Annex 5: Case studies' reports

1.1.1 Berlin metropolitan area case study

Main demographic/social and spatial developments

Two related recent historic events still have a strong impact on the land use patterns as well as industrial development in Berlin.

The first is the separation of the city until the early 1990's. The Eastern part belonged to the former German Democratic Republic (GDR) and was part of a centrally planned economy. This part, while highly industrialized, was marked by the typical structural characteristics and inefficiencies of communist planned economies. The western part was part of the Federal Republic of Germany that had no direct land borders with the remaining part of the country. Lacking market access made this an unattractive location for economic activities. Thus, most of the larger scale production in the city was heavily subsidized up to the beginning of the 1990s. This led a number of larger firms that had either previously been located in Berlin (e.g. Siemens, Bayer) or had newly moved to Berlin to establish mainly "extended workbenches" in the city.

As a consequence, when Germany and therefore the city was re-unified (and subsidies to Western Berlin were abolished) Berlin had an atypical economic structure for a capital city. The western part lacked headquarters, as much of the production was related to assembly. By contrast many of the enterprises in the Eastern part were bankrupt. Nonetheless planners expected rapid population growth (with some estimates suggesting a population growth from 3.4 in 1990 to 5 million in the long term) in the city at the time, due to its regained function as the capital of Germany. Similarly, economic forecasts were optimistic with respect to the depth and duration of the so-called transition crisis and expected that economic troubles would be overcome within a few years.

These expectations were not met. Until the mid-2000's the city experienced both a population decline as well as a reduction in employment. The population levels of 1995 were reached again only around 2010. In the process the share of manufacturing in GDP declined to 9% (from 17.5% in 1991) and the city[1], which is also a federal state, ran into severe financial difficulties. This was the second important event impacting on current policy. It led to the privatization a substantial part of land and housing stock previously owned by the city. It also resulted in the abolition of a number of pre-existing policy instruments that had been used to provide support to production in the city before. Thus, the city administration gave up a number of well-established, historically grown and also by and large generally accepted instruments of spatial

[1] In part this rapidly decreasing manufacturing share is owed to the fact that as Berlin became the capital again, a number of ministries and other institutions of the federal state moved to Berlin and this also helped in fostering growth in the media sector. This automatically fostered the tertiarization of the city.

planning policy. Land was, however, in ample supply at the time and land prices were rather low in comparison to other large cities in Germany and Europe.

Table A.5.1: Key data on Berlin

	Berlin		**Capital City Region[1)]**	
	2018	Growth since 2015 (%)	2018	Growth since 2015 (%)
Population (Thousands)	3.629	3,8	5966	2,9
GDP (billion Euro)	145,7	16,9	190,3	14,9
Area (km2)	891		30545	
GDP/cap	40146	12,5	31895	11,2
Employment	2.016		3140	
Share of manufacturing in GVA[2)]	11,0	-0,5	14,0	-0,5
Share of manufacturing in Emp[2)]	7,0	-0,5	9,4	-0,5

Source: Eurostat, 1) Berlin and Brandenburg 2) level 2017, change in percentage points.

A recent study evaluates the city according to three indicators also emphasized as main strategies in the Berlin Strategy “growing, smart and creative economy”, “urban, green and mobile life quality”, “solitaric, responsible and engaged society”. In a comparison of 15 capital cities Berlin is placed 4th in terms of talent (economic dimension). 11th in ecology, mobility, and tolerance (ecological and social dimension) 9th in life satisfaction, and participation, and technology 13th in administration. Also, all indicators (except the one relating to administration) have improved since 2008-2009.

Another specific feature of Berlin is that until the re-unification suburbanisation was impossible in the western part of the city and had been of low intensity in the Eastern part. This also applies to the movement of companies to the environs. This too was impossible in the western part of the city and out of the realms of decision of enterprises in the planned economy of the Eastern part. In addition, the surrounding area of Brandenburg was also part of East Germany and thus also went through the same struggles as Berlin. It is also a large federal state of Germany. Next to the areas surrounding Berlin it covers a number of rather remote and structurally weak municipalities. It also has a below average GVA per capita and manufacturing share in employment. Further, despite recent improvements, it is still quite strongly oriented to the domestic market (i.e. has low export shares).

Nonetheless interactions between the city and the environs are intense and in 1996 there was a plebiscite on whether Berlin and Brandenburg should merge and become a joint state of Germany. This proposition was, however, turned down by popular vote, but was a major impulse to the restructuring of collaborative spatial and economic policy in the two federal

states. The larger Berlin area, which is the subject of this joint policy, has been defined in a number of different ways. These can be considered to be organised as concentric circles and have also been subject to repeated revision over time. The largest of this is the capital city region of Berlin and Brandenburg (Hauptstadtregion Berlin-Brandenburg). It encompasses the federal states of Berlin and Brandenburg and has over six million inhabitants. While this region is probably too large and heterogeneous to allow for consistent spatial development strategy formulation, it is of importance from a political perspective as it involves the governments of the two federal states, which hold a number of important competencies in spatial planning and economic policy in Germany.

Figure A.5.1: The co-operation areas of the Berlin region

S: City of Berlin. Note: The map shows the capital city region (i.e. Berlin and Brandenburg. The pink area is the city of Berlin, the pink line delineates the larger Berlin area.

The smallest definition, by contrast, is the Berlin environs, which encompasses the city and its immediate surroundings (mainly the contingent municipalities) and basically is the functional urban area. This is the area most relevant for local co-ordination and is also the focus of some co-ordination institutions such as the municipal neighbourhood forum (Kommunale Nachbarschaftsforum).

Finally, in between these two definitions is the region described in the annual spatial monitoring report of the larger Berlin area, as an annual report on the economic and demographic development of this region. This area is probably a good frame for an economic analysis, as it

encompasses an area that exceeds the spatial extent of local labour markets and functional urban area and more closely mirrors the spatial extent of networks in production.

Main Trends in the development of the economy and manufacturing

Recent economic and demographic development of the city of Berlin suggests that it has managed to achieve a turnaround relative to the difficult situation in the 2000s. In the 2010s Berlin has been growing rather rapidly in terms of population. Up until 2018, 40.000 persons migrated to the city annually. Recently there have been signs that this population growth has reduced (to around 20.000) despite immigration remaining to be the main source of population growth. At the same time the economy started to improve too. GDP growth is higher than the national average since 2015 although productivity is still below the German average (around 97%) due to a lower share of manufacturing.

One of the central drivers of this renewed growth are start-ups. These were attracted to Berlin in the early 2000s by the low land prices that allowed creative people to benefit from the amenities of a city at low cost. They also profited from the many high-quality universities located in the city that make Berlin an important research centre and knowledge hub in Europe. These start-ups receive ample support and finance from the city administration as well as private financial institutions. They can also rely on effective institutional support. Most of these start-ups are, however, still small in terms of employment and sales and ensuring their continued growth is one of the challenges for economic policy.

The larger share of employees in Berlin is thus still working in the traditional enterprises located in the city. These in general remain to be strongly oriented to the internal market and also remain to have a rather untypical functional specialisation for firms located in large cities. The low share of headquarters among the enterprise persists. Also, in this respect there are, however, some signs of a change.

On the one hand this applies to investments of large companies from both abroad and from other parts of the country. Thus there have been a number of larger investments from major logistics firms (such as DHL and Amazon) and also investments of the metal working industry (by firms such as Mercedes Benz, Rolls Royce, Viessman, BDH Hausgeräte GmBH, ThyssenKrupp Rothe) have boomed in recent years with the most recent example being the plans for an investment, by TESLA just outside Berlin, which may result in the establishment of a Tesla research centre within city limits.

Most of these largescale investments are, however, made at the outskirts of the city in municipalities such as Falkensee, Brieselang and Ludwigsfelde (for logistics) and Ludwigsfelde, Blankenfelde-Mahlow, Mittenwalde, Nauen and Eberswalde for the metalworking industry enterprises. Given the size of investments the reason for these firms to choose the outskirts as well as the question whether or not these firms should have been more actively attracted to Berlin are an important issue in policy debates.

In this debate most of the actors emphasize that, given the shortage of land in the city, it is questionable whether the city could provide space for all these investments and also argue that the still available land should rather be used for high value added activities that are associated with low traffic and environmental areas. It is also argued by these actors that it is questionable whether the mentioned firms could be motivated to move to the city given the high land prices, the limited space for potential future expansions and the difficult transport situation in the city. According to this view it may be better to have these enterprises in the outskirts, where the population of Berlin can profit in terms of jobs and income, than in other parts of Germany.[2] There are, however, also some actors that would like the city to take a more attractive role in attracting (at least some) of these large investments (in particular in manufacturing and less so in logistics).

On the other hand, the changes within manufacturing and the start-up boom lead to a noticeable change in the structure of employment in the city. Through this mainly high skilled and jobs are expanding also within the producing sector, while low skilled jobs are declining. As a result of this there are also accounts of shortages of labour that seem to be particularly pronounced in high skilled technical jobs and IT-qualifications.

One additional result of the increased demographic and economic dynamics since the mid-2010s was a rapid increase in demand for land and a land price hike. This is putting the traditional industrial locations but also trades (Handwerk) under pressure. Further, large contingent land plots (in excess of 50 hectares) suitable for larger investments and production locations are almost impossible to obtain within the city limits. The only area where such a development could still be thought of is Buchholz Nord.[3]

These dynamics are expected to continue. Current estimates are that employment in the city will increase, from 2 million to somewhere below 2.2 million. Manufacturing is expected to stagnate such that the share of manufacturing in both employment and GVA will continue to decline in the medium term. The strongest growing sectors are expected to be (1) research, development and media (2) enterprise services and (3) social services.

Population is also expected to increase substantially, but at a slightly slower pace than previously. Current forecasts suggest that there will be an annual immigration of around 20.000 people in the next decade. In addition, according to a study by the Industrie and Handelskammer (IHK) modern production technologies such as industry 4.0 are likely to

[2] In part this is also reflected in the stated policy preferences of the city. For instance, in the area of logistics the spatial plan for Berlin and Brandenburg foresees a number of logistics centres in the outskirts of Berlin, as the city has no comparative advantages in that branch.

[3] This is a 180 hectares area that was still planned as a residential area in GDR times, but was never developed. Currently it is used by a pyrotechnics factory. This area has been earmarked for various production uses in the past but has proven to be difficult to develop. Previously it was envisioned that BMW and Magna could invest in the area, while more recently some hoped that the TESLA investment could be located there.

increase demand for land and according to most observers solutions focusing on a substantial increase in density are difficult to organize on account of e.g. the high costs of locating production related activities in multi-storey buildings. Mostly such uses are limited to food processing. The city therefore expects the scarcity of land to intensify in the next decades.

This scarcity is a new phenomenon for Berlin, which traditionally has been used to have sufficient land reserves and has led to increasing competition between different interest groups. One line of competition is between residential and productive uses of land. Here in general the feeling is that economic uses of land are becoming increasingly contested through the financially more lucrative and also politically more popular residential uses. Another line is between the newly emerging enterprises (i.e. the start-up scene) and the more traditional productive uses. Here it is often argued that in particular the small scale trades and repair workshops can often not afford the large rent increases in particular in the inner city and are forced to either move to the outskirts of the city or to close down. Finally, a third area of competition is associated with the increasing demands for public infrastructure (e.g. schools and kindergartens) that arise along with increased residential development.

The empirical basis on which the debates over this competition are led seems to be rather thin, however.[4] Thus, anecdotal evidence suggests that some of the traditional producers have moved out of in particular inner-city locations to areas on the outskirts of the city or to areas outside the administrative territory of Berlin (i.e. Brandenburg). There are, however, large differences in the assessment of the quantitative importance of this movement. Some consider it to be a major factor, others of minor importance or a natural process in a restructuring city.

These differing perceptions seem to be strongly related to the specific area of the city and the sector considered by the respective observer. Relocation seems to be somewhat stronger from inner-city locations (i.e. locations within the S-Bahn ring) to the outskirts of Berlin than from the administrative territory of Berlin to Brandenburg. It also seems to be somewhat stronger in the traditional trades and repair services than among industrial enterprises in the perception of some actors.

All in all, there is, however, very little empirical evidence as to the quantitative importance of the process of de-industrialisation of certain areas in the city or on the importance of relocation. The few studies that do exist lead to only partial results. One study conducted by the Industrie und Handelkammer focuses on the enterprises leaving Berlin. It finds that in the period from 2013 to 2018 3.740 enterprises left Berlin of which 964 settled in Brandenburg and that around 15% of these moves were primarily motivated by lacking land for expansion in the vicinity of

[4] This lack of empirical information is due to a mixture of a complex institutional structure which leads to many split competencies, a bad data as for instance the structural plan (i.e. Flächennutzungsplan) does not report areas below the size of 3 hectares, (which implies that smaller areas for productive uses disappear in this planning document and are attributed to other uses (such as residential uses) and a lacking necessity for the development of analysis tools in the past, when land was in ample supply in Berlin.

the previous site. A study conducted in the Kreuzberg area, by contrast, considers the re-use of the vacated premises. It suggests that these are often subsequently used by other (higher value added) enterprises and that the substitution through residential uses is a secondary phenomenon. Another study, which, however, pertains to German cities in general, shows that founding rates of producers in consumer industries and (the high-price segments) of the crafts are actually higher in inner city locations than in the outskirts of cities. These studies are, however, heavily debated and the generality of their results is also questioned by some.

One plan of the city in co-operation with the crafts association (Handwerksammer) has therefore been to establish a data management system to survey the land use patterns for productive uses in a more encompassing way. These plans have, however, not been realized and have met many practical issues due to data constraints.

Main factors affecting location choices of manufacturing

The land market in the city is thus rather strained and marked by intense competition. This applies in particular to land earmarked for production uses.[5] Thus according to the estimates of the city the land reserves for economic uses have substantially decreased in the last decade. Currently there is a total reserve of 1.025 hectares of land for such economic uses, which is 16% lower than in the last decade. Similarly, the IHK has conducted an analysis of 17 places where production can take place in Berlin. According to this analysis no further areas for development are available in 13 of these locations. Finally, also rent prices for both commercial and residential uses have increased substantially. Although prices vary across locations anecdotal evidence suggests that enterprises renewing their lease on their workshops in inner city location may experience rent increases from below € 10, -- per m^2 to over € 20, --.

Next to this, the mobilization of land in private hands is an issue, as private owners may not always be willing to sell or develop a site for productive use, but for instance hope that this land may be dedicated to residential uses in the future. Currently the city estimates that it has 300 hectares of land that could be developed for further economic uses. Of these, however, 2/3 are owned by private owners, who cannot be forced to sell this land. Thus, an additional issue is that while land is in principle available often it is not on the market for any uses .There are also few instruments to mobilize this land.

Among the reasons influencing the choice location of companies in the city according to observers – despite some variation in the relative importance of these factors across different sectors – the following factors are relevant:

- High rents and land prices and also the very rapid increases in these prices as these on the one hand are an important cost factor and also due to their dynamics reduce plannability and foreseeability of costs in the future.

[5] This is particularly the case in the west of the city. The last larger areas for development in Berlin are in the Northeast and the southeast. The western part of the city has only very limited land reserves. Thus, city development is moving to the north- and southeast.

- A lack of flexibly but reliably available land in the case a company wants to expand its operations on the existing premises
- A difficult situation with respect to transportation and logistics due to general traffic congestion, lack of parking spaces and similar issues, that, however, apply most strongly to inner city locations.
- A hostility (perceived by enterprises) of residents to productive uses whenever they are associated with even minor noise, smell or pollution, which in conjunction with a weak legal position of producers relative to residents may lead to very costly adjustments of the production process (in particular in mixed use locations).

Development preferences of the city (region) leadership

Policy makers in the city, in their aim to steer and moderate land scarcity, have intensively reacted to the challenging situation in the land market through a number of initiatives.

In particular the city has re-designed the strategic plan for economic development (Stadentwicklungsplan Wirtschaft 2030). This plan together with a traffic plan and a plan for residential development will serve as the basis for spatial planning and development in the next decade. The plan presents a coherent strategy for spatial economic development of the city that is amongst others based on strengthening the city's competitiveness, increasing mixed use zones, strengthening science and technology and improving regional governance. The plan also presents a spatially differentiated strategy for the future development of individual areas. To this end it highlights 11 "Places of Future"[6] and 40 industrial spaces and also introduces a new zoning category for mixed uses referred to as "Urbane Gebiete".[7]

The "Places of Future" are areas where the city aims to locate start-ups. Each of these zones hosts (or will host) a university and/or major research institutions and is devoted to a particular theme that is based on a description of the unique features of the particular area and also defines the kind of productive uses that can be placed there. Further there is an own office to provide for networking across the "Places of Future".[8] The industrial spaces, by contrast, are locations where more traditional production is taking place and can be developed. They are usually supported in their development by the quarter managements, but there are no special financial incentives (taxes or subsidies) for locating in these areas.

A further feature of this plan is that for the areas reserved for exclusive productive use there is a very strong commitment to avoiding mixed uses with residential and retail trade uses. This formal determination within the plan enables planning authorities to exclude non-industrial uses from these areas.

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[6] These places were originally defined by the economic administration of Berlin.

[7] These areas provide for an up to 80% residential use with the remainder being dedicated to commercial uses.

[8] The aim is to provide cheap locations for production areas in these "Places of Future". Rents should be between 8 to 9 € and thus substantially below current market prices.

The plan thus provides a clear orientation as to the development strategy of the city and also seems to be generally accepted by most actors. Despite this and, given the importance of the plan, not surprisingly, some of the features have been subject to intensive debate. For example, with respect to the “Places of Future” one criticism raised, is that they may not take sufficient account of the specifics of larger scale production enterprises, as these – despite collaborating intensively with universities – do not require the immediate vicinity of these institutions for their co-operation.

Another topic raised has been that the “Places of Future” differ in the degree to which they have already been implemented. For instance, Adlershof is an area which has already been existing for over 2 decades as a major urban development initiative endowed with ample funding. This – after some difficult times – is currently booming. It has 1100 enterprises 60 science institutions, 2 universities and 2 founding centres as well as 60.000 employees and a few thousand students. In this area it is becoming increasingly difficult to cater for the rising demands for land by companies. By contrast, the major urban development area of the Tegel airport has not been vacated yet and other “Places of Future”, e.g. Marzahn, do not have a clear connection to an applied university yet. It is thus still unsure how and whether these plans materialize.

Similarly, with respect to the newly introduced mixed zones a fear is that rather than increasing the land available for production, they may reduce this. This is because as more residential uses move into these areas, the space for noisy or burdensome activities may be reduced. This in part also is because, legally, the interests of residents receive priority over the interests of enterprises, irrespective of the zoning category of the land and the circumstances under which residential uses were developed in an area. This implies that in case that residents feel harassed by environmental impacts of production (e.g. noise or smell), their concerns take precedence over those of the affected producers irrespective of the time enterprises or residents have resided in the area. Thus, in case of legal conflicts enterprises usually have only a very weak position in mixed use zones.

Tools through which the municipality is able to control development processes

A further policy reaction has been to reintroduce or envisioning to reintroduce a number of policy instruments that were abandoned during the financial crisis of the early 2000’s. One example for this is that the city aims to own land and does not sell any of its land but aims to provide this only under long term lease arrangement (so called Erbbaurecht). While this system has a long standing history in the city, and is accepted by many, it too has been criticised by some on account of being unlucrative in particular for small and medium sized enterprises, who would often prefer to own rather than lease land and for hampering the growth of enterprises. The latter seems to be particularly relevant in instances where enterprises want to use their land as a collateral for an investment loan and the remaining time on the lease is short. The reason for this is that when the Erbbaurecht is used as a collateral for investments it is evaluated at a lower price than owned land, with the discount depending on the remaining length of the

lease.[9] In instances of a short remaining lease period, this leads to a low value and the question arises, whether the lease will be extended. Depending on the results of this evaluation this may result in very low values for the lease that can be used as a collateral.

A further example is that the city is planning to reinstate the municipality owned business compounds (Gewerbehöfe) initiative. This is another policy instrument that has a long tradition in Berlin. Up until the 1990s the city of Berlin was an owner of the Gewerbehofsiedlungsgesellschaft which ran the institutions on behalf of the city. The municipality owned business compounds were essentially located on land owned by the city and were places where trades could settle and where there was only limited residential use. This model existed since 1965. In 2010 the Gewerbehofsiedlungsgesellschaft, inter alia on account of the budgetary problems of the city, was sold to private investors who developed the land mostly into residential areas.[10] Currently the city is starting to re-initiate these compounds. The idea is that the city will provide city owned territory at reduced rents to potential firms of the trades, in order to guarantee a supply of the basic services in particular in the city centre.[11]

The city has also aimed to intervene in the land market and instituted a system of quarter managements, that exist in all of the districts of Berlin.[12] Interventions in the land market have taken the form of aiming to purchase some land (mainly from other state actors as privately owned land is usually too expensive) and recent plans for rent controls, which could also impact on rents for commercial uses, that have been met with severe criticism by employer federation. By contrast, individual quarter managements have also been criticised for lacking efficiency, while on the other hand others (such as e.g. the Motzener Strasse initiative as the “blue print” for these initiatives) can be considered to be best practice initiatives.

In Germany the federal state is responsible for providing the general guidelines of spatial planning, while the municipalities are responsible for the concretization of these general plans through the design of zoning regulation (Flächennutzungsplan) and construction plans (Bebaungspläne). The municipalities also profit from enterprises through local tax revenues.

In Berlin the situation is slightly different as it is both a federal state and a municipality constituted by 12 districts. Thus, the city of Berlin can provide only framework plans while the implementation through construction plans is in the responsibility of the individual districts of

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[9] The usual length of lease is 65 years for economic uses and 99 years for residential purposes.

[10] Two such locations that are still used in this way are the Dragoneraeal and Ratheberg. Of these in particular the Dragoneraeal received a lot of attention on account of intensive citizen’s support to maintain the mixed-use characteristic of the area.

[11] In this area the city aims to focus on a dense 4-storey use. Whether the demand for these locations will be sufficient to justify these concepts is still open, however.

[12] Their tasks are: location advice and help with the search for commercial property, knowledge and technology transfer for innovations, information about funding opportunities and funding channels, Support in the recruitment and qualification of specialists, providing contacts to partners, networks and organizations, support in authority and approval management, foreign trade promotion and support in securing the location.

Berlin. For instance, the city's recent economic strategy plan explicitly states that the general guidelines laid down in this plan have to be implemented through the districts' construction plans. The city can, however, define projects of central interest for which it is then solely responsible. Further it can also veto existing construction plans, if these do not accord with the city's directives. Both these options are, however, not used very often as they represent an intrusion into the autonomy of the districts.[13]

This system has the advantage that it leads to a strong consideration of local preferences in the spatial planning process and potentially also a higher involvement of residents. It, however, holds the disadvantage that it increases the already large number of actors involved in the implementation of development plans. This leads to additional co-ordination costs in the planning process. It may also cause inefficiencies in planning, in particular when development areas reach across district borders. Some actors also mention the districts' lacking incentives for industrial development, as they do not receive revenues from local taxes on enterprises in a similar way as the municipalities in other federal states.

In general, the process of acquiring construction permits, as in general the public administration, is seen as rather lengthy and bureaucratic, by many actors. The reason for this is mainly seen in the large number of actors of actors involved in the process.

In addition, two issues specific to the productive use of land are that many (mainly small scale) producers operate in locations that are not safeguarded by zoning law. This means that an enterprises' location is actually dedicated to other uses according to the current zoning plan, but that it is allowed to continue operating in this territory on account of having been there already before the zoning regulation was applied. These firms are then severely limited specifically when they would like to expand their business and are also threatened by severe price increases in rents when their lease expires.

Next to this the city of Berlin has also developed some new instruments to influence the location choice of enterprises. One of these it the so called Bodenbevorratung which inter alia foresees that Berlin will aim to buy new land. The focus of these purchases is on land that is owned by federal agencies, because there is a commitment to keep land in public hands in these agencies. Further areas are previous premises of railways and similar (public or previously state owned) enterprises that are not needed any more.[14] In the case of these areas, however, the city competes with the private market as these enterprises are required to maximize profits, too. Further the railways have developed a number of areas themselves. Acquisitions in the private land market are more complicated on account of the high costs and because the land

[13] An instance where the former option has been used, though, is the envisioned development of the airport of Tegel.

[14] The land owned by the federal state that becomes available usually is territory that is not needed any more. The prime example are conversion areas (i.e. former military areas) of which there are, however, only very few in Berlin, or buildings such as a hospital or federal research canters which are, however, often not suited for production on account of their location or exiting environmental regulations.

will later be rented on the market below market prices, which automatically results in a budgetary loss that is difficult to argue for the city administration.

The actual territory of land for industrial use owned by the city is difficult to estimate, as it is often owned by different agencies and levels of government (e.g. by the districts of Berlin or other independent organisation controlled or owned by the city of Berlin), so that the city can actually not say how much land exactly is under its control. The general objective of policies pertaining to the land owned by the city is, however, to use it to support groups that are not able to pay the market rents.[15]

Another recently implemented instrument is a program whereby landowners of relevant plots are directly addressed and made aware of the possibilities of densification and more efficient land use made available to them.

Potentials for metropolitan area cooperation

Berlin and Brandenburg also have a joint spatial development plan. This sets the guidelines along which the two federal states want to develop different areas. To this end, the states of Berlin and Brandenburg have founded a single planning authority, located in Potsdam. This Joint State Planning Department performs the tasks of the highest authorities responsible for spatial planning in both federal states. Therefore, it comprises members of staff of both federal states authorities, the Berlin Senate Department for Urban Development and Housing as well as the Brandenburg Ministry of Infrastructure and State Planning.[16] This department is amongst others tasked with developing common spatial planning plans as well as common structural and development concepts that cover the whole area of Berlin and Brandenburg and approving regional plans for this area. In addition, the agency provides an annual regional planning report.[17]

The central strategic aim of the joint plan is to develop a star shaped agglomeration around the city of Berlin. That is the main development areas should be along the major transport routes to and from the city, while the spaces in between are intentionally left open.

This joint planning represents an innovative approach to cross-border planning and has been ongoing in the last 20 years without the principal importance of joint planning being questioned in that time. Naturally there are, however, also a number of classic differences in interests in the procedures, though. Thus, for Brandenburg, which is not only composed of areas that are

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[15] This applies to both housing and economic uses.

[16] To be more specific planning at the level of the federal state (i.e. the framework plan) is a joint responsibility of the federal states of Berlin und Brandenburg which is why the joint planning agency was founded through a state treaty.The agency is staffed by employees of the state of Berlin and of Brandenburg, which amongst other develop the joint state development plan. Regional planning (i.e. the competencies allocated to government level below the federal state remain in the responsibility of the respective regional bodies.

[17] This specific institutional set-up whereby two federal states jointly develop spatial framework plan is unique in Germany and is owed to the developments in the 1990s, when the two federal states planned to merge.

located close to Berlin, one repeated challenge is to strike the balance between policies directed at the more remote areas of the state and the needs of the locations close to the capital. Further the star shaped development leads to some complaints that transport routes connecting localities around Berlin directly may be underdeveloped (i.e. you have to travel through Berlin).

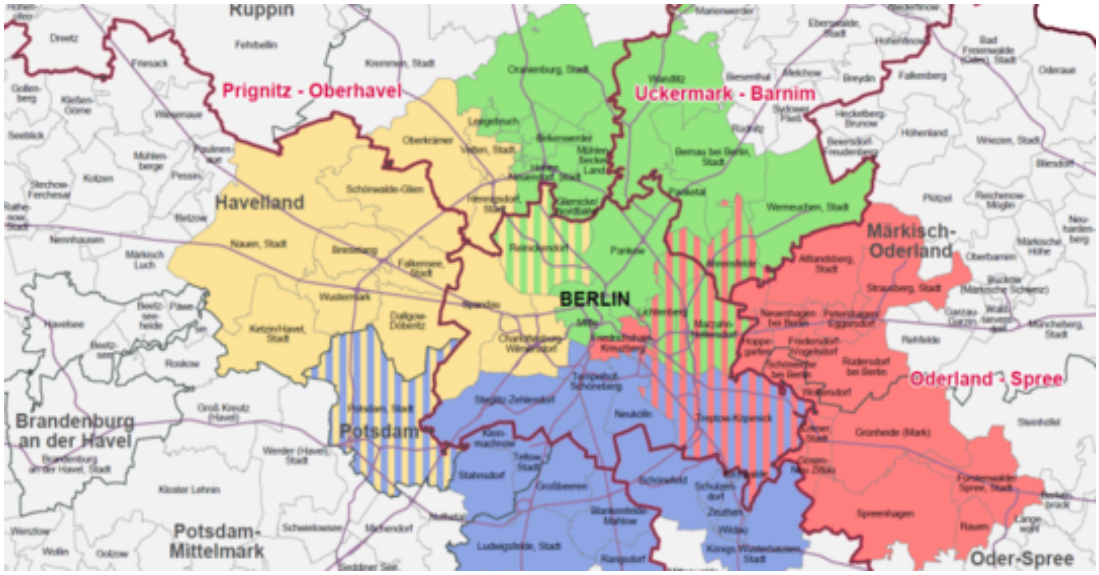
Although a big advantage of this system is that it ensures coherent strategies for the complete region, there are also always controversies if specific municipalities want to develop their area differently from what is foreseen in the joint state level plan. As a consequence, in each planning period there are occasions where individual municipalities sue against the planning document as they have a feeling that their autonomy is impinged upon.

In addition, in part due to the legal constraints on the spatial planning competencies of the German federal states and in part due to different interest of the federal states and municipalities, the joint plan has an indicative nature only, with implementation hinging on the activities of the municipalities. Finally, the joint plan (and policy in the Berlin metropolitan area in general) is also sometimes criticised for taking too little account of integrating different policy fields (i.e. viewing transport, housing and economic development jointly).

As part of their collaboration Berlin and Brandenburg also have also agreed on a "Joint innovation strategy of the states of Berlin and Brandenburg" (innoBB 2025) in January 2019. The aim of this strategy is to promote 4 joint clusters (Healthcare, ICT, media and creative industries, Transport, Mobility and Logistics Energy technology and Optics and photonics) and to position Berlin-Brandenburg at the forefront of international competition in these areas.

The implementation of more concrete specific projects to jointly develop certain areas in the Berlin environs (e.g. through intercommunal enterprise zones), has proven to be much more difficult, however. The only recent exception to this is the development of the area around the new airport in Berlin. For this there is joint development program that has been carried by Berlin, Brandenburg and the Republic of Germany. For this development Berlin has bought industrial land of 120ha of which 30 are already given away. This area is currently developed by private firms and although development is delayed due to the delay of the airport the co-operation is working. By contrast, in the context of the recent investment plans of TESLA most observers consider the co-ordination between Berlin and Brandenburg to be only minimal. This is seen as a deficit given that many of the workers at that firm will come from Berlin or other more distant parts of Brandenburg (or even from Poland), which poses major challenges to transport planning.

Figure A.5.2: Areas covered by the four working groups of the municipal neighbourhood forum (KNF)



Source: City of Berlin. Blue (south), Green (north), Red (east) and Yellow (west) colours indicate the territory for which the individual KNF organisations are responsible. Shaded areas indicate territories serviced by two KNF organisations.

Next to the formal and legally binding joint indicative planning strategy at the Länder level, at a more local level there is also the so called municipal neighbourhood forums (Kommunale Nachbarschaftsforum - KNF), which has 4 informal working groups (North, South, East, West). They consist of the districts of Berlin and their bordering municipalities and are organized according to geographic principles with some of the districts or municipalities (located at the edges of the respective territories) belonging to more than one working group.

These organizations, which by now already exist for 20 years, have no formal power but are forums where discussions can be held, and information can be exchanged. They meet three times a year and in addition hold one annual conference where a specific topic is discussed in detail. At the occasion of this annual conference also a joint political declaration is formulated and presented to the responsible state level administrations.

So far the municipal neighbourhood forums have had no legal status and their organization has been paid exclusively by Berlin. It is, however, currently planned to develop these institutions into a registered non-profit organization and to require all its members to pay a small membership fee (of € 0,1 per inhabitant). It is expected that this move to a non-profit organization would increase the stability of the organisation as it would then also have a legal basis and formal statutes. Also acquiring funds through membership fees is expected to further increase the commitment of the involved partners. The envisioned changes are at the current point plans and it is probably too early to talk about their effects

The longevity of these institutions suggests that they are advantageous for both the partners involved (as participants) and the city of Berlin (as the funding agency). There are, however, also some imbalances within the institutions that are sometimes an issue. In general, the municipalities of Brandenburg enjoy more autonomy than the districts of Berlin. By contrast, the

districts of Berlin may have a population of 300.000 people, while the municipalities in Brandenburg may number less than 10.000 inhabitants. This implies that the municipalities in Brandenburg can autonomously decide a lot more than the districts can, although the policies of the districts are more important in terms of the people affected.

Nonetheless these institutions are seen as having been effective in reducing stress, sharing information and formulating joint policies vis-à-vis higher tier organizations as well as generating trust.[18] Their effectiveness, however, strongly depends on the goodwill of the members and other authorities. The intuitions are also a good way for those responsible to get to know each other (e.g. in instances of personnel changes) and to make informal contacts with the persons responsible for planning in adjacent areas.

Summary

Summarizing the case of Berlin represents the case of a city, which has recently experienced substantial increase in population and which – after a period of slow development - has been also experiencing more rapid economic growth. This has also led to an increased competition between various uses of land in the city and to an intensive and in parts also controversial debate on the appropriate policies to cope with this emerging shortage of land. This debate and the regained budgetary room to manoeuvre has also given rise to a number of policy reactions. These include drafting a new regional economic development strategy, a reversion of the city administration to some policy measures that had already been in place before the city's financial crisis and generally spatial planning taking a more active role in the land market of the city. While individual measures have not gone uncriticised, there seems to be a consent among the relevant actors that in this novel situation the city administration must take an active role in the future management of land use patterns.

The city is - and also has been – marked by massive structural change. This is evidenced by the lively start up scene and the high founding rates of enterprises (that is also paired with a high rate of enterprise closures) and the large number of major development projects in the city (e.g. the development of the Berlin airport, the associated plans for using the Tegel airport or the investment of TESLA in the outskirts of the city to name just a few). Accommodating and allowing for this massive structural change clearly puts additional demands on urban planning, in an environment where residential uses often get priority over economic functions, as it implies that space must be provided both for the demands of the new activities as well as the pre-existing enterprises that are also rapidly changing their structure. Striking the balance between the support for new activities and support for the incumbents is therefore likely to remain an important topic for policy makers in the future.

[18] One example for this is the Tesla project, where the possibility to talk to each other in these institutions has helped to avoid misunderstandings or to reduce different levels of information among those responsible.

The larger city area is also marked by a long standing tradition of joint spatial planning at the level of federal states and of co-operation at the more small-scale local level. This planning seems to be mainly of an indicative nature, with the concretisation left to lower tier administrative levels and co-operation is definitely not facilitated by the fact that functional urban area of the city borders is divided by the borders between two German Federal states, which have substantial autonomy in regulating the economy, education systems and many other important areas of co-operation. The long-lasting tradition of this co-operation, however, suggests that the value added of joint planning is well understood by the partners involved.

One aspect that is a little surprising is the poor empirical basis on which some of the debates over urban planning and spatial policies are based on, even though all actors generally support the idea for providing improved data and monitoring tools.

1.1.2 Oslo metropolitan area case study

Main demographic/social and spatial development trends

The population of Oslo was 658 th in 2016, and is projected to reach 890 th by 2040, thus there is a 35% increase to be dealt with within 25 years. According to the ESPON SPIMA project, the most common definition of the metropolitan area of Oslo is along the formal borders of the City of Oslo and the County municipality of Akershus, with its 22 municipalities. This is the area of the joint regional plan (1,3 mill people).

Outside Oslo there is also population growth, both Oslo and municipalities in Akershus are doing their own strategies to house their own population growth but they do not cooperate about the numbers of homes to be built. There is cooperation in following up the regional plan for transport-oriented development, including also working together with the closest municipalities on development in the functional urban area. The population growth will gradually lessen in the future, by 2040-50 there is a need for 100 th new homes in Oslo alone which would cover the population increase. It means 3300-5000 new homes should be built on a yearly average.

Since the 1950s most of the non-residential areas in the city center have been converted into residential, with some conversions to offices, retail and services. This is partly true also for the western part of the city, where large areas in the western fringe belong to the university and three hospitals (one private and two public). The areas around Majorstuen, Nydalen and also Skøyen further out west are dense mixed uses areas built around transportation hubs. The Western side of the city has the highest land prices in Oslo, neither here nor in the inner-city manufacturing activities remained.

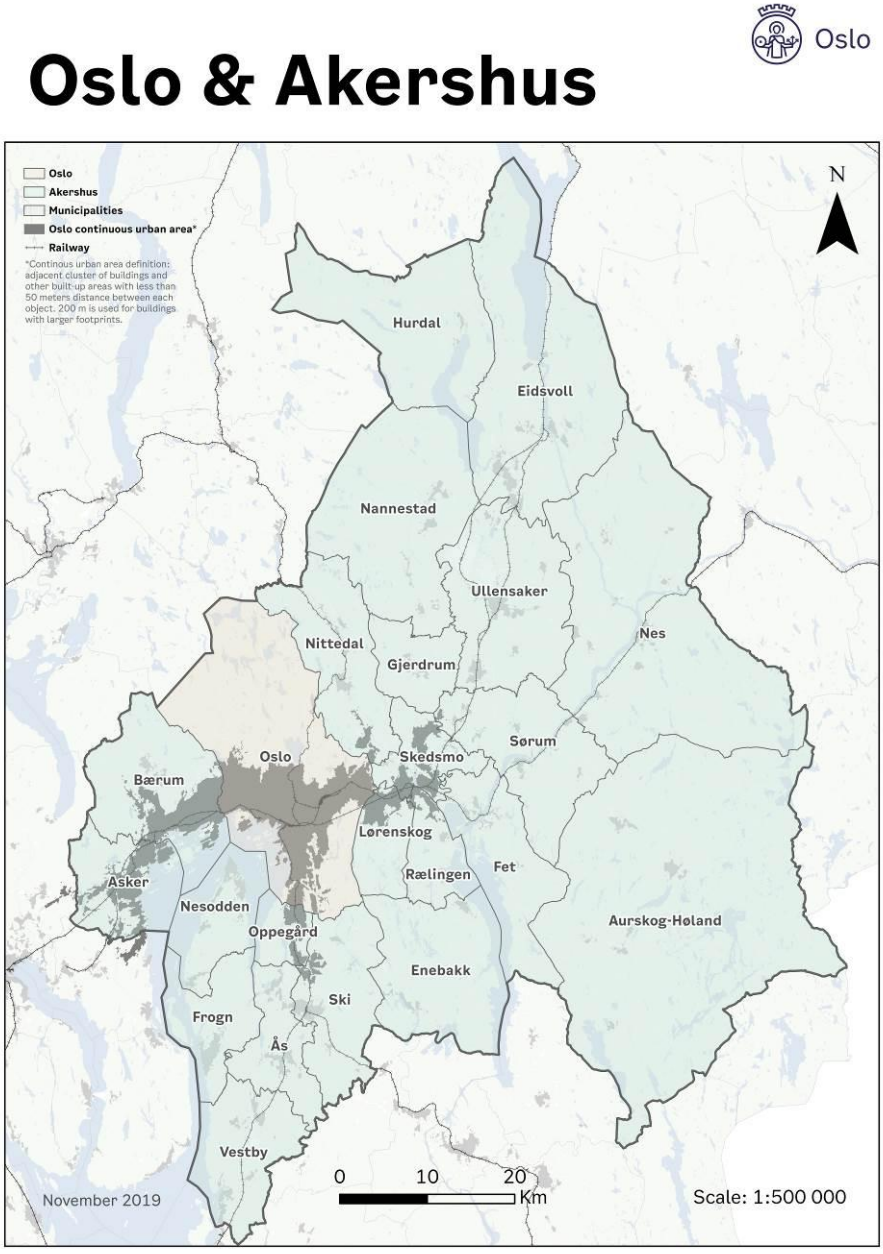
Despite transforming many parts of the city into residential, due to the quick population growth land for further housing construction is scarce. Oslo is facing a worsening housing affordability problem in the market driven, liberal housing system. The densification of the existing low density residential areas is not easy, as only limited density increase is allowed even if rezoning happens, and efforts for densification within established residential areas meet substantial local resistance. For mass housing production the current industrial areas appear as the most realistic option but this creates conflicts with the existing industrial, logistic and other background service acti vities.

As a consequence of the expansion of the residential functions within the city, the Grorud valley has got its large importance as the last concentration and main place for manufacturing. The Grorud valley is more or less the only place where production, with linked functions, can exist within the municipal boundaries of Oslo.

In Oslo the problems of transport of people and goods are on the top of the agenda. The metro system is full at peak hours, it gives great access to the centre while less between peripheries and has lower service frequency outside working hours. Parking is restricted in the city centre, visitors pay a lot in the inner city if they are not residents. In the city centre there is almost no street parking, only multi-storey parking with a fee of eur 5/hour.

Regarding goods transport, the main roads are congested in peak hours, for example Alnabru, Alnabru freight terminal is difficult to reach. Efficient solutions for transport avoiding Oslo center and also better approaches to the logistics center would be needed.

Figure A.5.3: The spatial scale of Oslo and Akershus, covering the metropolitan area)



Source: Oslo Municipality

Table A.5.2: Main characteristics of Oslo city and Oslo Functional Urban Area

	Oslo City			Oslo FUA*		
	2001	**2011**	**2018**	**2001**	**2011**	**2018**
Population	508 726	599 230	676 000	1 058 863	1 256 554 (2012)	1 292 000
Activity rate	66.0%	69.4% (2008)		67.8%	69.3% (2008)	
Unemployment rate	2.6%	3.0% (2009)		2.0%	2.4 (2009)	
% of mining, energy and manufacturing in employment (NACE 2)	7.7%	4.5%		Na	Na	

*Source: Urban Audit, * The FUA is defined as Akershus county*

Main trends in the development of the economy and manufacturing

Industry has changed in the last 20-30 years: traditional industry already moved away, now the second wave is here and even this might change in the future.

The costs for central locations are increasing, standard warehouses are disappearing while more specialized ones are built for food storage, etc. Manufacturing, warehouse and office buildings are most common and dominating in the industrial areas. In fact, only 60% of buildings are places where manufacturing activities are going on in these areas.

Oslo industry (manufacturing, excluding building industry, in NHO registered businesses in Oslo) employs 9600 persons within Oslo in 240 companies, which is a radical decrease compared to 50 years ago.

Deindustrialization changed the situation, transformation is going on. The industrial belt in the Grorud valley continues beyond the city border, where some neighbouring municipalities have got industries which were pushed out from the city, e.g. around road 159, heading to the east, till Strømmen in Lørenskog municipality. Other industrial areas lie to the south, as far as Vestby, mainly those that needed larger space, such as logistics but only little manufacturing.

The moving out of industry from Oslo speeded up 15 years ago, to places up till 15-20 km-s away, but not further. A n ew opportunity would be around the airport, but this is considered to be too far, 60 km from the city.

Not too much process industry was or remained in Oslo – except for food production. Only the building industry is expanding, driven by the large demand to build public and residential buildings, roads, infrastructure.

Another push factor in the East corridor, besides growing housing needs, is the restructuring wish of the large logistical centre in Alnabru. The aim is to increase its capacity, put more on rail from roads. There are many options existing regarding this complex issue. First ideas considered replacement towards outer areas, including satellite areas as well. More recently expansion of capacity would happen on spot. There is a national transport plan on rail freight

terminals. Over half of freight coming here serves the Oslo and Akershus area and the distribution system is very advanced. To increase capacity would need more space. However, there is no more space, thus the capacity increase would need densification, which would be extremely expensive. Some road freight depots have been established outside Oslo but the main restructuring will go on at this spot.

The restructuring of Grorud valley is going on along market lines, without detailed influence of the public sector. This also means that the industry and low-density facilities for technical services are gradually pushed out from the city. The question is who the losers are (from different perspectives, e.g. services needed for the city residents, doing services from here or from one hour distance away). Can public services. e.g. snow cleaning, be done from outside Oslo? On the other hand for some industries, such as wholesale (30 th jobs registered), logistics, it would not be a large problem to move out – despite the fact that some of the businesses registered as wholesale are located recently in the city centre.

The present restructuring produces some spatial mismatch regarding jobs and housing: the tendency is that manufacturing jobs are moving out while low educated people stay within the cheaper parts of the city. For the moment this is not a serious problem as the public transport system is fairly affordable, allowing people to commute between the city and surrounding towns. The transportation system is well structured to handle traffic towards the city centre, but mobility between corridors is more difficult and either requires travelling through the centre or using less frequent bus routes.

Main factors affecting location choices of manufacturing

Taxation system is largely centralised in Norway, taxes are collected by the national office. A fixed percentage of income tax is held by each local authority and the rest is redistributed to each local according to need. The only significant locally-prescribed tax is property tax. Oslo introduced a local property tax in 2016 and some neighbouring municipalities also did it, but not in the western municipalities with stable conservative local leaderships (and also more well-off people). The tax is set as a small percentage of the property value[19]. In the case of residential properties, in Oslo only the most valuable properties are taxed. The property tax was introduced by the left-wing city leadership. Debates are only about the residents' tax, companies are not complaining.

Taxation policy and the collection of taxes in Norway are centrally determined. All taxes are collected centrally and then allocated along clear and transparent objectives and indicators, based on the needs of local governments.

[19] The tax is 0,3%. The minicipality can only increase the tax with 0,1% annualy, and the maximum level is 0,7%. In the budget the property tax revenue for housing is estimated at 0,6 billion NOK annually and 1,0 billon NOK for commerial properties.

Wage levels and taxation differentiation do not influence location preferences of companies. Relocation decisions are much more influenced by the land prices and rezoning issues.

Currently the Oslo city Agency for Real Estate and Urban Renewal is preparing a strategy for the role of the industry and manufacturing, which would be more protective to industrial activities. The agency estimates the need for industry in the city, its climate and social (in terms of jobs) consequences. It is known that to move some of the industry outside of the city may have more negative consequences, e.g. because of the increased transport.

Main challenges and conflicts of future development in manufacturing

The main factors affecting the future development of manufacturing can be summarized as follows:

- Population growth can not be stopped in an open society (only influenced indirectly, through a restrictive zoning policy);
- Forest areas around the city border can not be touched (state level policy). Green spaces within the city are also protected (municipal policy);
- Silent densification is going on, but there are strong local protests in single family housing which is greatest part of the city – thus the densification of nice historic areas can not be achieved to larger extent;
- For all these reasons the main development pressure from the side of the housing construction sector is on the industrial areas.

The main dilemma is: how can population growth be handled to avoid the well embedded industrial areas being pushed out from the city (which would cause lack of jobs and even harm the smooth provision of public services also causing more environmental harm as important background activities are also pushed out beyond the city border)?

One of the potential answers to this dilemma is the densification of existing urban areas. There are many examples on such densification attempts:

- **Ensjø Area development**: transformation from car-city to housing, plan for gradual redevelopment. This was the first framework plan, developed 15 years ago by the city for a whole area which is predominantly in private ownership (city ownership only 15%). The idea was that if landowners see that residential use would also be possible, they will gradually change, not prolonging the licenses of industrial land uses and hand in plans for new housing construction (as this results in higher revenues from the land). In the original framework plan no mixity of functions was envisaged. The plans people got when buying their flats shows totally residential area, with large green areas. However, much of the planned green areas are still not existing, while many industrial buildings got renewed licenses lately. Before recent elections there were big debates and protests: people who moved to here wanted to get the promised parks[20]. Based on these experiences the city makes framework plans now more precise, with deadlines for the different tasks. The city has learnt a lot from this case.

[20] One of the underlying challenges is the legal framework for development agreements. According to the current law it is not legal to include financing of already built infrastructure in development agreements, thus if the municipality wants private financing of infrastructure, the infrastructure must be built after the development agreement is signed.

- **Sæter, in the south of Oslo,** traditionally a villa and family house area facing the issue of densification. Developers are the initiators of changing the zoning plan, e.g. around the Ekebergveien and Nordstrandveien crossing (tram stop and bus stop). After a more dense zoning land value increases dramatically, and developers are coming in and start to talk to the owners of houses. People face daily different developers offering above market price for the property. Some people became upset about this. Municipality published the plan and got angry remarks: no development is needed as villas are historic, or if development, it should be done by the municipality, not private developers. Other options than demolish the villas might be making them a bit more dense. Recently developers buy one by one plots and rebuild these. In the rezoned area in 2006 the owners organized themselves and protested that denser building will ruin the image of the area. But the city insists that TOD is needed for the whole of the city therefore the zoning was changed around the district center along the bigger roads. Gradually 2-3 storey new buildings are built, replacing earlier villas
- **Smestad** in the west part of Oslo is a villa area, among the best-connected areas in Norway and one of the highest prestige areas in the city. There is huge resistance against any plans for densification. The city is proceeding, being aware of the strong local opposition.
- National road goes through the area. The city offers some increase in quality of life (new park, open a stream…) but for those who are against it, this is not an argument.
- **Kjelsrud**, Alfaset location which is an industrial area, most land is owned (or controlled) by two big landowners. One of them wants to develop it, while the other does not want change. This second owner is the pension fund of Norwegian municipalities, since decades they lease the area for a well-established gas production facility (long term investment…), they are not interested in change. The gas production company has a contract till 2040 (it is not polluting but there are certain risk elements). The other is a real estate developer which would like to have development. Densification ideas include mixed use, even housing, although this is unlikely that anyone would move here to live (without significant change to the overall area). In this case the developer company is thinking on development. After the plans are clear, an actual building developer comes in to do the job. The city is doing the area zoning plan, even if one of the landowners does not agree. However, the gas company (100 employees) can continue until not wanting major changes. The whole area might be of 500 employees. After the new zoning plan is passed by the city council the real estate developer gains a lot on the land price increase but it is not taxed – there are discussions on that though it is not possible for the moment.
- **Økern**: empty high-rise building, and previous shopping center. Large transport investments: subway was here since long, but now total regeneration of subway station, developing it into transport hub, building also tram lines is planned, but not financed. All the resources for these transport developments come from the toll-ring revenues of the city. If public transport development is reaching an area, the transformation from industrial to higher-value residential use is speeding up. There are already signs of that: previous liqueur factory transformed into housing. In such cases the city has to intervene if the aim is to keep mixed use: some parts of the existing industrial use has to be protected, otherwise new residential development takes over the whole area. For example, Vienna protects some industrial parts (mixed means that in such areas some parts of the old use have to be kept), while Oslo not … the best is if mixed use is planned beforehand.

Development preferences of the city(region) leadership

Up till 5 years ago conservative coalition was leading the city, with a strong focus on high-end jobs, consultants, banks, research park around the university. Industry owners in the Oslo east corridor had the feeling to be under threat, people thought functions in these areas will be pushed out by offices and housing.

For 5 years now there has been a red-green leadership which is re-thinking the situation. Now an economic-planning cooperation started about the industrial areas: why are these areas important, what can be done here? There was little interest in interventions in industrial land in the East corridor by the conservative city government as they did not intervene into economic matters. However, in the Grorud valley there are 80 thousand jobs, many of them relatively low-paid jobs - though only a smaller part of them are in manufacturing (others are more in logistics, warehouses etc.)

The case of the harbour area (10-15 years ago) is a good comparable example for the market-driven development policy: there was a debate in the city, what to use the harbour area for? Market restructuring has resulted in total conversion of the previous harbour into expensive office space and non-affordable private housing. Fortunately, the new harbour is still within Oslo, its capacity has been increased. So generally, this restructuring process went on well, but this model can not be applied in other areas. The East area is different, there are many low paid jobs and a lot of functions that the city needs, thus it is important to revise the market processes and rethink what should happen.

Housing is one of the main priorities of the city leadership: how to secure enough flats for a growing city. Current city leaders have affordable housing on the agenda, however, without an exact plan how to produce this, especially as the scope of public intervention is very limited. Until now Grorud valley has been one of the affordable housing areas in Oslo, prices are moderate as the area has mixed reputation[21]. The price of new housing developments in the valley is lower than the average of the city. This might change as the housing production continues crowding out industrial activities (this already happens in parts of the valley near to the inner city).

Politicians agree by now that although more housing is needed, the loss of the jobs should be avoided! There is also a political view that it is important to keep jobs for the low educated people. This was already part of the right wing parties although they focused more on attracting highly talented people. Now it is a balanced view about the two ends of employment.

The link between employment and housing is important: how could workplaces and housing be kept within the city for low-educated people. Norway is an egalitarian country, social

[21] Some areas of Grorud valley have serious vicked problems with unemployment, low income and education-levels and face issues with noise and air pollution etc. But there are also positives in all neighbourhoods, often with a well established bike and footpath network, green spaces and recreation areas etc.These positives are usually not mentioned when people think about the reputation of the area.

considerations always play a role (e.g. the big question in road user charges is how poor people can pay for it).

Regarding the vision for the next 20-30 years, the current city plan continues to have a TOD (transit-oriented development) approach, growing from the centre outwards, especially to the Hovinbyen direction. The plan is to build 100 th new housing in the city. This is not easy as the city's efforts to enable densification in existing low-density residential areas are met with residential resistance especially strong in more prestigious areas (Smestad is one of these). There are many areas in Oslo where family houses and villas are prevailing (wooden low rise buildings). Even Oslo-wide FB groups are formed as resistance against densification of existing housing in such areas.

Densification of residential areas and transformation of industrial areas are parts of the dual strategy of the city, however the city has not set any target numbers regarding how many new housing should be produced through densification and through transforming current industrial areas into residential or mix-used areas. As Oslo does not have any areas for green-field development these are the only options to new housing construction. As the zoning planning process focuses on specific areas and not for the whole city the exact locations and numbers of housing production are defined gradually through the planning stages of certain areas. Detailed planning is made only for the most important areas (see examples in the next chapter) both in cases of densification and transformation of industrial areas. Housing production is done by private actors, but big cooperatives are also on the market since the 1980s as private developers.

As it was already said housing construction is totally market driven. Social housing is only 5% of the housing stock in Oslo, and is organized by municipalities, buying into housing built by others. There is a system for building and supplying welfare housing, financed through Husbanken, a government organisation that originally provided social housing, in the allocation of which homes local district councils play a role.

Akershus has also a TOD strategy, outside public transport nodes it is forbidden to build, in the hub places some subsidies are given in the form of infrastructure.

New affordable housing strategy for Oslo is under development and it is unclear how a new approach could be developed which would be accepted by the market players and the population.

Overall, within the 100 th target for new housing, industrial reconstruction is the larger part. But it might be more costly, as decontamination and substantial infrastructure development is needed. Even so, mass housing production can be done only in and around transportation hubs and in larger areas such as current industrial areas as in the framework of densification in existing areas should be done within the existing context making lower rise buildings the most viable alternative.

During the last 20 years, efforts to rezone sites with low-density housing near selected metro hubs have been made. Plans for densification through rezoning have often met local opposition, which has given political challenges. Regarding the densification of low density residential areas planning tools can be applied, e.g. allowing for higher density and wait until plot-by-plot changes happen on a bottom-up market way.

In some parts of single-family areas it is allowed already now (since 25 years) that single family plot changes into small condominiums with max 8 units (the rules are not set per apartment, but the effect on plot-ration and height restraints usually leads to 6-8 units in attached houses or low-rise apartment buildings). Few hundred changes already happened. But protests of the neighbours against densification on the plot have sometimes prevented these plans being realised. Larger interventions would be needed to achieve more significant densification. Municipality could buy properties and join them together in order for denser houses. This could be a procedure to rebuild the area not as single-family housing area but in a new way. The city already is testing such strategies and doing some preparation work but meets several difficulties, such as local resistance. Thus, it might be the reality that changes can only go on through a slow developer led process, pretending that the new 4-6 flat units in a building are looking like single-family housing.

Smestad is a case where the city wants to show how densification could be done in a more regulated way, also offering some public developments (community facilities such parks, playgrounds etc.), but families came with kids holding posters: do not take our garden away. A new zoning plan increases the real estate value creating a pressure on the families.

The planning system has three levels in spatial terms: regional, municipal, local area planning.

As for housing developments municipal strategy is TOD: densification is around the public transportation stations. First a joint overall plan is established by the city planning office to a given area. As it was said, two instruments are used:

- formal area plan, legally binding land use plan (area zoning plan), the development and passing it would take 5-7 years. In this the possible functions are stipulated
- guidance plan concentrating on non-available public infrastructure, and potentials (not binding). Even in this case the city gets in touch with landowners (families, entre preneurs, public institutions…)

As for the transformation of industrial areas to housing and office use which concerns foremost the Grorud valley the planning process is going on for some specific areas (see examples in next chapter). During the planning process the city Agency of Real Estate and Urban Renewal plays the role of brokers between different stakeholders, bringing them together. The planning office presents ideas for development in order to spark up different forms of cooperation. Sometimes more resistance and disagreement evolve among actors.

In several areas of the valley mixed-use is allowed resulting in a spontaneous process where new developments of housing and office functions crowd out industrial activities. Developers of new housing projects communicate toward the public that the whole area will be residential

generating conflicts between new home buyers and the remaining industrial and other non-residential/ office actors in the area. The city and district municipalities[22] should also make their communication clearer regarding the future functions of areas under development: This would make a more conscious planning procedure necessary on the part of the city. Therefore, the city has started to make more detailed planning procedures to some bigger areas in the valley including the different stakeholders. They are also surveying the activities and future plans of the industrial actors in the valley.

The transformation of the industrial areas depends very much on the landowner structure. Many industrial actors rent their plots and already big areas were bought up by developers. When rezoning is done and also mixed use becomes possible the land prices increase substantially. Many landowners therefore are interested to make shorter term rent contracts with the industrial actors, which makes industrial activities more uncertain in the area and actually hinder the industrial actors to invest in their business in the city.

The 2015 municipal plan (the first legally binding strategic plan) made the statement about the 100 th need for housing. Now the second level of planning is going on, the 100 th housing need is still considered as valid (by 2050). 4 th new dwellings per year is needed. Discussions with the region are also needed in order to harmonize the construction plans between the city and its agglomeration.

The present strategy of the new city government is that the city starts to increase the low portfolio of public land, with the aim to secure sufficient land for social infrastructure and also contribute to new construction. The city is studying how to build cheaper housing for the poorer people which would require a 20% discount on the final price. It is a question whether the city should build housing itself. The city has a political decision that the land itself should not be subsidized compared to other potential uses. If so, the city should create a construction capacity or develop a scheme to build 20% cheaper than currently the private sector, based only on increased efficiency (lower financing cost and lower required return), as any form of subsidisation is not possible.

Five pilot projects are planned to test the idea, one of them is a rent to ownership scheme, part of the project built by the city. The political aim is to facilitate within 4 years the creation of at least 1000 housing units. OBOS, one of the biggest housing cooperatives, can for instance be included as a private developer. In one of the industrial areas currently under development such an experiment will go on.

There is also a scheme[23] to avoid full house price inflation, in exchange for the lower sales price (which is around 15% less than that of the average new construction in the city) the

[22] Oslo has 15 City districts, with directly elected councils. But the City districts only have a consultative role in planning and urban development, which is a single function for the whole City/municipality.

[23] https://www.obos.no/privat/ny-bolig/bostart

landowner/developer has the right of first refusal on a price which follows average property value increase if the property is going for sale. Such a scheme is being under implementation in one of the OBOS development projects in Ulven. Here affordable housing is created in the 9-10 floor buildings and prices will be much cheaper than in other parts of Oslo. 10% of the flats will be according to this „Bo Start" scheme (selling with 10-15% discount but if reselling it can only be sold to OBOS and get only low price increase).

Tools through which the municipality is able to control development processes

In the 1980s a right-wing government took power and changed the left-wing attitude to regulation, opening up the market towards liberalization, also in the housing sector. (The share of owner occupied housing is relatively high in Norway). There are no fixed rents, no fixed housing prices. The philosophy was to ensure that everyone has a job with a decent income instead of trying to create/maintain a subsidized housing market.

In the 1990s the city did not grow fast, and the view was that the municipality should not own real estate which it does not need (after WWII the city purchased large agriculture lands). Along this line the city real estate department has got very high sales targets (to get money into the budget from property sales). Since then a large part of the city owned properties have been sold.

However, already at the end of the 18 years of right wing city leadership the market-oriented view started to change and properties have to be bought again in order to ensure plots for social infrastructure, public services – but not for housing. This has been further strengthened by the incoming left wing city council 5 years ago. The city real estate agency has now a 1 bn NOK annual target to buy property in the next 4 years.

Oslo could, but is not directly building social housing apart from the 5% of the stock serving the vulnerable groups. This stock is spread out across all areas of the city in an attempt to prevent segregation (rich neighbourhoods do not like it). The city cannot provide land for housing on reduced price without a system for regulating prices for consumers and who should be eligible for the subsidised housing. Furthermore, it cannot apply inclusionary zoning (e.g. requiring 20% affordable housing from developers) as this is against the law.

Land price increase due to new zoning decisions passed by the city council is not taxed. At the state level there are discussions on how to finance public infrastructure and if new models are needed.

Thus only the „development agreement" approach is available. Infrastructure needs derived for densification or development made possible by a zoning plan can be secured by rules of succession that make establishing infrastructure a prerequisite to obtain building permits. Based on the zoning plan the developer and the municipality can make a development agreement. The agreement clarifies the responsibilities for building and financing the infrastructure. Development agreements are voluntary– the process, prerequisites and

limitations connected to development agreements are regulated in the planning and building act. Oslo is very bureaucratic, thus corruption is not a real danger.

The city has to consider how much infrastructure levy to put on the developers due to the legal framework and to reduce the risk of reducing the building activity significantly.. The city has no tools to intensify new development – if 1000 flats can be built, developers will develop in the pace they consider most financially advantageous, many times resulting in doing it slowly in order to sell at the highest price. The city is discussing with the state level to change the law on financing infrastructure developments.

Housing affordability is a growing problem: the „nurse test" shows that many people have growing difficulties getting housing in Oslo on affordable prices, especially in the central areas. Families when having their first or second child are more or less forced to leave Oslo, going to Akershus, to find larger accommodation.

Transport costs are rather cheap: a monthly ticket in the inner zone costs 70 EUR, in the outer zone with the longest distance 100 EUR per month. The whole Oslo-Akershus area is in fact integrated both in housing market and regarding transport and jobs.

The planning system consists of different level of plans[24].

- municipal plan is a strategic plan
- zoning plan defines the land use of the area
- guiding plan examines the needs for schools, parks, services, etc. and also includes environmental impact
- detailed plans are for smaller areas and define the road and infrastructure network of the area.

It is important that Oslo does not have a planning system which covers the whole city with zoning plan as it was decided that they go for less specific planning. Instead the city makes zoning plans for specific areas where it is important – e.g. where the municipal masterplan sets out new use and densification, creating the need for new zoning- or guiding plans. In the process of making zoning plans they examine the demands and show different possibilities for the area, but in the end the politicians decide (all plans have to be approved by the city council).

When during planning the city Agency for Real Estate and Urban Renewal negotiates with the stakeholders, they also ask ideas of the developers and negotiate with the landowners but mostly they put new ideas on the table.

Potentials for metropolitan cooperation

The whole Oslo-Akershus area is in fact integrated both in housing market and regarding transport and jobs – on the basis of which it is possible to locally influence the local distribution of the growth. Relocation of some industries from Grorud towards the airport area is a normal

[24] A brochure about Urban development in Oslo and the Oslo planning system: https://bit.ly/2UpDvXs

A good overview of the planning system in Norwayhttps://www.regjeringen.no/en/topics/plan-bygg-og-eiendom/plan--og-bygningsloven/planning/id1317/

procedure and outside Oslo the municipalities are increasingly prepared for that. As many people moved here and substantial housing construction development also happened in addition to new jobs, many employees do not have to commute any more as they can find affordable housing in the area.

The cooperation between Oslo and Akershus is good in area planning (e.g. waste management and other public services) but there are some conflicts regarding the transport system development and housing and economic development. One of the most debated transport development plans is the new motorway from the west which has been planned for 30 years. The municipalities of Asker and Bærum want tunnel while the present political leadership of Oslo is sharply opposing it as it would lead to an increase of road traffic towards Oslo. Instead they suggest that the local traffic in Baerum and surrounding settlements should be improved, taking down the local transport from the motorway. This debate is very sharp now but many experts share that time has changed, the original solutions for a new motorway and new tunnel are not needed anymore, instead the public transport should be developed.

An important element of financing urban development is the „Oslo package" on the use of toll ring revenues. There are negotiations every two years, 80% goes to public transport, while 20% to road-related developments, mainly for buses, etc. Recently no part of the money goes into road investments which would increase the road capacity. The biggest debate is around the western access to the city. Lorries are avoiding crossing the city in rush hours…

Transport development priorities of the city: to expand the metro system to the west (Fornebu, discussed since 25 years…) and to the north-east (to Lørenskog), plus a new tunnel below central Oslo. All these issues are connected to the Oslo package, negotiating how much the government should contribute. Government share would be 50%, congestion charge (which is a road charge) would cover the rest. However new negotiations are needed as money coming in for the city is declining (as electric vehicles are too successful, i.e. less people pay road charge) while infrastructure costs are increasing. So either the central government should contribute more or the counties (including Oslo) should find other sources, as toll revenues can not be increased. Every two years the package is renegotiated between the political leaders in Oslo and Viken (previously Akershus), and the final proposal must be approved by the national government for it own matching-funding[25].

Neighbouring municipalities took more strategic positions only in the last few years, earlier they were just reacting on to industrial changes. Recently a joint strategy has been established by surrounding 7 municipalities in order to prepare for the transformation caused by the outflow of industrial and other business activities from Oslo. The inititative was implemented by a

[25] The Oslo package is being renegotiated during April-May 2020 and the final conclusion is still anticipated. The challenges remain and have been reinforced by strong differences between some of the political groupings about which projects should be prioritised, and more recently due to dramatic falls in toll-revenues with the lock-down under Covid-19.

voluntary cooperation board and part-financed by the Ministry of Municipalities. Their vision is to locate the high-tech jobs in their centers, while establish new industrial areas outside the settlements. Joint strategy was developed for places where industrial concentration could be settled down but implementation is still a question.

Conflict lines are between the government and the region. The former good link between Oslo and Akershus is now replaced with new interests raised by the changed, larger region, Viken which now encompasses several secondary urban areas and also rural areas beyond the metropolitan area of Oslo. The strengthening of the regional level in its new setup is changing the lines of conflicts.

The joint Oslo-Akershus plan went into more details and municipalities were asked to follow the requests: regional growth centers were assigned but no exact numbers how many flats etc. should be built. Clear guidelines were given for each municipality, e.g. 80% of growth within each municipality should be around the designated growth area, normally the main railway station or bus terminal. If the municipality did not act in that way, a „red card" was given, which stops the plan being approved without being changed: the regional governor (representative of the national government) tries to broker a deal between the stakeholders and, if a local deal is not reached, the minister decides.

The regional plan (2016) sets out some areas outside Oslo to be developed as regional business centers, regional logistics satellites, but not all of the affected municipalities are completely happy. The regional plan deals with large businesses while small ones are considered to be the task of municipalities.

Both in Oslo and in Viken (formerly Akershus) political changes happened but the main earlier agreements have been followed as they were based on strong collaboration between municipalities, employment and other groups.

Although agreements with Akershus will automatically be transferred to the newly established larger region, Viken, the spatial reality of the much larger region and new political majorities are expected to bring changes. The realities of legal agreements are in place but Viken needs some time to find its new direction and priorities, thus Oslo sits and waits what happens, the city does not want to provoke and lead to worse development. Many of the important industrial centres are outside Akershus thus the restructuring of industry can be of interest for Viken.

Viken has red-green government now, same as in Oslo. The newly elected leaders of Viken themselves want to go back to the previous situation, i.e. to dissolve the larger region to three, as it was before. To reverse the regional reform would require a new national decision but the national government is the same and does not want it. This problem sucks energy out of the system.

Restructuring of municipalities (1 Jan 2020, together with regional reform) led to some cooperation but sometimes strange ways of merging (there was some financial stimulation from

the government side but not too much). It was a voluntary reform, resulting in a reduction from 430 to 350 municipalities, the smallest ones least wanting to merge.

Potential inspiring cases from the stakeholder city-region

In the area of Ensjø a new method to influence development was experimented in fragmented privately owned area, with small industrial ventures. Tobacco factory closed down. City invested in putting a high voltage air line underground. Then city real estate officers contacted landowners one by one. City offered a coordinated plan, leading to higher land value, if landowners contribute to the costs. Planning agreements were offered, including costs of initial investments (to put off the electric power wire). By now 60-70% of the area is converted from small car sale area into modern housing. However, tensions are large, as it was not clarified that mixed use will remain in the area. Most of the tension comes from the fact that some are reluctant to change land use, or are waiting, resulting in a much wider mix of uses than anticipated.

The essence of the approach was to initiate first a planning framework with no legal power but using it as basis for discussions with developers and land-owners. This framework-model has later been used in several areas currently under redevelopment, such as Løren, Vollebekk, Bryn and Breivoll that are part of Hovinbyen. And plans are ongoing for areas Halse(Hovinbyen) and Rommen /Strovner(outer upper part of Grorud valley). It is still an open question whether such a framework model can be offered to other parts of Grorud valley, where larger players exist, putting more emphasis on detailed planning of future functions, what functions should be achieved in what timeframe?

The 2015 municipal masterplan opens up for the transformation of Grorud valley: the aim is that industrial areas should become mixed used, without specifying which uses or minimum or maximums of any use. However, recognizing that if residential is possible, industry will be pushed out, a strategic plan was made for part of the area, called Hovinbyen, to secure functions which would otherwise not be built under market circumstances. This would lead to very different values of the same land.

The planning agency is working on following up the strategic plan, and the real-estate agency contributes with calculations. A good model should also contribute to the climate goals, for which there is a special climate budget available. This will also lead to a discussion about the „desired city" regarding what functions should be kept inside the city to ensure the necessary supply of goods (logistic functions), background activities of public services and other industrial activities (mainly small productions) also in order to minimize environmental harms and ensure low skilled jobs.

Paadriv, an interest organization of industrial and other sectors, operating on cross-sectoral basis: Paadriv brings together all actors to think about the future of the development of the valley, they are trying to develop new ways of cooperation among different stakeholders. Its current project is the temporary use of plots which are currently not in use and new

developments will not start in the coming years. They developed a temporary school, temporary swimming pool, co-working centre, while also bringing life to the area with mobile small houses.

Paadriv organises regular seminars which are attended by all the CEO-s, the city's planning director was also there. People all express interest in cooperation, until it comes to concrete self interests. Inside Padriv every actor has 1 vote.

Previous planners' alternative idea on spatial directions of development: place the national functions from Alnabru closer to the airport (and develop the link to Stockholm instead of Gothenburg). If the central logistical functions are moved away, 300 ha-s would be freed in Alnabru for other functions, which can be turned into logistics related to the city. If some emptied area in Alnabru would be available, developing a railway also to the northern areas would become possible,, instead of building an extremely costly new tunnel under the inner city.

Summary

Oslo is one of those case study cities where the conflict around existing industrial areas is the sharpest. The main factors affecting the future development of manufacturing are very clear: quick population growth, restrictive zoning policy strictly protecting forest and green areas, non-availability of underused or brownfield areas. Under these circumstances there are two main alternatives to house the additional population.

- Densification of the existing urban areas – this is going on in "silent" way but there are strong local protests in single family housing which is greatest part of the city;
- Pushing out the existing industrial areas, which concentrate in the Grorud valley.

Although housing is one of the main priorities of the city leadership, politicians agree by now that the loss of the jobs should be avoided, as it is important to keep jobs for the low educated people within the city. The case study describes this dilemma: how can population growth be handled to avoid the well embedded industrial areas being pushed out from the city?

The city has a dual strategy: densification of residential areas (TOD strategy: densification around the public transportation stations) and transformation of industrial areas. In the transformation of industrial areas mixed-use is allowed resulting in a spontaneous process where new developments of housing and office functions crowd out industrial activities. The city is looking for innovative ways to slow down this process, offering a planning framework with no legal power but using it as the basis for discussions with developers and land-owners.

The whole Oslo-Akershus area is in fact integrated both in housing market and regarding transport and jobs – on the basis of which it is possible to locally influence the local distribution of the growth. The good cooperation will hopefully continue even after the administrative restructuring of the surrounding area.

1.1.3 Riga metropolitan area case study

Main demographic/social and spatial development trends

Population decline can be considered as one of the biggest problems of the city of Riga. The city infrastructure was planned for 1 million inhabitants, reached 900 thousand by 1990. Independence has led to emigration of Russians followed by strong suburbanisation processes of the 2000s. In 2008 the economic crisis hit Latvia very strongly (similarly to Greece), leading to further emigration of the inhabitants into the European Union. As a result, the population in Riga city dramatically decreased to around 650 thousands by today. The past influences very much the options for the future. It is very costly to maintain the infrastructure which was planned for 1 million people: this creates problems for the financing of new projects.

In spite of the population decline, Riga concentrates more of the resources of the country than most of the capital cities (48% of companies, 82% of college and university students, 90% of institutions[26]).

In the boom years before 2008, speculative housing developments were built in the suburban area, suffering today from the lack of proper infrastructure. Examples on such urban sprawl areas are visible in almost all municipalities bordering Riga, especially in territories of Marupe, Kekava, Stopini and Garkalne counties.

Within the city many brownfield areas exist, as there were many Soviet micro-rayons devoted for industry which largely bankrupted in the process of transition. Only some of the socialist industries were converted to other uses after privatization in the early transition times. Most areas even today are physically run down, the decontamination and restructuring of which would require substantial capital from developers.

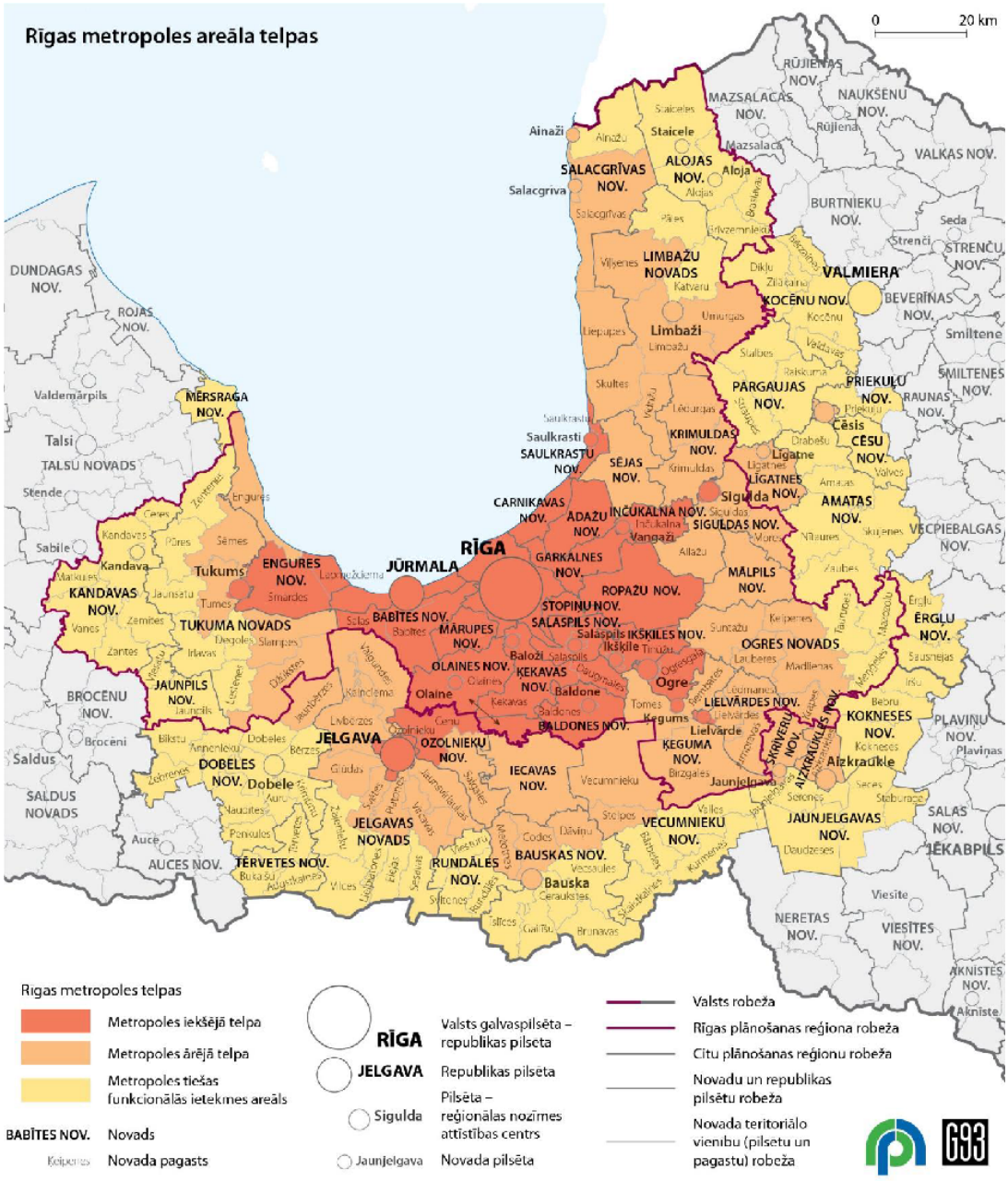
The metropolitan territory of Riga has two interpretations:

- An earlier established entity is the Riga Planning Region (RPR) which is one of five planning regions in Latvia responsible for regional planning. The planning region was established on the basis of previous 4 administrative rayons (Riga, Tukums, Ogre, Limbazi).
- The real functional urban area (metropolitan area) is currently “only a map” developed for the “Action Plan for the Development of the Riga Metropolitan Area” in November 2019 (approved by Riga Planning Region Development Council on January 2020). This area is a territorial delineation without institutional competencies. The metropolitan area has three belts: 1) a close one where the rate of commuters to the city is above 50%, an intermediate one where the rate is between 30-50% and an outer one with commuters’ share between 20-30%. (See the map below.)

As can be observed by the figure below the territorial delineation of RPR (inside the purple lines) does not follow the logic of functional relationships: although it includes almost fully the core of the metropolitan area, it is zig-zagging between the outer metropolis and the functional impact area, excluding some of the former, while including some of the latter areas.

[26] Source: Riga Planing Region Sustainable Development Strategy 2030

Figure A.5.4: The spatial scale of Riga metropolitan areas (both the Riga Planning Region and the functional metropolitan area)



Source: RĪCĪBAS PLĀNS RĪGAS METROPOLES AREĀLA ATTĪSTĪBAI, January 2020

Table A.5.3: Main characteristics of Riga city and Functional Urban Area

	Riga City			Riga FUA*		
	2001	**2011**	**2018**	**2001**	**2011**	**2018**
Population	756 627	658 637	632 479	1 040 014	958 015	932 595
Activity rate	57.4%	61.3%	63.9%	Na	Na	62.8%
Unemployment rate	11.2%	16.7%	6.5%	Na	Na	6.1%
% of mining, energy and manufacturing in employment (NACE 2)	17.6%	10.6%	9.5%	Na	Na	11.5%

*Source: Urban Audit, * The FUA is defined as the commuter zone of the city, its population is close to that of Riga Planning Region*

Main trends in the development of the economy and manufacturing

The deindustrialization process is going on since the transition started, in laissez faire way, led by market forces. The share of manufacturing in GDP was 11.59% in 2000 in Riga, and decreased to 8.12% by 2017 (this rate was 12.07% in Latvia)[27]. Consequently, manufacturing still plays an important role in the city.

On the other hand, if we take into account, that the average wages in manufacturing is about half of that of the financial sector and similar to average salaries of the health care sector[28] we might assume, that manufacturing still employs a diversity of workers from the low skilled to the high skilled ones.

Regarding the spatial distribution of manufacturing in Riga there are two types of industrial areas: end of 19th century and Soviet era. Not much happened in these areas as there is no population growth thus strong growth pressure. Large industrial areas were privatized in unfortunate way into many pieces, leading to fragmented ownership structures (in most cases it took 2 decades to consolidate the situation). Things went smoothly only if professional developers acquired the former factories.

Part of the changes happened in the North of the city centre area, turning post-industrial areas into housing and business areas – with conflicts as railway lines and cargo transport still exist.

In recent years the shrinkage of the population came to a halt, population number has stabilized. There are priority development territories assigned. One of these is the planned new central business district “Skanste”, around Skantes street. Another big project is the “Knowledge mile” in Tornakalns, on the left bank of the river Daugava – where the first two buildings of the university are already functioning.

[27] Source: Central Statistical Bureau of Latvia

[28] Source: The economic profile of the city of Riga, 2019

The biggest redevelopment project is the former State Electrotechnical Factory (VEF) around Zemitani: this VEF area is turning into new types of high-tech industry. Another example is on the left side of the river Daugava, in the Mukusalas street area, around the bridge, with mixed office development, close to the planned new university campus in Tornakalns. These areas have good location and infrastructure. Less or no polluting industry and manufacturing with high added value is coming to such areas.

The big question is within the port area, on the left bank of the river: part of it is a big area zoned for industry but owned by someone who has no interest to develop it. In addition, the accession to this area raises environmental questions as the west side of the port is surrounded by protected waterlands.

Besides the spatial aspects qualification is also a key issue regarding the future of industry. According to a recent survey of the Chamber of Commerce the three most relevant challenge entrepreneurs named for 2020 – before having any information on the Coronavirus crisis - are: 1) potential decreasing demand of European markets, 2) shortage of labour force and 3) skills of labour force. As a result of the coming 4th Industrial Revolution the qualification required in industry tends to increase, so one of the major bottlenecks of new industries to settle in Riga might be the number and quality of labour force (that is why “import” of qualified labour force from abroad is a more and more common phenomena). It is a common statement of experts that workplaces in the industry are needed to keep residents inside Riga – or even lure them back. However, this statement is not properly supported by data evidence on the quality of the current workforce, on which qualities will be expected in the future, on the number of workplaces moved to the metropolitan area and on the workplaces created in the city.

The national educational system seems to be less efficient in assisting the potential employees in coping with the skills requirements. The national curricula is too extensive, giving little flexibility to initiatives important for the local labour market. Major changes are needed in educational system, e.g regarding ICT skills, where there is huge demand, but only little supply. The city of Riga tries to provide limited number of training courses e.g. on robotics.

There are contradictory statements about the scale of companies moving out from (or not settling to) Riga. There is a valid statement that resettling is very expensive that is why companies do not choose this solution, on the other hand the settlements in the metropolitan area with the largest industrial potential state that they have many inquiries from companies intending to move out. What is however seems to be a fact is that only some settlements in the agglomeration area have substantial industry (the ones with some kind of industrial past) and all the others are more interested in luring residents rather than businesses. According to the added value of the different parts of the production sector (https://rpr.kartes.lv) industry is relevant only in some settlements outside Riga: Olaine, Marupe, Kekava, Adazi, Salaspils, Sauriesi, Ulbroka and Pinki.

On the other hand many activities, not specifically manufacturing, but logistics, wholesale and retail has appeared in the city borders causing substantial transportation problems. Since 10

years ago new warehouses and logistical centers were built, 30-40 km-s from Riga – around the main bypass ring-road and the Via Baltica (Riga is in the centre of the Baltic states).

> Rail Baltica is planned as a new development. This would mean new railway station in Riga and it would have also regional relevance. The three countries established joint stock company RB Rail, center in Latvia, co-financed by the EU. There are still debates between the three countries what should be share of the cargo and the personal functions. By 2026 the first section should be built of this EU-gauge railway line.

The strong manufacturing sectors in the Riga urban area, outside of the city are food production, chemical and pharmaceutical industries. In addition, other – less manufactured sectors – that create high value added appear as well, like IT businesses or research oriented companies (e.g. in Salaspils south to Riga)

Main factors affecting location choices of manufacturing

The location decisions of companies are based on the usual factors: companies are looking for labour force (either commuting or housing opportunities for people moving in), adequate and affordable physical space to build, availability of services (energy, etc.) and good logistical connections.

Within Riga the usual large-city-type difficulties emerge related to manufacturing. To buy sufficient land and premises is expensive, and there are additional problems with parking, access by road, potential dissatisfaction of residents living around, etc. Renting properties is an option but financially uncertain, as prices are going up.

Wage differences seem not to be big (10%) in different locations, there are no dramatic wage differences within and outside Riga. What matters more is land price, availability of utilities and accessibility. Environmental aspects, such as pollution regulation, are also important, but these regulations seem to be quite similar inside and outside Riga. All settlements and Riga itself allow companies with limited pollution to settle. (Naturally the tolerated pollution level can differ in different urban zones.)

What is however also a decisive factor in choosing a proper location for businesses is the level of bureaucracy. Riga, as a bigger capital city has much more bureaucracy that makes the location decisions and the constructions much more complicated.

Zoning seems not to be a problem, in most municipalities there is enough place for investments in privately owned areas with existing zoning regulations for productive uses. In case adjustment of land use is needed by means of local plans for a smaller part of the settlement, the municipalities can elaborate on it without difficulties.

> Municipalities are elaborating spatial (territorial) plans with functional zoning and local plans for specific smaller parts of the territory if there is need for change of land use. If changes of land use are planned in some smaller part of the territory it’s allowed to

elaborate local plan with which changes can be made to the spatial plan elaborated for all territory of municipality.

The more serious issue is utilities. The municipalities have to build streets, supply water and sewage, which can be a very slow process. Electricity and gas is under national regulation, the local level can not influence this.

Main challenges and conflicts of future development in manufacturing

It is not easy to formulate exact critiques with regard to the spatial movement and spatial distribution of manufacturing in the Riga metropolitan area.

The process of moving out from Riga to the suburban area seems far not overwhelming, thus not endangering the current provision of work-places. However according to certain opinions Riga would need more citizens, for that more housing and diversity of jobs would be needed. From a housing perspective the renovation of the existing stock is a major issue, while, from economic point of view the bottleneck seems to be less significant.

The major tension with regard to the spatial distribution of economic activities in the metropolitan area comes with transportation issues. These conflicts are associated less with manufacturing, more with the wholesale and retail activities settled in the city border and with the fact that majority of the inhabitants in the close agglomeration is working in Riga. There are huge transport problems within and around the city. There is no public transport along the Riga bypass ringroad, which is a 2*1 lane road (with plans to rebuild it into 2*2 or 2*3 lane road). Public transport is organized on Riga city level, there is no transport association existing which would cover the metropolitan area.

> Currently the transport of the metropolitan area is organised separately by the city of Riga (inside the city borders) and the nation state (outside the city borders). The majors of the metropolitan area signed a joint memorandum about this issue and sent it to the transport ministry, which however passed the inquiry to the planning region (which has no competence on transportation…)

Only Rail Baltica, the upcoming EU financed main railway line with EU standard gauge, connecting Tallinn to Warsaw, is considered as basic opportunity to improve the situation. The passenger traffic on the new railway line is planned to cross the river towards the airport and then follow the line of the bypass ringroad. The cargo line of Rail Baltica is planned to go straight to south. The regional level has to be careful to get out advantages from this major investment, regarding some stops on the line.

Development preferences of the city(region) leadership

The development document of Riga Planning Region concentrates on creating a competitive and liveable metropolitan area. With regard to the economic structure it aims to strengthen “knowledge-based green, innovative and flexible economics”. When this overall aim is detailed, creative industries, information technology, knowledge-intensive production based on chemical technologies and tourism based on health services are emphasized. These are natural

objectives to set for a capital region that has traditions in special sectors like pharmaceutical industry.

Based on the planned development of the Rail Baltica Riga also intends to strengthen its role as a central transition location which would have an impact on tourism and logistics.

Based on the spatial vision of the Planning Region, it is obvious that economic development is planned to be strengthened alongside the major roads and part of the planned Rail Baltica lines. These are mostly the locations where major manufacturing development currently takes places.

The development plan of the metropolitan area (which is literally not the same as the development plan of the Planning Region) states that Riga, as a capital regions is currently performing behind its potential in comparison with other Baltic or Western European main urban areas. With regards to industry and manufacturing the development plan emphasizes that a complex development of industrial territories would be needed with the provision of infrastructure and related services like housing. These areas should have direct link to the international transportation hubs (like port, airport, railway station.) Thus, the development plan emphasizes the importance of a more cautiously planned industrial development.

It is very common in many European metropoles that – due to the growth pressure – areas that may be potentially utilised by manufacturing activities are practically used for housing and office developments taking into account their high added value. Many cities are promoting these processes directly or indirectly. This choice between different activities is less obvious in case of Riga both regarding its development planning and the opinion of the practitioners. The number of inhabitants in Riga is stagnating, thus there is no pressure from this side. It seems to be also obvious that the renovation of the existing housing stock is also not a first preference.

A subsidy programme for panel buildings exists in Latvia but does not work well in Riga: out of 6000 buildings only 109 have been renovated within the last 10 years. The negligence of the building stock also leads to suburbanisation as the agglomeration is the place where family houses can be built (in Riga only 6.3% of the housing stock is family housing). Several other cities achieved more in energy efficient renovation.

There are substantial brownfield areas that would be suitable for economic development – however the price of their development is high, which can only be accumulated by high added value activities. So, all in all, one may not state that the development preferences of either the city or the metropolitan area would be against of manufacturing. One can only observe that not too much is implemented actively for encouraging the realisation of the development visions.

Tools through which the municipality is able to control development processes

The main revenue for the municipalities is PIT (Personal Income Tax) and also the real estate tax which is based on some basic parameters of the property (e.g. size but not value). According to the law, developing business is the task of the central level, thus municipalities do not get anything from the business tax revenues. On the other hand, according to the latest regulation of the business tax, companies are not obliged to pay it in case the profit is not paid as dividend

but turned back to the company as investment. Most of the starter companies are in this situation. The lack of business revenues of local municipalities creates disincentives to locate business activities as in reality it is the task of municipalities to deal with infrastructure which is not covered by any business income. Municipalities where new industries are going to, are struggling with rapidly increasing needs for human and physical infrastructure.

One idea on changing this regime is that municipalities should get some portion of the business turnover tax. Another idea is to share the PIT of people between the places where they live and where they work. However, this version is not in the interest of most agglomerational settlements which has limited business activities. This solution would result in higher revenues for Riga and less for more suburban settlements, that is why it is strongly debated.

As an example, Adazi municipality can be mentioned which is popular among entrepreneurs. For the new businesses new capacities of the water and sewage systems have to be established. However, the municipality lacks the financial resources for that – not even the PIT revenues of the municipality are increasing as most of the new employees are commuting to Adazi (at least in the first few years), paying their taxes somewhere else. In order to handle this problem, the municipality introduced a new system, requiring from every new company coming to Adazi to pay access fee to basic public services.

Another visited municipality, Olaine, is in a different position, having been industrial location already in the Soviet times, with well-developed infrastructures, allowing new companies to settle down.

Financial incentives for new businesses are only given in underdeveloped parts of Latvia, and the Riga Planning Region is also excluded from EU funding on the basis of state aid map (exceptions were only possible for industries with big added value). In this regard there is difference between Riga, the bordering municipalities and the rest of the RPR region.

In Olaine it was possible to get EU funding for new production premises creating new workplaces up till 45% support of the investment costs (only for the building, not for land, not for equipment). This grant – which will most probably disappear in the new budgetary period – created incentives for companies with high value added to settle outside of Riga.

Land is mainly in private ownership. Privatization has led to fragmented ownership structure. If a municipality has still some land ownership (e.g. inherited as a former military land), it can prepare the needed plans and can decide whether to create places for business. Local government spatial plans have to be approved by the ministry, but only that case if someone suits it – for a few years this task was delegated to the planning regions, but not anymore.

Municipalities also have short term (up to 3 years), middle-term (up to 7 years) and long term (up to 25 years) development plans. The new investments – mainly if they are bigger scale – have to fit into these plans. In case they do not, the modification may take many months including the elaboration of environmental impact study. The local development plans have to be in line with the Planning Region's sustainable development strategy and development

program. On the other hand, the Planning region is not responsible for checking the spatial plans of local municipalities anymore (since 2013), thus it does not have direct influence on local spatial planning. Local spatial plans have to be sent for approval directly to the ministry (however, as it was emphasized by some of the respondents, ministry evaluates the spatial plan only in case of conflicts, in case the plan is attacked by any parties).

Spatial Development Planning Law defines development planning levels and documents in Latvia. Spatial development shall be planned by developing the following mutually coordinated spatial development planning documents:

- at the national level - Latvia's Sustainable Development Strategy and National Development Plan;
- at regional level - the planning region's sustainable development strategy and development program;
- at the local level - the local municipalities sustainable development strategy, development program, spatial plan, local plan and detailed plan.

All above mentioned plans exists in reality. Spatial plan defines zoning of all territory of municipality. Local plan is a tool for local planning - a long-term territorial development planning document of a local municipality, which shall be developed for a part of a territory for solving a planning task or elaborating or amending the spatial plan.

If the municipality does not have land, the situation is more difficult. Municipalities face restrictions if wanting to buy land. There are fears from corruption and also from the danger that municipalities would further increase the already high level of public debts. For all these reasons municipalities are constrained in their decisions to accrue land ownership and to take loans.

Under such conditions companies are relatively free in their location decisions, looking for places where there are some pieces/reserves of industry or infrastructure and where the settlements are responsive. In many cases investors purchase land on the private market even before contacting the municipality to clarify existing and future infrastructure conditions and plans for future development.

All this results in fragmented patterns of industrial development. The potential advantages of concentrations in industrial parks in suitable areas and/or aiming for the use of existing brownfield areas are not exploited properly. Municipalities are left alone and only the actual interests of the investors influence their decisions on new development. Most municipalities do not have the expertise to evaluate the consequences of the business location decisions, the need for changing the local plans and the ways of how to do it (that is also why strategic spatial planning would be in better place in the hands of a regional organisation).

Municipalities do not want polluting manufacturing. To prepare zoning plan is municipal task – if there is a serious issue, it can be discussed in the Regional Development Council, but this rarely happens. If a developer comes, 2-3 municipalities discuss and agree how to

accommodate this. Largest decisions are taken by the ministry, not on the local or regional level.

Potentials for metropolitan cooperation

As was mentioned before the metropolitan area has a formal organisation (Riga Planning Region - RPR), which spatial delineation does not match the borders of the functional urban area. On the other hand, the appropriate spatial unit, the metropolitan area has “only” a delineation and a development plan without any administrative empowerment.

The main competencies of RPR are strategic and spatial planning, regional scale cooperation projects, entrepreneurship promotion and support measures. The RPR Administration prepares two documents: Sustainable Development Strategy till 2030 and Medium Term Development Programme – both are obligatory for municipalities. During the planning process consultations are being held 4-5 times a year with local level planners in Consultative Working Group. Finally, the RPR Development Council (mayors of the 30 local municipalities) approved the plan.

In the RPR Development Councils all settlements have one vote plus Riga has 6 votes, this equals to 35 votes.

Regarding the strategic development plans of the municipalities, they have to be in line with the RPR plans, however the strength of RPR to judge local development plan seems to be questionable, as RPR plans are often considered only as guidelines.

Between 2009-2013 RPR fulfilled the role to oversee local spatial plans (recently only sustainable development strategy and development program are at the regional level). Thus the spatial visions were overseen by the region but then, due to political consideration of reducing the importance of the planning regions (there was even an idea to eliminate the regional planning level), the argument came that the region is not good for this function and conflict of interest could have happened, thus the ministry took back this function.

RPR prepared a strategic plan on territorial potentials and possible specialization of the metropolitan area – an area that has somewhat different borders than that of RPR - taking present realities and potential future development into account. Although such plans are considered to be useful, they only give orientations, used as a communication tool, but not having any legal strengths.

RPR ensures connection between the national and local level of governance through the function of coordination. In this way the region is capable of covering the issues which exceed the borders of one local government, and in the same time it defines the demand for territorial solutions of national and international level.

RPR administration ensures the execution of the decisions taken by the RPR Development Council on regional development planning, coordination, collaboration between local governments and other national governmental institutions.

There is no national legislation regarding territorial cooperation around major cities. It is the regional scale development planning documents, which include strategic directions and solutions for cooperation within functional areas of cities.

In practice metropolitan area related planning considerations are not functioning. For example, it should be avoided to turn greenfield areas into development areas as there are so many existing brownfield and empty areas. But building on greenfield is cheaper than on brownfield thus greenfield development dominates. Another metropolitan regulation should address transport issues. Riga city would like to build P+R places around existing railway stations but the suitable areas are under the control of different local municipalities and there are no tools against their will, which usually is different from P+R.

Despite all the difficulties metropolitan cooperation is slowly getting impetus. Not only experts but also politicians started to talk about this. In October 2019 there was a huge event organized, at the end of which a memorandum was signed on cooperation.

Metropolitan collaboration initiatives started from active work together with planners in RPR Consultative Working Group and regular presentations about the issue in Development Council meetings. Thus, the impetus came from bottom up initiatives that were heard and understood by existing political leadership of the RPR. All next steps (the elaboration of the Metropolitan Plan, willingness to be involved in ESPON targeted research, regular metropolitan theme-oriented events, memorandum of understanding, Vienna visit with mayors of metropolitan area municipalities) are natural evolution of these activities. Another factor can be the establishment of Association of Pieriga municipalities (NGO consisting of mayors from municipalities around Riga) working actively for about 3 years now regarding common development issues.

This is a big step compared to the previous years in the core metropolitan area. Smaller settlements understand now that also for their residents it is important to improve transport links and infrastructure as their citizens are using these when going to the city.[29]

It was frequently mentioned by the interviewees that the plans on metropolitan and urban level are well developed, Riga is also for metropolitan development - it's defined in planning documents and actively promoted by city development department. However, the political will, mainly from the side of Riga politicians - that have different political parties in leadership than the neighbouring settlements - was absent during the previous decade.

Originally it was planned to have an extraordinary election for the mayor of Riga at the end of April 2020. Due to the Coronavirus crisis it is postponed to the 29 August. By that time an interim body consisting of 3 members from different ministries are leading the city.

[29] Also a recent OECD report on Latvia (OECD Economic Survey on Latvia 2019) mentioned clearly that cooperation in transportation issues around Riga would be crucial https://www.oecd.org/economy/latvia-economic-snapshot/

Besides formal RPR organisation there are cooperations between the municipalities in the metropolitan area based on different projects (e.g. lake protection close to Adazi).

Recent plans for administrative reform

There is a territorial reform process going on in Latvia. According to the plan of the ministry the number of municipalities will be reduced from 119 to 35-40, thus a dramatic change is foreseen. In the Riga area instead of 30 probably 6-8 municipalities would remain, about which a lot of discussions are going on and the first results are expected to come in the middle of 2020.

In the framework of the administrative reform the ministry plans to discuss the regional reform as well. According to the most recent plans – May 2020 - the number of planning regions would remain the same, but in case of Riga the borders would change, making the region more compact and leaving out important centres like Ogre or Tukums.

The big question is also about functions. Some ministries do not want to decentralize at all, some of them would delegate those functions that are less important for them.

The planned administrative reform is already strongly debated between local politicians and scientists. There are opinions according to which instead of mergers between settlements which are working efficiently, the links of these with Riga should be improved. There is a fear that the administrative reform as planned today will take 2-3 years without creating any positive outcome - at least that is what expected by the actors.

Even if Latvia is small in population, having only 2 million people, the territory is big, 67 thousand sqkm. Thus, a middle tier level is needed, even if only 35-40 municipalities would remain. The minister for regional development will take the decision, and is now a bit more open for discussions in the Parliament. It is a strong view that stronger regions are needed, e.g. by strengthening planning regions by adding additional functions.

The key question about the Riga metropolitan area is the political link between Riga and surrounding municipalities. As in 2019 promising talks started, there are now hopes for more collaboration.

Potential inspiring cases from the stakeholder city- region

Cases that can be used in the inspiratory case depository:

- The step by step transformation of the VEF factory (inspiration for cities with a brown field development with dispersed ownership).
- The training of the IT company with special focus on young women. (How to cope with the challenges of the industrial transformation)
- The use of the former industrial areas in Olaine (if outside the city, then at least by the rail lines and based on brownfield)
- The plans for the redevelopment of the most southern part of the harbour area for mixed use.

Summary

Riga is a special case among the stakeholder cities: the post-socialist transition brought a lot of problems and also the 2008 economic crisis was very strong, leading to large population

loss, huge brownfield areas and many empty buildings. Riga was one of the fastest shrinking EU capital cities. In spite of the shrinking nature of Riga, areas outside the city can still be more a rational choice mainly for newly settling companies that need greenfield areas, fast local decision making, affordable land prices, EU support for construction in the past and good transportation connections. There are no public policies currently in Riga to counterbalance these advantages, but many say it is even not worth considering as Riga is still the biggest hub in the country with the largest concentration of highly educated people and the withdrawal of the industry seems not to be a significant trend. (However, there is no hard data to show movements of companies and labour force properly. What seems to be obvious is that only some settlements in the Riga metropolitan area with some industrial past were able – and motivated – to locate new industrial businesses, the others are reluctant due to the fact that no direct municipal income is attached to the settlement of businesses). Riga intends to lure new business activities with high added value, and these are the activities that can pay for the higher prices of location inside the capital. This is a trend that is going on in each stronger European cities. The main question is how and why the city should go against these trends taking into account that there is no clear picture about the quality of the current labour force in the city and also about the future demand of different sectors.

The change of the demand in the quality of labour force seems to be a more threatening challenge than the withdrawal of the industry. This change was very much visible in the 1990s when the industry collapsed and the unemployment was dramatic. Recently the changes are happening in a much smaller scale, but still influence the future of the labour force. There is already a shortage in labour force in general (which might be a consequence of the recent favourable world market situation before the coronavirus crisis that did not last forever) but what is more important, there is a lack of skilled workforce. This gap between the labour demand and supply may further widen, and may create bigger tensions in the labour market than the withdrawal of the industry. It might be probable that not the industry, but the service sector will have much bigger impact on the employment of the low-skilled labour force in the future.

From spatial planning and mobility point of view the settling of logistics, retail and wholesale activities seem to generate more tensions.

The present situation can be described as laissez faire development: unregulated game between entrepreneurs and private landowners, in which municipalities are observers and the public is suffering from the huge externalities.

The national politics is concentrating on strong redistribution, taking a lot away from Riga; dealing with major infrastructure (bypass, Rail Baltica); not decentralizing to regional level; not considering the importance of the metropolitan level (however the metropolitan scale was recently recognised by the national development plans, but it remained a pure geographic term without development tools).

Metropolitan coordination in shrinking and suburbanizing areas are equally important to the case of economically growing areas, but for different reasons. Despite the low level of new

economic development, there are huge urban development problems in the Riga metropolitan area: large brownfield areas, many empty standing multi-family buildings, fragmented suburban areas with no public transport, large road congestions, lack of infrastructure capacities in some greenfield areas while costly to maintain surplus of such capacities in post-industrial areas, etc. Besides these "hard" factors there are also problems with the "soft" factors of economic development, especially regarding the lack of labour force and the skills mismatch between the demand and the offer by existing population.

In order to handle all these problems efficient collaboration across the whole metropolitan area would be required. The present reality is just the opposite: fragmented system of local municipalities, and the cooperation is further constrained by the existing taxation and planning systems, some elements of which explicitly hindering cooperation. As a result of these, recently there are no incentives of well located and accessible municipalities to develop strategies to attract investors. Similarly, there are no regulatory or financial factors, which would limit such efforts by municipalities with unfavourable conditions.

The result is fragmented development with investments in sub-optimal locations while lack of investments in places which would offer much better conditions. The worst consequences of this laissez faire development process can be seen in the bad traffic situation across the metropolitan area. (Cases like IKEA or the planned new outlet center, just outside the city borders of Riga, illustrate well the lack of metropolitan coordination in planning.) Spot to spot development of the economy is also not logical in planning perspective: municipalities soon realize the long-term disadvantages of sudden large developments (Garkalne and Marupe with the fastest population development or Adazi with economic development are clear examples on that.)

All these disadvantages, negative externalities are well known by most actors in the area and in the last months the first signs of cooperation efforts can be seen. However, official politics does not seem to be fully open to new types of approaches. Instead of creating better conditions for metropolitan cooperation in the Riga area the interest of official politics is directed towards a general administrative reform, aiming for the decrease of the number of local municipalities. While this might be justified in sparsely populated areas of the country it is certainly not the most important reform for the Riga metropolitan area.

To unleash these potentials changes in the financial and regulatory/planning systems are needed, together with the strengthening of the regional/metropolitan level of institutional structure. In case of such changes the development of the metropolitan area would get an impetus, even without additional financial support mechanisms (which could not be possible due to the relative high level of development). It is important to show that the quicker economic development of the Riga metropolitan area would not be at the expense of other parts of the country as this is not a zero-sum game. If the Riga metropolitan area could strengthen its position in the Baltic region, this would provide additional benefits also for other parts of the country.

1.1.4 Stuttgart metro-region case study[30]

Main demographic, social and spatial development trends

The Verband Region Stuttgart (VRS) comprises 179 municipalities which covers a surface of 3654 Km2 resulting in a quite a highly dense (733inh/km), polycentric as well as administratively fragmented urban region[31]. Actually, in spatial terms, VRS is quite a small urban region, if compared to the traditional international economic competitors that Stuttgart is traditionally associated to when considering it is one of the innovation islands which have dominated the innovation process in Europe for decades. Its economic importance grow steadily along the last century, despite not particularly favourable spatial conditions: in particular after the second world war, the shift from consumers' good originally located in the eastern urban sectors to investment goods on the western urban sector, opened a new axis of development along the axis between Stuttgart and the Böblingen and Esslingen areas.

The competitive labour-market along with the area's economic performance and the concentration of world-leading enterprises contribute to feeding population growth, that – on account of an ageing resident population and low fertility rates - is exclusively due to immigration. This is no new development, as work-related immigration has always represented an engine for growth for the Stuttgart region, over the last decades. Indeed, over the last century, the Stuttgart region, because of its strong economic role, kept growing at a higher pace than the federal state of Baden-Württemberg, based in particular on important migration fluxes towards the region (the VRS population is estimated at around 2.7 million). Today it is one of the still-growing territories, in a country, in which many others urban regions are experiencing a durable process of shrinkage and decline; higher rates are registered in the municipalities around the city of Stuttgart, as the result of a process of suburbanisation that started after the second world war, when the new infrastructural network allowed for the relocation of both manufacturing spaces and residents. Nonetheless, the recent immigration from outside the region has contributed to an extremely tense housing market[32] and a substantial increase in housing prices. Especially for low- and average income individuals it is difficult to find appropriate housing for reasonable prices in the centre of the region. However, it is evident that to ensure its competitive strengths it is crucial for the region to stay attractive not just as a location for investment but also as a place where people are willing to live in and want to move to.

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[30] As a result of the uncertainty and difficulties of this period posed by the threat of the global pandemic COVID-19, the research workflow has slowed down. Therefore, the submitted version of the case is not to be considered the final one, as additional interviews - on which the region's representatives Thomas Kiwitt and Christoph Hemberger are helping us with - will be integrated ex-post.

[31] See https://www.region-stuttgart.org/andere-laender/english/?noMobile=

[32] Population growth in the region was 2,4% in the years 2014 to 2016 and thus slightly lower than in Munich and Berlin, but higher than in the German average (1.7%) and in most other German metropolitan regions.

In terms of internal structure – despite substantial variation among the surrounding regions - the region can be analytically separated into the city of Stuttgart and the five surrounding Kreise (Böblingen, Esslingen, Göppingen, Ludwigsburg and Rems-Murr-Kreis). In this division the city of Stuttgart is the central location for services and headquarters of the many enterprises in the region and has been described as a service economy clustered around an industrial core. It hosts 5 of the 12 largest enterprises of Baden-Württemberg and (after Bremen) is the second most heavily industrialized metropolitan region of Germany. The city also hosts 22.5% of the population of the region but – due to intensive commuting flows - accounts for 32% of the employment and 36% of the gross value added of the region and is thus economically the dominant city in the region. Among the remaining Kreise of the region, Böblingen and Ludwigsburg, which are also important locations for industrial production, account for a further 16% to 17% of GVA each, while the contribution of Esslingen, Göppingen and the Rems-Murr Kreis, that are slightly less industrial, ranges between 5% to 15%. The city of Stuttgart has also been growing more rapidly than the surrounding areas in terms of employment in recent years. Employment growth in the city was 2,8% in 2018 and ranged from 2.1% to 2,5% in the surrounding areas.

These differences are also reflected in the settlement structure of these regions. While the city of Stuttgart - also compared to other German metropolitan areas - is highly condensed, in the overall region there is still 75% open space (used for woods, agriculture, etc.) on account of a substantially lower population density in the surrounding areas.

All in all, despite the large amount of open spaces, the economic success is creating high pressures on the spatial and socio-economic system due to the limited availability of land to accommodate both the continuously expanding industry and the housing demands. Under increasing housing prices population has been progressively pushed out from inner-city locations towards the periphery. As a consequence, the greater distance from the workplace implies an increased use of transportation networks, which therefore result under a high pressure. This decentralization is further reinforced through the fact that locations with metro or rail access are more expensive locations, such that once such connections are built incentives for further decentralization are created.

Main trends in the development of the economy and manufacturing

In economic terms, the central strength of the Stuttgart region, is its strong industrial base. Manufacturing contributes one-third of the total employment in the Stuttgart region and is strongly oriented towards two clusters: automobile production and mechanical engineering. These two key industrial segments represent the main engines driving the development of the regional economy. In fact, since the last century, the region has become famous for vehicle manufacturing and has managed to retain the automotive sector as the most important economic driver in the region until today: it is home to the headquarters and major production sites of several global players in car manufacturing (Daimler and Porsche) and component supply companies (Bosch, Siemens and many others). Next to these two central clusters the

region is, however, also characterized by an important electrotechnical and metalworking industry, which is to a large degree linked to the two dominant sectors, a high share of production related services and a growing IT sector and creative industry sector, that is specialised in industrial design, architecture, publishing, music and animation films. Such industrial base makes the region a central location for innovation.

Nevertheless, although the wide spectrum of industries at the crossroads between innovation and tradition characterizing the regional business dimension, the automotive industry – including delivery companies and the associated logistic businesses – remains to be the dominant cluster. The automobile cluster according to recent estimates accounts for over two thirds of the manufacturing sector's turnover and 17,1% of total employment[33] in the Stuttgart region and has seen substantial employment growth (of +12,8%) in the decade from 2007 to 2018. The mechanical engineering cluster, by contrast, contributes another 6% to total employment but has been characterized by a decline in turnover and more modest employment growth, in recent years.

One important characteristic of the region's entrepreneurial fabric is the successful network of global players and innovative small, medium-sized businesses (usually scattered all over the region, in small or medium-sized cities, not just in the centre).[34] In consequence, given also the huge concentration of multinational companies, the area stands out as one of the strongest exported-oriented economies at the national level being one of the main regions contributing to Germany's high export share. This exposure to the global market along with the high concentration of multinational enterprises, also implies that the region is strongly affected by international developments accelerating the transmission/transfer of these accordingly.[35]

The region has experienced substantial economic growth over the last decade. This has not only included the automobile cluster but has also affected many of the other branches located in the region. Over the period from 2014 to 2016 the region's gross value added has grown by over 10%, with the manufacturing sector growing more rapidly than the service industries.[36] As a consequence the share of manufacturing in the overall gross value added has increased from 38.9% in 2008 to 41.6% in 2016.

Under the rise of e-mobility, one major trend affecting the automotive industry in the region mentioned by most analysts is the reorganization of the existing plants to accommodate a

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[33] This figure applies to the companies affiliated with the automobile cluster (i.e. the automobile cluster and all of its affiliated firms). Within this cluster the automobile industry (i.e. mainly the car manufacturers account for over half of the manufacturing sectors turnover.

[34] Most of the large manufacturers, OEMs and the R&D facilities are usually located close to the bigger cities as they benefit from the positive externalities generated from the spatial proximity and geographical clustering.

[35] One example of this is the recent Corona crisis which arguably affected the region earlier than most other regions on account of the close economic contacts in particular to the Asian market.

[36] In the same time period only some of the urban regions located in Eastern Germany have shown more rapid growth. These regions have, however, grown from a substantially lower level of GDP per capita than Stuttgart.

second line of production for the manufacturing of electric engines. This has made necessary the introduction of new facilities along with the relocation of logistics, suppliers and warehouses. Furthermore, according to many analysts, vehicle electrification will result in less labour-intensive process as compared to a combustion engine fewer components are needed in electric engine production. Hence, given the increasing global competitiveness of the already advanced electromotor industries (i.e. the Chinese market), the manufacturers linked to the future of traditional auto motors production of combustion engines (such as those manufacturing components like pistons, seals, valves, etc.) are a major concern to policy makers in the region. One threat repeatedly mentioned is that an important technological development could be missed, which may lead to a reduction in employment in car manufacturing and potentially also in the region. At the current time, there is, however, still little insight as to when a consistent diffusion of electric vehicles will happen. There is a general consensus among interviewees that this uncertainty is largely dependent upon the final consumers' choices and preferences, that is the consumers' interest in such product. Moreover, although the increasing adoption of electric vehicles expected over the next decade, many analysts stress the fact that the traditional combustion engine vehicles will continue to have a significant market share.

As a consequence, despite massive investments to make electric vehicles a cost-effective and competitive product it seems that Baden-Württemberg is afraid to be late on technological development. In particular, it is witnessed the risk that this process of technological innovation will not be adequately supported by the local established system of automotive industry supply-chain made up of medium size enterprises (unable to follow the market evolution). For instance analysts emphasize that Tesla (as a main producer of e-cars) competitive advantage on the market is to be found not exclusively in a different approach in car manufacturing (with a very powerful artificial intelligence steering unit as the centre of the car) but most importantly in the process of knowledge production. This implies having a solid and comprehensive knowledge base of the car intended as an 'ecosystem' enabling the acceleration of innovation processes. Within the German automotive industry, the big companies rely on a structured suppliers' network (a network that has been built up over the last 20/30 years). Therefore, drawing on this peculiar B2B approach/solution it is clearly evident that the innovation of big companies inevitably comes via the innovation of the entire regional automotive ecosystem that has to be developed at the same time (this applies in particular when considering the linkages between various supply-chains serving the high-tech auto sector). This phenomenon is even more accentuated in the case of Stuttgart because its industrial ecosystem is dominated by the car industry. Against this background, it is worth noting that although there is a widespread agreement among interviewees that the region in undergoing massive structural changes, local stakeholders disagree on whether the automotive industry has been sufficiently reactive to accommodate these changes in due time. Daimler, for instance, was an early adopter of alternative mobility concepts, having produced the first e-car over two decades ago, but at that time there was absolutely no interest by politics nor customers in such technologies.

A further underlying long-term trend related to the dynamic of progressive digitization of the economic base is an incremental transformation of the "manufacturing capacity" towards services, head-quarter functions and R&D activities. This includes a shift of occupational structure in manufacturing towards service occupations. For instance, the annual structural report on the Stuttgart region published by the metal-workers union (IG-Metal) observes the continued trend towards an increased employment in service occupations even within the manufacturing. According to this report 38,2% of the employees in the secondary sector are occupied in service occupations in the Stuttgart region and this trend will continue in future. In particular it will require the adoption of new approaches in developing land and industrial structures as it will require different adaptable space (i.e. prototype lines and pilot production methods, mixed uses offices and apartments, etc.).[37] One consequence of this is that the employment structure in the manufacturing sector (in particular the automotive sector) offers many well paid (and thus attractive) jobs, but has also substantially shifted to an increasing demand of high-skilled jobs.

Finally, due to its strong internationalisation and the presence of a large number of headquarters of multinational companies in the region (e.g. Bosch, Daimler, Porsche) Stuttgart region is also much more strongly integrated in the worldwide location competition. In the past this has led to relocation of many of the routine tasks (e.g. assembly) within the multinational enterprises to other countries such that an increasing share of the production in the multinational enterprises is related to the development of prototypes and thus very close to R&D. It also leads to a continued concern of many actors, in particular trade unions, that in the face of a shortage of land for the further development of existing enterprises and higher wages than in many other countries, local companies may decide to further relocate parts of their production abroad. As a consequence, in particular trade unions and the social partners, as two very important further actors in regional development,[38] aim to motivate firms to strategic investments in the region of Stuttgart rather than elsewhere both in wage negotiations as well as through a number of policy initiatives.[39]

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[37] This is of particular relevance for Stuttgart region as much of the production located in the region (in the automobile production, but also in the other sectors) is related to the production of prototypes and the development of new products, which require a close link between production and more service-oriented parts of the enterprises (e.g. design, marketing and R&D).

[38] An example of the important role played by trade unions is the reaction to the economic and financial crisis in 2008. During this, trade unions put in place negotiations on a part-time work scheme with the objective to prevent the deskilling of the workforce through (potentially long term) unemployment and to maintain purchasing power (i.e. demand) in the region. This measure was unequivocally seen as highly effective in preventing mass unemployment.

[39] Examples of this are a bi-annual structural development report, which contains an analysis of recent regional developments as well as a set of policy recommendations that are agreed upon between the social partners and the organization of various regional alliances (Regionsbündnisse) involving the social partners and firms for specific topics (E.g. Machine building. Industry 4.0, high skilled labour and others).

Main factors affecting location choices of manufacturing

Among the many factors that influence the choice of location of new manufacturing activities the scarcity of suitable land for further industrial development (especially for large commercial uses) and land prices therefore feature prominently, are:

- A lack of contingent land plots of adequate size for major industrial development, as there are no significant brownfield opportunities of sizable plots in both urban and suburban areas. The only remaining plots of an adequate size for major industrial developments are conversion areas (i.e. the very few former-military grounds that have not regenerated into civil use yet[40]) and areas in the vicinity and property of railways, that are not needed for transport infrastructure anymore.
- The lengthy planning procedures for larger projects that are also caused by the many partners involved in such planning and may take up to 5/6 years and thus very often exceed the expectations of companies as well as an emerging problem concerning building permissions which are sometimes not flexible enough for accommodating innovation (i.e. the permission for new materials).
- Soaring land prices (in particular in the city of Stuttgart and its immediate surroundings) in recent years and that according to the assessment of some developers are unrealistically high to justify development for production such that realistic prices can be found only at a distance of over 50km from Stuttgart.
- The rather heterogenous situation with respect to accessibility and provision of transport and communication infrastructures which lead to congestion becoming an additional concern for many enterprises. [41]
- Increasing shortages of skilled workers in certain fields (e.g. IT-developers and experts as well as almost all kinds of service workers, and workers in the handicraft and many others are very difficult to find in the region).

Main challenges and conflicts of future development in manufacturing

Throughout the last decade, which was marked by solid economic and demographic growth the demand for industrial land was relatively constant in Stuttgart and amounted to around 150 ha per year for the overall region. Current projections, however, suggest that the development for the next years to come is substantially more uncertain, because of the ongoing disruptive developments and massive structural changes in the region's economic structure driven by progressive digitization and e-mobility trends as well as most recently by the corona crisis. In particular, according to all of the interviewed experts, the rise of e-mobility is undoubtedly posing urgent and pressing challenges for the region, both in terms of regional economic organisation and cohesion and in relation to the availability of spaces to develop new technologies. The implementation of this new form of engine production implies in fact the establishment of two parallel technologies, resulting in more land-use intensive production sites. Thus, the implementation of a new production paradigm, led on the one hand to the request for new spaces for investments, and on the other hand to the reorganization of existing

[40] Almost all of these plots have, however, already been transformed.

[41] The traffic density is partly attributable to the fact that 75% of employees do not work where they live (commuters) and that the production-oriented economy entails a large volume of road transport linked to logistics/delivery services (resulting in traffic congestion accordingly).

spaces according to the new production needs. In one case this also led to a strong demand for land from a company, that aims to run production sites for two technologies (electric and combustion engines) in parallel.

There is, however, still significant uncertainty as to whether this demand will be sustained in the medium and long-term.[42] In particular one scenario is that the two technologies will co-exist also in the long term. In this case increased demand will also be sustained in the long-run. By contrast another scenario has been that e-mobility will replace the combustion engine rather quickly, with these scenarios assuming a transition phase of somewhere between 15 and 20 years. In this case land demands for industry should peak in the next decade and then start declining hand in hand with the emergence of dominance for e-mobility.

Irrespective of this, however, in spite of the rapid structural change, the availability of adequate spaces (in excess of 15 hectares) for large scale industrial use in the Stuttgart region appears rather limited, [43] constituting a crucial problem for the often large investors in the region.[44] The major observable trend, as referred to by some of these investors, is that "we take whatever we get". Indeed, considering that the demand for land is very much exceeding the supply (to date just five municipalities have suitable industrial zones for new development), all available land that producers can get is taken.

For smaller enterprises, by contrast, there are considerable development options (also within existing settlement structures). Here the issue seems to be more with suitable spaces in urban locations, that are highly attractive for certain industries. Given the scarcity of land and the limited resources, a viable solution for companies is to be found in the effective maximization of the existing properties by densification. These solutions are, however, often problematic because of the structural conditions of the existing buildings and the resulting high prices for such an increase in density and are considered to be unlikely to solve the upcoming challenges for the region on their own. Indeed, here the concern voiced by some interview partners is that inner urban development (upgrading and transformation of existing structures, densification etc.) – although important – alone will not solve the anticipated needs of the future.

The issue of land shortage, in particular for large scale development, is intensified by a number of further factors such as:

- Lacking public and political support for industrial development and in particular the rezoning of agricultural land for industrial uses as well as difficulties in mobilising land from owners. Here anecdotal evidence suggests that on the one hand the population in smaller municipalities is difficult to convince of industrial development on account of

[42] This uncertainty is underlined by the fact that next to e-mobility fuel cells are considered a 3rd option and there are also initiatives on their way to develop this technology further.

[43] Estimates suggest that while overall 880 hectares of land in Stuttgart could be used for productive uses, only 97 hectares are actually available immediately.

[44] For instance, according to the accounts of some interview partners Porsche is looking for a 15 ha production site and Daimler is continuously looking for areas in Stuttgart, with the search being rather lengthy and difficult and often requiring intensive support of politics to avoid conflicts.

the anticipated negative environmental effects of such development and that existing owners of land are difficult to motivate to sell existing land. As a reaction to this also municipalities are often reluctant to engage in the development of land for productive uses, despite their tax revenues being very closely linked to the number of workplaces on their territory.

- Lacking incentives of owners to sell land as the returns on land (through price increases) are higher than interest rates or returns on most other assets. This is of particular relevance in Stuttgart, because a large share of the land is still
- Competing uses for land which are mainly residential uses in the city of Stuttgart, but also include agriculture and recreational or protected land in the surrounding area that are supported by the sustainable development approach of the region[45].
- A challenging topography of the region that is located in a very hilly part of Germany, such that large parts of the territory cannot be developed for industrial use (or can be developed only at a prohibitive cost).
- A rather fragmented ownership structure of the available spaces. For instance, a recent study indicates that in average there are over a hundred owners to each hectare of developable land in the Stuttgart region.

Next to the challenges faced by the automotive industry digitization is a further concern to the region that applies to all sectors. As most other regions worldwide the Stuttgart region is in a process of digitization of its economic base, that amongst others, is leading to the development of mobility services being exploited by companies that are progressively breaking into the market no longer as producers of cars but as the owners of platforms (e.g. the UBER platform which has a turnover of billions of US dollars). This implies the adoption of new technologies, marketing channels and forms of organizations by which these companies are characterized. To this regard, many local stakeholders voiced concern about the extent to which the companies in the region will manage to accommodate the aforementioned changes.

Development preferences of the city (region) leadership

Further to factors applying to all industries there are a number of factors that make particular productive uses more attractive than others. Here in particular uses associated with additional traffic and large land use are less attractive (e.g. logistics). This is also reinforced by the system of fiscal transfers and municipal revenues. According to this system for all of Germany the main source of income for municipalities are the share of the income tax they receive. This – despite a number of further complicating issues – in general implies that municipalities more and better paid jobs (or employed residents) also imply higher revenues, such that in the past this has ensured an urgent wish of most municipalities for both growth in terms of residents and commercial areas.

More recently, increased public concerns about environmental and traffic issues, have, however, led to a more selective process, such that uses (e.g. logistics and warehouses) with low employment densities and low salaries as well high traffic and environmental burdens are

[45] In particular, soil protection is a highly political topic in the region which is seen guiding the foreseeable development future of the area (which is directed at lowering the environmental impact of productive activities).

increasingly unpopular, as they (all else equal) lead to smaller increases of revenues than high employment density and wage activities and more public concerns than activities associated with lower traffic and environmental burdens. Thus, the location of large-scale logistics and storage uses necessary for production is seen as a major issue by observers in the region.

Tools through which the municipality is able to control development processes

Institutionally the central actor in the design and implementation of spatial planning and economic development strategies for the Stuttgart region is the Verband Region Stuttgart (VRS), but land use planning and development is in the competence of the municipalities. The VRS covers 5 Kreise, that, however, have only very few competencies, and comprises 179 municipalities, that are responsible for implementing land use plans and zoning. The competencies entrusted to the VRS by law are the open space development, the organization /operation and planning of the regional public transport system, regional planning, economic/business development of the region and tourism marketing. In addition, the VRS also organizes a number of conferences and fairs of regional importance through its legal competence for the building of the Stuttgart fair. The VRS has been established by a law of the federal state of Baden-Württemberg in 1994 and represents a rather unique institution in Germany as it is governed by a directly elected regional parliament, that is responsible only for a part of a federal state. It thus represents a middle tier elected body between federal state and municipalities, which are usually the only directly elected government levels in Germany (alongside county assemblies).

In particular the VRS is responsible for drawing up the regional development plan for its territory. This is a binding document for all of the municipalities, who, however, retain the power of designing zoning laws (Bebauungspläne) and to develop construction plan. This plan constitutes the framework within which municipalities can design zoning laws and construction plans. The current plan reaches to 2030 and contains detailed development for various subspaces of the region as well as a definition of central projects in regional development. This regional plan is also the central instrument available to the VRS in spatial development planning at the regional level as it lays out the areas dedicated for industrial development. Through this therefore municipalities that are interested in developing industrial land in excess of a certain acreage are appointed to do so, in a planning procedure that involves a series of procedures (e.g. an environmental impact assessment) and may also result in additional conditions and requirements[46]. After this the plan is then submitted to the regional parliament, that will take a decision.[47]

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[46] These conditions often include the requirement for neighbouring municipalities to co-operate in the development of the land int the form of inter-communal industrial zones (interkomunale Gewerbegebiete). This condition is usually made to ensure that concerns of neighbouring municipalities (related e.g. to traffic and noise) are adequately considered in the planning process and to spread financial risks involved in the development of major projects.

[47] An example of this is a recent project in Schwieberdingen, which will develop 25 hectares of land for the first Porsche e-motors production site in Germany. This exceeds the maximum space available for the

The existence of this autonomous parliamentary assembly and this decision process is seen by many analysts as key to ensuring effective decision-making on regional issues and for the democratic legitimation of these agendas (e.g. regional development plans). It is also considered to be instrumental in providing a strong and well established co-ordination of regional spatial planning and development strategies, despite the relatively fragmented decision making structure of the region (which would otherwise require the co-ordination of 179 municipalities), in ensuring a homogeneous development vision, and in regulating as well as restricting unwanted developments at the level of municipalities whenever this is deemed necessary. Further, this specific model of regional governance is also considered to provide a high legitimacy to the planning process and to enable bottom-up forms of governance directed at the empowerment of residents.

Nonetheless the institutional set-up of the VRS has also been criticised. In particular; as underscored by many interviewees, the VRS is seen as rather ineffective in accelerating development against the interests of the municipalities as the VRS is active only upon the request of the municipalities and cannot oblige them to develop land against their will. A situation described as having “brakes but no gas pedal” by many observers. This is seen an important limitation for the development of production in a time when political support for industrial development at the local level is very low and when thus municipalities are often reluctant to develop such land.

In addition, policy, - in particular the VRS - has been actively trying to convince many municipalities to provide more area for industrial development. To date, the region can, however, primarily only rely on its bargaining position and expertise built on “information policy” in trying to encourage industrial development at the local level, convincing municipalities to prioritize the wider regional interests over the local ones. Such attempts are supported by a small program of incentives, of about 3 million euros distributed over a period of five years, mainly directed at overcoming technical problems to meet environmental regulations rather than overcoming political barriers.

Furthermore, drawing on a more pro-active approach, for the first time the regional body is considering developing land on its own. This initiative aims to constitute a joint venture with the cities that are willing to cooperate with the regional body which will be 50% partner in developing land providing directions for the transformation. The region intends to implement this approach only for a few big projects (for instance battery factory or giga-factory) which are deemed essential for the promotion of the regional business development ensuring its competitiveness.

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autonomous use of municipality by far. Therefore, a precondition for this was the cooperation of neighbouring municipalities to develop a so-called inter-communal industrial zone (interkommunales Gewerbegebiet) an obligation which was seen as an asset by most of the partners involved as the financial costs and associated risks of the project could only be carried jointly by the involved municipalities.

Finally, at the more local level one reaction of municipalities and mayors, faced with increased public opposition with respect to the development of land for productive uses, has been to increasingly rely on plebiscites to legitimize development such plans. This has the advantage of providing for a democratic conflict resolution in controversial and in some instances has led to such projects being realized.[48] It has, however, also led to some criticism on account of leading to increased fragmentation rather than reinforcing cooperation in cases where only citizen of the affected municipality are allowed to cast a vote and for being used both excessively and very early in the political process such that controversial decisions are delegated to the general public through the plebiscite/referendum instrument.

Potentials for metropolitan cooperation

At the level of the federal state, policy has reacted to these challenges facing the automotive industry by inter alia establishing the so called 'Strategiedialog Automobilwirtschaft'. This is an institutionalised collaboration to foster strategic dialogue of the automotive sector in Baden-Württemberg with politics, industry, universities, employee associations, consumer organisations, environmental associations and society. This initiative is essentially directed at supporting the transformations occurring in the automotive sector of Baden-Württemberg by intercepting the emerging trends and by mobilizing projects and policies capable of projecting the automotive industry into a "new climate-friendly age of mobility" accordingly (Baden-Württemberg, 2018, p.5). Therefore, in order to facilitate the close cooperation between different stakeholders and to properly disentangle the transformative process concerning the automotive cluster, the initiative was structured according to "six different topics[49] covering the entire value-chain" (Ibidem, 2018).

Currently, for each identified subject, working groups are discussing the state of the art and the future trends of the industry in the next 7/10 years in order to implement targeted strategies and projects which are aimed at easing and supporting the disruptive changes affecting the automotive sector. Some funding programs have already been set up based on the first results of this program. Thus, this initiative is definitely helping industries to catch up on what's happening worldwide and to enable them to develop the right strategies looking at future trends.

In addition, in the field of economic promotion, the "Wirtschaftsförderung Region Stuttgart GmbH" (WRS), as a subsidiary of the VRS and a number of further regional actors[50], building on a comprehensive approach directed at the maintenance as well as the enhancement of the structural economic strengths of the territory, takes on various important tasks (in close

[48] One example of this is Schwieberdingen where the development of the Porsche plant was supported by a 54% majority in a plebiscite.

[49] These are (1) Research and Development, Production and Suppliers, (2) Sales and Aftersales, (3) Energy, (4) Digitisation, (5) Traffic Solutions, (6) Research and Innovation Environment (Baden-Württemberg, 2018 p.6).

[50] These include regional development and real estate agencies of the federal state and the city of Stuttgart as well as the social partners

consultation with the VRS). Among these is the support of the industrial and entrepreneurial activities of the region - by providing a platform for the cooperation facilitating the dialogue and linkages between the industry clusters, regional networks and the academic and research municipalities. Next to this is the strategic approach on developing land through research and monitoring which constitutes a crucial input from the regional planning process. Thereby, future projections of regional development trends in terms of spatial distribution are translated into the question of land demand.

Potential inspiring cases from the stakeholder city

- IBA 2027. The underlying idea of IBA 2027 has to do with the disruptive times the region is experiencing and leaving. After the IBA 1927 held in Stuttgart over 100 years ago the idea was to have this time-line narrative and to look at what happened within 100 years and where the world will be in 2037. IBA 2027 deals mainly with terms of how the foreseeable future of three different dimensions, that is work, mobility, and the way we live - will be integrated. In the Stuttgart region companies are encouraged to build and for the search for foreseeable solutions outlining how things will be like in 10 years above time. This approach to innovation is encouraged by a couple of means. One of them is the total visibility that companies will get. The idea is the introduction of regulations for building (where companies can get the IBA label on their buildings), so overall the possibility to be a little more flexible to check new materials and to push the borders and frontiers a little forward in the construction and integration of mobility, working and living together in one comprehensive ecosystem.
- The system of Regionsbündnisse organized inter alia by the social partners. These are institutions where enterprises, local and regional policy makers as well as social discuss the impact of and potential policy responses to global developments impacting on the region or a specific industry in the region. It would be interesting to investigate these systems further to better understand the way in which they are organized and what are the potential results of such an approach.
- The system of revenue sharing and join development of larger industrial zones (interkommunale Gewerbegebiete). A lot has been written on this approach and it was hyped both in Germany and Austria about five years ago. There is observable a certain disenchantment with this instrument in both Vienna and Berlin. A closer investigation of the pre-condition of success of this system is deemed to be worthwhile, more specifically the reasons for which the system does work in Stuttgart but not elsewhere.

Summary

In sum the Stuttgart region represents a case of a heavily industrialized region that is strongly specialized in automotive construction and that, starting from an already high of economic development, has experienced rapid growth in recent years inter alia because of and has a high level of private R&D investments. It is also a case of a region where a large number of large multinational enterprises in co-location with many SMEs have created a strong basis for economic development that is based on innovation and technological leadership structure. On the risk side, however, and the ongoing substantial technological change (primarily in the automotive industry as well as in other industries) are a certain threat to the region, if the main producers should not be able to accommodate this change. In addition, due to the large number of multinational enterprises in the region also the global tendencies of digitization and

globalisation, arguably, impact more directly and strongly on the region than in most other regions of Germany.

Thus, industrial policy strategies to simultaneously maintain technological leadership in the main sectors of the region, while at the same time not stopping the development newly emerging branches are likely to remain high on the policy agenda in the region. While this is well understood by all actor in the region one issue that remains open is how it can be ensured that such policies also gain track at a local level.

An additional feature of the region is the regional governance system, which is based on an – in comparison to many other regions/ city-regions – powerful organisation responsible for the development of the entire metropolitan region (the VRS). This organisation has been highly successful in providing better coordinated economic development and the regional planning activities, prioritizing the regional interests over the local ones and has also provided better legitimized policies. More recently, with reduced political support for industrial development and an increasing shortage of land, the lack of mobilization potential provided by this instrument has proven to be a limitation for the region. In addition, the ongoing changes in the automotive industry, along with the significant structural change in the economic structure of the region at large, have made reduced the effectiveness and reliability of traditional planning instruments. In particular, here the central policy issue is how land for productive uses can be activated in times of vanishing political support for such policies.

1.1.5 Turin Metropolitan City case study

Main demographic, social and spatial development trends

The Città Metropolitana di Torino[51] (CMTo) outlines the spatial and institutional frame of reference, responsible for the socio-economic development – among others - of an area lived by about 2.3 million inhabitants and 6830 Km2 wide. Instituted by the Del Rio law[52] (or Law 56/14) introducing all over Italy the so called "metropolitan cities", it is the fourth largest in Italy by population and the first for geographical extension, as well as one of the most problematic in terms of coherence between the institutional boundaries and its main socio-economic features. The metropolitan city is characterized by a marked morphological heterogeneity (divided between mountain territory and the plain/hill) and comprises 312 municipalities, 139 of which mountain municipalities. Thus, in order to ensure an adequate representation of the various territorial needs, in 2015 the area was organised into 11 homogeneous zones (Z.O.) which have been identified according to the territorial specificities. Despite this effort, the current metropolitan institution is responsible for highly diversified socio-spatial and economic conditions, from the central urban areas of Turin and the surrounding municipalities, to the peripheral mountain areas, basically neglected or out of the most relevant dynamics and also developmental policies. This unusual geographical structure has been inherited by the former boundaries of the provincial level, which the law instituting the metropolitan government, has adopted all over Italy in order to speed up the process of constituting such institutional entities. From the spatial point of view high level of urbanisation and built up density are found all over the plain while the mountain areas are much less dense and urbanised, despite the presence of important touristic settlements, built in particular during the eighties, which have undergone processes of decline for some years now.

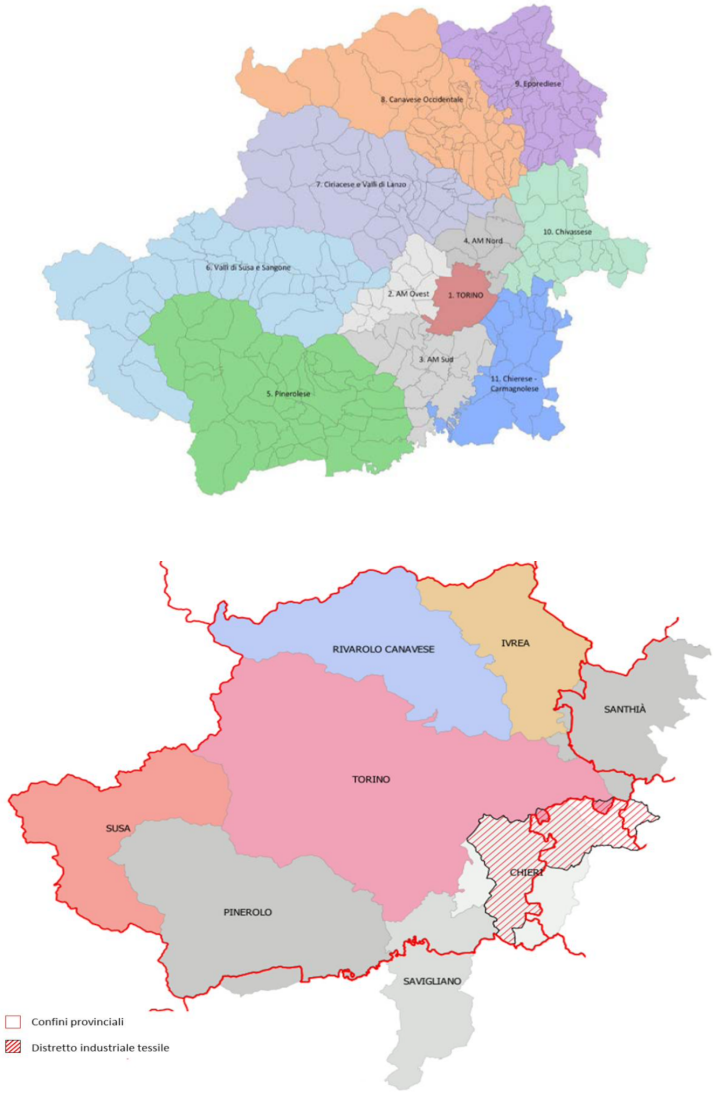
The metropolitan city of Turin can be read, on the one hand as a part of a larger urban region, moving from Milan to Venice and reaching out the port city of Genoa, partially reinforced by the high-speed railway line. At the same time, the metropolitan city works as a large functional area but is also subdivided into six local labour systems (SLLs). Building on the home-work commutes, SLLs are defined by ISTAT (Italian National Institute of Statistics), as territorial areas (consisting of two or more neighbouring municipalities) that record constant commuting flows and within which nearly all of socio-economic relations are entertained (Istat, 2011). In the metropolitan city there are six SLLs (the largest of which is Turin with 112 municipalities). Although there is a strong concentration of economic activities and jobs around Turin and the

[51] Some of the stakeholders suggest that the terminology used to refer to the metropolitan territory as 'city' is already an aberration with respect to the concept of 'metropolitan area'.

[52] In 2014, the Del Rio law foresaw the institution/establishment of the metropolitan cities at the national level. These were originally conceived as "engines of the socio-economic development" of the country capable of promoting its growth. Among the fundamental functions attributed by the Law 56/14 to the Metropolitan Cities is the adoption of the "Strategic Metropolitan Plan" (PSM) and "General Metropolitan Territorial Plan" (PGTM).

surrounding municipalities of the first two belts, the other SSLs have specific and important economic specialisations as well[53].

Figure A.5.5: Spatial delineation of the 11 Homogeneous Zones and the SLLs



Source: IRES, 2018; Vetritto et al., 2017

Well known in the literature as the "one company town", the city of Turin has flourished consistently during the fifties and sixties with the automotive sector, being by large organised on the presence of the most important Italian car manufacturing, FIAT. In this period work-related immigration mainly from the south of Italy and the rest of the region, has been an engine

[53] As reported by Vetritto et al. (2017, p.45) "half of the Turin's Local Labour Systems (Chieri, Rivarolo Canavese and Torino) are classified as 'Local Transport Systems', those of Ivrea and Susa are classified respectively as 'High Specialization Local System' and 'Local Tourism System' while the Pinerolo SLL is part of the 'Made in Italy System' specialized in the manufacture of machinery, and finally the extra provincial SLLs of Santhià and Savigliano are specialized respectively in petrochemical/pharmaceutical and metal production and processing."

for growth so much so that the city of Turin and metropolitan area have experienced for several decades a consistent trend of demographic growth. However, the reorganisation of the automotive sector and the economic crisis of early seventies, brought in a quite disruptive process of change and the whole area was heavily affected, both in economic and socio-demographic trends. In particular, the end of Fordism has been characterised by a progressive relocation of population from the city of Turin and the first belt municipalities, to the second and third belt, with a general movement of high classes to the hills and mountains; while working classes moved or remained stuck in the suburbs. In the background, the mountain arc kept shrinking demographically and in its already weak economic role. All in all, the city of Turin lost one quarter of its population, while the surrounding municipalities kept growing of one third, generating a strong residential pressure. Within this framework the city started shrinking from both residential and industrial function, which has resulted in empty factories and abandoned manufacturing buildings mostly located in the central urban area. The decentralization of productive activities towards more peripheral areas have resulted in a large series of disused sites, particularly concentrated in the city of Turin (around 3,5 million squares meters); with an exacerbated dynamic in the last years, where the real estate has never been able to generate consistent demand for either residential or other economic uses (Ires Piemonte, 2018). As such, the number of industrial abandoned areas grew exponentially in particular in the city, but also in the metropolitan area. Despite this, actors emphasize that recently, speculative dynamics have tried to generate new land value offering new industrial sites, which still result empty. In terms of size, brownfields are located in both urban and suburban areas, inside and outside Turin. Today, the exclusive recurring function that manages to occupy brownfields areas is logistics (or trade activities but in a smaller percentage).

Over the last two decades, after a short demographic recovery in the ‘90s - because of the progressive phenomenon of suburbanization, the increasing ageing population and the low birth rate - the city of Turin kept losing population (even if at a steady low increasing trend -2%), while the surrounding municipalities kept growing at a higher trend (Rapporto Giorgio Rota-Centro Einaudi, 2019, p.16). Next to this, the more recent massive waves of immigration, mainly from North-African and Eastern Europe countries, have changed the social composition of the resident population. Recent studies have shown that in Turin, “the incidence of the foreign population on the total population has increased in the last twenty years, from 3% in 1998 to 13% in 2008, to 15% in 2018” (Ibidem, p. 26). Currently data reveal that “inflow and outflow are balanced suggesting that the phase of expansion of the migration dynamic is coming to an end and the phenomenon is settling” (Città di Torino, Prefettura di Torino, 2017, p.16 cited Rapporto Giorgio Rota-Centro Einaudi, 2019 p.26).

Main trends in the development of the economy and manufacturing

Today the metropolitan city of Turin seems actually far from its 'car monoculture' past and the ‘total embedding’ dynamic exercised by FIAT which has dictated the economic development of the whole area for decades (Vanolo, 2015, p. 3). A paramount event in the process of restructuring of Turin’s economic base was the host of the Winter Olympic Games in 2006. As

recalled by many stakeholders, on the wave of the mega-event, the idea that the industrial vocation of the Turin area was destined to run out in a fairly short time has gained ground in both the public opinion and at the institutional level. In order to recover from the reorganisation of the automotive sector and the process of “relative deindustrialization" - that has hit the whole urban area, moving in particular from the central city - policymakers exploited this momentum to reorient the development of Turin from the traditional automotive-centred specialization towards new service sectors (see Cotella, 2011; Vanolo, 2008, 2015; and Spaziante, 2001). The mega-event undoubtedly constituted a catalyst of change triggering processes of urban transformation and facilitating the promotion of a renewed vibrant identity for the area built around a knowledge-based economy (Cotella, 2011).

This generated a new concentration of job offer in the central city, partly contrasting the effects of deindustrialisation, and of new economic activities in the Susa Valley and around Turin. The haste to quickly abandon the industrial vocation of the area in favour of a “wannabe global city”, however, has proved to be an “hyper-optimistic aspiration” when the area was struck by the global financial crisis in 2007 (Rossi and Vanolo, 2012; Vanolo, 2015 p. 1). The economic crisis of 2007 indeed strongly hit the area, generating additional stress to its already fragilized manufacturing structure that has lived on the total dependence of the FIAT, and that as a consequence, has not been able to completely discard from its unique industrial vocation and heritage.

Economic diversification and the knowledge economy turn -

The metropolitan city stands out for being a territory that in recent years has heavily focused on innovation as a driving force for the relaunch of its economy and as an essential factor to ensure territorial attractiveness. Actors agree that the increasing competitive pressure and the diversification of economic vocations have been a further incentive for innovation. Indeed, the promotion of a knowledge-based economy has resulted in a significant innovative-oriented and diversified ecosystem which comprises “2 Universities, 3 Business Incubators, 4 Innovation Hubs, 2 Science and Technology Parks, 2 Technology Districts, and 1 Bio Park” (Città Metropolitana di Torino, 2019). As shown by several studies, over the years many specialisations have developed around the automotive industry (e.g. advanced mechanics and mechatronics, electronics) with a strong concentration in technologically advanced sectors like aerospace, ICT, and biotech. Innovation is further fostered by the cooperation and the proximity relations with advanced research centres and academic institutions. Next to this - on the wave of the touristification process started back in 2006 - data shows that also the tourism sector is continuing to grow. Also, the sector of social innovation (third sector, social welfare, corporate policies) is rising new opportunities. Against this background, many local stakeholders witness the lack of a metropolitan policy framework to support the further development of the industrial ecosystem.

The strengths of the metropolitan area remain its strong export-oriented economy (being the second metropolitan area contributing to 4% of the national export share[54]) and the presence of a productive fabric with a strong specialization in the manufacturing sector (the manufacturing share is around 8/9% with 35% added value[55]). In terms of distribution of employees, data shows that the industry still manages to attract a consistent work-force (26% on the total number of employees)[55].

Considering the recent economic development of the metropolitan area, some interviewees consider it to be improper to refer to a before and after crisis[56] as the economic recovery has been only touched. Because of the joint effects of different dynamics (e.g the increasing competition on global markets, tertiarization process, crises in key sectors of the regional economy such as the automotive and textiles), a general contraction of Turin's entrepreneurial fabric with a negative growth rate and the inexorable decline of the manufacturing industry continues to be recorded in almost all sectors[57]. This phenomenon is widespread to all the 11 homogeneous zones

Spatial dynamics: first and second round of manufacturing relocation

Today, the hinterland of Turin and neighbouring municipalities are characterized by a marked spatial concentration of industries. In particular, sectoral studies[58] estimate that the majority of requests for space for industrial use are concentrated in the municipalities of the first two belts like Moncalieri, Rivalta, Grugliasco, Collegno, and Settimo Torinese. From the third belt, the lower concentration of industrial sites is observable mainly because of the high levels of environmental quality and the agricultural vocation of the area. Thus, the territorial dimension and extension of the manufacturing activities result highly concentrated compared to the administrative boundaries of the metropolitan area. Among the various reasons that have led to such a spatial configuration is the lacking space for expansion, increasing land values and rent prices, but above all the environmental incompatibility and accessibility needs. These latter are the strongest factors guiding the relocation of many industries. Next to this, the agglomeration economies have had and continue to have a remarkable impact affecting the

[54] For further information see Rapporto Rota-Centro Einaudi (2019) and CAMERA DI COMMERCIO INDUSTRIA ARTIGIANATO E AGRICOLTURA DI TORINO (2019b), TORINO CONGIUNTURA.

[55] Data source: Istat 2016 cited Rapporto Rota-Centro Einaudi (2019, p.41)

[56] It should be recalled that the metropolitan area has been recently declared a complex crisis area ("Area di crisi complessa") by a government decree. For more information see: https://www.mise.gov.it/index.php/it/198-notizie-stampa/2039612-dm-di-riconoscimento-di-torino-quale-area-di-crisi-industriale-complessa

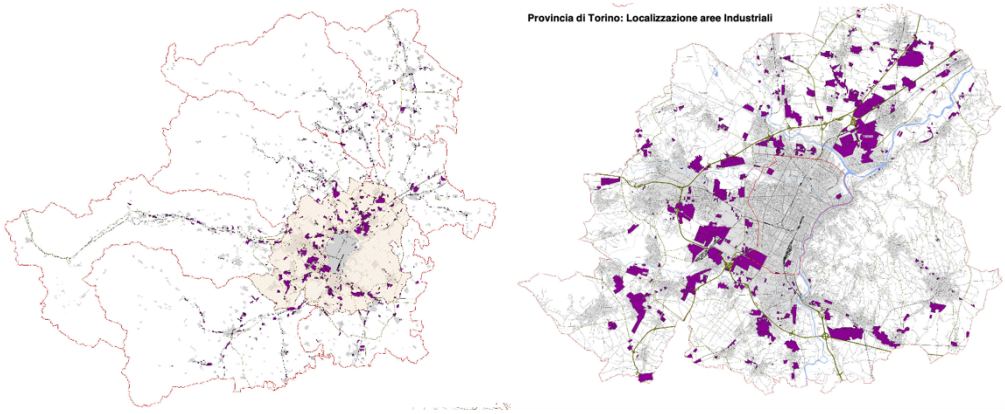
[57] Data source: Camera di Commercio Industria Artigianato e Agricoltura di Torino (2019a; 2019b) Natimortalità delle imprese torinesi, Torino Congiuntura Nr.762019 and Rapporto Rota (2019)

[58] Scenari Immobiliari, 2017. Rapporto 2017 sul mercato immobiliare del Piemonte e Valle d'Aosta. (online) Available at: http://www.piemonte.ance.it/docs/docDownload.aspx?id=41118; JLL and Ceipiemonte, 2019. Torino Urban Profile 2019. Overview del mercato immobiliare torinese. (online) Available at: https://www.centroestero.org/images/pdf/TUP2019_ITA.pdf; Ufficio Studi Gruppo Tecnocasa, 2018.

location choices of the companies and contributing to the spatial concentration of industrial activities around the capital city as illustrated below. Some of the interviews have pointed out that compared to the past large-scale industries began to reduce their size. Indeed, as reported by stakeholders, since the past 10/15 years, there has been a decreasing demand for large-scale buildings and areas (if not for logistic) whilst it has been recorded an increasing demand for the decomposition of large covered areas into smaller industrial sheds of 200 or 300sqm (maximum 500 sqm)[59].

On the one hand, the main result of the interviews consists in the general and diffuse idea that the situation is economically stagnating and consequently, there is no demand for new industrial spaces. The same is for residential ones[60]; in other words, there does not seem to be any consistent conflict among manufacturing and other uses.

Figure A.5.6: spatial localization of industrial activities in the metropolitan city



Source: Città Metropolitana di Torino, 2011

On the other hand, there is a general consensus over the industrial relocation process as an embedded dynamic which encompasses the evolutionary urban development pathways of cities: it looks impossible to conceive the presence of large-scale manufacturing within urban central areas because of the unsustainable environmental and social costs. Nevertheless, different interviewees put forward the need to relocate industry in the city[61]. Indeed, in their view - after a season that has accelerated the expulsion of greater economic activities from inner-city locations to the edge on the wave on the Olympic games and the knowledge economy turn-

[59] For more info see footnote 58 and the following: https://www.rapporto-rota.it/trasformazioni-urbane/mercato-immobiliare.html and https://www.scenari-immobiliari.it/tag/industriale/

[60] A recent study called “Torino atlas”, conducted on the city of Turin area and the municipalities of the first two belts shows that since 2007 due to the ongoing economic crisis the number of new buildings for residential use has significantly decreased. Next to this, “average house prices are also declining and are strongly polarised between the central area where prices are four times higher than in the more peripheral areas” (Rapporto Giorgio Rota-Centro Einaudi, Urban Center Metropolitano and IED, 2018, p. 47).

[61] Currently, the Full (Future Urban Legacy Lab) research centre in Turin, is carrying out a line of research called "City and Innovation" that aims to understand how likely it is that manufacturing can return/move back to the city. Indeed, the role of the industry in the city and the extent to which a potential relocation process is possible and the form in which this should occur seems to be highly debated.

there is the need to rethink the voids left by industries in terms of productive spaces. Given the undergoing process of digitization of the industrial base towards 'lighter' and more sustainable models of production, interviews expect inner urban spaces to become able to accommodate innovative-oriented activities (i.e. labs, centres of product development, product design, or prototyping) as these latter benefit from geographical clustering and spatial density. More precisely, the potential relocation of activities is argued drawing on a scale of micro-production and technologically advanced production chains based on customization.

Next to this, according to the opinion of some stakeholders, processes of relocation at a global scale, seem to be difficult to contrast: once a certain threshold is reached in terms of turnover, number of employees and land occupation, medium-large and especially large enterprises (which are few compared to the prevalent economic landscape made of SMEs) tend to relocate production and 'capital' moving abroad. Conversely, some interviewees argue for an opposite phenomenon whereas is found, especially for high-level productions, (e.g. Vadò in Moncalieri) the tendency to move back to Italy. High-level productions indeed are considered to be activities that can no longer follow exclusively cost-based logic but rather appear to follow precise positioning advantages such as access to qualified markets. Therefore, the emerging phenomenon seems to be the return of some (high-level) productions in Italy and a second round of delocalization (from East-European countries to China). Finally, on a more general level, analysts pointed out that most relevant spatial allocation decisions mainly concern the localization of research and development centres which are crucial as they facilitate technology transfer.

Main factors affecting location choices of manufacturing

Today the factors affecting the industries' location decisions - mainly addressing issue related to the economic organisation spheres rather than specific spatial problems - are described as follows by the interviewers:

- **Infrastructural deficit.** The infrastructural deficit of the metropolitan territory (e.g. telematics infrastructure such as broadband and limited connection networks, like airport and railway) contributes significantly to the loss of economic competitiveness of the productive system. This implies not only marginalization but also higher costs (economic, environmental, and social).
- **Lack of skilled workforce**. There is observable the shortage of skilled labour, in particular the scarcity of specific professional profiles able to meet the market requirements and the ongoing changes of the economic base. Furthermore, it is acknowledged the inability to keep talent and skilled labour on the territory. In particular, the Polytechnic university of Turin, despite its great capacity to attract students, still has a very low capacity to retain human capital. This, according to interviewees, is symptomatic of a territory that is not growing. To this regard, it is interesting to note that with the regional Law 23/2015 some specific competences, like professional training (which is usually managed by the regions) has been delegated to the CMTo. This is one of the very few cases in Italy where the region has delegated such a paramount function in the context of industrial policies to the metropolitan city.
- **Institutional and legislative uncertainty** (i.e. legal certainty, the certainty of the employment relationships, etc.) is identified as being a further limiting factor. More

precisely, the inability to interact with the Italian labour market from a legislative point of view constitutes a strong barrier to the attraction of foreign investments; and the lack of homogenization of administrative/bureaucratic requirements to be accomplished by companies further undermines the attractiveness of the area. The SUAP, "Sportello Unico Attività Produttive" (One-Stop Shop for Productive Activities), was constituted by a national law with the aim of simplifying and coordinating the procedures required for the establishment and operation of new enterprises at the municipal level. Despite some positive results, interviewees lament in particular the heterogeneity of application among municipalities and a general lack of coordination at supralocal level.

- **Time-constraints and planning procedures.** There is a mismatch between the administrative/bureaucratic times of the planning procedures to be undertaken to start a new activity and the expectations of companies that seek for immediate answers. As referred by some interviewees, the standard answer that companies are most likely to receive when they first interact with SUAP on possible interventions, is always 'it depends'. Again, the dimension of certainty is missing partly because of the excessive and lengthy bureaucracy. This inevitably affects the internal decision-making policies of firms and their potential localization accordingly.

Main challenges and conflicts of future development in manufacturing

Lack of vision and weak metropolitan leadership – According to many stakeholders the Del Rio Law establishing the metropolitan city, has led to a deterioration in the governance dynamics. In particular, some of them highlight the lack of an overall vision able to deal with the complexity and diversification of the urban area. Actually, few of the metropolitan city's strategic objectives include keeping industry and the attraction of new economic activities by the creation of a competitive environment. Nevertheless, interviewees lament a situation of inertia of the public administration and the need of a more effective leadership for supporting the existing productive activities and the establishment of new ones. In addition, civil servants in several municipalities stressed the need for greater cooperation, which would allow rethinking the productive areas, within a new market logic. Many stakeholders highlight the difficulty for municipalities to manage economic development policies, suggesting the need to create a territorial agency for the coordination of industrial development at the metropolitan scale and the management of the abandoned industrial areas.

Insufficient incentives for the regeneration of brownfield areas – Local political agendas seem quite sensible to the relevance and consequences of the 'brownfield phenomenon' (in terms of both financial/environmental sustainability and safety management), nevertheless, local stakeholders witness the lack of tools for tackling the problem. The high -and often difficult to estimate- costs of the environmental remediation produce a first consistent obstacle to new investments. Companies remain mostly oriented towards greenfield development, whereas greenfield sites are increasingly less because of the sustainable development approach adopted by the metropolitan authority. Hence, stakeholders ask for reconciliation between different policies objective: sustainability and economic development. The existing public measures directed at facilitating the regeneration of brownfields are considered to be insufficient. More systemic reasoning on measures such as the reduction of urbanization costs, zero costs for decontamination, incentives for the completion of the characterization plans

("Piani di Caratterizzazione") etc., are considered as something needed to go in this direction and support an overall vision of development.

Path-dependency and entrepreneurial culture: managerial approach vs proprietary/owner approach. Regarding the challenges embedded in the industrial system limiting the development of manufacturing, interviewees lament that companies have not been sufficiently reactive to renew their structure in time to create the right conditions for accommodating the ongoing changes. As pointed out by the trade unions, many of the recent crisis situations are difficult to resolve also because of an entrepreneurial culture that is still anchored to strongly traditional models "making it difficult to survive on the market". One of the major problems concerns the entrepreneurial culture of most companies. It is still difficult to get out of the small and medium-sized 'owner enterprise approach' towards a more managerial SME dimension.

Industrial fabric pulverization - Many recent researches and studies (e.g. BANCA D'ITALIA EUROSISTEMA, 2019) have identified the prevalence of micro-industry and thus, the excessive pulverization of the industrial activities as a major challenge. De facto, the size and dimensional structure of these companies, that have limited robustness and capacity to survive if compared to medium-large enterprises, continues to be a challenge affecting the ability to invest in innovation and research (in fact companies' capacity to innovate has not been homogeneous in these years), as also the possibility to access credit, as well as to access and compete in international markets (such dynamics are not well-supported).

Tools through which the municipality is able to control development processes

The regulations and policies that have the greatest influence on the localisation of production activities are of national or eventually, regional competence. In fact, the levers of competition that most affect the decision-making policies of companies (such as work and energy costs, etc.) are mainly determined by national strategies. However, along the last decades the lack of a clear industrial policy at national level is also lamented.

In the early 2000s, the main incentives to territorial economic development have been promoted by the national government through the so-called "Patti territoriali" (territorial pacts (PT) - a nationally founded programme grounded in the local labour systems), to be implemented by the provincial level. In the Turin case, the province has been the promoter of a large and fruitful season of spatial concertation and of alternative forms of governance by experimenting bottom-up partnerships. This experience is still considered a best practice.

Today, in the absence of specific financial lines, the tools available to the metropolitan authority are the "Strategic metropolitan plan" and the "General territorial metropolitan plan". The first sets the framework for territorial development: it is updated annually and renewed every three years. The second identifies optimal territorial areas for the localization of productive activities (defining certain criteria and conditions for new spatial locations and the improvement of existing ones, but without defining the characteristics and modes of intervention).

The municipalities instead retain the power to design the urban master plans (Piano Regolatore Generale) through which to regulate land use and the construction activity within the administrative borders of the municipality. Next to this, the set-up of new industrial activities is carried out through urban planning tools, always at the local level, by the creation of production settlement plan (PIP - Piani di Insediamento Produttivo). These are executive instruments of private initiative, thus, it is the responsibility of the economic operator to draft and submit the plan to the evaluation of the municipality. The municipal council then approves it once the compliance of the plan is verified. The executive plan is based on an agreement that sets out the public-private relationship with regard to the infrastructure of the area, the standards that the intervention has to comply with, the possible transfer of the areas, and the economic value of the transfers or rents. Hence, the executive plan being an implementation tool, it is approved upon the definition of a series of elements, namely: the buildable private area having deducted the surface for municipal facilities (e.g. roads, parking areas and services under public competence) alongside urban planning standards and construction costs. Planning fees ("oneri di urbanizzazione") are paid to the municipality along with the construction contribution ("contributo di costruzione") that the local municipalities get drawing on the surface of the area to be built by the private (€/mq). The tax level (both for the construction contribution and the planning fees) is defined by the municipality. The lowest charges are those for industrial/productive activities compared to other functions such as residential or tertiary/commercial.

Next to this, the municipalities may introduce a discount where the economic operator prefer brownfield development rather than greenfield, and therefore there is clean-up cost for the site. Usually, each municipality adjusts the tax level according to the characteristics of the area. The planning fees for the urbanization works can be allocated to the municipality in two different ways: through the intervention of the private operator for the realization of the public facilities which are then transferred to municipality deducting fees or via the monetization of the value of these areas. In this last case, planning fees are directly collected by the municipal administration, which commits to using the fees to build the planned works.

Also, it emerged from interviews that despite the adoption of the "General Territorial Metropolitan Plan" (PGTM) replacing the "Territorial Coordination Plan" (PTCP) of the former province, "national and regional regulations do not provide substantial elements to understand the difference between the PGTM and the PTCP, neither in content nor in value compared to the local masterplans PRGCs". This has further limited the co-planning relationship among different territorial levels and has complicated the confrontation of the local master plans (PRGCs) with the higher-level plan. As a consequence, interviewees witness a certain "urban planning autonomy" at the local level as the higher-level planning fails in providing a uniform approach and direction to the planning practice and thus, ending up having a more indicative nature. In addition, the critical fragmentation of the urban planning instruments further limits the capacity to effectively respond to varying urban planning processes resulting in a lack of homogeneity in vision and in a condition of irrelevant strategic coordination and direction that

mainly apply at the metropolitan level. Thereby, it is the lower-level decision making which plays the role of author as well as the direction for territorial development. Finally, it is worth noting that the ownership regime of land (greenfield as well as brownfields) is private except for a very small percentage of areas owned by companies traceable to the public (e.g. FinPiemonte).

Development preferences of the city (region) leadership

The metropolitan strategic plan defines amongst his major objectives, the attraction of new companies and the creation of employment. Indeed, one of the five platforms (PP3) around which the metropolitan strategic plan built upon is the formation of "an innovative and attractive metropolitan city for businesses and talent" (Città Metropolitana di Torino, 2018 pp.13-17). Within this framework the metropolitan city has recently launched a budget line for innovation (INNOMETRO) directed at supporting micro-enterprises[62]. The PP3 line of development is pursued in conformity with the sustainable development approach to urbanization adopted by the metropolitan city which is directed at minimizing the environmental impact of production activities.

The combination of the need to create further economic development from one side and environmental protection on the other side has resulted in a series of actions aimed at the regeneration of former industrial sites and the use of already compromised areas (e.g. sites close to motorways). Preservation of high-quality agricultural land (being a limited and non-renewable resource) and the rationalization of existing spaces are the underlying drivers of a massive phenomenon of requalification. As such, greenfield areas for industrial use are increasingly less due to soil protection reasons.

To this regard, it should be recalled the "Trentametro" project, has been launched as a pilot project in 2018 (and included in the metropolitan strategic plan). Drawing on the existing brownfields, the project identifies 30 privately-owned abandoned areas (measuring more than 5000sqm), which are believed to be particularly 'suitable for foreign investors in an attempt to revitalize the local economy by guaranteeing zero soil consumption' (Città Metropolitana di Torino, 2019)[63]. As emerged during the interviews, the aspect that should have differentiated and actually differentiates this project (strongly backed by the CMTo councillor in charge of economic development and productive activities) lies in the procedural implementation of the project directed at discarding the brownfields' selection from what could have been the "political input", and thus, prescinding from the a priori consultation of municipalities and municipal administrators.

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[62] The political direction at the metropolitan level is to focus on micro-enterprises because very often funding at the national and regional level concerns large companies. Therefore, the transition to an innovative-driven economic base will mainly affect the world of SMEs.

[63] As described in the "Trentametro" project dossier, the variables guiding the selection process were as follows: location, accessibility, broadband connection, remediation costs, and the availability of services in the area (Città Metropolitana di Torino, 2019, p.4)

Next to this, local administrations at the municipal level are sometimes taking the lead to meet the needs and demands of industries willing to settle in the area both at the procedural level (i.e. experimentation of simplified processes for administrative procedures within the institution of SUAP) and as regards the urban planning instruments (i.e. territorial equalisation, territorial agreements, planning conventions, settlement agreement “Contratti di insediamento”).

Finally, the only industrial activity present today or which appears as a request is logistics. A sector that has the advantage of reducing the buildability, but at the same time consumes land and does not come with a high number of jobs. One of the key political and strategic actions of the current regional government is the idea of making Piedmont a logistics platform. From this point of view, Piedmont undoubtedly has the potential due to the existing infrastructure network and the system under construction: two European corridors, the proximity to the ports of Genoa and Savona, and the logistics hub of Novara which is progressively becoming the logistics warehouse of the Milan area. In addition to the large logistics hubs, an emerging requirement is that for spaces to accommodate the intermediate level of logistics (this is currently the main theme of the metropolitan PUMS “Urban Plan for Sustainable Mobility”). In an area like Turin, there is an observable lack of intermediate platforms to serve both end-consumer and the medium-sized commercial structures.

Potentials for metropolitan cooperation

The current administrative organisation of the metropolitan city reflects that of the former province of Turin. The form, role and size of the metropolitan area and the number of municipalities to be included within its administrative borders have been debated for decades. At each season, the debate is re-proposed and as noted by some stakeholders, it seems to be more “related to the optimal number of municipalities to be incorporated” within the entity’s organizational and administrative-territorial dimension, “rather than to the content, needs or objective and concrete spatial relationships” that that geographical area must entertain. In 2015, in order to properly disentangle the needs of the extensive metropolitan territory encouraging intercommunal cooperation[64] and sharing the most relevant decision-making processes, the CMTo was organised into 11 homogeneous zones (CMT, 2015; 2018)[65]. Turin, which is a homogeneous zone itself, is at the forefront of the economic development of the metropolitan city[66].

[64] Although the claimed objective, municipal administrators share the belief that the establishment of these 11 sub-areas has formalized a subdivision that has fostered a harsh competition at the local level, not to attract investments but rather to share them.

[65] As reported in the Statutes of the CMTo - Title IV - Chapter I - Article 27 "all homogeneous areas identify a spokesperson and participate in the shared formation of the Strategic Plan and the Metropolitan Territorial Plan".

[66] Source: I dossier delle Città Metropolitane, 2017. Città metropolitana di Torino. Dipartimento per gli Affari Regionali e le Autonomie Presidenza del Consiglio dei Ministri.

Against this framework, many interviewees (especially those involved in the public administration) voiced concern over the implementation process of the new institution. A strong emphasis is posed on the political-institutional role of the metropolitan city, lacking in particular real power in the field of economic development. On the one hand, the CMTo, in fact, is a non-directly elected second level body. This has made its institutional role fragile and has further complicated the political interlocutions with other governance levels (regional and national). On the other hand, the lack of resources and the contraction of the technical staff have had important consequences on its governance capacity. In addition to this, the extensive geographical composition of its territory is conceived as problematic because it disperses both economic and human resources for the coordination of activities. From the interviews emerges a shared nostalgia for the significant role played by the former provincial institution, as an intermediate subject on the vast scale, capable of interacting in an equal dialogue (also within the planning process) with both the municipalities and the region.

In addition, many local stakeholders share the belief that the establishment of the 11 homogeneous zones failed to generate meaningful spaces of dialogue between the different territorial identities able to 'summarizing the diversified needs of the territory'. The lack of cooperation and communication indeed has further impoverished all the municipalities accentuating the fragmentation of this highly heterogeneous territorial context.

There is general consensus that various forms of cooperation and stakeholder networks (more or less formalized and consolidated) have always characterized the Turin area. These governance initiatives appear to be a typical feature of the territory starting from the significant experience of territorial pacts ("Patti Territoriali") - through which it was possible to experiment forms of bottom-up partnerships involving a multitude of public and private actors, sectoral associations and trade unions - continuing with more sectoral projects focused on the development of the industrial districts and innovation clusters on the territory. Emblematic in this sense is the experience of the aerospace district that from being a committee, has strengthened over time its governance structure through an institutionalized cooperation until evolving into a well-established district. A more recent experience, instead, linked to forms of cooperation among municipalities is the "Bando Periferie" project; mainly destined to urban regeneration processes which has also provided for certain mechanisms of facilitation for enterprises. Nonetheless, interviewees express the existence of a significant difference between previous experiences of cooperation and current ones. De facto, the forms of cooperation activated on the territory under the former province of Turin were initiatives capable of consolidating their governance structure over time (getting to be more or less institutionalized), vice-versa; the current forms of cooperation are perceived as ad-interim-experiences whose durability is highly influenced by the availability of funding as the premises for the generation of substantial cooperation opportunities (see Caruso, Cotella and Pede, 2015). As suggested by interviews there are few examples which are reflective of the success of the previous experiences of cooperation: more precisely industrial districts and innovation clusters that have all been managed through cooperation processes.

More differing opinions seem to be linked to whether or not cooperation exist today. If some of the interviews consider the existence of forms of cooperation (even if less formalized and although it is recognized the usefulness of some working tables, some opponents argue that today cooperation does not exist. Not only is there no cooperation, but there is also no awareness of the dimension of a series of territorial phenomena. Undoubtedly, the first limit to the forms of cooperation - as well as to the ability to “make system, as evoked in recent years but which has had a little operational follow-up” (Rapporto Giorgio Rota-Centro Einaudi, 2019 p. 227) - is once again of a highly political nature, namely the lack of a political-institutional subject capable of acting as an intermediate coordinating entity between the various actors in the territory and governance levels. The second economic limitation - which effectively extinguishes the forms of cooperation - can be identified in the lack of resources and funding to carry out the identified projects. As argued by interviewees “usually, if there is available the financial resource, actors will cooperate”. In particular, the lack of public funds has had and continues to have a dramatic impact on cooperation experiences. Thus, as a result, the forms of cooperation are activated when they entail the possibility of working on concepts that - either directly with cooperation funds or in another form - can be financed. However, if the industrial policy is carried out by means of tax credits, it is likely that cooperation will eventually take place at the national level, as today most of the benefits to industry are financed by tax credit mechanisms (e.g. the whole issue of recapitalisation).

Turin centric approach

Moreover, interviewees describe the perception of a Turin-centric approach, where the city is seen as an actor that takes decision without interacting with the metropolitan area and behaves as the protagonist of major changes. Indeed, interviewees voiced concern over the risk that Turin - which is a separate homogeneous area to itself - retains the ‘functions of rank’ and expels those of decidedly lower rank in an absolutely Turin-centric perspective. Furthermore, also at the regional level, actors lament a stronger focus on the city, rather than the wide urban area. The risk is that regional policies fail to represent industrial dynamics of relevant sectors - such as the automotive and aerospace - that extend beyond the municipal boundaries of the capital-city (which is only a part of the entire metropolitan context).

Conflictual political divide/opposition

A further problem weighing on the limits of the metropolitan city’s governance capacity is the political opposition between the centre-right regional administration, and the CMTo, centre-left oriented. This has further complicated the institutional confrontation between the metropolitan city and the region. In fact, the unexpected turn out of last regional elections, after years of centre-left regional governments, have moved the ‘decisional center of gravity’ out of Turin, thus ending up representing more the rest of the Piedmont region than the Turin area. It is in the opinion of many stakeholders that the guiding-logic at the regional level is going towards the progressive redistribution of resources to the other provinces; resources that, in the opinion of many, have focused too much on Turin in recent years.

Potential inspiring cases from the stakeholder city

- I3P incubator (PoliTo): the incubator, which is one of the most long-lived in Italy, is a public incubator resulting from a regional public policy. It is an investment project aimed at the development of the territory that has had a very consistent and highly recognized multiplier effect, especially in recent years if compared to other policies. Recognized as an important place for the development of new entrepreneurship, the incubator is specialized exclusively in hi-tech or deep-tech projects involving innovative industrial supply chains according to a B2B logic.
- Pirelli industrial zone in the Settimo Torinese area. At a time when the factories were relocating and moving the production abroad, the activity of Pirelli has been concentrated in the Settimo Torinese municipality, specializing the production around the manufacturing of high-end tyres with very high technological content (nanotechnology). The reasons why the case is interesting are as follows:
    - the public-private relationship that has been created;
    - the credibility of the public on this operation that has guaranteed to Pirelli the conditions to stay;
    - the quality of the settlement under many respects (which has been designed by Renzo Piano).
- LAVAZZA Headquarters. In contrast with the relocation choices of many companies that have moved out of the city centre - through a detailed plan approved by the city of Turin - LAVAZZA has established its new headquarter in the former ENEL power plant. The intervention has led to the reconfiguration of an entire neighbourhood of the city opening the industrial premises to citizens. The area includes a research centre that employs 600 people, museum, recreational facilities and the design school IAAD among others. This is an emblematic case of servitization (i.e. industrial tourism). The headquarter has been designed by the Italian architect Cino Zucchi.
- TNE and Bio-Industry Park

Summary

Under the changing industrial environment and the transition to a post-Fordist development framework, the former province of Turin, has been challenged by the reorganization of its economic base (see Cotella, 2011; Vanolo, 2015). Despite the knowledge economy turn and economic diversification, alongside the progressive process of tertiarization[67] the strength of the area remains the manufacturing industry with the automotive sector as the dominant one. Next to this, the crisis of Fordism before and the massive structural changes intervened in the car industry after, have been decisive in the spatial phenomenon of industrial re-localization (Vanolo, 2015). Empirical evidence shows that the city has shrunk from industrial function with many factories relocating the production from inner-city location to the outskirts and surrounding municipalities of the first two belts (mostly along the ring road due to the high level of accessibility). The complex geographical structure and institutional-political framework characterizing the metropolitan city has weakened its capacity to direct the economic

[67] As reported by the Urban Center Metropolitano (2016, p. 14) in “La città e i suoi numeri” based on data gathered from Osservatorio Mercato del Lavoro Regione Piemonte and ISTAT (2014; 2015) “in the seventies more than 60% of the working population worked in the industry today 30% of those employed work in the industry while 69% are employed in the tertiary sector”.

development of the area in a homogeneous way. Indeed, there is found the lack of an overall vision for economic development able to deal with the complexity and diversification of the whole urban area. Moreover, cooperation across different institutional levels is still rather problematic also because to date the metropolitan city is not recognized as a “political formation” responsible for the coordination and promotion of the socio-economic development of the territory. As such, there is a shared nostalgia for the role played by the former provincial institution, as the metropolitan city results in a condition of irrelevant strategic coordination and direction.

Next to this, the metropolitan area is economically stagnating and consequently, there is no demand for new industrial spaces. The same applies for residential ones; in other words, there does not seem to be any consistent conflict among manufacturing and other uses. Over the years the deindustrialization process alongside the decentralization of productive activities towards more peripheral areas have resulted in a series of disused sites. In particular, the crisis of recent years - during which many companies shut down their activities and the delocalization of some industries (under the increasing fiscal pressure along with strict environmental regulations); exacerbated this dynamic whereby the number of abandoned areas grew exponentially. Today, despite the impact of the ‘brownfield phenomenon’ (in terms of both financial and environmental sustainability) makes it a highly critical topic on the political agenda, stakeholders lament the lack of a structured vision. This is reflective of the absence of adequate tools, but according to some interviewees it is also emblematic of “a system that relies on emergencies and on occasional conditions”. Arguably, a series of public measures/actions directed at facilitating the regeneration of brownfield areas by increasing the objective advantages of these transformations, need to be put in place. Particularly considering that in the last years, real estate has never been able to generate consistent demand for either residential, industrial uses.

1.1.6 Vienna metropolitan area case study

Main demographic and spatial development trends

Spatial planning as well as economic and social policies in the city of Vienna have traditionally been based on a firm belief in an important role of public authorities in accompanying, monitoring and, where necessary, correcting the results of market processes. This tradition continues until today. The city has a large share of social housing[68] that is rather evenly spread around the city and is owner of a number of enterprises in public transport, utilities, culture and event management and in the housing sector. The city has also been repeatedly ranked as one of the top locations in terms of quality of life in recent international rankings.

Economically the city has, however, been strongly affected by the massive internationalisation of the Austrian economy in the last 3 decades (which included the opening of Central and Eastern Europe, the accession of Austria to the EU, and the increased openness of the country to world trade). On the one hand this led to a substantial restructuring of the economy that was still strongly oriented towards less productive and in some instances sheltered industries and production up until the late 1980's. This has led to a de-industrialisation in which the share of manufacturing in employment decreased to around 5.5% in 2019.

On the other hand, this internationalisation also led to a substantial immigration of people both from within the country and abroad. As a consequence, the share of foreign born in the population aged 15 or older has increased from 22.9% in 2004 to over 39.9% in 2019. Thereby, the city evolved from a shrinking to a significantly growing metropolis and transformed from being the demographically oldest Austrian federal state to the demographically youngest in the same period. This ongoing immigration was fuelled inter alia by repeated refugee waves (e.g. from former Yugoslavia in the 1990s and more recently from Afghanistan and Syria), labour and educational migration (from the CEE countries in the 1990s and again since 2004 and 2011, and Germany in the late 1990's and early 2000's) and family reunion (primarily from former Yugoslavia and Turkey). The integration of these new arrivals into the Viennese economy – in particular of the low skilled among them[69] - is seen as one of the major economic challenges for the city by many.

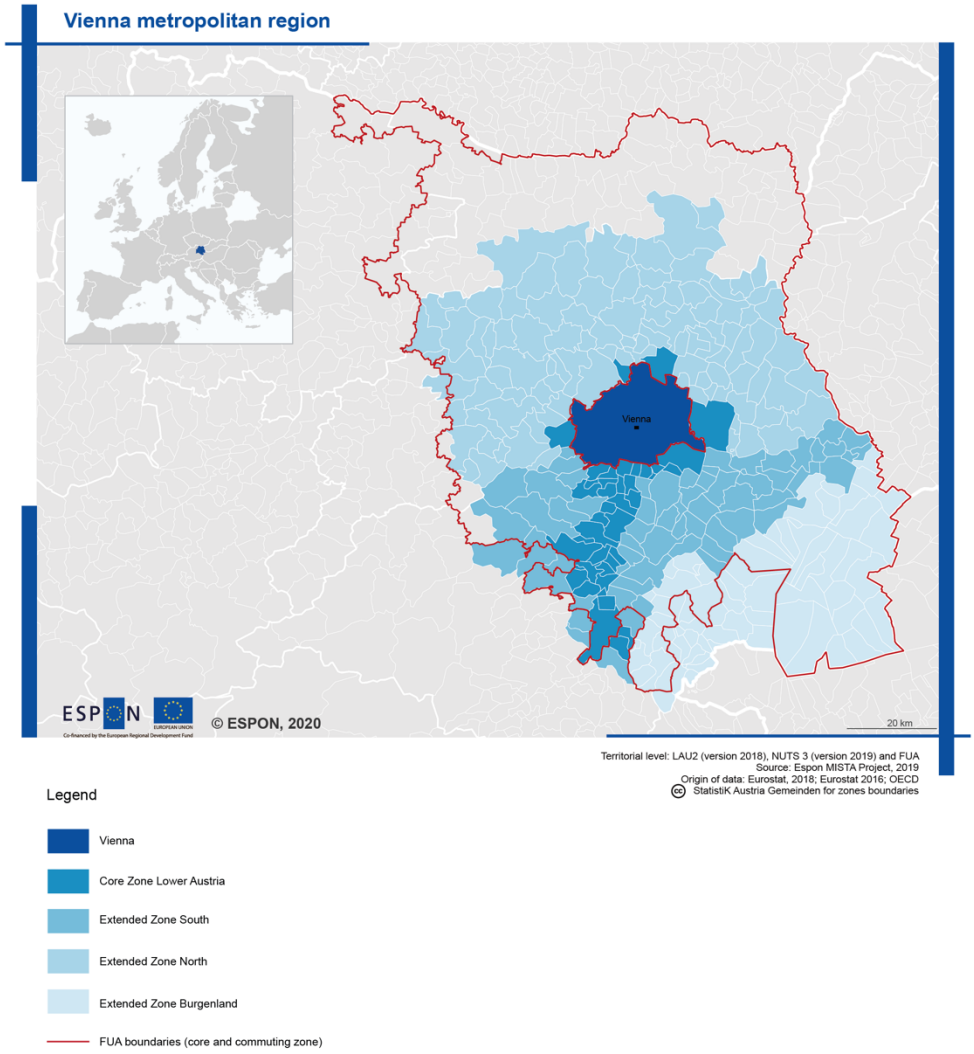
Today thus Vienna is a highly internationalised and diversified location both in terms of population and economic structure. It is also an important location for research and knowledge-intensive business services as well as for headquarters to serve the neighbouring Eastern

[68] Estimates indicate that 45% of the homes in the city are state supported housing and 22% of the apartments are owned by the city.

[69] Low skilled foreign-born workers usually work in the construction sector and in tourism. On account of this, the share of manufacturing in total employment of foreign born is lower than among the natives.

markets. In addition, Vienna is the city with the largest number of university students in the German speaking countries.[70]

Figure A.5.7: The larger Vienna region (Stadtregion+)



**Source: MISTA Team illustration*

***Source: Planungsgemeinschaft Ost (Hrsg.), "stadtregion+ Zwischenbericht. Planungskooperation zur räumlichen Entwicklung der Stadtregion Wien Niederösterreich Burgenland", PGO, Wien, 2011.; Statistik Austria; WIFO.*

Vienna is also economically deeply integrated with its environs. According to recent estimates 260.000 workers and 36.000 students commute to the city from other locations in Austria on a daily basis and 90.000 workers and 5.000 students commute out of the city for work every day. Further, a recent study suggests a strong complementarity of production in the city with that located in the larger Vienna region and further potentials from economic cooperation: According

[70] According to recent estimates around 190.000 students are currently studying in the 23 private and state-owned universities and universities of applied sciences.

to this study enterprises with around 220.000 employees (16% of employment) work in sectors that profit from strong knowledge linkages to sectors mainly located in the larger Vienna region. These employees could thus substantially profit from increased co-ordination of industrial policy between the regions.

The concept of the larger Vienna region has been defined in different ways by different actors at different times and - since there are no formal requirements for the co-ordination of spatial planning or economic strategy across federal states, - the concept has remained vague. The generally most accepted definition is that of the Stadtregion+.[71] This definition is mainly based on travel to work areas and divides the larger Vienna region into an inner core and an outer zone. The former encompasses Vienna and municipalities contingent to Vienna as well as municipalities located directly at the main transport lines connecting Vienna to the South. The outer zone covers areas in two Austrian federal states outside Vienna (Burgenland, Lower Austria). For many analyses – due to marked differences in economic structure and accessibility - this outer zone is divided into a northern and southern part and a part located in Burgenland.

The federal states that are part of the larger Vienna Region differ markedly in terms of their geographic features. Lower Austria is the largest Austrian federal state in terms of territory and is marked by a rather heterogeneous internal structure. The area around Vienna is a typical suburban region, which hosts important industrial enterprises, but also a fair amount of services (e.g. retail trade) that supply the city. The central parts of Lower Austria to the west of Vienna are locations of manufacturing and (next to many larger enterprises) also host a number of highly specialised SMEs in the machinery and metal working sector, that have been considered the backbone of Austria's economic competitiveness in many analyses. In the north and the south, by contrast, the region is more peripheral. Burgenland, by contrast, is the smallest federal state of Austria (both in term of population and territory) and was considered a periphery until the 1990s. Since then – as Austria's only objective 1 region - it has profited from EU funds and the fall of the iron curtain and has been the fastest growing federal state of Austria for most of this period.

Next to linkages to other Austrian regions also linkages to the neighbouring countries are of relevance for Vienna as it is located only 60 kilometres from Bratislava (the Slovak capital city), 90km from the Czech and 80km from the Hungarian border. This vicinity has led to an estimated 90.000 cross-border commuters (mainly from Slovakia and Hungary) mainly working in eastern Austria and thus the Vienna region. It has also led to repeated attempts to organize closer co-operation with the regions in neighbouring countries either between the two "twin" capital cities

[71] This is an analytical concept that was introduced in a number of studies commissioned by the Planungsgemeinschaft Ost (PGO), which is an institution to discuss and informally co-ordinate spatial development in the Eastern region of Austria (i.e. the federal states of Burgenland, Lower Austria and Vienna). As such there is no political organisation responsible for the economic development strategies or spatial planning of that region

of Vienna and Bratislava or between all regions bordering on Austria (in the so called CENTROPE initiative[72]).

Despite being mentioned in all strategic and planning documents the issue of cross-border policy co-operation has lost in political priority in recent years, however. In part this is due to a normalisation of relationships, where the feeling is that economic co-operation across borders is functioning without problems and requires less policy attention. In part this is due to a lack of concrete results and therefore a certain disillusionment of the partners involved. Thus, currently the main form of concrete joint cross-border co-operation is mainly done in projects provided in the various INTERREG programmes, in which Vienna has repeatedly and forcefully lobbied to be included, despite its lack of a direct border with the Czech Republic, Hungary, or Slovakia.

Main trends in the development of the economy and manufacturing

Economically the ongoing structural change in Vienna paired with high population growth has resulted in increased problems to match the qualifications of the growing labour force with the structure of labour demand. Thus, the unemployment rate is the highest among the Austrian federal states (11.7% in 2019 according to the national method of estimation compared to a national average of 7.4%). This high unemployment is related to the rapid structural change of the city and is caused by a mismatch between the qualifications of the labour force and the qualification needs of the enterprises, to a large degree. Consequently, despite high unemployment, enterprises in the city and even more strongly in the metropolitan region have repeatedly complained about a lack of qualified labour. This mismatch is also related to the loss of in particular low-skilled and manufacturing jobs in the city in the past.

For most of the last two decades GDP has been growing at par with most other capital cities in the EU, but below the Austrian average and has also not been able to keep pace with the speed of population growth. Consequently since 2016, the GDP per capita of Vienna – that was traditionally the highest among all Austrian federal states – has fallen to the second place behind Salzburg. Before the current crisis induced by the Corona virus, which has led to a massive increase in unemployment and an almost complete standstill of the economy, there have been signs of a slight improvement in economic performance of the city as GDP and employment growth reached the Austrian average in the last two years.[73] In addition, there have also been signs of a slight reduction in demographic growth, from between 25.000 to over 30.000 persons per year for most of the last decade to around 15.000 last year.

Current forecasts expect that the more moderate recent population growth will continue in the next decade such that Vienna's population will grow by 100.000 inhabitants until 2030. At that

[72] The territory of the CENTROPE region is defined as the Czech and Slovak regions of Vysocina, Southern Moravia, Bratislava and Trnava, the Hungarian regions of Györ-Sopron, Zala and Vas as well as the Austrian states of Burgenland, Lower Austria and Vienna.

[73] Recent estimates suggest that Vienna on account of a high share of industries that are heavily affected by the corona virus has also been disproportionately affected from the current crises and will also feel its long term effects even more strongly than many other Austrian regions.

point in time Vienna will host over 2 million residents. Economically the current medium-term employment forecasts, that were, however, published before the current crisis, predicts an average employment growth of 1,4% annually until 2025 for Vienna. This is slightly higher than the national average (1.3%). According to this forecast employment in manufacturing should continue to decline slightly also in that time period, while the fastest growing sectors are expected to be publicly financed services, information and communication as well as professional, scientific and technical activities.

The demographic growth – despite slight moderation in the last few years – and the resulting substantial increase in housing prices has led to an increased importance of the topic of affordability of housing in the political and public debate and (in part as a consequence) a substantial increase in investments in public housing. These major investments have resulted in the completion of an average of 10.000 apartments in new housing units annually since 2015 (compared to 5.000 on average per year in the decade before). They have also resulted in the development of completely new residential areas (e.g. around the newly constructed main railway station or the Seestadt Aspern) that have been the "headline topics" of urban development in the city in the last decade.

These increased construction activities have also led to public debates related to the provision of infrastructure in the new residential areas. Despite these controversies, however, the feeling expressed by many actors is that on the one hand planning processes for residential quarters have been substantially improved in the last decade[74] and that on the other hand the infrastructure challenges posed by rapid residential development may be slightly smaller in Vienna than in other cities, on account of the city already having numbered 2 million inhabitants in the 19th century. This implies that at least some of the infrastructure of the city is already geared to such population sizes, although current infrastructure and mobility requirements differ markedly from those in the 19th century, of course.

From a sectoral point of view one of the main drivers of GDP and employment growth in recent years have been the knowledge intensive business services, which have profited substantially from the demand in the nearby more industrial region. Next to this tourism has been booming, due to the many touristic attractions in the city and the international trend of growth in city tourism.[75] Manufacturing employment, by contrast, has slightly declined in the 2010's.

This negative trend has been caused by continued restructuring within manufacturing to more city affine, knowledge-intensive and wage cost resistant activities (higher-tech-manufacturing, knowledge-intensive services). The rate of this decline was, however, more moderate than in the 1990s and 2000's, when issues such as the closure of large firms and the relocation of manufacturing to the outskirts of the city were quantitatively more important. The reason for this

[74] One example of this is that the newly developed residential area in Aspern was served by the underground system already at a time when construction was still ongoing.

[75] This has also led to policy debates related to „over-tourism" in the city on occasions.

is that there are only few low-skilled manufacturing jobs – as prototype jobs for such relocation – that are still located in the city and because there is also an increasing reluctance in the municipalities outside Vienna to attract productive activities, as these have already attracted many sites and have increasingly shifted to “not in my backyard” type policies.

The negative trend has also been associated with substantial internal restructuring of the productive sector. On the one hand this has resulted in an increased share of high-tech and high-skilled manufacturing in the city of Vienna. This trend continues to this day and is amongst others driven by the still sizeable wage cost differential to neighbouring countries. It also implies that a substantial part of the manufacturing sector enterprises in the city have specialised in in the dispositive function of the division of labour within enterprises (i.e. headquarters, research and development and other strategic functions), while activities related to actual production and assembly are conducted elsewhere (either abroad or in other parts of Austria). It has also led to an increasing demand for representative office space in locations close to the city centre and/or close to research facilities. Also, these trends are continuing to date.

Within manufacturing in particular the Biotech and Pharmaceutical industry has experienced substantial investments in recent years. This is mainly due to the investments of large firms (in particular Boehringer-Ingelheim) that has expanded its operations in Vienna substantially. Aside from this a number of smaller firms in this sector have also grown, but their contribution to overall growth was lower due to a smaller size. Next to this, further specialisations of the manufacturing sector are in the manufacture of transport equipment and (to a lesser degree) in machine building. These have experienced more modest growth or decline decline in employment in the medium term as have the electrotechnical and electronics industry. In the former industries this seems to be mainly due to the (relative to the Biotech industry) slower market growth. In the electronics and electrotechnical industry, by contrast, also structural change has played a crucial role, as here the production structure in the city has increasingly shifted away from hardware components to software.

Main factors affecting location choices of manufacturing

With respect to production, the housing boom in the city has also led to a replacement of area devoted to productive uses by areas for residential use. In some cases, this has implied residential uses have also been allowed in areas that host industrial uses that are difficult to reconcile with residential areas. In general, the perception of most actors in the city is thus that providing adequate housing for the growing population has been a more important priority for policy makers than providing space for industrial development: different actors however, disagree on the extent to which this is the case and as to whether this prioritization of housing development is appropriate or not.[76] Irrespective of this, given the high financial returns that can be expected from shifting industrial land to residential uses, according to anecdotal

[76] This applies for instance to the area around the new central railway in Vienna but also some areas in industrial zones in the south of Vienna

evidence even SMEs sometimes find it difficult to resist this temptation, even if this goes against their business model. [77]

Whether such issues are quantitatively important or not is, however, heavily debated among the actors and empirical evidence on this general perception seems to be rather limited on account of a poor data situation. According to the city's development plan, in the period until 2015 an estimated 100 hectares of land originally earmarked for production has been dedicated to other (mostly residential) uses.

In general, the central motives for production firms to invest in the city of Vienna or to locate here are related to market access, to profiting knowledge externalities and other spillovers (in particular from the university and research centre). Market seeking motives are of particular relevance mainly for CEE-headquarters (which profit from vicinity to CEE markets and are often trading firms and thus associated with wholesale trade), and the mostly upstream small-scale production consumers (that are seeking to satisfy demand of the local consumers). Externalities are of high relevance in the manufacturing sector. these firms are therefore often interested in the industry specific research infrastructure (universities and research institutions) in the city.

By contrast, Vienna has no comparative locational cost advantages (both in terms of land prices and wage costs). In terms of wage costs the neighbouring CEE countries are more competitive and in terms of the availability and price of land also the neighbouring regions are better equipped. These areas are also relevant for the move of some production enterprises out of Vienna. In particular here moves from the Vienna to outskirts are often driven by expanding enterprises, who cannot find land for expansion in their neighbourhood. In this case choice is to relocate within Vienna or somewhere outside. In this decision often the surroundings have a comparative advantage due to lower land prices and more flexibility for future expansion. By contrast moves of enterprises form Vienna to other countries are usually decisions taken in the headquarters of the firms abroad (i.e. not located in the city) and are driven by cost and market growth considerations. For production, cost motives (almost) entirely dominate. For services and in particular CEE-sales headquarters, once markets in the CEE grow enough the firms needs an own headquarter for the respective country, it is a decision of the MNE headquarter whether they also retain a CEE headquarter in Vienna or move operations entirely.

In general, this relocation of firms is, however, seen as a process that – despite its repeated discussion in the public debate - is natural in a tightly interacting locality. This is particularly so as there are also activities that move into city (often related to the Biotech and the Pharmaceutical enterprises or with CEE headquarters, but also applying to many other

[77] While official data are hard to come by and land prices vary considerably among locations in the city, circumstantial evidence indicates that prices for residential land are 3 times higher than for industrial land in Vienna.

branches[78]) from other regions. The central locational advantages usually emphasized by these firms is the high quality of life, the international flair of the city (with a large number of expatriots), the location, and - despite problems with recruiting high skilled labour reported by some firms – the high qualification of the labour force, that – in contrast to other parts of Austria – has its strongholds less in the traditional crafts and more in a tertiary educated labour force.

Development preferences of the city (region) leadership

The city of Vienna is an important actor in economic policy, inter alia because it is also owner of a large share of the housing stock and of most main public facilities serving the city as well as of the main urban infrastructure enterprises and many cultural facilities. Further, the city has own lines of funding and specialised institutions in most policy areas (e.g. the support of enterprises, support of unemployed and R&D). Although this support has a more limited impact compared to the (very differentiated) system of national and supra-national funding, these are of relevance for the funding of certain subsystems of the city (e.g. the funding of the Universities for Applied Sciences or certain cultural institutions and events). Finally, the city has also taken a very active stance in macro-economic policies in the cases of the financial crises of 2009 and also the current Corona crisis.[79]

Next to the city administration also the local social partner organisations (i.e. Trade Unions, chamber of labour, chamber of commerce, Federation of Austrian Industries, Chamber of Agriculture) are important policy actors. Their staff serves as experts in many of the policy initiatives of the city, in addition they initiate certain policies and in parts jointly implement specific programmes.[80]

The central strategic document for spatial planning is the spatial development plan of the city (STEP 2025). This contains separate strategic concepts for open and public spaces, mobility, energy, high-rise buildings, polycentric development and for production (see below for details). In terms of economic strategy, it is augmented by a smart city strategy as the framework strategy for economic development of the city. This is a strategy on which all further strategy documents are based and was originally designed in 2014 (and updated in 2019). It sets the main objectives and strategies for development of the city, with respect to (1) quality of life (2) resource efficiency and (3) innovation and sets quantified objectives[81] in a total of 12 topical

[78] Next to these “headline topics” there have also been important investments by many other firms working in other industries (e.g. DHL in logistics) or investments by firms have resided in Vienna for some time (e.g. Henkel, Siemens).

[79] A recent example of this is the current Corona crisis where the city rapidly issued a € 50 Million package to support enterprises of special importance for Vienna, through becoming a stakeholder.

[80] Recent examples for this include the plan for qualification (Qualifikationsplan für Wien) and the pact for a growing Vienna (Bündnis für das wachsende Wien) as two central strategic documents in which the social partner organisations are signees and partners in implementation.

[81] As headline objectives these include making Vienna the city with the highest quality of life and life satisfaction worldwide, reducing energy consumption and the environmental footprint by 50% each as well as making Vienna an innovation leader.

areas until 2050 and provides the framework within which all detailed sectoral strategies of the city operate.

At an analytical level below this, the most relevant strategy in the current context is the recently presented economic strategy "Wien 2030: Wirtschaft und Innovation".[82] This together with sector plan for production (Fachkonzept Produktive Stadt), which predates this document and is more strongly focused on spatial development, summarizes the current economic strategy of Vienna. It organizes the main economic objectives of the city around five central topics (smart solutions for urban spaces, health metropolis, digitisation, smart production, city of international meeting and cultural and creative metropolis) and 10 fields of action (education, labour market, universities and research, Climate change and adaptions to climate change, infrastructure, innovative administration, innovative milieu, regulation, support institutions and location marketing).

Tools through which the municipality is able to control development processes

According to the Austrian constitution the implementation of spatial plans is a joint task of the federal states and the municipalities, with the federal state responsible for the (macro-)regional aspects but the municipalities responsible for local planning. The federal states, however, have very few practical instruments at their disposal through which they can motivate municipalities to design a spatial plan that is against their own interest. In practice therefore the federal state can prevent the municipality to set certain activities, but it cannot trigger new local developments.

Further, each federal state has a spatial planning agency, as well as an own agency for enterprise and innovation support and an own economic development plan, which are all instrumental in influencing the development of the region. The institutions governing this system are also regulated by laws of the federal state. In consequence each state has slightly different procedures and institutions responsible for spatial planning. This system is usually argued for on historic grounds, the strong regional identities of the population of the federal states and the extremely varied geographic structure of Austria. It has also inter alia allowed for instance the city of Vienna to follow a markedly different route with respect to housing policies than most of the other Austrian federal states. It does, however, also lead to a rather fragmented and varied institutional landscape in the areas of economic policy and spatial planning, which increase the co-ordination costs across federal states.

[82] The city also has many further sectoral strategies that refer to this framework strategy and are of relevance for economic development. These include (but are not limited to) strategies for the implementation of smart solutions for urban spaces of the 21st century, the development of the health metropolis, digitalisation, smart production, energy security for the support of international meetings, and the development culture and creativity.

In addition, institutions that have the task to co-ordinate spatial planning across federal states (such as the Austrian Conference on Spatial Planning – ÖROK[83] – for all federal states in Austria and the Planungsgemeinschaft Ost – PGO[84] - for eastern Austria) have no regulatory powers, such that their effectiveness relies to a large degree on the goodwill of the federal states.

The situation is slightly less complicated in Vienna, as it is both a city and a federal state. This implies that both the framework plans and implementation of spatial planning are in a single hand, which according to some observers has been an asset in the phase of increased demographic growth.

Financially, according to the system of fiscal federalism in Austria municipalities receive taxes that are closely related to wage bills but also profit from increasing per capita funds for each resident through the fiscal transfer system if they exceed a population size of certain thresholds. The costs of new enterprises as well as additional residents, by contrast, are mainly related to infrastructure (water, transport, parking, electricity...) costs. It is thus not clear whether increasing population size or attracting new enterprises is fiscally more lucrative for municipalities. In general, however, increasing population is very attractive close to population thresholds. By contrast, whether settling a firm is profitable or not hinges critically on its costs and multiplier effects. Thus, in general firms are of profit for municipal finances if: wages are high in the firm, there are low infrastructure costs and if there are close linkages to other firms in the region.

Next to these general considerations, planning documents provide guidance for the way how the city wants influence land use. In this respect the central objective of the sector strategy for production (Fachkonzept Produktive Stadt), which is the central concept for economic uses, is to secure sufficient spaces for economic uses, by on the one hand designating special areas for economic development and on the other hand increasing the land available for economic use by increasing the mixed use areas. According to this document there are currently land reserves of 2.100 hectares dedicated to productive uses in the city.

The plan therefore concludes that in general there is sufficient space available for economic purposes in Vienna. In practice not all of this space, however, is available on the market as it

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[83] This is an organisation established by the federal government, the Länder and municipalities to coordinate spatial development at the national level. It is chaired by the Federal Chancellor and its members include all federal ministers and heads of the Länder, the presidents of the Austrian Association of Cities and Towns and the Austrian Association of Municipalities as well as the heads of the social and economic partners with a consulting vote. One of the central areas of work comprises the preparation and publication of the Austrian Spatial Development Concept the latest of which dates from 2011 and reaches over a decade. It is also an important co-ordinating body between the internal and the European level as it drafted the partnership agreement (STRAT.AT 2020) for the European Structural and Investment Funds.

[84] This is a joint organization of the federal states of Burgenland, Lower Austria and Vienna for the coordination, and preparation of questions relevant to spatial planning in the Austrian "Eastern Region". Its aims are to provide analyses for the eastern regions and to use these to formulate common spatial development aims of the three federal states of the eastern region of Austria.

belongs to private actors that are unwilling to develop the land, potentially in the hope of future rezoning. To improve the mobilisation of this land a recent reform in zoning regulation allows for conditional zoning. Under this regulation a granted zoning change from industrial or other uses to residential uses) can be withdrawn if the applicant does not develop the respective area within a certain time period.[85] In this case the land will be rededicated to its regional use (e.g. industrial or other).

This regulation is, however, rather new and its effectiveness is heavily debated. Thus, while the largest part of the observers considers the instrument as an improvement over the previous situation some voice concern that implementing this regulation may be difficult politically. The reason for this is that withdrawing a granted zoning change has a huge impact on the land value which may be difficult to impose against the interests of landowners for those responsible for the withdrawal (who are the mayors). Irrespective of whether this is the case or not, instances where this regulation have been implemented are extremely rare and it is probably still too early to know how this regulation will work in practice.

A further important asset through which the city can influence development is the sizeable land ownership of the city and its organisations. Thus alone the Vienna Business Agency owns around 300 hectares of land (approx. 1% of the territory of the city) that is earmarked for economic uses.[86] As in many areas with this land too one issue is to ensure that it is used according to plan, as incentives for enterprises to use this land for residential development if this is allowed are high.

Potentials for metropolitan area cooperation

Despite the existence of some co-ordination mechanisms for spatial planning at a strategic level and the availability of platforms for such co-ordination, joint spatial planning and/or joint economic development at the strategic level is little developed in the Vienna metropolitan region. There currently is no binding joint planning and there are also no binding joint strategic plans with respect to economic development. The reason for this lack of strategic co-ordination is, usually seen in the combination of (1) a complex institutional framework conditions (described above), (2) a lack of common interest - as the Vienna environs until recently had access to ample land reserves and could thus automatically profit from the vicinity to Vienna without such co-ordination, (3) a lacking structural fit and many involved partners - as the

[85] Another recent change to zoning regulations has been to intrduce an own zoning category for subsidized housing. The hope is that this will improve the availability of affordable housing in the city.

[86] A large part of this land is located in the Seestadt Aspern, where there are numerous development projects ongoing at the moment.

municipalities in the Vienna environs are often small (the smallest of them has just 100 inhabitants) and numerous[87] and (4) a lack of national support for such co-operation.[88]

With respect to the different interests of neighbouring municipalities and the city there has, however, been a slight change in recent years, as some municipalities have recently also run into land restraints and have announced that they are not particularly interested in further demographic (or economic) growth. This applies in particular to municipalities located in the south of Vienna that has traditionally been privileged over the north in terms of population growth and economic development. In this respect a number of observers note the increasing prevalence of not in my backyard type policies on the outskirts of Vienna.

Co-operation at the more operative level is much better developed. This for instance applies to the area of public transport, where a joint transport association (the Verkehrsverbund Ostregion) serves the complete territory of the eastern part of Austria. Although this too has not gone uncriticised by some actors, as investments plans for individual means of transport systems remain in the responsibility of the individual federal sates, which inter alia implies that the part of the public transport system owned by Vienna (i.e. subways, trams and busses[89]) ends at the city borders, and a lacking co-ordination in the design of support infrastructure (e.g. park and ride systems) this has led to integrated time schedules and ticket prices and also rising demand for public transport in the region.

Similar observations apply to the Vienna airport, which is jointly owned by the federal states of Vienna and Lower Austria as well as the central state. Here too there have been long-standing issues related to the public transport accessibility of the airport from Vienna that have only been solved recently. Nonetheless the development of the airport has been successfully managed to the most part.

A further example is location marketing, where the Vienna region (defined as Vienna and Lower Austria (and sometimes Burgenland)) aim to jointly market the Vienna city region as a location for production. This co-operation is not conflict free, as the involved Länder (and indeed even municipalities) regularly become competitors for the settlement of investments once projects are sufficiently concrete. The strategy here has, however, been to co-operate in phases of

[87] Next to the city of Vienna, there are over 270 municipalities in the larger Vienna area, many of these have less than 200 inhabitants and the smallest numbers 98. Co-operation thus would often imply co-ordination between partners with rather different population size, political weight and also factual competence, which increases concerns on the side of smaller municipalities about negotiations. Also, a co-operation including all these partners would be very difficult to organise.

[88] In addition, different actors, while almost unanimously in favour of increased co-operation name a plethora of further reasons reaching from cultural to political reasons.

[89] As a consequence, the transport systems serving both Vienna and its surroundings is predominantly owned by the central state (i.e. railways and buses) or private owners, whereby the latter, however, have only a low share in the total market.

settlement that precede this concreteness of plans and to more openly communicate strategies in the more concrete phases.[90]

Finally, Vienna has also established an institution to manage connections with and among its environs at a more local level (so called Stadt-Umland management). This aims to foster contacts and information flows between and amongst the mayors of the Lower Austrian municipalities and the districts of Vienna and has two parts: one responsible for the north of Vienna and one for the south. While this management has no formal powers, it holds regular information meetings, have developed joint project data bases and in general aim to provide networking services for the involved municipalities.[91] The institution is, however, rather small in terms of staff and has limited capacity only.

In general actors involved in co-ordination activities make a strong distinction between the strategic, "political" level and the more pragmatic operational level. In the former they often perceive an increased disinterest in co-operative policies and a reversion to "my place first" policies.[92] Concerning the latter they, by contrast, describe relationships as much more pragmatic – although not frictionless - and also often state that the joint actions at this level are built on the understanding that politicians need their space of action too. Almost all of them, however, emphasize the increased complexity of their job that is caused by the missing strategic and explicitly political level in the co-operation.

Further many also stress that at a more local level co-operation between municipalities and Vienna is somewhat problematic, due to the large number of actors and the small size of many of the municipalities outside Vienna. Additionally, this co-operation is hampered by the much lower autonomy of the Viennese districts, relative to the often much smaller municipalities in Lower Austria.

Summary

In sum the city of Vienna, in part due to its geographical location and on account of increased globalisation, has been faced with high population growth and massive structural change since the 1990's. In the course of this the city has been faced with increased unemployment, has seen the share of manufacturing in employment to drop to around 5% only. This has inter alia contributed to a loss of low skilled employment and rising unemployment due to skill mismatch. Despite this, however, the city has maintained its extremely high quality of life and regularly scores among one of the top locations in standard international rankings of life quality. The city

[90] Interaction in this area seems to be rather frequent, as the relevant actors meet on a quarterly basis.

[91] One important result of these activities was the development of a joint enterprise zone of 8 municipalities in Lower Austria (Kommunalverband Marchegg), with the aim of jointly developing land for enterprises and sharing the resulting tax revenues. This joint enterprise zone, however, does not include Vienna.

[92] At the time of the interviews this perception was fuelled by public statements of the mayor of Vienna that residents of Vienna should receive precedence over other applicants, for jobs in the Vienna city administration and ongoing debates about the introduction of a city toll in Vienna.

is also an example of a very powerful economic actor that has traditionally taken a very active role in the housing market and its economy.

Given the rapid population growth of the city in recent years, however, issues of affordable housing and providing living space have arguably received more public attention than issues related to securing and developing land for economic uses. In particular, the intensive construction activities of the housing sector have led to new challenges related to the mobilisation of land, that is in principle available but not marketable, and to preventing the use of land for productive uses to be replaced by residential uses. It has also led to a sizeable part of the land being rededicated to residential uses. Policy in the city has, however, recently reacted to this by defining strategies that put a strong emphasis on securing land for productive uses, and also new instruments to mobilise land have become available.

These instruments have so far, however, rarely been used and it is yet too early to judge how the policy measures will work out in the future. Irrespective of this the lack of existing systems to monitor land use patterns, - irrespective of whether they pertain to the Vienna metropolitan region or the city's administrative area - are clearly a limiting factor in implementing the existing policies.

In addition, one challenge specific to the Vienna metropolitan region is the lack of a clear co-operative strategy within the larger Vienna area, which includes both territories in the Austrian federal states of Burgenland and Lower Austria as well as the neighbouring countries. While strategies to co-ordinate with the neighbouring countries have recently received less political attention. With respect to co-operation with the Vienna environs, there is actually quite intense co-operation, focusing on practical issues, such as joint infrastructure development. Many actors, however, also state that these co-operations are hampered in their effectiveness by the lacking strategic and political framework for such co-operation and the complex institutional framework within which such operation occurs in Austria. Devising instruments that allow for such co-operation, without excessively impinging on the autonomy of municipalities in Austria is thus a major challenge for the political actors in the Vienna region.

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1.1.7 Warsaw metropolitan area case study

Main demographic/social and spatial development trends

City of Warsaw

Population of Warsaw was 1.78 million in 2018[93], which meant a moderate, 5 % increase since 2001. However, other non-official statistical data shows a higher number of inhabitants estimated around 2.1 million people as city users (some 150 thousand people not registered people, and data from service companies such as sewage, etc. show over 2 million people).

The last Master Plan[94] of the city was made in 2006 and it envisioned 3.5 million inhabitants in the future, based on the huge amount of available land and the fact that the share of the capital city to the country is one of the lowest in Europe, both in terms of population and GDP (5% and 10% respectively) despite that the surface area of the city is one of the largest in Europe, 517 sq km. Thus, there is a huge room for more concentration.

Although this forecast was too optimistic, the migration balance is positive for the city as the inflow to the city is higher than the outflow. Thus, migration can be regarded as the main source of population growth primarily due to internal movement (from other parts of Poland to Warsaw). Nevertheless, a significant number of immigrants have arrived from Ukraine, Belorussia, but also from further away countries but internal migration (from other parts of Poland to Warsaw). The new Master plan being currently under elaboration, counts with 2.5 million city users by 2050.

In the last decade significant housing construction activities have been going on in the city despite the officially moderate population growth. Since 2011 averagely more than 10 thousand units were built annually. The housing shortage inherited from the socialist past was a main reason in addition to the fact that the number of actual inhabitants might have increased faster than the official data shows. Besides housing, office building construction also heavily formed the city's landscape by creating new monofunctional office districts, which recently is seen as a less positive development.

Metropolitan area

There have been several different delimitations of the metropolitan area of Warsaw. The former metropolitan area was officially determined in 2006 and consisted of Warsaw and 71 communes located in 13 counties. However, from 2018 a new delimitation came into force which divided the Mazovia voivodeship (the former NUTS2) into two NUTS2 regions, one comprising of Warsaw and its surroundings, now named Warsaw Capital Region while the other NUTS2 region is the rest of the Mazovia voivodeship (region). The new metropolitan area comprises 69 communes (in 9 counties) besides Warsaw. As the map below shows several

[93] Source: https://bdl.stat.gov.pl/BDL/dane/teryt/tablica

[94] Master Plan is called „Studium uwarunkowań i kierunków zagospodarowania przestrzennego" in Polish (Study on the conditions and directions of spatial development).

communes on the western part were detached from the previous metro area and others in the East were attached to the present one.

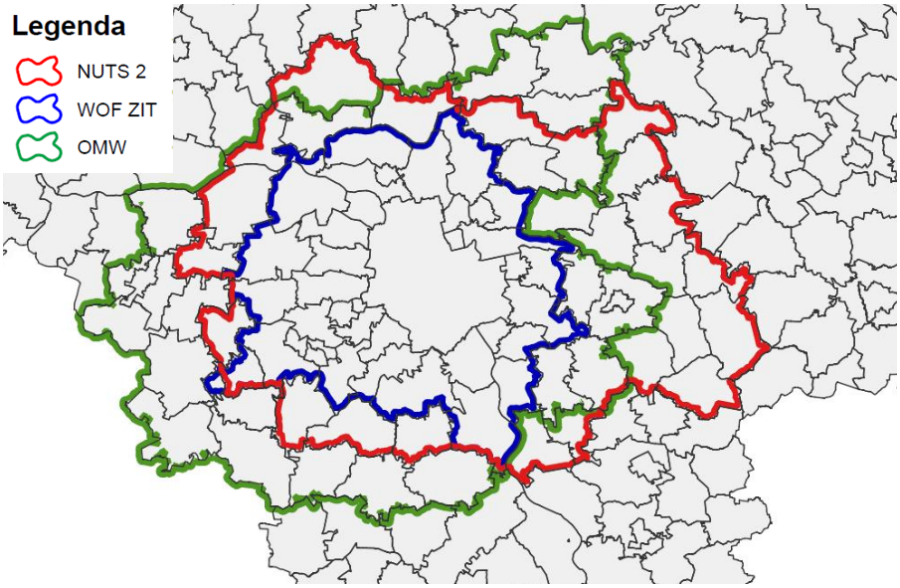
The idea of changing the previous functional delimitation of the metropolitan area was put forward for practical reasons, namely, to enable the rest of Mazovia voivodeship to get access to EU funds on larger scale. Warsaw and its surrounding communes have significantly higher GDP per capita than the rest of the voivodeship, but being in the same NUTS2 region the average indicators were higher also for the poorer parts of the region. Splitting the region has made it possible to separate that part of the region that should still receive the EU support.

The present metropolitan area, which is a NUTS2 region at the same time, has around 3 million inhabitants[95] and covers 6104 sq km. Nevertheless, it is only a statistical category and does not have any governance structure. Furthermore, it does not cover the real functional urban area, which goes more to the West and South from Warsaw (they are also the richer communes). Nevertheless, in the future this metropolitan area will be the subject of metropolitan cooperation. The government has been also considering to split the current voivodeship into two according to the NUTS2 division. This would have a very negative effect on Warsaw and its metropolitan area as it would mean that they should pay higher financial contribution to the government to finance the poorer voivodeships in the country. Consequently, this plan is highly criticized by Warsaw.

It is also worth mentioning that in the 2014-2020 programming period the EU funded Warsaw ITI (Integrated Territorial Investments) includes only 40 communes (with 2.7 million inhabitants) planning together major EU funded infrastructure developments. ITI does not have any official organisational structure either, it is led by a steering committee consisting of representatives of the affected municipalities. Nevertheless, the cooperation was good between the communes, and the ITI is still regarded as a successful collaboration.

Figure A.5.8: Different delineations of the metropolitan area

[95] Regarding demographic trends of metropolitan area no long-term data are available because of the change in its delimitation.



Borders of the new "capital" NUTS 2 area (red), the ITI area (blue) and the Warsaw Metropolitan Area (green) according to the previous delimitation

Table A.5.4: *Main characteristics of Warsaw city and Functional Urban Area*

	Warsaw City			Warsaw FUA*	Warsaw Metropolitan Area**	
	2001	**2011**	**2018**	**2011**	**2016**	**2018**
Population	1 688 972	1708 491	1 777 972	3 037 856	3008 478	3 057 544
Unemployment rate	13,5 (2002)		1,9		3,7	2,4
% of mining, energy and manufacturing in employment (NACE 2)	16,6	9,1				

**Source: Urban Audit. The FUA is defined as the commuter zone of the city, its population is close to that of Warsaw Planning Region*

*** Source: Statistics Poland. The Warsaw Metropolitan Area defined as the official delimitation came into force in 2018.*

Main trends in the development of the economy and manufacturing

In European countries and cities deindustrialization is still going on and manufacturing is around 5% of GDP. Today Warsaw is similar to London and other large cities with 2-5% share of industry. In the Warsaw Metropolitan Area the share of manufacturing is 22%, similar to the Polish average (in the last years there was a slight increase nationally). According to a Colliers study 66% of industrial areas are located 15-30 km away from Warsaw city centre.

In Warsaw, after 1990, within the first 5 years of transition from socialism to market economy most of the large industries collapsed. Only a few remained especially in the car and machine industry, but lately also the majority of them have closed down, which is shown by the fact that only one of the three formerly biggest factories is still in operation. The big car company FSO

(the successor of Polski Fiat) closed in the end of 2000s, the Ursus tractor factory finished its operation in 2019 and it is only the Steel Work Huta Warszawa that still operates. Other manufacturing in the city is food and electronic industries which also keep shrinking, for example Danone, a main player in the food industry, left the city two years ago. The famous Wedel chocolate company located in Praga district also planned to move out their production from the city but then decided to stay and even enlarge their factory.

From the general trend of losing industry, the pharmaceutical companies might be the exception as they rely on high quality workforce. More innovative industrial branches also exist in the city though on a smaller scale, such as aerospace and electronic industry.

As a novelty of capitalist development, since the early 2000s many shared services centers have come to Poland. After Krakow, Warsaw is the second and Wroclaw is the third city for shared services (in terms of number of employees) whereas Warsaw is by far the largest centre of financial services in the country. On the other hand, not many manufacturing investors have come to Warsaw (P&G was an exemption, coming to the only special economic zone). The main reason is the cost of labour, which is much higher here than in other parts of Poland.

There are some successful new type of companies in Warsaw in the creative sector (such as CD Project, game industry (e.g. Witcher), software industry or POLSAT TV studio applying the most modern techniques, many of them also located in Praga district. These cannot be considered as production in the old meaning, but are important to employ highly educated people, like software experts, actors, graphic designers, etc..

Regarding employment, the present situation in Warsaw is good, unemployment is only 1.3%, which can even be considered as too low, there is a shortage in basic skills, hotels, services. In 2017 the number of work permits issued for people from outside the EU was 35 thousand, while in 2019 over 130 thousand, in a city of 1 million employees. 90% of the 3-year work permits were issued to Ukrainians. Migrants from Pakistan and Bangladesh are also increasing in numbers. The low level of unemployment in Warsaw, which practically means shortage of labour especially low skilled workers, is connected to the lack of (affordable) housing.

The agglomeration grows mostly to the western and southern direction of Warsaw, also because to the East there is protected forest area. Regarding the surrounding area of Warsaw several companies moved there from the city, but also new companies, including foreign companies settled there. The majority of new investments are green-field developments. Beside basic industries needed to supply the city and its agglomeration such as food industry also more innovation related industries such as chemical industry, creative industry are growing outside the core city. Logistic is high-rocketing recently, the biggest logistic centre in Poland is in Blonie, a smaller town to the West of the city, where the municipality and also private developers facilitate the settlement of new logistic activities.

The deindustrialisation also drastically changed the city structure. The way of privatisation affected this process was that the bankrupted socialist firms were bought mainly for the land.

This led to quick changes in the former industrial areas, e.g. substantial part of Wola district was industry, now skyscrapers, while in Służewiec the second biggest concentration of offices in Europe (after La Defense and Canary Wharf) has been created as all industry was demolished and new offices were built.

All these factors have led in spatial terms to monofunctional developments, such as large office and residential concentrations in previous post-industrial areas within the city (with still many brownfield areas existing), while large logistical and industrial areas in green-field locations are 15-30 km-s away from the city centre.

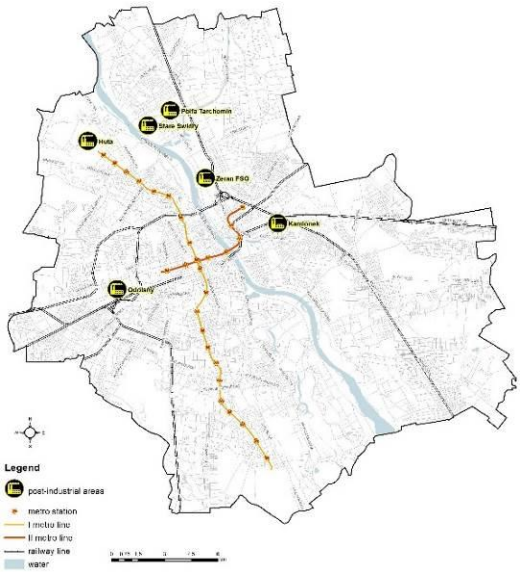
There are six areas within Warsaw (mostly privately-owned land) which are zoned for industry and where no other uses are allowed. In some cases, there are 99 year-long lease contracts, which are close to ownership, as the lease right can be sold.

Some large industrial or unused areas are in the ownership of the state or the state-owned railway company. A main problem is that the city has no real influence on the actual development activities in such areas.

In the southern part of the city there are especially big development opportunities. The Technical University has a campus there and wants to expand activities especially in cooperation with companies in order to establish more R+D activities (labs and industries). The city cooperates with the university in order to facilitate such developments.

Targowek is an industrial area, changing towards creative industries. A substantial concentration of industrial heritage can be found in the Praga district although very little production remained here by now.

Figure A.5.9: Post-industrial areas in Warsaw



Main factors affecting location choices of manufacturing

The major factors affecting the location choices/outmigration of companies with manufacturing profile are manifold:

- Land prices in Warsaw are much higher than in the surrounding functional area of the city.
- Most of the buildable land in the city is brownfield and often contaminated. The cost of decontamination can be substantial especially if time-saving technologies are applied.
- Big lands suitable for more traditional industries are not available any more in the city whereas there are plenty of possibilities for green-field investment in the agglomeration area.
- Warsaw has a significantly higher wage level than its agglomeration and other urban areas in Poland.
- In Warsaw there has been strong competition among development functions for buildable lands, currently it seems that residential developments are the most profitable, but office developments still happen crowding out other functions such as industrial related developments.
- There are increasing residential objections against industrial and related transport activities in Warsaw.
- The existence of adequate infrastructure is also an important factor. In this regard it is also essential how the cost of infrastructure development is divided between the municipalities and companies.
- Local financial incentives can also affect companies' location choices.
- In Poland there is a strong competition among major urban areas for new developments especially related to industry 4.0. Companies consider not only the level of land prices and wages but also the availability of high-skilled labour force, R&D capacities, the existence of a business friendly environment etc..

For most analysts it is clear that within the city boundaries large-scale manufacturing is not feasible anymore, due to the high labour costs and land prices. Many examples exist on the de-location of enterprises from Warsaw, as cheap labour starts some 15 km-s away from Warsaw. Thus the metropolitan trend is strong industrial development in lower wage areas, mainly in green-field areas. In these areas all types of manufacturing can be found, although logistical functions are more rewarding than production functions.

Another location factor is the price difference in land. For example, in Blonie (17 km-s from Warsaw and being the most important logistical centre in Poland) 1 sqm of industrial land costs €25-50, while in Warsaw it could be as much as €2500-5000. Despite this large difference, the price of land is not the strongest factor for companies to leave the city, labour costs are ongoing and therefore more important.

Blonie is a good example how sites with well-developed infrastructure can attract investments. A developer bought lands in Blonie, unified them into one large site and built the necessary infrastructure (roads, utilities) then leased plots to logistic companies who established their own premises there.

In terms of labour factor not only its price plays a role in companies' decision but also the level of qualification of the labour force. The more innovation related an industry is, the more important this factor is in companies' location related decisions. A good example is the aviation industry which has already settled in Eastern Poland but now faces difficulties to find adequately skilled workforce.

Another factor in foreign companies' investment decisions is the system of financial incentives which is considered to be more important than land price by some experts. The maximum level of public aid is defined by the EU (regional aid map): in Warsaw 10% is the maximum, area west of Warsaw is 20%, rest of Mazovia 35% (but only for initial investments), while in Eastern Poland it is 50%. Municipalities can apply exemptions and reduction of local taxes, such as property taxes and local business taxes. In Warsaw the city uses the maximum level of local taxes. The opinions highly vary among experts how much effects on companies' location choice these kinds of allowances have.)

Main challenges and conflicts of future development in manufacturing

As the economy has recently been going strong, and the employment rate has reached an unprecedented peak with extremely low unemployment rate, a main challenge is to provide sufficient low-skilled workforce for the city economy, particularly in the service sector. The lack of labour force is very much connected to the lack of affordable housing inside the city, another major challenge that the city faces. Many people move out to the agglomeration in order to find more suitable housing. But commuting is problematic from the agglomeration, the transport system is underdeveloped, public transport connections are not sufficient and roads are congested. That is why people also move back from the agglomeration to the city.

The process that industry, especially more traditional industry has left Warsaw is not conceived as a problem by the city. The city political leadership does not see the outflow of the bulk of foundational industry as a negative development either as even these essential products can be imported from outside, with more and more environmentally friendly ways of transport of goods and services. Although the city tries to support the traditional craft trades in the city, and has launched several initiatives to support them and provide them premises on preferential terms, such trades generally struggle to maintain their activities.

Nevertheless, the city wants to preserve some areas for industrial activities, mainly for clean and innovation related industries and it also prioritizes mixed-use development after the past mistakes of creating monofunctional areas. Mixed-use aims at not only office or commercial functions but some industry as well. However, these aims are difficult to achieve because of the fragmented owner structure and dominantly private ownership of lands, and the growing market pressure towards residential developments. As it was mentioned the larger public owned plots, which partly could be used for industrial developments, are in state ownership but no cooperation mechanism in place between the city and state organisations. Basically, the city lacks direct tools to effectively influence the spatial development processes therefore it is forced to shift towards more indirect ways.

Warsaw also faces several obstacles related to the modernisation of industry and increase the competitiveness of the city. There is a low level of internalisation of enterprises and of cooperation between universities and local businesses despite that several industrial activities grow in the city and its surrounding area and the city is an important scientific and academic hub. The negative factors include low level of innovativeness in the production sector and

negative balance of foreign trade, especially in terms of high-technology products (though a positive balance e.g. in the food sector), low activity of municipalities in terms of promoting local entrepreneurs on foreign markets, and lack of unified package for foreign investors, low activity of clusters and associations of entrepreneurs.[96]

Some experts also see a danger in the recent economic development of the city claiming that its one-sided job structure - namely the very high share of financial and shared services – can cause unemployment problems even in the mid-term. The automatization of the banking sector in the near future can result in that 40% of its current labour force stock will be redundant. This challenge should also be addressed by the city economic policy by higher diversification of economic activities. The city also risks to lose its technical expert capacity as currently there are no good job opportunities for them in the city, after accomplishing the university they leave for other cities or countries.

As for the metropolitan area the lack of governance structure and cooperation mechanism was addressed by experts as a main challenge as without these the metro area cannot grow to a more competitive direction. Beside the above-mentioned transport problems inside the metro area, the underdeveloped infrastructure system (utilities) also pose a challenge to larger scale industry developments.

Development preferences of the city(region) leadership

Manufacturing generally is not seen as a priority by the city's political leadership in Warsaw. As it was mentioned above, regarding economic development the main emphasis is on advanced business services, financial services, innovation development and R&D activities. As for the industry the city is interested in getting the new type of industry (industry 4.0), like labs, high-tech workplaces, creative industry, which needs less space than traditional production industries and can be the subject of mixed-use developments.

Despite that Warsaw and its metropolitan area are the largest labour market in Poland there is a lack of clear economic vision for the future. Warsaw has a development strategy (Warsaw 2030 Strategy) in which it is stated that there is continuous "weak relationship between universities, business sector and local administrations". The strategy sets out among its main goals to enhance the creative potential of the city and to generate innovation, but the strategy does not mention the role of industry or production in achieving its goals. However, a strategic background document[97] estimates that Warsaw will continue to develop despite the ongoing suburbanisation but the city should be able to ensure the necessary conditions, among them land, for the development of science, innovative sector including industry using new technology. The ITI Strategy for Greater Warsaw argues that the metropolitan area needs a more conscious

[96] Source: Warsaw. Information on Study of Development Conditions and Directions. Architecture and Spatial Planning Department.

[97] Source: Warsaw. Information on Study of Development Conditions and Directions. Architecture and Spatial Planning Department.

economic promotion to other countries' investors and markets, and municipalities should create more favourable conditions for enterprises to settle, support more innovative and export activities. They should also more actively prepare areas to attract investments.[98] However, between Warsaw and surrounding communes the main development issues were transport and road constructions during the implementation of ITI and closer cooperation related to economic development is still not considered as an important issue among the affected communes.

On the whole, municipalities' main direct interests relate to housing developments in order to increase the number of their residents as their revenues primarily derive from personal income tax. They have only indirect incentives to increase business activities in their communes in order to provide jobs to their residents locally.

Tools through which the municipality is able to control development processes

Similarly, to most post-socialist cities, the local government has very little land ownership as most of the enterprises and land have been privatized. There is virtually no land reserve within the city for larger industries, even the brownfield areas are in scattered ownership structure with private landowners dominating whose interest is to change the land use pattern towards more profitable residential, office and commercial uses. Although, as it was mentioned, there are some larger state-owned areas but the lack of cooperation between the city and government organisations appears as a main problem in these cases.

The Warsaw metropolitan area consists of small (up till 50-70 thousand population) municipalities which are all totally independent in deciding about the future development of their territory. The regional government issues the Spatial Development Plan of the Mazovia Voivodeship which is a rather general guidelines for municipalities who have to check only whether their own master plan is in line with the regional document's guidelines.

Financial tools to regulate development

In Poland the personal income tax (PIT) and corporate income tax (CIT) together with the value added tax (VAT) are defined by the government whereas municipalities impose local taxes which are real estate tax and vehicle tax. Local municipalities get real estate tax, based on the surface of the area used by entrepreneurs. The tax level is decided by the commune, within the limit of an upper level stipulated by the law. For example, Błonie collects €5/sqm, which is below the €6/sqm upper level. Communes with worse location usually charge lower tax level.

The level of Corporate Income Tax (CIT) is 19%, which goes to the central budget but its 7% goes back to municipalities. If the seat of the company and the production place are in different communes then the corporate tax is divided between the two communes.

The other main form of taxation is the personal income tax (PIT), of which 38% is transferred to the local level from the government, according to the place of residence of the employees.

[98] Source: Integrated Territorial Investments for Greater Warsaw. Prepared by the City of Warsaw.

Within the local budgets usually the real estate tax is less important than the PIT revenue (except for smaller municipalities like Błonie, where the large logistical ventures pay substantial real estate tax. In the case of Warsaw the share of real estate tax is 9% while the corporate tax and PIT together amount to the 50% of the budget.

In 2019 there were changes in the national regulation, the rate of PIT was reduced by 1% and people below 26 years became exempt of PIT. As a result municipalities PIT related revenue also decreased and large cities lost a lot of money and had difficulties in financing education and other important local services. (Warsaw will lose €200 mill yearly which is a lot compared to the €4.3 bill total budget). In the upper chamber (Senate of the Republic of Poland) there is a proposal for giving compensation for municipalities which have lost money. However, there is no chance that the Senate will pass this proposal (partly because all large cities have leadership being in opposition to the national government).

Planning tools

Spatial planning is an important tool of municipalities to influence the level of investments and functions of development in their area, especially in those cases when the municipality does not own larger land in the commune. However, they have to face several limitations regarding the enforcement of spatial plans.

There is a hierarchical system of different spatial plans in Poland. On national level the National Spatial Development Concept 2030 has been elaborated. It presents an assessment and analysis on the state of spatial planning in the country and puts forward a vision for the country's spatial development to the year 2030. On regional level a regional spatial development plan is produced which is much like the National Spatial Development Concept. It is rather a strategic document. The regional plan outlines investments of national and regional importance and general development conditions.

Local governments are the main actors in the Polish land-use planning system, which has three levels locally.

1. First, the so-called "Study of the conditions and directions of spatial development" has to be produced (referred as master plan in English in this case study). It is an obligatory framework study to guide local planning policy in municipalities. It covers the whole area of the municipality. Local spatial development plans should be consistent with this master plan, but the master plan itself is not a legally binding document on local spatial planning. Study also gives an analysis and recommendation on a range of social, economic demographic issues important for local planning.
2. The "local spatial development plans" are produced for smaller areas of municipalities and they are legally binding. It can be regarded as the essential planning document of local governments. It defines particular permissible assignment of land uses and specifies the size and volume of possible developments, rules for property division and protection of cultural heritage. However, not the whole area of municipalities have to be covered by local spatial development plans. Municipalities produce these plans only to those areas where it is important to define more specifically the exact functions and details of future developments.

3. Planning decisions are issued in order to ensure that new development could proceed in the absence of a valid local spatial development plan. It is a simplified administrative procedure ensuring that the new development is in line with basic neighbourhood characteristics or at least does not cause any harm in its environment. They are not required to be consistent with the master plan. Planning decisions are made for building approvals, change of land use and for the location of public investments.

Local spatial development plans covering the specific areas of the city regulate that in certain areas what functions are allowed, if mixed functions then it also includes the proportion of the functions. The procedure of making local spatial development plans is based on German system, a difficult and lengthy process and also any changes take 2-3 years to adopt. However, if the city wants to change the zoning regulation (meaning the allowed functions) of a certain area then the master plan for the whole city has to be revised which makes the whole spatial planning system very bureaucratic, lengthy and inflexible.

Currently only 40 % of Warsaw is covered by local spatial development plans, which is a big problem. For another 30% the local spatial development plans should be elaborated. Another main problem is that the zoning is not efficiently enforceable mainly because of two legislative measures.

A national law from two years ago, emphasizing the importance for new residential development, decreased the time under which the city council can react on the applications from developers: the city council has to decide within 60 days whether to give permission for the planned development. This "Act of 7 July 2018 on simplifying the preparation and implementation of housing and associated investments" which is often referred to as "Lex Developer"[99] modified the normal planning law of 2003, in order to have faster procedure for new housing construction. This is a serious limitation on the independence of local municipalities – although the Lex Developer makes sense in cases when small changes are needed in the master plan. Modifications to this law are currently underway.

To have a local spatial development plan is good as the developer knows exactly what can be done. If there is no local spatial development plan to an area then the developer has to justify that the function of the planned investment complies with the existing functions of the area. This means that if in an industrial area there is only one residential building then the developer can change the whole area into residential use (actually the FSO area is a similar case currently) and neglect the stipulation of the existing zoning. If the city does not allow it then the developer can turn to the governor (the representative of the voivodeship government). This practically means that developers do not have to follow the zoning plan.

Another problem relates to the state (or state company) owned land which falls out of municipalities' competence in terms of elaborating local spatial development plans. When the

[99] The act is called in Polish "ustawa z 7 lipca 2018 r. o ułatwieniach w przygotowaniu i realizacji inwestycji mieszkaniowych oraz inwestycji towarzyszących; (Dz.U. poz. 1496 ze zm.)". The short, informal term for the act is the "Lex Developer" which is often used but has a negative connotation.

municipality prepares the master plan the state entities (for example railway company or army) are obliged by law to provide relevant data / information about their plots with an indication of their development plans. This information is included in the master plan. If it turns out that the area belonging to the state company is used in a different way than previously declared, then the city may apply to the court to transfer the land to city ownership.

Regarding the local development plans, half of them are quite outdated in Warsaw. Now a new planning act is under development, which will require all municipalities to develop zoning plans and their master plan within 3 years, which is seen as a doable requirement.

Warsaw is currently preparing its new master plan including also the zoning plan. Parallel with this the city also prepares the missing local spatial development plans for key areas and revises the old ones where it is necessary. In this process the municipality uses a strong participative approach which includes residents, developers, landowners etc. Main principles of the spatial planning process are

- creating a compact city;
- supporting mixed use of areas instead of monofunctional;
- preserving 25% of the city to green areas.

The planning procedures often are quite over-politicized, with special regard on the actual political situation: the governor of voivodeship (the government representative at regional level) has to give opinion on the cities' spatial planning documents which is a significant source of conflict as the governor often turns down the city's plans. The governor has 30 days to give his opinion. If this is not accepted by the city, the case goes to the court. There are 230 ongoing cases in court, which is a good indication for the conflicted relation between the city's and governor.

> The city just won a case in the court against a state-owned company, which had large military areas not in use anymore. The company wanted to use the land for housing development which conflicted with the zoning plan. The city argued that the zoning plan should be binding to the company as the military functions (which meant the base for the exemption from the spatial regulation) did not exist anymore.

Taking the relatively weak position of the city in the development process, the chief architect of Warsaw introduced an innovative "planning workshop" approach. This is a workshop for landowners and residents in a given area, which is under redevelopment. In the first three workshops the consultations started with no plan, now in the fourth the city starts with an initial plan. Participation is not compulsory but most of the larger landowners are coming to the workshops. If the city would like to keep the industrial function of an area, the city council can decide for that zoning, but as it was mentioned the regional governor has the right to decline it in order to achieve change towards residential zoning. As an example: the city achieved an agreement during the workshop on the FSO area with the landowners on mixed-use also keeping industrial function beside housing and office functions but some of the owners changed their mind after realising that selling the land for housing developers would bring more profit.

This is seen as a negative development by the city's main architect. Currently the agreement made with owners and developers is not legally binding.

The last master plan for the city was from 2006 (counting for 3.5 million inhabitants). The industrial areas defined in the old master plan will be changed but the city wants to keep 4-5 larger areas for new types of industry. This is a critical question for Warsaw, where there is still housing shortage. While allowing more space for housing, the city also wants to block urban sprawl and go for a more compact city.

> Example of the conflicts around the master plan: the Bialoleka district was connected to the city 20 years ago. It was mainly agricultural and forest area. The new district authorities prepared plans for huge housing areas and the 2006 master plan (with 3,5 million people in mind) approved the plans. The most important decision of the new master plan will be to decrease the planned density and functions at the edge of the city where there is no sufficient public transportation, infrastructure and public services.

There seems to be a general agreement among planners that the city should prescribe some level of mixity, using the zoning plan, which will have to be obeyed by developers. Not prescribing plot by plot the exact use but the shares of functions for the areas and some basic principles. Such principle could be mixing functions: along big roads only services and other functions but residential can be established while further away from big roads residential function is supported. As a planning tool, the local spatial development plan is of key importance for the city even if not having ownership in the area.

The case of the metropolitan area is different: there is no master plan for metro area as the law does not allow for that. Regional spatial plan exists (developed by the regional governor's office) but with no influence on local plans although it has a part which deals with the Warsaw functional area. For the moment the influence of Warsaw is only indirect: the city distributes money to surrounding municipalities through the ITI and its relationship is good with the affected communes.

Sectoral policies: housing

In 2015 Warsaw had the same number of apartments as in Vienna, 907 thousand units. In 2018 23 thousand units were built, much more than in Vienna and one of the largest in Europe. Since 2011 over 10 thousand units per year have been built. Even shopping centres want to be transformed into mixed use with residential function as retail developers also recognize the need for housing.

Only one thousand of the 23 thousand new housing units were not privately built, the average price is €2,4 thousand/sqm. This is very high, due to the high price of land and the increasing construction prices. For instance, in Piaseczno - a neighbouring, fast-growing city South to Warsaw, with currently around 90 thousand inhabitants - the price is only €1000 per sqm.

Contamination of post-industrial land is a problem, although only few areas are heavily contaminated. However, in case of housing construction the polluted land has to be totally removed. It is the investor's responsibility to decontaminate the land.

Wola district shows the disastrous consequences of the controversial deficiencies of the spatial planning system: a huge housing development implemented on the state railway company owned sight without basic public infrastructure (roads, side-walks, schools etc.) near to cement factory more than 10 years ago. Now the inhabitants who bought their housing in their twenties want the services and also want to get the cement factory closed, and all these became now the problem of the municipalities (district, city).

Another conflicted area is the already mentioned Steel work Huta Warszawa, a large industrial area (200 ha) owned by the AcelorMittal. After decontamination of the land (and even planting forest) the company sold one part of the plot (further away from the public transport and services) to Coimpex and the new owner decided to go for housing, which was not allowed next to the industrial activity. After a huge war with city hall the land is now sold to an American company which understood the situation and does not want housing any more but light industry and logistics.

URSUS is another neuralgic point: a former industrial district still having substantial development potential. Originally the city planned a mix of functions with new industry (also in the cooperation of technical university as already mentioned) including also with workers housing related investments. However, now the investment plans are only for housing and commercial use.

According to the city's chief architect, people have to be educated that workplaces are needed in the city while still housing can be built. There are already a few developers who are smarter and think not only in short-time money earning way but are going for quality and mixed functions – but this is not the general case. The situation in Warsaw today is like in SIMCITY: developers are crazy about housing. The city has weak tools to convince them about mixed developments.

Opportunities for Warsaw in industrial development

During the course of interviews many possible initiatives came up regarding the future development of industry in Warsaw.

Interesting opportunity for Warsaw could be the Aerospace industry (GE R&D center is already substantial employing 2000 people). Warsaw has no problem to find employees for that kind of industry while Rzeszow (city in South-East PL) experiences such problems with its already existing aviation valley. Also, the electronic industry could be a target for Warsaw, especially maintenance centers. Electronics are not polluting, small components do not need much transport.

Significant future opportunities relate to the current Chopin Airport area. According to some experts Warsaw should participate in the preparation of the new airport (between Łodz and Warsaw) and should also think ahead what to use for the area of the current Chopin airport.

This is a huge land within the city boundaries, well connected to the city centre and could be developed to a new technology park with light manufacturing. The city should take the lead to define the future use and should heavily negotiate with the state which owns the territory. The city could also cooperate with neighbouring communes in the development of the area, for example with Pomiechówek commune where there is a 100 ha big land, which would be especially suitable for the aerospace industry because of the vicinity of the Modlin airport. After the joint preparation of the area including also the establishment of train access, municipalities could make advertisements for investors.

The city could use more incentives to direct the desired development investments to areas designated for industrial activities.

One of such incentives is linked to public infrastructure development. If the new infrastructure is used by more than one entity, it is not counted as direct state support. Warsaw could create industrial parks, especially in combination with special economic zone, which is also important because then the tender is not necessarily an open but limited tender, thus the city can influence more what kind of companies/functions come to the area. Logistic centers are most profitable but not necessarily the most desirable for the city. (e.g. city Zabrze had open tender for a 20 ha industrial land, finally a manufacturing company won the tender over a logistic center but it was a luck).

Another incentive can be the local property tax exemption as it is a flexible tool and companies can immediately enjoy its effect. The city could define what kind of industry, with how many employees can apply the exemption. However, in case of Warsaw the effect of such incentive can be limited (as the degree of the exemption is moderate).

Some believe that Warsaw should definitely designate a place for manufacturing activities, if possible, linked to the special economic zone. To do so it should take into account state owned lands as well and look at some good examples how other cities could successfully cooperate with the state or state-owned companies (e.g. Lódź successfully managed to work together with the railway company (PKP)).

Potentials for metropolitan cooperation

In the metropolitan area, only soft methods can be applied in the field of spatial planning but also in economic development, based on common sense and common interests e.g. for public transport.

The mayor of Blonie is one of the 40 members of the Warsaw ITI steering committee, which is led by the mayor of Warsaw. According to the mayor during the ITI planning there were no big conflicts among the communes, decisions were taken unanimously, each commune having one vote.

The ITI, in the magnitude of €165 million, mainly included transport projects. In the case of Blonie 12 km bike routes were built (between the localities inside the commune), and P+R around the railway station. The next plans are for further developing public transport to Warsaw,

to have more trains and more buses, as the demand for this is big. Many municipalities in Warsaw surroundings face similar development needs.

ITI only gives a framework for communication but there is no legal background for a metropolitan law. The regional level spatial plans practically have no effect on strengthening the cooperation on metropolitan level in the most important issues such as suburbanisation and transportation. The ITI created some momentum towards coordinating development, mainly in transport. Also, sport, leisure functions should be coordinated according to some of the communes. Even closer coordination of spatial planning processes between neighbouring municipalities would be needed.

On the basis of the positive ITI experiences the general opinion among the interviewees was that stronger leadership in the metropolitan area would be needed, especially in transport.

The core of the problem is that the fields of cooperation among the municipalities in the metropolitan area are still limited. This is not sustainable and leads to uncontrolled suburbanization activities in different sectors, such as concentration of office spaces and that of advanced businesses in certain areas.

To tackle the different problems in manufacturing in and around Warsaw, a publicly owned business agency would be needed, in the best case on metropolitan level according to several experts.

Currently there is a business unit established in the municipal economic development department that already has established a wide and complex network with economic stakeholders and investors but still struggles to create efficient tools to support investments which also comply with current legal regulations (e.g. competition rules). Krakow, Lodz, Gdansk, Wroclaw, Poznan are the best cases in Poland for more coordinated economic development, some of them do it even on metropolitan area level. Lodz has a department while the others have agencies outside the city administration to negotiate and attract investors. Gdansk has this on the city level, Krakow and Wroclaw established a metropolitan level agency, the latter one as joint stock company (100 percent public, owned by all the municipalities of the metropolitan area).

Future directions to govern industrial development in the metropolitan area

The economic development challenge in the Warsaw area can only be tackled in metropolitan area context: Warsaw alone has no tools and has no land, while wise metropolitan policies could create good solutions. Also, more resilient solutions can better be achieved on metropolitan level.

Based on a shared vision across the whole metropolitan area, new planning tools are needed to protect those manufacturing and logistical functions which are needed for the whole area but would otherwise disappear due to market processes if such areas are not protected by zoning.

The creation of a strong governance system on metropolitan level is not in the short-term agenda in Poland. Although in 2015 a general rule was adopted to create metropolitan areas, the government never prepared the executive law. After one year the general law was cancelled and the new governance model was assured by law only for Silesia, as a pilot.

As several experts share the opinion that under such circumstances, the coordinated development of manufacturing can only be initiated from below, in a bottom-up way, by the establishment of a metropolitan wide business agency.

However, for larger industrial areas Warsaw has to cooperate together with the surrounding municipalities. They could establish and operate a Development Agency on metropolitan level. The small municipalities do not have financial resources to do major infrastructure and transport developments (and no EU money is available for that any more in the Warsaw region). The small municipalities are not able to do the marketing and organize the labour force either. Warsaw should cooperate with such metropolitan municipalities where still land is available and it is not polluted. This would be indirectly an advantage for Warsaw as much of the PIT (Personal Income Tax) would go to Warsaw as many Warsaw residents would go there to work. The investments would be of mutual interests but would bring different gains to the municipalities: local tax is paid to the municipality in the agglomeration which provides the land, but the increased PIT is the interest of Warsaw.

Potential inspiring cases from the stakeholder city- region

The initiative of the City of Warsaw to elaborate local spatial development plans in participative workshops can be seen as an inspiring case despite its difficulties. The inclusion of the different stakeholders in the process can reveal the varying interests related to the development of the given area. It is also a good opportunity for the municipality to negotiate its interest with the other stakeholders, developers, residents, property owners.

Błonie is a good example of how to attract investors: a private person had a good vision about creating an industrial park, made brave investments (bought the lands, developed all the infrastructures) and then real customers came. The municipality itself is also very active to attract new developments through its spatial planning system and applying more preferential local taxes.

Good examples for the creation of Development Agencies at metropolitan area level:

- ARAW Metropolitan Area Development Agency has been created in Wroclaw. Since its creation 10-15 years ago Wroclaw has become a booming city from a very bad starting position. Even too many investments went to Wroclaw and no more labour is available now (labour availability in Warsaw is higher than in Wroclaw).

Another good example is Krakow, where land is also expensive and unavailable within the city. Krakow cooperated with the surrounding municipalities regarding the use of the industry land around the city, and the city led the process.

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