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1. Abstract

Commuting works like a transmission belt between urban and rural economic performance and way of life. It connects the dynamic urban agglomeration area with its rural surroundings. This also applies to the metropolitan region of Vienna and the surrounding area as well as large parts of Lower Austria and its medium-sized towns Hollabrunn and Mistelbach. The expansion of urban space also brings about a spread of urban values, culture, and political views. That led and leads to fear reactions in conservative rural regions of Lower Austria towards the city of Vienna, the so called “Red Vienna”.

The economic success of the urban agglomeration of Vienna is confirmed by the current data on regional GDP and GDP per capita. But commuting apparently works as an effective redistribution machine. The net income per earner in Lower Austria and in the regional towns of Hollabrunn and Mistelbach has exceeded the value of Vienna since 2011. A large part of Vienna's GDP is taken to Lower Austria. There it enables a higher purchasing power and more investments in the regional future of the rural areas.

The long-standing socio-cultural and political tensions between Lower Austria and Vienna can still be demonstrated today in the political decision-making bodies and in administrative practice. Numerous evidences of the urban and rural divide could be identified in the research. Aside from the tensions, cooperation platforms have also been established that are supposed to enable better cooperation in spatial development planning. These collaborations provide an important basis for evidence-based regional planning but do not reach to the city level.

Keywords: commuting, urban agglomeration, urban rural divide, cultural and political tensions, Hollabrunn, Mistelbach, Lower Austria, Vienna

Pendeln stellt einen Transmissionsriemen zwischen städtischer und ländlicher Wirtschaftsleistung und Lebensart dar. Es verbindet den dynamischen urbanen Agglomerationsraum mit seinem ländlichen Umland. Das gilt auch für die Metropolregion Wien und das Wiener Umland sowie weite Teil von Niederösterreich als auch für seine Mittelstädte Hollabrunn und Mistelbach. Die Ausbreitung des urbanen Raums bringt auch eine Verbreitung der städtischen Werte, Kultur und politischen Ansichten mit sich. Das führte und führt zu Angstreaktionen in ländlich geprägten Regionen Niederösterreichs gegenüber der Großstadt Wien, dem sogenannten „Roten Wien“.

Der wirtschaftliche Erfolg der urbanen Agglomeration Wien wird durch die aktuellen Daten des regionalen BIP und des BIP pro Kopf bestätigt. Doch das Pendeln wirkt als wirkungsvolle Umverteilungsmaschine. Das Nettoeinkommen pro Einkommensbezieher in Niederösterreich und in den Regionalstädten Hollabrunn und Mistelbach hat seit 2011 den Wert von Wien übertroffen. Ein Gutteil des Wiener BIPs wird nach Niederösterreich mitgenommen. Dort ermöglicht es eine höhere Kaufkraft und auch mehr Investitionen in die regionale Zukunft.

Die langwährenden Spannungen zwischen Niederösterreich und Wien lassen sich auch heute in den politischen Entscheidungsgremien und in der administrativen Praxis nachweisen. Es konnten im Zuge der Forschungsarbeit zahlreiche Belege dafür identifiziert werden. Abseits der Spannung wurden auch Kooperationen etabliert, die eine bessere Zusammenarbeit bei der räumlichen Entwicklungsplanung ermöglichen sollen. Diese Kooperationen stellen wichtige Grundlagen für eine evidenzbasierte Regionalplanung zur Verfügung, erreichen aber nicht die Ebene der Städte.

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The photos on the cover page are from the author. They were recorded during visits to the cities of Hollabrunn and Mistelbach in June 2020.

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4. Introduction

„[...] I believe that all policy analyses are based, consciously or not, on assumptions drawn from history, just as all history is based on assumptions drawn from an observation of present circumstances” (Bruegmann, 2005: 8).

For pragmatic reasons (availability of statistical data, changes to documentation rules, etc.) I had to limit myself to an analysis of the recent past of commuting in an urban agglomeration. Of course, I also wanted to take a look at the further past. As the above quotation notes, the observations and findings are sometimes closer than they appear historically.

The work of various spatial researchers has helped me to make assumptions about major influencing factors on the commuter system, the more recent developments of which I have followed. Whenever possible, I have also explored longer periods of time and made connections with recent developments.

In our first ‘Urban Geography’ lesson in the 4cities urban master study program we talked about core concepts and approaches of our field urban studies. Professor David Bassen asked us: “What is urban, what is the city?” A definition that splits urban researchers apart even though that is what we intend to study. One example of a conceptualization was “The city versus the non-city (the rural?)”. Scientific research and reflection of the two terms (urban/rural, city/non-city) show that urban and rural societies are economically, socially, culturally and spatially highly divers.

On the other hand, are most rural regions closely linked to urban areas, interlinked and economically, socially, and culturally intertwined. Urban agglomerations encompass regions that are increasingly distant from the core city. Commuters connect the countryside to the city and the city to the countryside. The several phases of suburbanisation changed the spatial model from the monocentric city to a more polycentric landscape of a big city with several mid-size cities in the regional network. A simple distinction of urban and rural no longer does justice to social reality.

“Analysing this spatiality and investigating the use of urban and rural motifs in terms of their constitution and effectiveness remains a challenging and rewarding task for human geography” (Helbrecht 2019: 12).

In my master thesis I would like to look at the current and the historic development of this urban and rural dichotomy in Austria.

What exactly was it that got my attention?

1. *Political election results (Trump, Le Pen and Brexit) of recent years are often interpreted by the public as a new division of society into city and rural area. The Austrian presidential race of Norbert Hofer versus Alexander Van der Bellen resulted in a split among rural and urban voters.*
2. *In our studies, we were introduced to theories of planetary urbanization, which assumed that social realities can no longer be grasped by the categories of “city” and “rural”, as urban-rural boundaries have been blurring for some time. Lefebvre predicted (Stanek, 2011), Harvey re-affirmed it (Harvey, 2013). The urban-rural-divide is fading, at a different pace throughout the world, but it is.*

What is the connection between these two observations and where exactly could these processes be evaluated?

I have decided to focus my work on commuting. I assume that commuting has been for many decades the concrete transmission belt between country and city, or otherwise between different urban and rural areas that grow into one another and yet differ.

Commuting was also a reality in my family and for my parents. One of my grandmothers was a commuter from the rural area of Mühlviertel to the city of Linz in Upper Austria. My parents were both student commuters from the rural Mühlviertel to the city of Linz.

My commuting grandmother lived almost her complete life in Mühlviertel. But commuting made her more connected to developments in the world than some of her neighbours. She was more cosmopolitan and interested in developments outside of the village and the rural area. My parents moved away from the rural area to the city of Vienna after finishing their studies.

My research focus lies on the eastern Region of Austria with the capital city of Vienna, the big federal state of Lower Austria, that surrounds Vienna (including urbanized areas but also vast rural areas) and the provincial cities of Hollabrunn and Mistelbach, that are on the border of the metropolitan area of Vienna. The selected four regions perfectly represent the urban rural divide.

Vienna is a must for a research work into urbanization in Austria, as it is the only metropolitan city in Austria with more than 1.8 million inhabitants. Vienna is a very special place in Austria with an even more special history. Vienna was the imperial capital of the large Austrian-Hungarian Empire. After World War I, Vienna found itself as the disproportionately large capital of a dwarf state that lost 90 percent of its crown lands. Vienna became “Red Vienna” with huge social and political reform programs (with slightly imperial dimensions). Part of it was a big social housing project that is still influencing the spatial urban form and the housing situation in Vienna today.

Vienna culturally developed highly different than the rest of the country. Viennese people know about the difference as well as the people in the countryside. When I visited my grandparents in a small village in the northern part of Upper Austria, older people on the street, friends of my grandparents, always referred to me as “das Weana madl” – the girl from Vienna. I was considered different.

Another peculiarity in Austrian history is the strong political divide between Vienna and Lower Austria or Lower Austria and Vienna. This started already in the end of 19th century and was intensified after World War I. It continued after World War II with slightly different pattern. In Austria this divide also has had a historical background in the political competition of the two mass parties, SPÖ (social democrats) and ÖVP (Christian democrats) and their different strongholds in cities and rural areas.

I would like to use the exemplary relationship of Vienna and Lower Austria to analyse the development of the urban rural relationship during history. I am curious whether this historical split still has an effect and how it affects concepts of concrete urban development or regional development. My search along the urban-rural border led me to the cities of Hollabrunn and Mistelbach. These two cities represent the rural area in the eastern region of Austria, but are nevertheless connected to Vienna through a high number of commuters. They are far enough away from the suburban belt around Vienna that cultural and political diversity can be expected.

I am very grateful for the friendly reception from the spatial planners of Hollabrunn, Mistelbach, Lower Austria and Vienna and the valuable information I received. I am especially

grateful for the answers to my questions from the mayor of Mistelbach and the planning councillor of Hollabrunn.

I am also grateful for the professional exchange with the cooperation institutions SUM (Vienna Urban Area Management) and PGO (Planning Association Eastern Austria). The numerous documents from the PGO gave me some very good inputs.

A big 'thank you' goes to the employees of Statistics Austria from the various specialist departments, who stood by my side with advice and also provided me with special evaluations (some analyses are presented for the first time in this master thesis).

I would also like to thank the Austrian Ministry of Interior that provided me a special evaluation of the criminal offenses in the four regions of interest.

Last but not least, I am grateful to my fellow students of the 4cities urban master program and all our professors who added new ideas and insights to my studies.

5. Research questions and research design

The focus of this master thesis is on commuting in an urban agglomeration (represented by the eastern region of Austria, in particular by the federal state of Lower Austria, the metropolitan city of Vienna and the mid-size cities of Hollabrunn and Mistelbach).

It is generally recognized in the scientific literature on urban studies that commuting is a result of urban agglomeration policies that have been in place for many decades. The agglomeration policy forms the boundaries for the commuter flows, based on the different motives of the commuters (jobs and professional opportunities, education and training institutions, affordable housing, high security standards and green living, wide range of shopping possibilities as well as cultural opportunities). Commuter flows are a constant challenge for transport and logistics connections.

These backgrounds and challenges should also apply to the agglomeration of Vienna, an example of a metropolitan region, and the regional cities of Hollabrunn and Mistelbach, which represent cities in the rural areas of Lower Austria that are slightly outside the metropolitan commuter radius. The current urban agglomeration policy guidelines and action plans of Vienna, Lower Austria, Hollabrunn and Mistelbach should reflect the specific challenges of commuting and be based on solid evidence and data. In this context it is of interest whether the long history of political and cultural tensions between Vienna and Lower Austria has an impact on the agglomeration policy and administrative measures of the three cities mentioned.

5.1. Research questions

The first research question tackles the influencing factors and how these factors are reflected in the regional development concepts of the four selected regions.

What are the recent developments of spatial, institutional, and economic factors that influence commuting in the eastern region of Austria and to what extent are these facts reflected in the current agglomeration policies of Lower Austria, Vienna, Hollabrunn and Mistelbach?

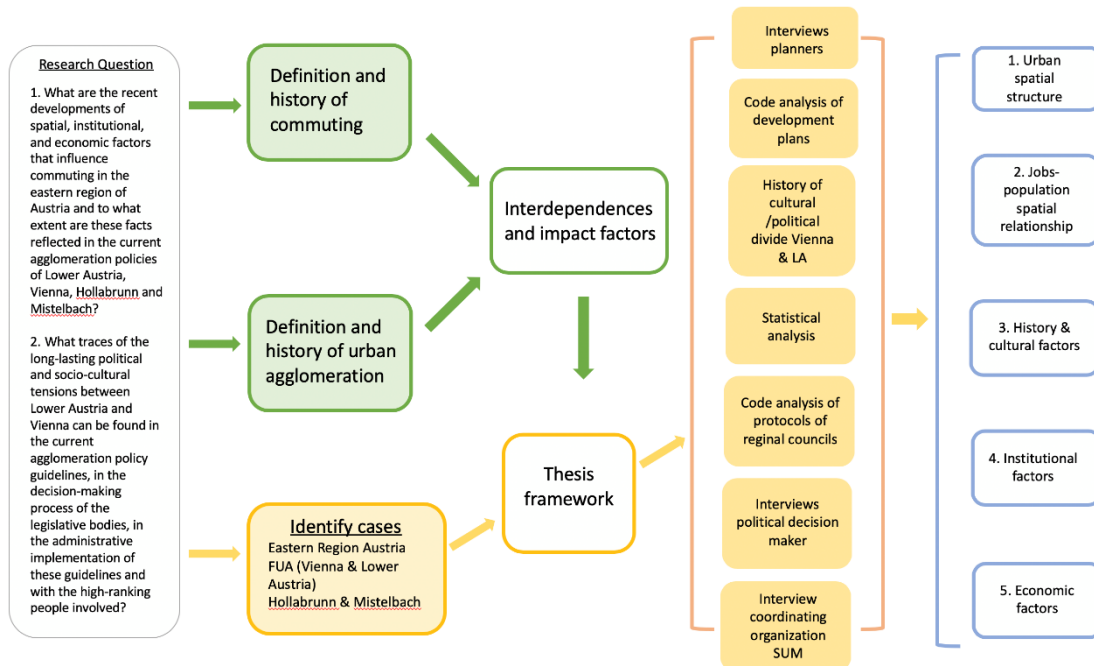
The second research question tackles the historical urban rural divide between Lower Austria and Vienna.

What traces of the long-lasting political and socio-cultural tensions between Lower Austria and Vienna can be found in the current agglomeration policy guidelines, in the decision-making process of the legislative bodies, in the administrative implementation of these guidelines and with the high-ranking people involved?

5.2. Research design

The research design is oriented on conceptual frameworks demonstrating the impacts of urban form and socio-economic factors on commuting (Lin et al., 2015; Engelfriet and Koomen, 2018). The frameworks were adapted to the implemented research methods.

Figure 1: Research design master thesis



Source: Own design based on conceptual frameworks from Lin et al., 2015; Engelfriet and Koomen, 2018

The research methods were designed as broadly as possible in order to be able to illuminate the different aspects of the urban-rural divide on the specific subject of commuting in an urban agglomeration.

At the beginning, the history and definitions of commuting and urban agglomeration are examined.

In a “case study approach” the four selected regions that are the subject of the study are presented.

Finally, the historical tensions between Lower Austria and Vienna are discussed.

The following research methods were implemented for answering the research questions:

1. Interviews with the spatial planners of Lower Austria, Vienna, Hollabrunn and Mistelbach based on a standardized questionnaire. The answers have been transcribed.
2. Code analysis of the current development plans of Lower Austria, Vienna, Hollabrunn and Mistelbach regarding to what extent the spatial, institutional, and economic influence factors of commuting have been reflected in the development plans. Unfortunately, Hollabrunn is in the middle of the process for a new development plan and was not able to provide an older document.
3. Literature analysis about the long-lasting political and socio-cultural divide between Lower Austria and Vienna.
4. Statistical analysis of spatial, institutional, and economic factors of the four regions based on the database of Statistik Austria (most of the data material) and Austrian Ministry of Interior (for criminal offenses data).
5. Code analysis of the protocols of the legislative decision-making bodies of the four selected regions Lower Austria, Vienna, Hollabrunn and Mistelbach.
6. Questionnaire and interview with political decision makers of Hollabrunn and Mistelbach. The answers of the political decision makers have been transcribed.
7. Interview with coordinating body SUM based on a standardised questionnaire. The interview has been transcribed.

The implemented research methods are briefly explained below.

5.3. Case study approach

A case study approach was pursued in this master thesis. The case studies were selected in light of the research design described above. In order to pursue a case study approach, you have to follow the following steps (Creswell, 2007):

1. *First identify the cases, the different cases should show different perspectives on the problem*
2. *Your data collection should draw on multiple sources of information*
3. *Provide a detailed description of each case*
4. *Decide between a within-case analysis and a cross-case analysis*
5. *Last do an interpretation of the meaning of the case*

In this master's thesis Vienna, Lower Austria, Hollabrunn and Mistelbach were selected as cases. It relies on multiple sources, interviews, documents and statistical data. It was decided to conduct a cross-case analysis. The case description can be found in Chapter 8, the interpretation of the meaning in Chapter 11 and 12.

5.4. Expert interviews

The expert interview method was chosen as an additional method. Because experts should bring a gain in knowledge about specific topics based on their position in their field of work or their status as political representatives.

A total of 6 interviews were carried out. The mayor of Hollabrunn had his transport city councillor fill out the questionnaire and send it back. Unfortunately, no interview with the mayor of Vienna was possible because of the regional council elections in Vienna.

Due to the standardization of the questions, generalizations can be made, since this allows comparisons to be made between test subjects (Mayring, 2002). Selected quotes from the interviews flow directly into the work and the thematically assigned statements were incorporated into the respective sections of the work.

The qualitative content analysis according to Mayring (2002) was used to analyse the interviews. The material is reduced in such a way that the essential content is retained, and a manageable corpus is created through abstractions, which is still an image of the basic material.

5.5. Code search

In the empirical part of the present work, the discussion culture in the federal state parliaments of Vienna and Lower Austria as well as the municipal councils of Hollabrunn and Mistelbach are examined using selected protocols from 2012 to 2018 (7 years). These protocols are accessible via the respective homepages.

The selected debates were coded in a computer-aided process (using the Atlas.ti program) with a code set previously developed deductively.

"This procedure is based on quantitative text analyses (for example of party programs), in which individual, independent content-related statements ("quasi-sentences") are identified and then coded with a previously defined variable, the content of which corresponds best to the statement found in the text" (Wendler, 2014: 15).

The search words used to search for the passages were chosen by the author and were used identically from 2012 to 2018, which is why the analysis is based on the same basis and enables a comparison over time. The subjects obtained from the statistical data analysis were

sought in the political debates. Different keywords were assigned to the higher-code topics. An overview of the code words can be found in Figure 2.

The same method was used to deductively code the urban development plan of Vienna, the federal state development concept of Lower Austria and the development plan of Mistelbach. No development plan was available for Hollabrunn.

Figure 2: Clustering keywords for code analysis



Source: Own design

5.6. Statistical analysis

In order to get an overview of the development of the important influencing factors selected statistical data (population development, employment development, development of new building permits for private homes and rental apartments, development of school and training places, available sales areas and criminal offense development) on the municipalities Hollabrunn and Mistelbach as well as on the federal states of Lower Austria and Vienna have been researched using the Statistik Austria STATcube (an online statistic database). Unfortunately, no data was available for green living areas and cultural facilities (seats, usage).

The statistical data was available for most of the subject areas from 2011. For comparability, the time series were used uniformly from 2011 onwards. Unfortunately, only values for two years (2004 and 2014) were available for the shopping area statistics. Therefore, only these two measuring points could be used.

The population data was available since 1865 and was used for a long-term analysis of the population trends in the four regions.

Commuting data was available from 1971. This data was also used for a long-term analysis of the commuting trends.

GDP data was available since 2000 on the NUTS 2 and NUTS 3 level. For GDP and GDP per capita analysis the data since 2000 was used. Data from 1998 to 2017 were used for the special evaluation for regional net income per income earner.

From the available data, indexed time series have been created if required to make the development of regions of different sizes comparable. The starting value for each time series in 2011 was always set to 100 and the subsequent values were indexed accordingly. For this purpose, the individual values (X_t) were divided by the original starting value ($X_0 = 2011$) and then multiplied by 100 (general index formula: $\text{Index} = X_t \text{ by } X_{2011} * 100$).

For analytical purposes, individual time series were also set in relation to the total population (per capita) in order to obtain a more meaningful comparison between trends in the four regions.

5.7. Overview result chapters

The findings of the implemented research methods were incorporated into the five result chapters of the master's thesis.

The first chapter deals with the specific spatial urban structure of the four selected regions. In particular, the change from a monocentric structure with Vienna as the centre to a polycentric structure with several dynamic cities around Vienna in Lower Austria (in particular through the establishment of its own capital in Lower Austria of the regional development concepts) to the medium-sized cities on the edge of the metropolitan area such as Hollabrunn and Mistelbach.

The second chapter is devoted to the spatial relationship between jobs and housing, whereby this work speaks of the jobs-population spatial relationship because the household concept with a single earner (which was the basis of the jobs-housing spatial relationship) is seen as outdated. Focus lies on Hollabrunn and Mistelbach versus Vienna and Lower Austria in total.

The third chapter deals with the historical and cultural tensions and whether these can still be felt today or to what extent they still influence the planning concepts, the administration of the planning concepts and the planners itself and the decisions of the legislative bodies as well as the decision-making politicians involved.

The fourth chapter covers the institutional factors such as the availability of affordable housing, the availability of school and training places and retail sales areas as well as the number of witnessed criminal offenses. This chapter also examines whether these institutional factors are reflected in the development concepts of the four regions. Other institutional factors like availability of green living areas and supply of diverse cultural program could not be covered due to missing data.

In the fifth chapter, an evaluation of the integrated wage and income tax statistics for the four regions is used for the first time in order to be able to assess the economic convergence and the remaining economic distance of the four regions.

The results are discussed across all topics in chapter 11, discussion.

In chapter 12, conclusion, an attempt is made to give an answer to the two research questions.

6. History and definition of commuting

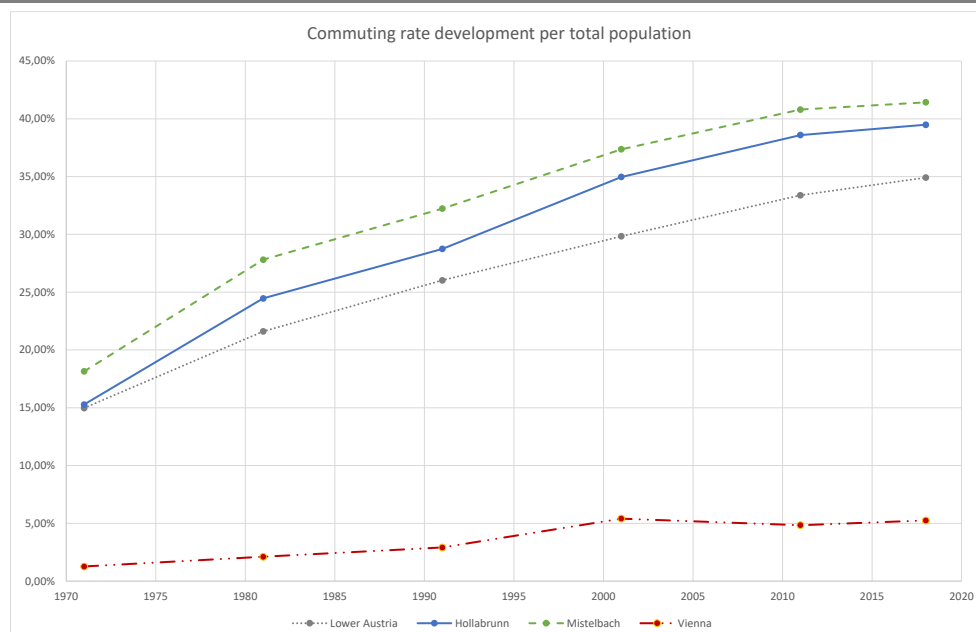
Commuting has a fairly short history. It is a twentieth century invention. Even at the beginning of the twentieth century most people walked to work as studies about Britain found out (Pooley and Turnbull, 2000). Suburbia was an elite issue for wealthy people moving to the summer residency looking for fresh air and some distance from urban criminality (Priebis, 2019).

The construction of suburban railways started the *first wave of suburbanisation* (Cervero, 1989), and changed the travel pattern from home to work. In doing so the word “commute” was invented. “The origin of the word *commute* itself heralds from the late nineteenth century United States’ commutation ticket, a reduced-price railway season ticket by which the price of multiple daily tickets was “commuted” into a single payment” (Bissel, 2018: xiv).

The *second wave of suburbanisation* (Cervero, 1989) brought the migration of retail activities (shopping malls) to the suburbs in the 1950s (US) and 1960s (Europe). It was the beginning of more intense usage of private cars (Pooley and Turnbull, 2000). In the 1980s the *third wave of suburbanisation* took place in the US and a mass arrival of white-collar and service jobs to the suburbs (Cervero, 1989). The usage of private cars increased dramatically.

Commuting has become a mass phenomenon in all western industrial countries and meanwhile all over the world, including in Austria in Europe. This master thesis focusses on the eastern region of Austria, in particular the federal states of Lower Austria and Vienna as well as the mid-size cities Hollabrunn and Mistelbach (located in the rural area outside the urbanised metropolitan area of Vienna). The following diagram shows the increase in commuting in the eastern region of Austria, starting in Lower Austria with 15% in the 1970s and arriving at 35% in 2020. The figures for Hollabrunn and Mistelbach look very similar.

Figure 3: Development commuting rate in the eastern region of Austria (1971 to 2018)



Source: Statistik Austria, STATcube, own cross referencing of outgoing commuters and population data

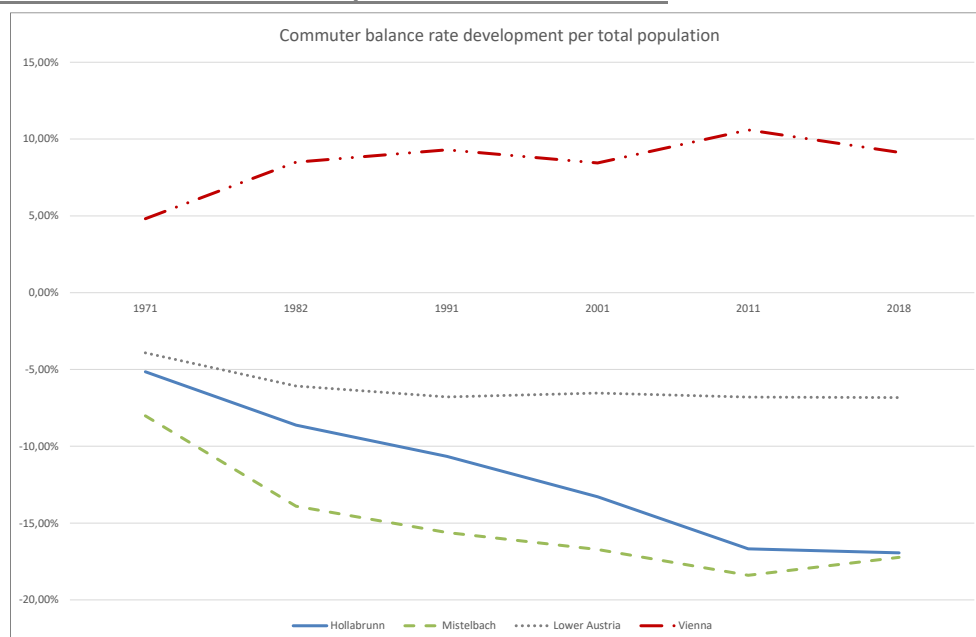
Commuting is defined as periodically recurring travel between one's place of residence and place of work, or study, and in doing so exceeding the boundary of their residential community (dictionary.com, 2020).

The measure of commuting in the presented long-term analysis is based on the number of workers and students moving out of their living municipality (Statistik Austria, 2020a). That is why Vienna does not show a heavily growing figure over the long-term history as most of the commuting takes place inside the city borders of Vienna itself. It started late in the 1990s that suburbs attracted more Viennese workers to travel outside the city borders of Vienna (the move of the institutions of the Lower Austrian provincial government from Vienna to St. Pölten also generated commuters from Vienna to Lower Austria in the 1990s). In all areas around Vienna (represented by Lower Austria) and even outside the metropolitan area (represented by Hollabrunn and Mistelbach) commuting almost tripled.

This *'fourth wave of suburbanisation'* could be seen in context of the growing globalisation and a stronger integration of urban agglomerations into the global interactions. It is assumed to be a dual process of global urbanisation and economic globalisation (Fang and Yu, 2017). New job profiles were brought to the urban and suburban areas of urban agglomeration areas as part of the "global re-division of labour" (Fang and Yu, 2017). It is interesting that recent data since 2010 in the long-term analysis show a declining or even stagnating growth pattern for commuters in the eastern region of Austria into Vienna.

Another method of showing the development of commuters is to compare outgoing commuters and incoming commuters in the form of the commuter balance. For this, the number of outgoing commuters is subtracted from the number of incoming commuters (commuter balance = number incoming commuters minus number outgoing commuters). The long-term analysis shows interesting figures for the four regions.

Figure 4: Commuter balance development from 1971 to 2018



Source: Statistik Austria, STATcube, own calculation commuter balance of outgoing and incoming commuters

Vienna shows an increasing positive commuter balance from 1971 until 2011, which was the peak value. Since 2011 the commuter balance of Vienna is decreasing, mainly because of less incoming commuters. Lower Austria, Hollabrunn and Mistelbach show a negative commuter balance (more outgoing commuters) since 1971. Since the 1990s the commuter balance all over Lower Austria is stagnating. The growing number of jobs offered in Lower

Austria obviously better meets the growing population and job-seeker demand of Lower Austria.

For Hollabrunn and Mistelbach the situation was different until 2011. Since then the commuter balance does not show a further decreasing. Mistelbach even shows a changing trend. Since 2011 the regions on the border to the metropolitan area of Vienna show a better development than Vienna. We will get into that later.

The strong growth of commuting over many decades has exacerbated the negative effects of commuting. The growth of attractive public transport supply did not meet the growing demand of commuters. Private car usage is still at high percentage among commuters. The modal split of Vienna in 1990 showed 44.1% of commuters using their private cars and 43.9% using public transport (Schwanen, 2002). Several other European cities showed even a higher percentage of private car use (Schwanen, 2002).

Car usage was also subsidised by commuter tax credit (commuter flat rate). “As long as a place of residence in the periphery is subsidized by the commuter flat rate, it is also attractive to live somewhere in a single-family house. And then you drive everywhere in the car and get subsidized for it” (city planning Vienna, 2020).

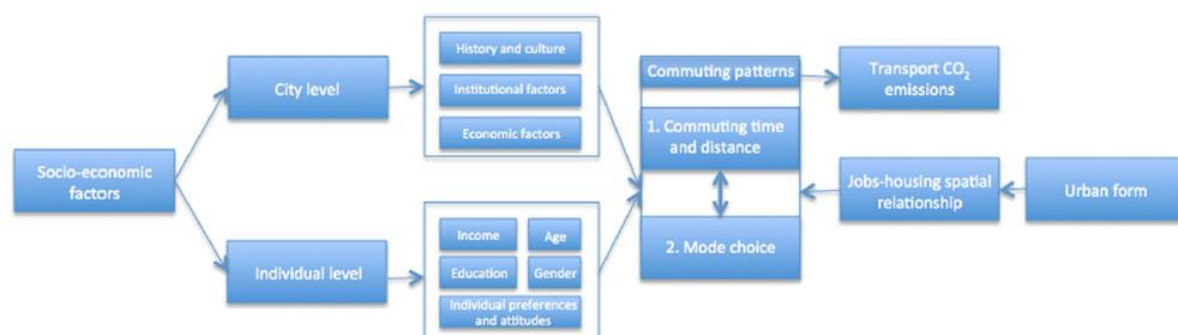
Commuting has become associated more and more with traffic congestion (European Commission, 2006), vehicle emissions and noise (Stern, 2000), time consuming traveling and long absences from children and family (Schneider et al., 2002) as well as health problems (Feng and Boyle, 2013). Because of the rising problems commuting has become a top priority for urban planners (City of Vienna, 2015) and all political levels (European Commission, 2006).

Researcher all over the world tried to figure out what factors influence the commuting activities.

The “urban form” (monocentric and polycentric city) was assumed in the early stages of research to strongly influence traveling behaviour (Alonso, 1964; Mills, 1972; Gordon et al., 1989). “Urban form describes the spatial distribution and concentration of jobs and residences and thus affects commuting distances” (Engelfriet and Koomen, 2018: 1272). Most research was done in the US (Schwanen, 2002), some in Europe and recently a lot in Asia, especially in China (Fang and Yu, 2017) and about China (Engelfriet and Koomen, 2018).

Engelfriet and Koomen gave a broad overview of the existing research on urban form and the different impacts on traveling behaviour (ibid, 2018). Researchers tried to set-up a framework to differentiate the impacts of the urban spatial structure and further socio-economic factors on commuting (Lin et al., 2015; Engelfriet and Koomen, 2018).

Figure 5: Conceptual framework impacts of urban form and other factors on commuting



Source: Engelfriet and Koomen, 2018: 1272

The urban form influences the jobs-housing spatial relationship. The “jobs-housing balance” measures the relation of jobs to housing units. It is assumed that a more balanced mix of jobs and housing reduces the length of trips to work and changes the modal split to more walking and cycling (Cervero, 1989).

The jobs-to-housing-ratio is a rather old-fashioned concept as it is based on the single wage-earner household living in a housing unit. It was kept alive and the ratios have been adopted to the growing number of dual wage-earners. Today we have a growing number of singles in single wage-earner households and the standard type dual wage-earner household. In recent years we have witnessed also triple and more wage-earners in parent households as kids stay longer with their parents. A better measure would be the amount of jobs in relation to the “employable population” (16 to 65 years of both genders) in a specific spatial structure (e.g. municipality or parent region like county/district or federal state).

But this measure also has weaknesses because it does not consider the growing importance of student commuters. Since the 1970s, the number of high school and university students commuting to their educational institutions has significantly increased. In this master thesis the benchmark for jobs and school places (the two main reasons for commuting) will be the total population of a region for reasons of statistical simplicity.

However, the jobs-dimension seems to be essential for understanding the spatial development as employment, not population, is the key component to understand the formation of urban structures (McDonald, 1987). I would add the number of school and university places as another important component to understand the formation and the sustainability of urban structures.

The new frameworks also show impacts on commuting also from socio-economics factors, so called ‘soft’ factors (Lin et al., 2015), as the spatial relationship of workplaces and residences is not able to sufficiently explain commuter behaviour. Some researchers have even showed that reducing the jobs-housing imbalances produces new problems like urban sprawl and labour market fragmentation (Peng, 1997). In this master thesis emphasis is put on the ‘soft’ factors (political history and culture, institutional factors, economic factors on the regional level) that influence commuter behaviour but jobs-population spatial relationship and urban form are still considered.

The urban form has changed dramatically since the beginning of the twentieth century when commuting started to rise. The monocentric urban centre was changed to a more polycentric structure. Dynamic influence was generated also in the suburbs by the new types of jobs and corporations. Due to economic and population growth combined with an increased supply of motorways and high-performance public transport most of the urbanized regions started to grow into urban agglomerations.

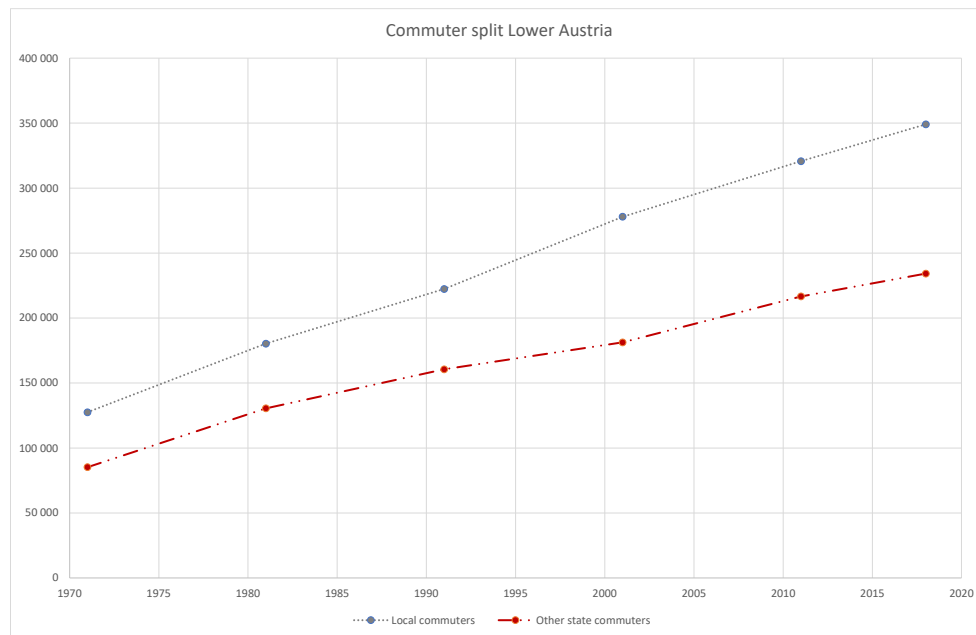
Urban agglomerations generated a lot of new options for workers (and students) in their short-distance as well as longer-distance surroundings. The exchange of capital, labour and information intensified within in the urban agglomerations as well as among global urban agglomerations and with different global value chains (Lin et al., 2015).

The change of the urban form from monocentric to polycentric structure influenced not only the city structure but also the structure of the regions around the cities. The “so-called” urban agglomerations grew with prosperity. This also had impacts on the commuting directions in the suburban regions but also in the more rural regions.

The area around Vienna (Lower Austria) and the FUA (Functional Urban Area - as defined by OECD and European Commission) of Vienna are interesting examples for this change.

The more polycentric development structure of Lower Austria (moving the capital from Vienna to St. Pölten in the 1990s, and the regional development plans for main regions created a special dynamic in Lower Austria since the 1990s) generated new opportunities for job and house-seekers outside of Vienna. The growth of local and regional commuting was higher than the growth of commuting into Vienna (which was historically the main direction) as shown in figure 6.

Figure 6: Development commuters in Lower Austria (local and other states)



Source: Statistik Austria, STATcube, own calculation of outgoing commuters in Lower Austria

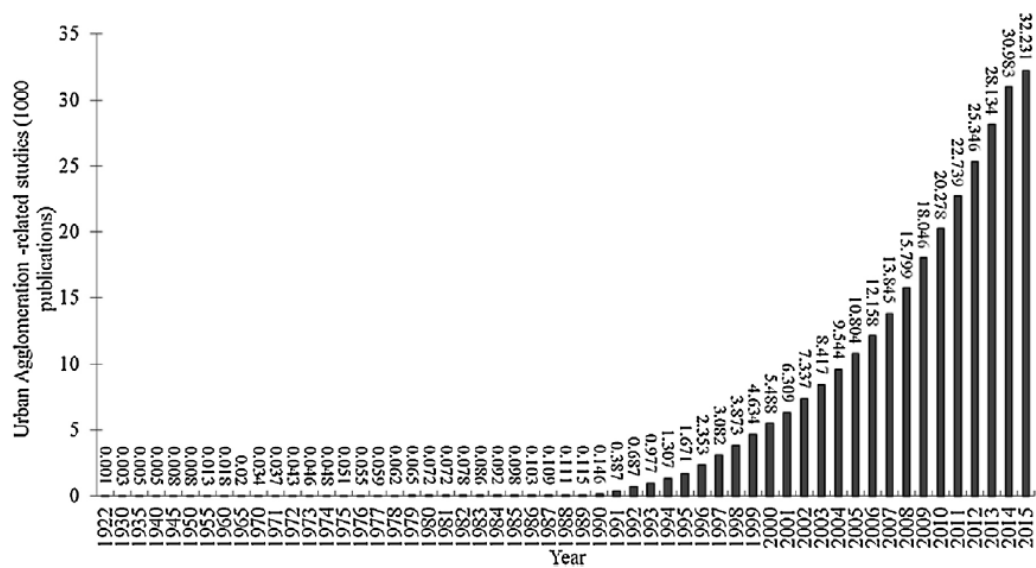
The dynamics of local and regional commuting in Lower Austria stayed higher even in recent years (2011 to 2019). The economic dynamic has obviously grown in the urban agglomeration outside the core city of Vienna.

Commuting is strongly linked to the building of urban agglomerations as specific forms of urban spatial organisations. Urban agglomerations are the main commuting areas in the world.

The OECD and the European Commission have taken this development into account by defining the FUAs (Functional Urban Areas). The FUAs include the commuting zone around a bigger city. Other international or national definitions are used as well. The specifics of the FUA definition and other concepts will be presented later in this master thesis.

Fang and Yu generated an impressive analysis on urban agglomeration related research articles in the past 50 years. This analysis confirms the growing importance of studies on urban agglomerations which confirms on the other hand the growing importance of urban agglomerations all over the world.

Figure 7: Number of urban agglomeration related research articles



Source: Fang and Yu, 2017: 127

Since the 1990s there has been a clearly visible increase in research activity. Urban agglomerations have arrived in the mainstream of urban studies.

7. History and definition of urban agglomeration

The history of urban agglomerations witnessed a strong trend of urbanisation (from a euro-centric point of view starting in the 19th century) in the first phase, followed by a strong wave of suburbanisation (in the 1950s in the US and 1960s in Europe) as a second phase. The third phase is described as de-urbanisation (starting in the 1970s and 1980s) which is followed by a new phase of re-urbanisation in recent decades (Gaebe, 1987). Researchers that focus on suburbanisation give slightly different descriptions of the historical development (Cervero, 1989).

Industrialisation in the 19th century led to rapid urban growth. People flocked to the cities in search of work and higher wages than farm labour. To maximize their profits, property owners were pushing more and more tenants into existing accommodations (Webb, 2016). In the absence of sanitary facilities, these shelters became breeding grounds for diseases. “Visitors remarked about the persistent smell of tanneries, breweries, dyeworks, and gasworks” (Kotkin, 2006: 87). Friedrich Engels described his observations as follows: “Everywhere one sees heaps of refuse, garbage and filth” (Engels cited in Kotkin, 2006: 87).

Cities not only formed a perfect breeding ground for diseases but also for commercial success of industrialisation and technical innovation. Big cities formed huge markets with growing consumer demand, provided short transport distances, enabled increased division of labour and integrated research institutions, and offered a wide range of education and training facilities. Cities became the combustion engines of technical and social progress. There were many approaches to analyse the economics behind agglomerations, from classical theory of Marshall and Ohlin to progressive new theories of Dixit-Stiglitz and Krugman which cannot become part of this master thesis (Capello and Nijkamp, 2009: 19-32).

“Cities have become spaces of confusing diversity, concentrated activity and dynamism, national and international innovation centres” (Gaebe, 1987: 17)

At the beginning of the 19th century London and Paris were the largest European cities (1 million and 550.000 inhabitants). Vienna was the largest city in the German-speaking region (220.000 inhabitants) and Berlin had only 150.000 inhabitants (Gaebe, 1987: 26).

The cities in Europe started to grow and grow during the industrialisation. However, in 1850 there were only 3 cities with more than a million inhabitants in Europe including Turkey (figure 8).

Figure 8: Development of the number of metropolis with more than 1 million inhabitants

Tab. 2 Zunahme der Millionenstädte von 1850–1980 (1)

	1850	1900	1920	1950	1980
Europa					
einschl. Türkei	3	4	6	15	21
UdSSR		2	2	2	23
Nordamerika		3	3	6	9
Lateinamerika			2	5	21
Ostasien		1	2	14	32
übriges Asien			1	8	29
Afrika				1	13
Australien					3
	3	10	16	51	151
(1) Städte mit einer Million oder mehr Einwohnern					

Source: Gaebe, 1987: 30

The growth of cities did not stop at the historical city borders but spread into the surrounding areas. “Teaford (2006) suggested that the interconnectivity among various cities was increasing dramatically due to highly developed social productivity and a market economy. Such increased interconnectivity blurred the boundaries between cities and peripheral regions” (Fang and Yu, 2017: 129).

Cities exported their economically and socially successful concepts. “The adaption and expansion of urban settlements, live styles and economic pattern in the wider area around cities is also a feature of urbanisation” (Gaebe, 1987: 30).

Urbanisation is far from over. “The United Nations’ *World Urbanisation Prospects* (United Nations, 2014) estimates that while in 1950 a total of 746 million lived in urban environments, by 2045 more than 6 billion are expected to be urbanised” (Keil, 2018: 3).

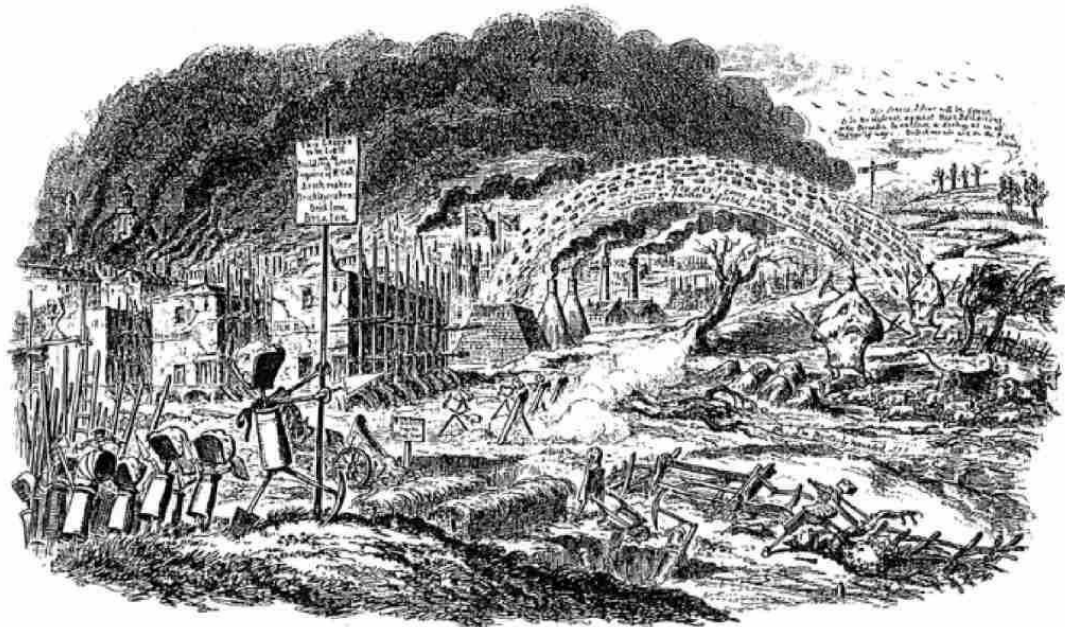
The triumph of urbanisation has been accompanied by defeats and upheavals. The narrow and dirty city turned into a hostile image. They were considered as urban lumps of stone and breeding grounds for meanness and vice (Stamm, 2003). Suburbanisation was the first answer to the negative image of city life. Initially, only royal, aristocratic, or wealthy people settled outside of these city centres, but they were soon followed by a growing middle class (Webb, 2016).

A huge rural exodus led to the emergence of new streets and residential areas, particularly on the outskirts of the growing cities (Pribs, 2019). This process is now known as suburbanisation. The expansion of mass transportation intensified this rural exodus.

The ideal of the garden city (Ebenezer Howard), as well as other urban planning concepts that were developed in the late 19th and early 20th centuries. aimed to loosen up and greenify the city. They are reactions to the grievances of the big cities.

The expansion of the city, now known as urban sprawl, has its historical origins at that time. It was not an urban development accident or urban planning failure, but a desired development (Pribs, 2019). “It develops from necessary expansion to planned invention” (Keil, 2018: 29) Geddes “observed the co-existence of urban sprawl and the over-concentration of both cities and industrial and economic activities. Geddes further argued that urban sprawl was a result of over-separation between cities and their suburban areas, whereas over-concentration was a result of the concentrated locations’ having apparent resource advantages (such as coal) and transportation conveniences (such as intersections among railways, highways, and waterways). Geddes regarded such a concentration of urbanization and collective human activities as a new form of population development” (Fang and Yu, 2017: 127).

Figure 9: London going out of town or the march of bricks and mortar



Source: Webb, 2016: picture 7 by George Cruickshank 1829

The industrialized countries went through half a century of deindustrialization, suburbanisation and urban decline (Keil, 2018). The central cities worked with increasing desperation to secure their historic primacy (Kotkin, 2006).

In some global cities (New York, London, Paris) there have already been approaches to re-urbanization in connection with gentrification processes (Prieb, 2019). Urban professionals have collectively embraced centralism and compactness as the guiding idea of twenty first century urbanism (Keil, 2018). Critical voices like Gaebe (1987) tended to conclude instead that the "back to the city" movement was vastly overestimated.

Dominant monocentric agglomerations with a one-dimensional and a strongly hierarchical relationship between the city centre and its surrounding area are being replaced by a more differentiated functional system with many mutual dependencies. Increasingly, the functions of existence (work, life, supply, recreation and education) are carried out in different and changing places according to individual preferences (Prieb, 2019).

At the end of this tour through the history of urbanization, with visible ups and downs in the urbanisation dynamics, we can realise, that urban agglomerations stayed the central location for capital, labour and information on a global scale. The crises of megacities should not be underestimated at this stage (Kotkin, 2006: 147). There are multiple problems to be solved. However, cities have grown into urban agglomeration that form the lives of a majority of the global population.

The metropolises have "been leaping ahead of the rest of the country, and this widening divide is there whether we measure it in incomes, jobs growth or house prices" (Collier, 2018: 125). Some urban regions and provincial cities have witnessed a severe economic decline. Collier cites a new analysis by the OECD, that finds in the high-income countries, over the past two decades the productivity gap between the top regions and the majority has widened by 60 per cent. This urban rural divide has become a dominant issue and "has played out in a political divide" (Collier, 2018: 125).

In the eastern region of Austria, a long lasting political and socio-cultural conflict exists among Lower Austria (which forms the area around Vienna) and the city of Vienna (Steininger, 2017). We will come back to this rural urban divide at a later stage of the master thesis.

According to Fang and Yu (2017), studies of urban agglomerations (cities and their surrounding area) started as early as 1898, when Ebenezer Howard proposed his ideal of garden cities. In his vision of the urbanized landscape, the urban form consists not only of the areas occupied by cities, but also of several peripheral garden cities that are integrated into a central city (ibid, 2017).

Fang and Yu found six parameters that are widely used to define urban agglomerations (ibid, 2017: 129).

1. *The urban agglomeration results from the evolution of urban spatial forms in a self-organizing process where the external morphology of the urban agglomeration is the product of a symbiotic growth of all elements (ecological perspective).*
2. *A certain spatial size is identified which fulfils criteria like population density, urban/suburb functions, and continuity of the spatial landscape.*
3. *An urban agglomeration is defined based on functional interconnectivity and accessibility (commuting rate and urbanisation rate of peripheral regions within the agglomeration).*
4. *An urban agglomeration is identified if certain minimum population counts of the core city/cities is reached.*
5. *An urban agglomeration is defined if specific minimum population and residential locations in the peripheral areas are reached.*
6. *An urban agglomeration is identified if the distance from the core city/cities to the most peripheral areas meets certain criteria such as acceptable commuting distance and commuting time.*

The quantitative numbers of Fang et al. are partly oriented to the concept of a megalopolis (with a minimum of 25 million inhabitants). This is not feasible for most of the urban agglomeration regions in Europe. The concept of the metropolitan area of the US (1990) would be more feasible for European urban agglomerations (Li and Stough, 2007).

In the following three different concepts of delineation for urban agglomerations are presented that are used in the international and Austrian context.

7.1. The concept of the Functional Urban Area (FUA)

The OECD and the European Commission have jointly developed a methodology to define functional urban areas (FUAs) in a consistent way across countries. Using population density and travel-to-work flows as key information, a FUA consists of a densely inhabited city and of a surrounding area (commuting zone) whose labour market is highly integrated with the city (OECD, 2012). The ultimate aim of the OECD-EU approach to functional urban areas is to create a harmonised definition of cities and their areas of influence for international comparisons as well as for policy analysis on topics related to urban development (Dijkstra et al., 2019).

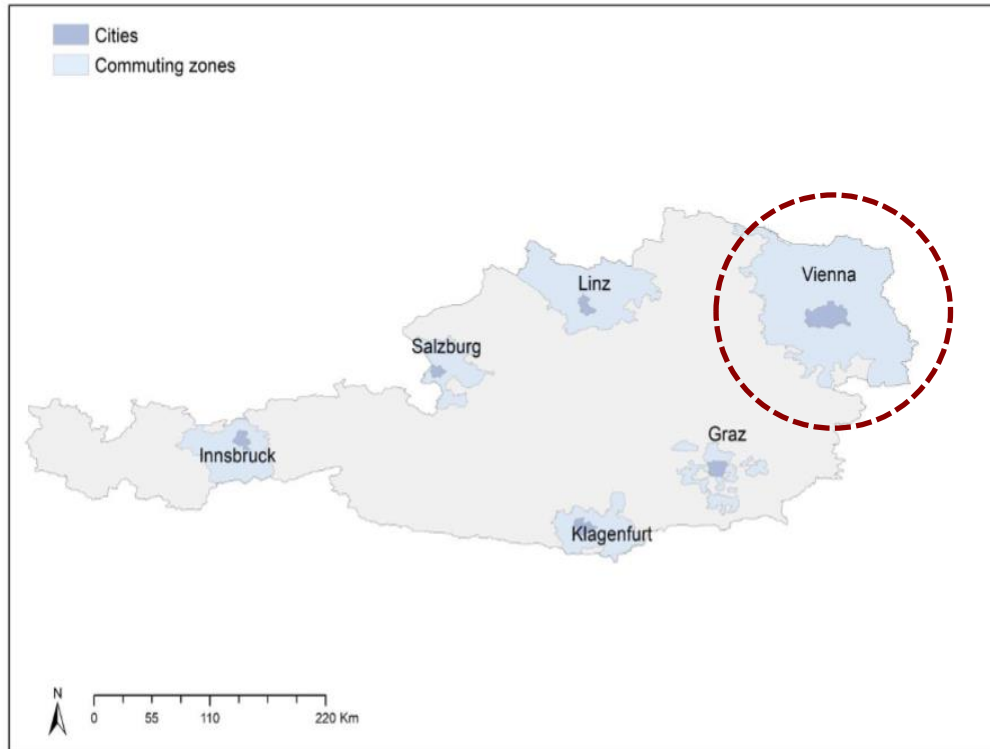
The FUAs definition of OECD-EU starts with the definition of a city and adds the definition of a commuting zone. A city consists of one or more local units with at least 50% of their population in an urban centre (Dijkstra et al., 2019: 5). Once all cities have been defined, commuting zones can be identified using the following steps (Dijkstra et al., 2019: 7):

1. *If 15% of employed persons living in one city work in another city, these cities are treated as a single destination.*
2. *All local units with at least 15% of their employed residents working in a city are identified as part of the commuting zone of that city.*

3. *Enclaves, i.e. local units entirely surrounded by other local units that belong to a commuting zone or a city are included, and exclaves or non-contiguous local units are dropped.*

A Functional Urban Area (FUA) consists of the city and its respective commuting zone. The following figure show the results for Austria.

Figure 10: Austrian Functional Urban Areas (FUAs)



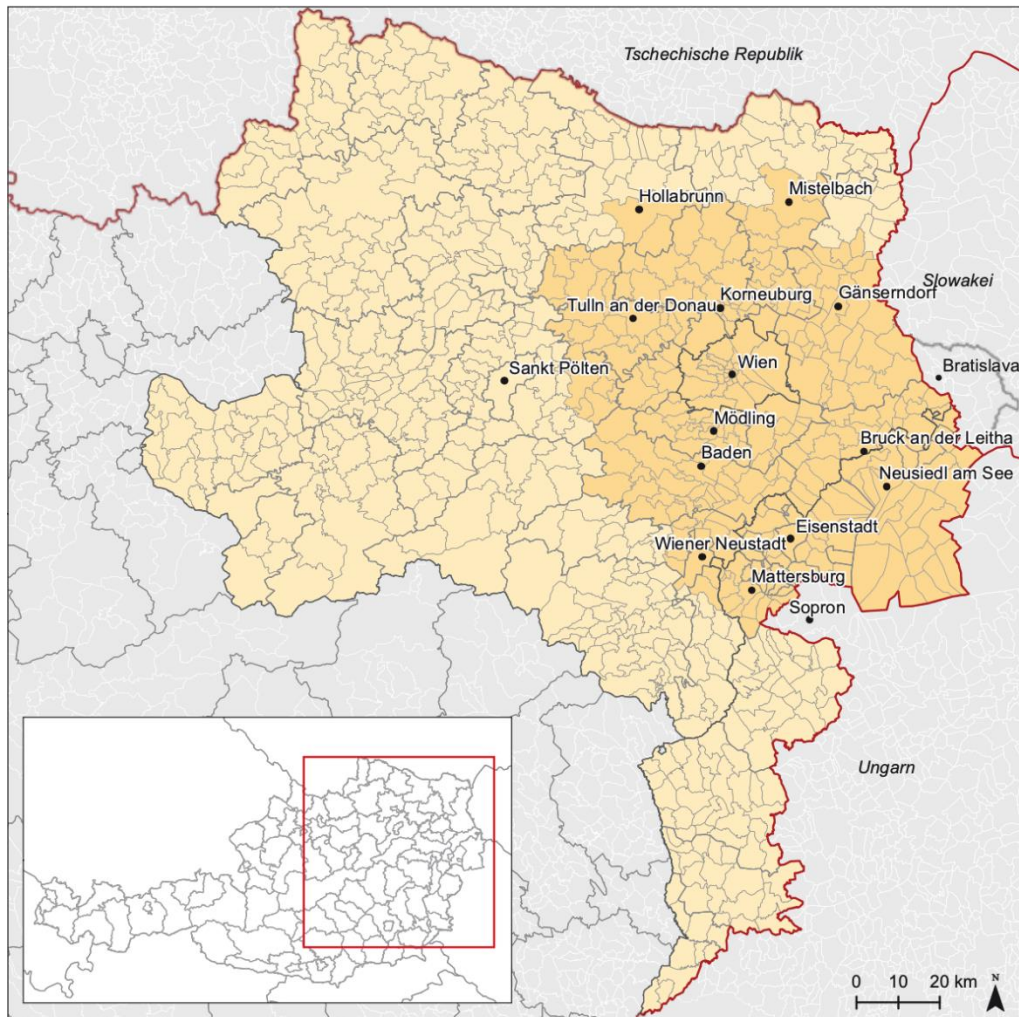
Source: <https://www.oecd.org/cfe/regionaldevelopment/Austria.pdf>, Version: January 2019

There are four “metropolitan areas” (Graz, Linz, Innsbruck and Salzburg). Vienna is the only “large metropolitan area” in Austria based on the FUA definition with approx. 2.8 mill. inhabitants in the specified region. This large metropolitan area covers the city of Vienna, the federal state of Lower Austria (including Hollabrunn and Mistelbach), some areas of the federal state of Burgenland and some northern regions of the federal state of Upper Austria.

7.2. The concept of the Extended Metropolitan Area – *Stad t r e g i o n + ö*

Another concept for defining the metropolitan area of Vienna is used by the PGO (Planungsgemeinschaft Ost), the spatial coordination and planning platform of the federal states of Vienna, Lower Austria, and Burgenland for the eastern region of Austria. The PGO was entrusted with analysing, agreeing, and coordinating issues relevant to spatial planning in the Austrian eastern region as early as the 1970s. The PGO called it ‘Stadtregion+’ a synonym for extended metropolitan area.

Figure 11: Extended metropolitan area of Vienna - Stadtregion+



Source: Fassmann, Görgl & Helbich, 2010

The elaboration of the PGO was carried out with coordinated control of the development beyond the federal and municipal boundaries and a common reference of decision makers. “Stadtregion+’ outlines a common path into the future that considers the diverse interdependencies between countryside and city, between the federal states and the municipalities and between the municipalities” (Planungsgemeinschaft Ost, 2011: 5).

The extended metropolitan region ‘Stadtregion+’ (dark yellow in the picture above) comprises 205 municipalities in Lower Austria (including Hollabrunn and Mistelbach) and 63 in Burgenland, as well as 23 municipal districts in Vienna. In the decision-making process where the boundaries of the urban region should run, classic scientific criteria such as commuter links, functional relationships between the core city and the surrounding areas as well as regional population forecasts were included. In addition, the arguments of the respective federal administrations were also considered (Planungsgemeinschaft Ost, 2011).

7.3. The concept of the Metropolitan Area

The Austrian Spatial Planning Conference (ÖROK) is an institution supported by the national state, federal states, and local governments for the coordination of spatial planning at the national level. ÖROK developed another concept to define the metropolitan area of Vienna.

In their Austrian spatial development concept, the “Cooperation Platform Urban Region” was established that develops the basic principles for a cooperative urban policy.

The Agenda published in 2015 defines four fields of action:

1. *Settlement and location*
2. *Undeveloped areas and environment*
3. *Mobility and accessibility and*
4. *Diversity and cooperation.*

In 2015, the website www.stadtregionen.at was launched as part of a project by the Austrian Association of Cities and the KDZ-Center for Community Administration Research. Here, data on Austrian city regions are visualized, following the urban-rural typology of Statistics Austria.

When creating the urban-rural typology, densely populated areas are first demarcated on a grid-based basis and thus urban and regional centres are classified at municipal level. The availability of infrastructural facilities is also assessed when determining regional centres. In a further step, the classification of municipalities outside of the centres takes place on the basis of commuter networks and the accessibility of the centres.

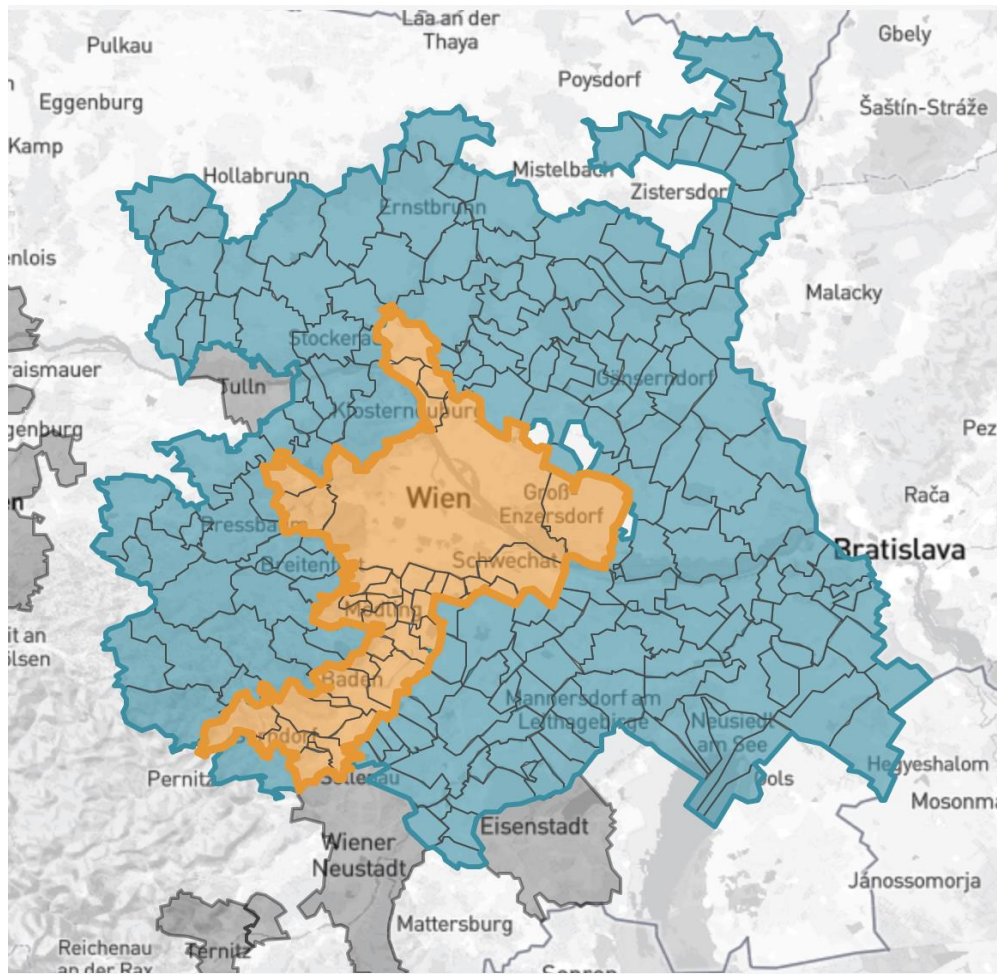
The result are 4 main classes: urban centres (city regions), regional centres, rural areas in the vicinity of centres (outer zone) and rural areas. These main classes are divided into a total of 11 sub-classes based on the number of inhabitants (within urban centres) and the accessibility of urban and regional centres into central, intermediate, and peripheral zones. As an additional criterion, the importance of tourism for all municipalities is evaluated and those municipalities with above-average tourism can be shown separately (Statistik Austria, 2020b).

The aim of the work of this cooperation platform is to anchor the term urban region in politics and administration and the special interests of cities and agglomerations in the implementation of sectoral policies of the federal and state governments. The cooperation platform should also ensure the networking of Austrian agglomeration areas within the framework of European measures (ÖROK, 2011).

The definition provided on the online platform defines city regions as "areas consisting of several municipalities that are economically, socially, geographically and transport-wise linked. In Austria they do not represent an administrative or political regional authority and are not constitutionally anchored" (stadtregionen.at, 2020).

The core zones (orange) form agglomerations with at least 10,000 inhabitants and function as nodes and centres of economic and cultural development.

Figure 12: Metropolitan area of Vienna (ÖROK concept)



Source: stadregionen.at, 2020

They are embedded in the outer zone (turquoise), the labour market catchment area in which at least 30% of the employees live in the core area. The municipalities of the outer zone are infrastructurally oriented towards the urban core and represent the main focus of settlement activity (stadregionen.at, 2020).

The delimitation of the urban region is based on the one hand on spatial structural features, such as population and building density, from which a core area that is as homogeneously structured as possible can be summarized. On the other hand, the demarcation is based on the extent of spatial interdependence between the core and outer zones in the areas of commuter flows, supply and leisure, which indicate the catchment areas of the core zone (stadregionen.at, 2020).

Hollabrunn and Mistelbach are outside the core zone and outside the outer zone of the metropolitan region. These two cities have been selected because they are on the border with the metropolitan area of Vienna. They are not as integrated to the metropolitan area of Vienna than other cities of Lower Austria. However, they are still close enough to the metropolitan area to monitor the impacts of urbanisation and suburbanisation trends. Both cities are capitals of vast rural districts in Lower Austria. This makes them central places of interest also in context to the long-lasting political and socio-cultural tensions between rural areas of Lower Austria and the city of Vienna.

8. The eastern region in Austria and its special features

The image of the eastern region is diverse. “From the Pannonian depths of the Seewinkel to the moderate heights of the Vienna Woods, over the floodplain landscapes of the Danube and March and the hilly landscape of the Weinviertel back to the flat land of the Marchfeld” (Planungsgemeinschaft Ost, 2011: 6).

8.1. City of Vienna

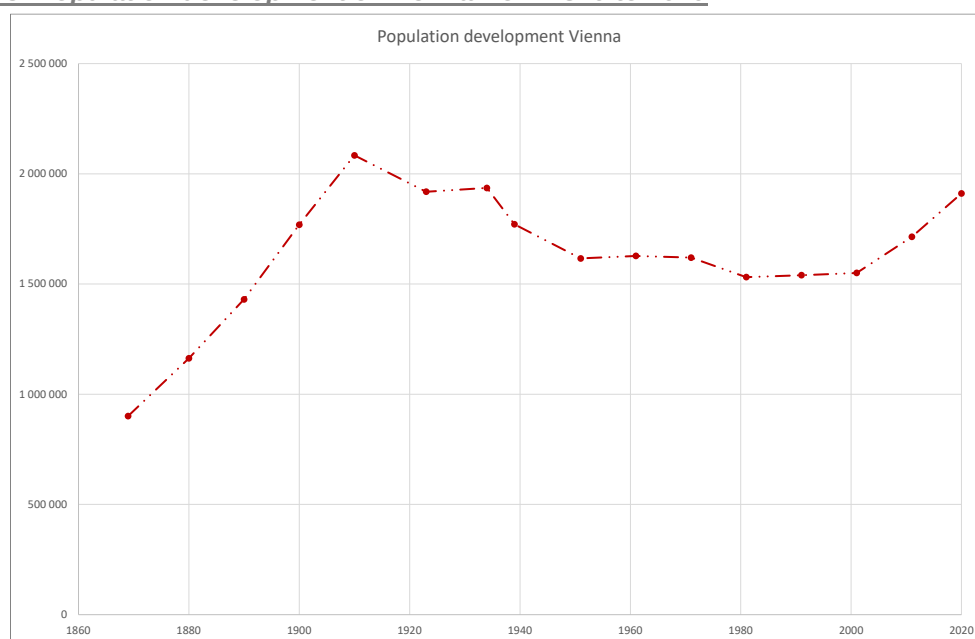
Vienna is a very specific place in Austria. It's the only metropolitan city in Austria and historically it changed from the capital and 'imperial city' of a huge monarchist empire to so-called 'Red Vienna' with progressive political, cultural and social programs. Vienna developed in a very different way than the rest of the country since the end of World War I.

Suitner, Krisch and Pühringer (2018) provide an overview of the urbanisation phases of Vienna: industrial urbanisation since 1850, a shrinkage phase since 1910, a phase of consolidation from 1950 and re-urbanisation since 2000.

Today, suburbanisation and re-urbanisation occur at the same time. There is an increasing tension between spatial centralization and decentralization (Eder et al., 2018).

Figure 13 shows the impressive growth of Vienna in the end of the 19th century (due to migration) and since 2000 (again due to migration).

Figure 13: Population development of Vienna from 1870 to 2020



Source: Statistik Austria, STATcube, Total population, 2020

The decline in the population of the core city has been observed since the census of 1910 (with a few exceptions between 1951 and 1961). Austria was a country of emigration until the 1960s, which was also noticeable in the Vienna metropolitan region. However, since the 1960s it was mainly a negative internal migration balance that caused the city to experience stagnating or negative population growth (Eder et al., 2018).

Since 2000, migration into Vienna started to grow again. In the period between 2013 und 2017 the annual gross immigration figure was over 150,000 people. In 2015 more than

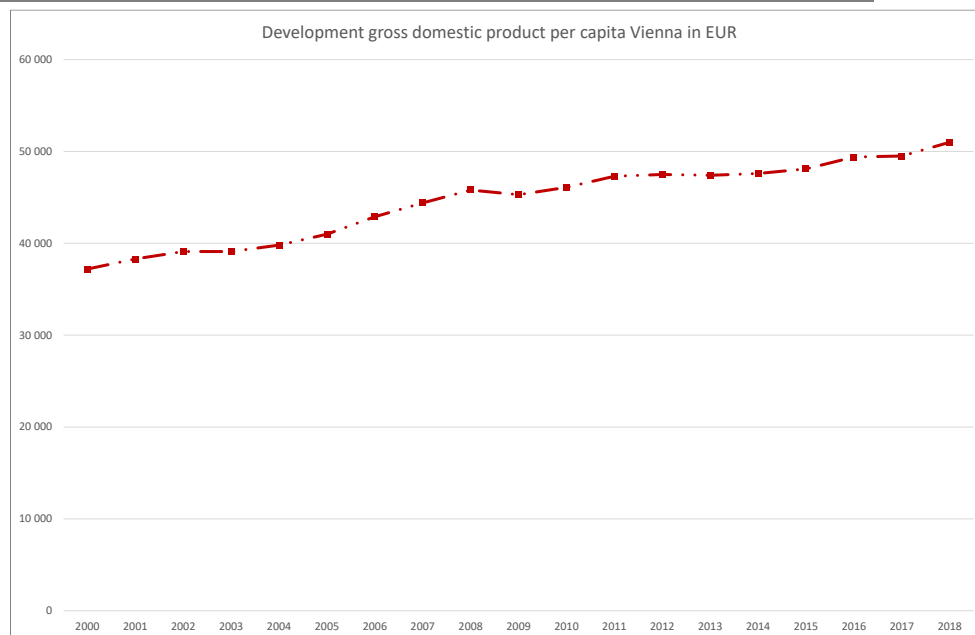
214.000 people moved to Vienna (Expertenrat für Integration, 2018). Vienna is on the move to reach 2 million inhabitants again which was already the case in 1910.

Vienna was an important economic area in Austria all over the decades since industrialisation and huge migration in the 19th century. The post-war period after World War I brought massive economic problems for Austria and Vienna. In these years, the Viennese forest was almost cut down by the Viennese people to survive the cold winters. The break-down of the Austrian banks in the end of the 1920s was the beginning of an economic disaster (Ausch, 1968).

After World War II many parts of Vienna were destroyed, and (especially in the Russian zone) the economy grew very slowly. The economic growth in Vienna stayed behind the Austrian average in the period after World War II until the 1980s. As a result, the economic difference between Vienna and the rest of Austria decreased. The share of the Viennese economy in the total Austrian gross domestic product fell from almost a third in the 1950s and 1960s to 28% in 1981. In the 1990s the Viennese economy for the first time grew faster than the entire Austrian economy (Eigner and Resch, 2001). This success story did not last very long.

The development of the regional gross domestic product of Vienna since 2000 did not follow the growth of the population and lagged behind the other regions of Austria.

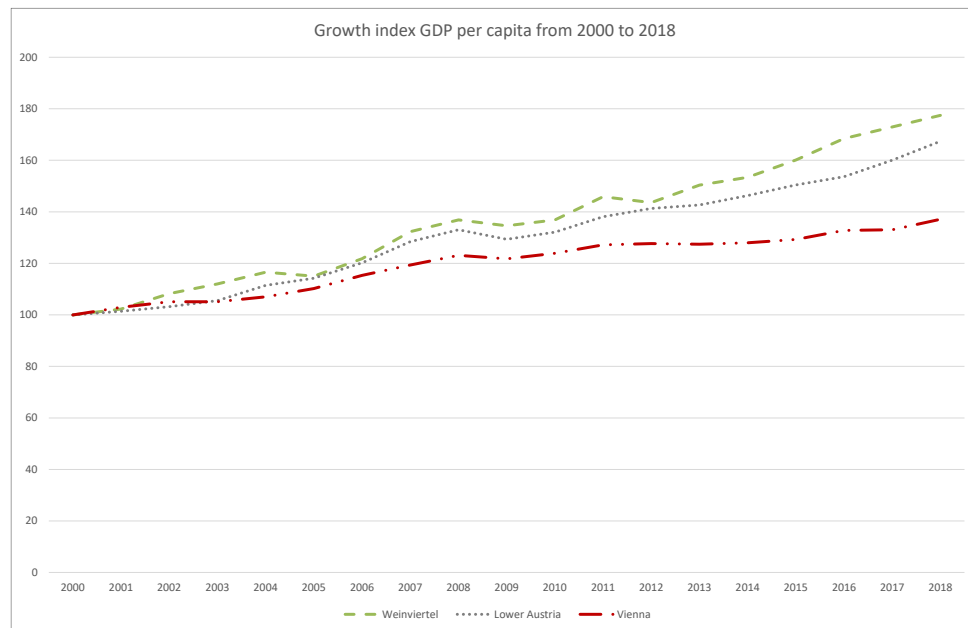
Figure 14: Development regional GDP per capita in Vienna from 2000 to 2018



Source: Statistik Austria, STATcube, Regional GDP federal states (NUTS 2), 2020

Since the year 2000 the economic growth in Lower Austria was higher than in Vienna and even in the remoter places like Hollabrunn and Mistelbach (represented by the data of the region called 'Weinviertel' – NUTS 3 region) the development of the economic performance per capita was better than in Vienna as shown in figure 15.

The region of Weinviertel showed a better trend performance than the total federal state of Lower Austria.

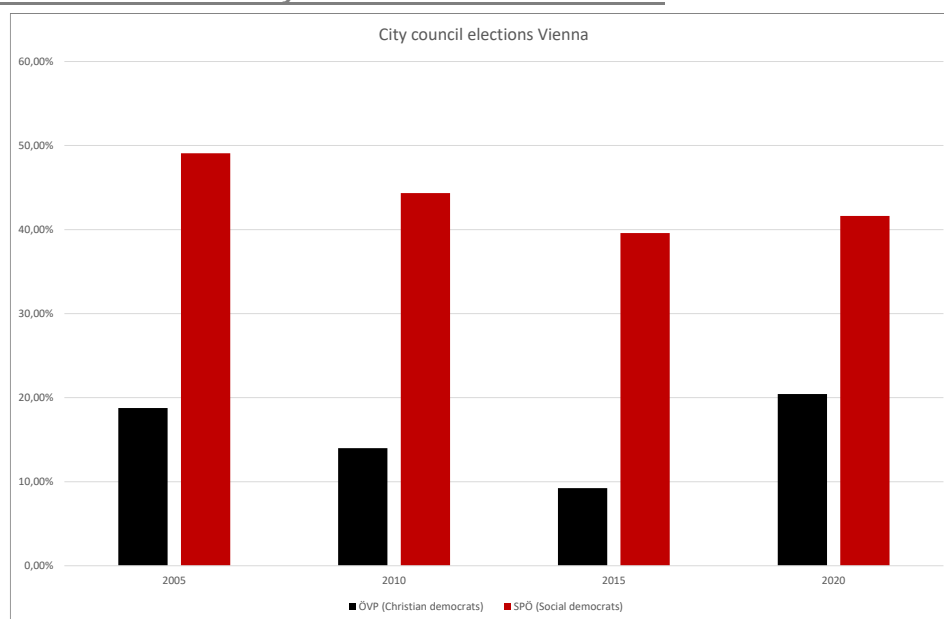
Figure 15: Development regional GDP per capita index from 2000 to 2018

Source: Statistik Austria, STATcube, Regional GDP (NUTS 3), own indexation and calculation, 2020

However, the GDP per capita is still much higher in Vienna than in Weinviertel.

Vienna had a social-democratic leadership since the first free and democratic elections in 1919 (interrupted only by the period of Austro-fascism 1934 to 1938 and the German-Nazi-occupation from 1938 to 1945). The phrase “Red-Vienna” was coined in the 1920s when extensive social reforms took place. Most impressive was the huge social housing program which still forms the housing market (more than 220.000 apartments are owned by the city of Vienna).

The recent city council elections in Vienna showed the following results.

Figure 16: Results of Vienna city council elections since 2005

Source: www.wien.gv.at/politik/wahlen/grbv, 2020

The social-democratic party is still the leading political force in Vienna. This provides a clear indication of the political orientation both at the decision-maker level and presumably also at the level of the administration itself.

8.2. The federal state of Lower Austria

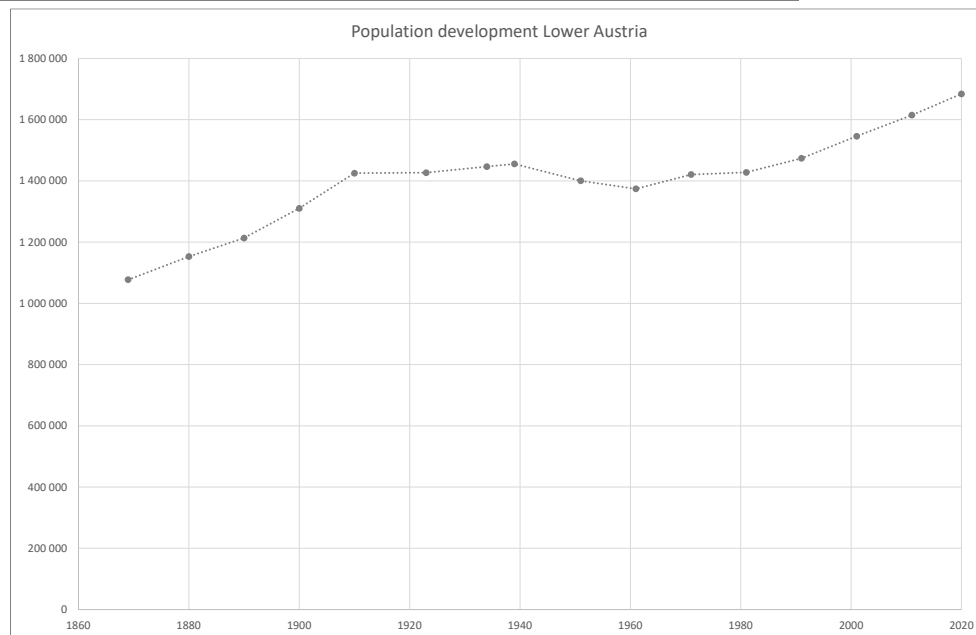
The state of Lower Austria suffered from the lack of its own capital after World War I. Before Lower Austria was a crown land around Vienna in the Habsburg monarchy and afterwards an independent federal state but without a capital.

After a referendum, the state parliament decided in 1986 to make St. Pölten the new capital of the federal state of Lower Austria. "A country without a capital is like a goulash without gravy" this slogan advertised for the establishment of an own federal capital. It was not until 1997 that the federal administration and parliament moved from Vienna to St. Pölten (Eminger & Langthaler, 2013; noe.gv.at, 2020a).

The decision to form an own capital had strong impacts on the spatial structure in the Eastern region of Austria. It was the beginning of a strong regional orientation within Lower Austria to balance the strong dependency towards Vienna.

Population growth in Lower Austria was like in Vienna in the end of the 19th century reaching a peak in 1910. From 1910 until 1940 the population stagnated. However, the population of Lower Austria did not decrease like the population of Vienna. Living might have been difficult in these years in Lower Austria but it must have been much harder in Vienna.

Figure 17: Population development of Lower Austria from 1870 to 2020



Source: Statistik Austria, STATcube, Total population, 2020

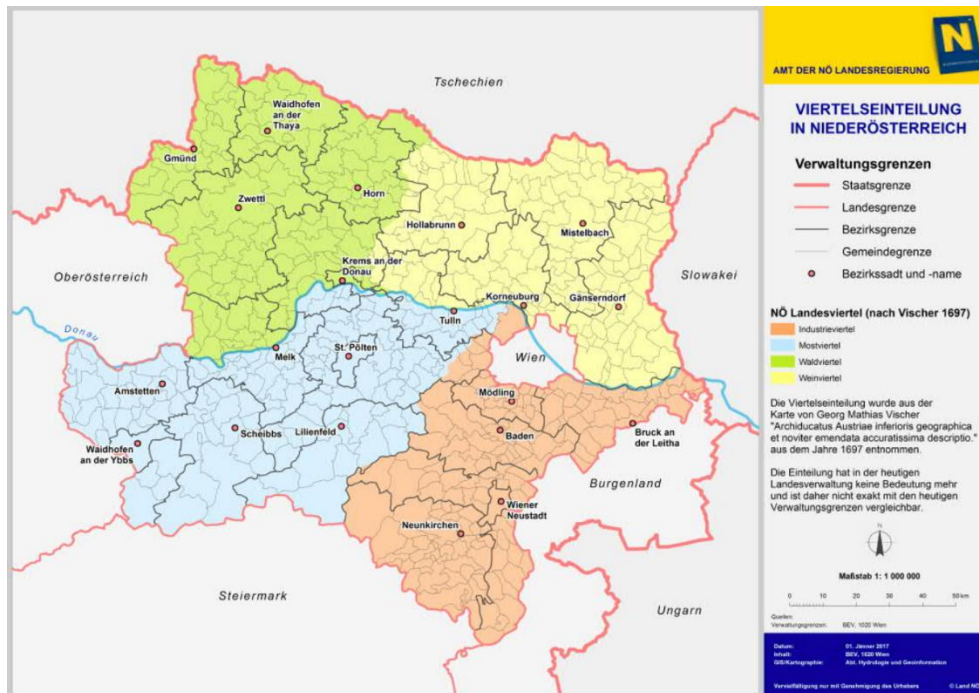
After World War II the population also stagnated in Lower Austria. Since 1960, Lower Austria had a positive population development. Part of it came from Vienna. "Altogether, between 1960 and 1988, more than 90,000 people permanently emigrated from Vienna to the surrounding area" (Weigl, 2017: 212).

Since 2000, Vienna grew quicker due to the higher migration figures but Lower Austria shows a continuing population increase.

Lower Austria does not offer an image of a single spatial area, but a colourful conglomerate of regions. The regional diversity is a legacy of the Habsburg monarchy.

Lower Austria is divided into four quarters. Two are located north of the Danube: the Waldviertel and the Weinviertel. Two quarters are located south of the Danube: the Mostviertel and the Industrieviertel.

Figure 18: The regional division of Lower Austria



Source: www.noel.gv.at/noel/karten-geoinformationen/NOE_viertelsgrenzen_A4.pdf

Lower Austria without the city of Vienna was an agricultural region in 1910 with 52% of the workforce in agriculture and forestry. About a decade later compared to the rest of Austria, the transition from agricultural to industrial society, and finally to a service society, began in Lower Austria. It was not until the 1970s that Lower Austria was able to catch up with the other federal states (Eminger & Langthaler, 2013; noel.gv.at, 2020a).

The changeover from the monarchy's large-scale economy to the regional small-scale economies led to serious economic problems in all of Austria. This also happened in Lower Austria. Animal diseases spread dramatically after World War I. In 1920, 31,769 cattle were infected with foot and mouth disease. In 1921 50,277 cattle were infected (Amt der Niederösterreichischen Landesregierung, 1930).

In 1930 Lower Austria comprised 45% of the arable land, 80% of the wine-growing area, 22% of the meadow areas and 21% of the forest areas in Austria. A quarter of the cattle population and a third of the horse population were located in the Lower Austrian agricultural region (Amt der Niederösterreichischen Landesregierung, 1930).

There were territorial changes during the Nazi era, the so-called Viennese surrounding communities were separated from Lower Austria and given to the Reichsgau Greater Vienna. It

was not until 1954 that most of these communities came back to Lower Austria (noe.gv.at, 2020a).

The regionally unequal industrialization manifested itself in the formation of centres and peripheral areas in Lower Austria. Mighty and rich regions became centres and dependent, poor regions became peripheries. A development that shaped the further economic development in the 20th century (Eminger & Langthaler, 2013).

Lower Austria is still the most important agricultural federal state in the Republic of Austria. The main branches of agriculture are arable farming, viticulture and livestock farming (noe.gv.at, 2020a).

In the years since 2000 Lower Austria witnessed a very positive GDP and GDP per capita development. Since 2003 the growth path even accelerated over the rate of Vienna.

Figure 19: Development regional GDP per capita in Lower Austria from 2000 to 2018



Source: Statistik Austria, STATcube, Regional GDP federal states (NUTS 2), 2020

The GDP and GDP per capita are still higher in Vienna. The disposable income per capita of Lower Austria nowadays with EUR 25.300 lies over the figure of Vienna with 23.000 per capita (Statistik Austria, 2020c). In contrast to GDP, which is aimed at the place of work, the disposable income is shown according to the place of residence. This comparison shows that the commuter community of Lower Austria transfers substantial parts of the Viennese GDP to Lower Austria.

Some of the surrounding areas of Vienna in Lower Austria are most attractive living locations with quiet green areas and a high level of security.

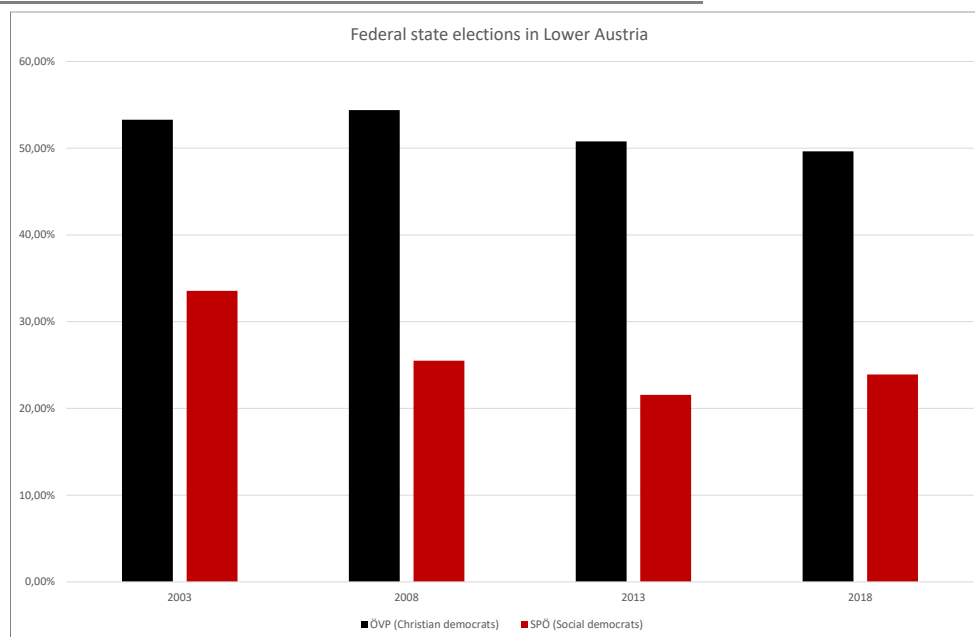
In the election of 1919 (was the first state election in Lower Austria after the end of World War I, with Vienna still being part of Lower Austria at that time), the Social Democratic Workers' Party of German Austria (SDAPDÖ) achieved 46.7% and achieved an absolute majority with 62 of 120 seats. Second place went to the Christian Social Party (CSP), which was entitled to 47 seats with a 36.8% share of the vote (noe.gv.at, 2020b).

With the entry into force of the federal constitution on November 10, 1920, the process of separating Vienna and Lower Austria began. This separation had become politically

necessary, since the representatives of the other federal states were only willing to approve the federal constitution if they were not dominated in the Bundesrat by a single federal state, namely Lower Austria with Vienna (which at that time had more than half of all inhabitants of Austria). On the other hand, it was a political necessity to separate the fundamentally different interests of a big city with Social democratic dominance from the interests of the farming region of Lower Austria with a large Christian social majority (noe.gv.at, 2020b).

Since the federal state elections of 1921, the Christian democrats (ÖVP) had a clear majority in the federal parliament of Lower Austria. This is still the truth as the following figure shows.

Figure 20: Results of Lower Austrian state elections since 2003



Source: www.noe.gv.at/noe/Wahlen/Landtagswahlen.html, 2020

The ÖVP (Christian democratic party) still determines the political orientation in Lower Austria's legislation and administration. This fact also supports the selection of this region for the present work.

8.3. The mid-size cities Hollabrunn und Mistelbach in the rural area of Lower Austria

8.3.1. Hollabrunn

Hollabrunn was elevated to the status of city in 1908 by imperial decision. The city was on the then important road connection from Vienna to Znojmo. The population grew rapidly in the end of the 19th century (Bezemek and Ecker, 2007).

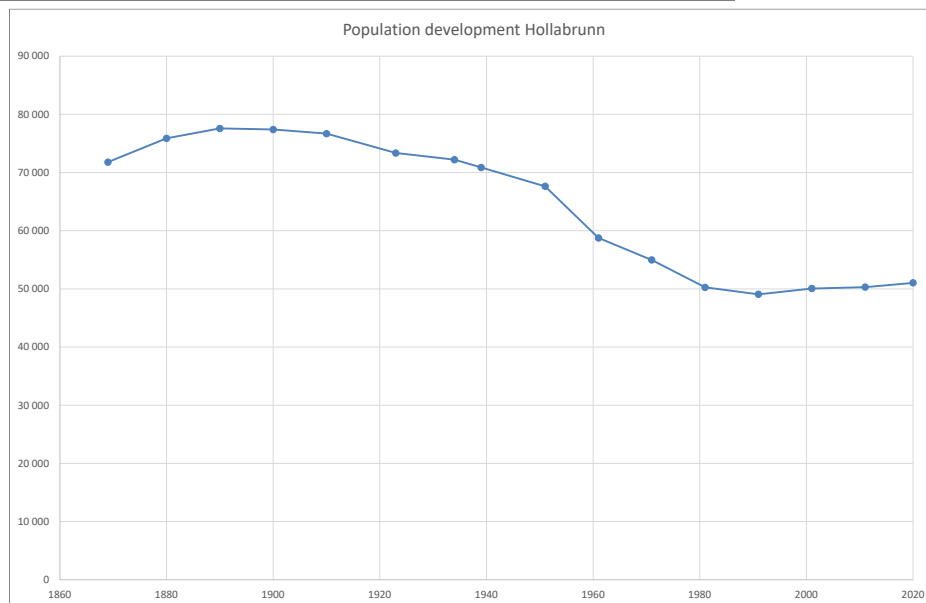
The first secondary and agricultural schools were established as early as the beginning of the 20th century, establishing Hollabrunn's reputation as a school town. The local teacher training institute was built as early as 1908 (Bezemek and Ecker, 2007).

The separation from Znojmo after World War I created long-lasting economic and social problems. The population decreased continuously until 1990.

A refugee camp was set up after the World War I. The camp later served as a welfare home for the City of Vienna between 1919 and 1921. It was directed by a student of Sigmund Freud. “The clerical and nationally minded part of the population viewed the activities with suspicion and rejection. For them, the new district was synonymous with ‘the reds’ [slang term for social democrats], the strangers who think differently” (Bezemek and Ecker, 2007: 51).

After World War II and especially after 1968, when a new mayor took over, Hollabrunn remembered its reputation as a school town and initiated new school projects. In 1978 the new technical high school was opened (Bezemek and Ecker, 2007).

Figure 21: Population development of Hollabrunn from 1870 to 2020

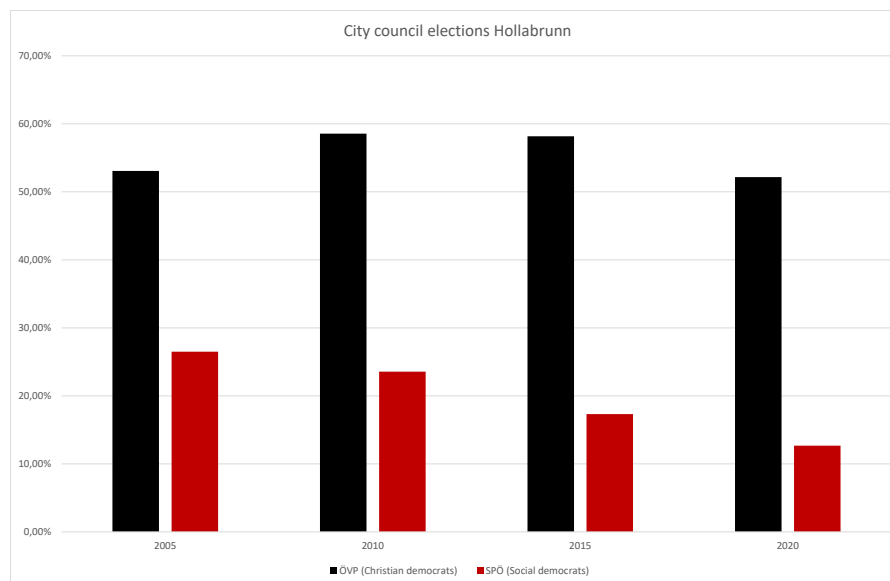


Source: Statistik Austria, STATcube, Total population, 2020

Since 1990 Hollabrunn shows a slightly growing population. This trend reflects the changing growing economic opportunities at the metropolitan border as well as the opening of the “iron curtain” in 1989. Znojmo became an easily accessible neighbour again.

The political situation in Hollabrunn showed similar results than in the rest of Lower Austria.

Figure 22: Results of Hollabrunn city council elections since 2005



Source: www.noe.gv.at/noe/Wahlen/NOE_Gemeinderatswahlen.html, 2020

The Christian democratic party won the first democratic elections after World War I and after World War II. The leading party nowadays in Hollabrunn is still the ÖVP as the results of the last four election terms show.

The freedom of travel and shopping for the citizens of the Czech Republic led to an economic boom in Hollabrunn in the 1990s. In the spirit of optimism of the 1990s, new branches of schools were also started, for example in the higher technical school the focus was on future-oriented combination of "technology-sport-music".

8.3.2. Mistelbach

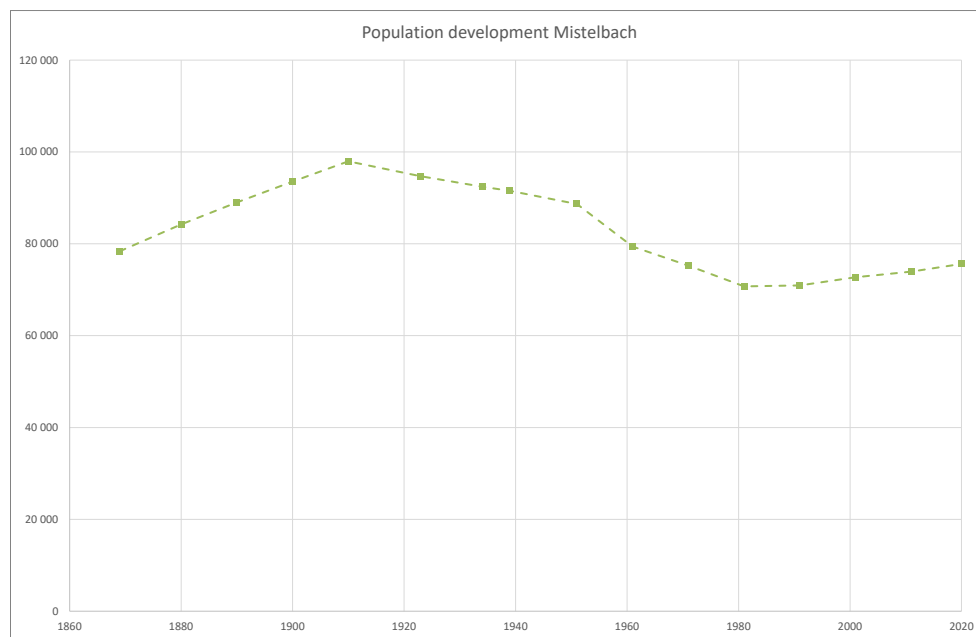
Mistelbach was promoted to city status in 1874. The city grew rapidly until 1910. During this period, many structural measures were also taken by the municipality.

The spatial situation did not allow for a radial growth of the city, that is why the city has started to grow lengthways along the main thoroughfare (Bayer and Kummer, 1962).

In 1930 the commercial vocational school was established by the Mistelbach community. The vocational school expanded significantly in the 1950s. This type of school still plays an important role in Mistelbach, as explained elsewhere in the results section (Bayer and Kummer, 1962).

Since 1910 the growth was stopped and the population of Mistelbach decreased, after 1945 even at an accelerated speed.

Figure 23: Population development of Mistelbach from 1870 to 2020



Source: Statistik Austria, STATcube, Total population, 2020

Despite intensive construction work (with the first community houses being built) after World War II, the emigration could not be stopped. Until 1980, the population of Mistelbach decreased steadily. Since 1980, the trend was stopped, and a slow increase was witnessed since then.

For many, Mistelbach was a provincial town until 1980, far away from the hustle and bustle of the metropolitan area of Vienna. Then the picture began to change again. Mistelbach was rediscovered as a city with a beautiful landscape and attractive buildings. The city started new cultural initiatives like the International Puppet Days (<https://www.puppentheater-tage.at/de/ueber-uns/vergangene-festivals/festival-1980>).

In the beginning of the 1990s the largest bypass in the state of Lower Austria was built. Mistelbach became a reduced-traffic city with an attractive residential area.

The puppet theatre is still an attraction in Mistelbach that brings tourists from Vienna and other regions to Mistelbach.

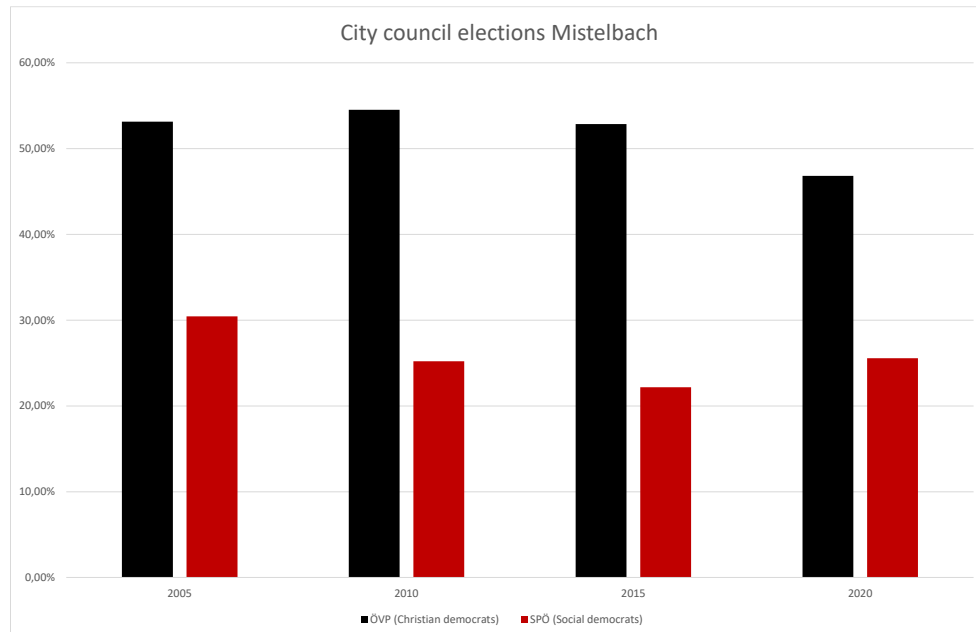
In 2007 a new museum quarter with two museums was opened. A museum was dedicated to the controversial artist Hermann Nitsch. Besides presenting the work of Nitsch, the museum researchers and documents all the works created by the artist (<http://www.nitschmuseum.at/en>). Mistelbach has thus finally emancipated itself from being an alleged provincial corner. The second museum is the Prehistory Museum MAMUZ, a branch of the Landesmuseum Niederösterreich (<http://www.mamuz.at>).

In 2014 Mistelbach employed a professional city marketing company to improve the international presentation of Mistelbach (<http://www.mistelbach.at/standortmarketing/kontakt/>).

The political landscape in Mistelbach after World War I was dominated by the so called "Wirtschaftspartei", formed by the Christian democrats and the Nationalistic Great German Party. They won the majority in 1919 and 1921. In 1924 the "Wirtschaftspartei" split itself into the ideological groups, Christian democrats, and Great German Party. The Christian democrats and the social democrats received 8 mandates in the municipal council. The greater German party reached 5 mandates and provided the mayor (Bayer and Spreitzer, 1962).

After World War II the ÖVP (Christian democrats) received the majority of votes and still does as figures 24 shows for the last 4 elections.

Figure 24: Results of Mistelbach city council elections since 2005



Source: www.noe.gv.at/noe/Wahlen/NOE_Gemeinderatswahlen.html, 2020

In Mistelbach the ÖVP has been the dominating party for decades.

9. Tensions and cooperation between Vienna and Lower Austria

9.1. History of political and socio-cultural tensions between Vienna and Lower Austria

The separation of Vienna in 1922 drew a federal state border in the interior of Lower Austria and politicized the economic urban-rural contrast (Eminger & Langthaler, 2013).

The process of separation between Vienna and Lower Austria, which began in 1918-19, passed through various phases of political decision-making and was finally legally bound with the Separation Act in 1922 (Steiniger, 2017). The separation of Vienna from Lower Austria made it possible for Vienna to flourish as a socialist, progressive city and experiment with social housing, which represented a stark contrast to the conservative politics in Austria. Vienna was free within its administrative borders to establish its visions.

Vienna became a modern city in the 1920s. "Cities have become spaces of confusing diversity, concentrated activity and dynamism, national and international innovation centres" (Gaebe, 1987: 17)

Cities exported their economically and socially successful concept. "The adaption and expansion of urban settlements, live styles and economic pattern in the wider area around cities is also a feature of urbanisation" (Gaebe, 1987: 30). The radiance of the urban lifestyle and economic success of Vienna also represents a challenge for the surrounding area in Lower Austria. Vienna attracted people from the rural areas looking for a better life in a big city. This migration flows put pressure on the conservative society structures in the rural areas.

After World War I it was only a smaller number of people that moved away from Vienna but there was also a migration out of Vienna. An example of an immigration winner from 1923 to 1934 was for example the district Hietzing-Umgebung (Weigl, 2017: 211).

There were tensions between Vienna and Lower Austria already in the monarchy, which resulted from conflicting interests. This is mainly due to financial reasons, since Vienna provided both in 1861 and 1919 higher tax revenues than the rest of Lower Austria and thus indirectly contributed to the expansion and maintenance of the Lower Austrian infrastructure. This explains why requests have already been made in the Monarchy to the Vienna City Council to separate Vienna and Lower Austria (Steininger, 2017: 139).

After the collapse of the monarchy, both the food situation and the distribution of the population were the starting point for the strained relations between Vienna and the other federal states. In the middle of November 1918, a general "anti-Vienna movement" was observed in the countries, which for the most part had economic reasons (Steininger, 2017: 141-142).

There were different interests within both parties. For the SDAP (Social Democratic Labor Party) in Vienna no loss of political power was to be feared by the separation of Vienna and Lower Austria. However, for the SDAP in Lower Austria a separation would have led to the loss of a majority in the Lower Austrian Landtag. The interests in the CSP (Christian Social Party or Christian democrats) were exactly the opposite: the Christian democratic party of Lower Austria demanded a separation of Vienna from Lower Austria, despite the financial disadvantages caused by the great tax power of Vienna. For the Viennese Christian democrats, however, a separation meant a weakening of their political influence, as their opposition position in the Vienna City Council could no longer be compensated by the stronger position of the Christian democrats in the Lower Austrian Landtag (Steininger, 2017: 143).

Still today, Lower Austria, governed by Christian democratic party (ÖVP), and Vienna, governed by Social democratic party (SPÖ), stand opposite one another.

Like Vienna, Lower Austria has grown in geopolitical importance since the fall of the iron curtain. From a western European peripheral location, it moves into a European central location. This gain in importance supports the long-lasting process of emancipation from Vienna. For a long time, it was only considered the state around Vienna. Lower Austria had to prove itself against the metropolitan Vienna as the imperial and residential capital of the monarchy, and later the capital of the First and Second Republic. This was to be seen as an independent federal country and not just as the hinterland around the city, as a "supplementary area, sales market, raw material supplier or recreational area" (Amt der NÖ Landesregierung: 31)

Another important symbol and instrument of emancipation was the establishment of a separate federal state capital. "Today Lower Austria is associated much more strongly with its regions and districts than with the image of the surrounding area" (Amt der NÖ Landesregierung: 32). The new capital boosted the self-confidence of Lower Austria.

St. Pölten is to be developed into a fully equipped state capital with the greatest possible variety of functions. The state capital should be the location of those federal and state agencies, interest groups, central offices of economic companies, organizations and associations that are usually represented in the larger state capitals. St. Pölten is to exercise central functions nationwide in the areas of economy, health and social sectors, culture, education, research, innovation, information and communication. Transport infrastructure and organization within the state should be designed in such a way that the state capital can be easily reached from all regions of Lower Austria (Amt der NÖ Landesregierung, 2004).

Lower Austria could not only push St. Pölten, but also had to offer development prospects for the other regions.

The cities of Wiener Neustadt and Krems an der Donau, which have grown historically in their supraregional significance, are to be further developed with independent supraregional economic and cultural profiles through the expansion of high-ranking facilities for business-related infrastructure (university / technical college, innovation and technology center, etc.) will. Together with the provincial capital, they should be an effective economic and cultural counterweight to the metropolitan area of Vienna and function as Lower Austrian "development poles" (Amt der NÖ Landesregierung, 2004).

This new self-confidence sometimes seems to be acted out a little excessively. There are also critical observations in the cooperation facility SUM: "Lower Austria tries to position its federal state capital. And since the two million city is close by, I think there is more competition. Is seen more as a competitor than as a partner you want to work with. So in the last few years I see greater demarcation rather than greater cooperation" (SUM, 2020).

Perception changes with the perspective of the observer. Even Lower Austria does not always have the feeling that the measures in Vienna are well coordinated with Lower Austria. One example of this are the new parking zones in Vienna, which are moving parking to Lower Austria. "This is if a parking zone is unilaterally introduced in Vienna, which leads to a tightening. It just cannot be that this is done so unilaterally without accompanying measures. And we in the administration (of Lower Austria) then have to somehow find solutions to cushion that" (regional planning Lower Austria, 2020).

9.2. New models of development cooperation between Vienna and Lower Austria

As early as the 1970s, the Planning Community East (PGO), a joint organization of the states of Vienna, Lower Austria and Burgenland, was entrusted with analysing and coordinating issues relevant to spatial planning in the eastern region of Austria. The PGO was registered

in national constitutional law as agreement 15a. Thus, the cooperation of the federal states within the scope of the PGO is anchored in law at the national level (Görgl and Grubner, 2015).

On the one hand, taxes can be issued through federal state financial equalization, which is based on the main resident population of the municipalities. The more residents a community has, the more grants it is entitled to in order to be able to provide for the residents. Tax revenue can also be increased through the municipal tax. In Austria, companies have to pay taxes where they are based, which is why municipalities benefit greatly from keeping companies within their own borders (Görgl and Grubner, 2015).

In their article, Görgl and Grubner (2015) analysed that a common planning perspective between the municipalities is difficult due to the competition for residents and companies, which has a direct impact on the allocation of funds. In addition, different interests, (professional) capacities and also personal and political animosities make simple inter-municipal agreements and the formation of perspectives beyond one's own municipal boundaries difficult.

In Vienna and its surrounding area there are not only municipal boundaries, but also federal state borders. This, and the aforementioned traditional political polarity represent an additional challenge for the cooperation between the surrounding municipalities and Vienna (Eder et al., 2018). In addition, there is an asymmetry in the balance of power due to the size of Vienna compared to the municipalities and an increased complexity among the actors involved (for Vienna this is usually several municipal departments). All of this makes cooperation more difficult compared to normal inter-municipal cooperation (Görgl and Grubner, 2015).

However, the lack of state competence for spatial planning in Austria makes it necessary for a joint agreement to take place (Eder et al., 2018). The city of Vienna can no longer be thought of without its surrounding area. The surrounding area must accordingly be included in future questions regarding the city.

Görgl and Grubner therefore propose that first, without Vienna, a further development between the municipalities should be agreed upon. In their view, reducing the power asymmetry is the only way to ensure cooperation between Vienna and the surrounding area. Görgl and Grubner opinion is that the Vienna metropolitan region can only maintain and expand its importance in the international competition between metropolitan regions if the cooperation between the small municipalities and the metropolis of Vienna is implemented.

Another cooperation platform is the City Suburbs Management (SUM). SUM is the coordination of spatial development in the urban region of Vienna / Lower Austria. With three focal points: settlement development and site development; traffic development and natural and recreational areas, agriculture, and forestry (Hacker and Zuckerstädter, 2020).

The SUM is the central point of contact for cooperation between the local authorities in the core city region. In a variety of contexts, it contributes to anchoring the "urban region" perspective in the thinking and acting of politics and administration. One manager works as an operational interface between the city of Vienna and the surrounding communities. The concrete work takes place in a network of the relevant departments of the state administrations, municipalities, and other regionally effective organizations (Hacker and Zuckerstädter, 2020).

In the core of the eastern region, the metropolis of Vienna and 60 Lower Austrian municipalities in the surrounding area form a "compact urban region" - the main area of application of the city-surrounding area management. Thirteen of these surrounding communities are small towns, some of which are directly adjacent to Vienna (Hacker and Zuckerstädter, 2020).

Along the traffic axes - especially in the southern suburbs of Vienna - the urban structure already extends far into the surrounding area. In between there are also many small, rural communities or villages and valuable green spaces, such as the Vienna Woods Biosphere Park or the Donau-Auen National Park. As before, the traffic flows are very strongly oriented radially towards the core city, although the tangential interdependence is increasing significantly, especially in the southern environs (Hacker and Zuckerstädter, 2020).

10. Results

10.1. Urban spatial structure

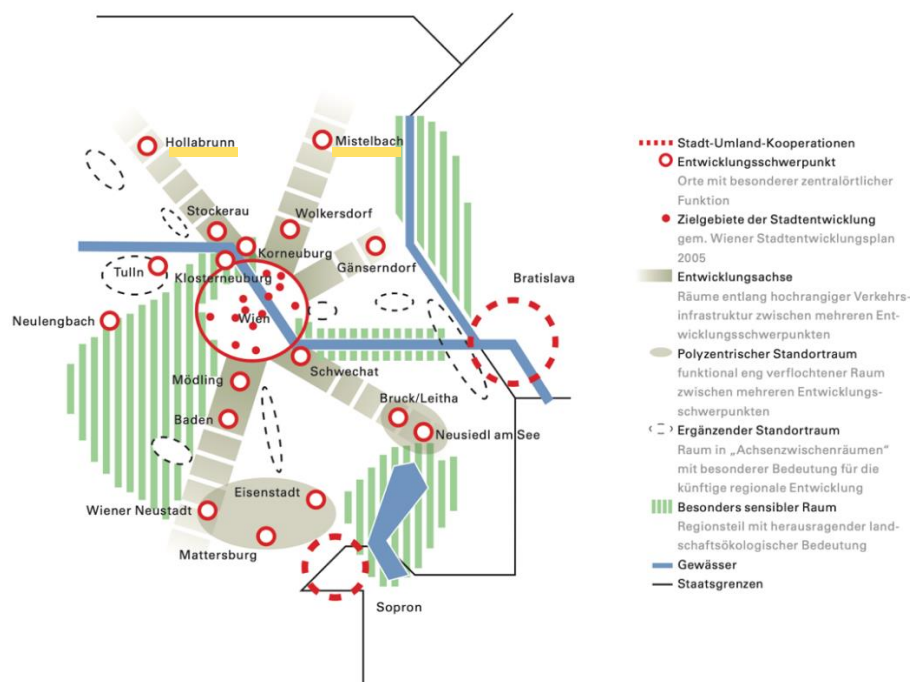
In the Austrian spatial development concept 2001 (ÖROK), urban regions are seen as engines of economic development under the challenge of global and international competition, whereby in the sense of a polycentric development in Austria, smaller urban regions should also achieve an international location status (Zech and Klinger, 2017).

Polycentric development or decentralized concentration are a kind of spatial planning model and settlement structure concept. That can be seen as a counter-concept to axial, ring-shaped or uncontrolled urban growth. The bundling of resources and the focus of development on one core should be relieved by a limited number of smaller development centres (Prieb, 2019).

Vienna and Lower Austria represent these new models in their current development plans (Vienna “STEP 2025” and Strategy Lower Austria “Landesentwicklungskonzept 2004”).

In its development plan STEP 2025, Vienna follows the basic principles for spatial development proposed by the PGO in its 2011 interim report. Hollabrunn and Mistelbach, together with other cities, are marked as development priorities.

Figure 25 Development priorities in STEP 2025



Source: Stadtentwicklung Wien, 2014 - STEP 2025, own yellow markings of Hollabrunn and Mistelbach

Vienna writes, how it is committed to an agglomeration policy based on partnership - with its neighbouring communities, the federal states of Lower Austria and Burgenland, but also with the centres beyond its national border. This is in order to obtain the cooperation that is required for the organization of cross-border traffic and a joint positioning in the international competition of metropolitan regions (Stadtentwicklung Wien, 2014).

The strategic conception of STEP 2025 and everyday practice in the political debate are likely to be somewhat different. Even if Hollabrunn and Mistelbach are defined as development

target areas, this has not become known there (which is at least a lack of communication) and is not reflected by the political decision-makers in the Vienna city council. In my survey of the word protocols of the Vienna city council discussions and decisions Mistelbach and Hollabrunn are only mentioned as synonyms for small and insignificant. "Mistelbach is really bankrupt" (GR_20120326). "We're not going to Volksbank Hollabrunn, we're going to Austrian National Debt Management" (GR_20160427). In any case, the cultural gap should still exist.

Lower Austria also describes the basic principles for spatial development that we see in Figure 25. Functional spaces are created, defined by the actions of the population. Individual action creates a new functional area that no longer coincides with the administrative boundaries of the authorities. The production of density ensures cost-effective development, creates agglomerative location advantages for companies and prevents the extensive uncontrolled expansion of the settlements. The centres should collect regional synergies from their surrounding area as focal points within the settlement network and through their agglomeration advantages. The locations and centres along the high-ranking and supra-regional axes tend towards further growth due to the agglomeration advantages that prevail there. It is therefore important to ensure that the axes do not grow into one and other and that settlement centres remain separated from one another by open spaces or green spaces (Amt der NÖ Landesregierung, 2004).

Lower Austria's development plan puts emphasis on the polycentric development of Lower Austria with several centres (Weinviertel, Waldviertel, NÖ-Mitte, Mostviertel and Industrieviertel).

Vienna spatial planning and Lower Austria spatial planning show some integration. The work of PGO is bearing fruit. But the regional integration does not involve the cities of Hollabrunn and Mistelbach very much.

Hollabrunn put its focus on becoming the city with the highest quality of life in Lower Austria and less on the connections with the urban area of Vienna (advance information about Hollabrunn Entwicklungskonzept 2040).

Mistelbach refers to PGO study results of expected population growth in its development plan and Mistelbach thinks about how the forecasted growth can be absorbed. However, the integration into the urban agglomeration is not explicitly mentioned (Stadtgemeinde Mistelbach, 2014).

Also, my interviews in Hollabrunn and Mistelbach showed little awareness of their own importance in the urban agglomeration of Vienna and no cooperative connections to Vienna.

In my interview with the mayor of Mistelbach, he mentioned that "a provincial mayor from Mistelbach has no opportunity to communicate with the mayor of Vienna" (mayor of Mistelbach, 2020). The city councillor for planning and transport of Hollabrunn also did not report any cooperative activities with Vienna (town planning Hollabrunn, 2020).

During our interview, the head of the city building and urban planning department in Mistelbach noted a clear separation between issues of spatial planning and political issues for which not he, but the mayor of Mistelbach or the planning department of the federal state of Lower Austria would be responsible. He has been working for the municipality for 20 years and does not know what intersections there could be with Vienna. The municipal level is one level too low for Vienna, that acts as a federal state. There are interfaces between the federal state of Lower Austria and Vienna, but not directly with the municipality of Mistelbach (town planning Mistelbach, 2020).

The city planning director of Hollabrunn also noted that he had no contact with Vienna. The city of Vienna would be too far away. But they experience an influx of people who would move to them from the city because they have more open space. Vienna with its own laws and ordinances and is perceived as if it does not want to cooperate with Lower Austrian municipalities. He does not know where to start with the mutual exchange (town planning Hollabrunn, 2020).

This shows an interesting delimitation and a real deficit. The spatial planning concepts of Hollabrunn and Mistelbach are not connected with the spatial planning concept of Vienna. The spatial planning concepts of Vienna and Lower Austria are connected. It was also pointed out by the head of the PGO in a mail to the author that there is no direct communication with the cities and communities (Mail Fellner, 2020).

The inclusion of cities from the urban agglomeration of Vienna in the joint communication of spatial development concepts could be a further development step for the PGO or another cooperation initiative.

10.2. Jobs-population spatial relationship

The jobs-housing balance was considered essential for a self-reliant region that does not generate too many commuters to other regions. If the jobs-housing relation is out of balance people will either influx to or outflux from a particular region (Margolis 1973, Cervero 1989).

Cervero assumed that workers do not live near jobs because they are not able to find affordable housing opportunities (Cervero 1989). This might have been the reality in certain areas, but it is not a convincing explanation for all circumstances. Jobs are also created under different economic environments. Cities and urban agglomerations have become more dynamic regions than rural areas when it comes to job creation. When we check the number of available jobs, we will find out what is the different fire power of the four regions in terms of jobs.

It is already mentioned in chapter 6 that the concept of jobs-housing balance is rather old-fashioned because it is focussing on the single-earner household and it is ignoring school student commuting. Therefore, in this work the relation of jobs and total population is used to check the incentives for commuting in the four regions under investigation.

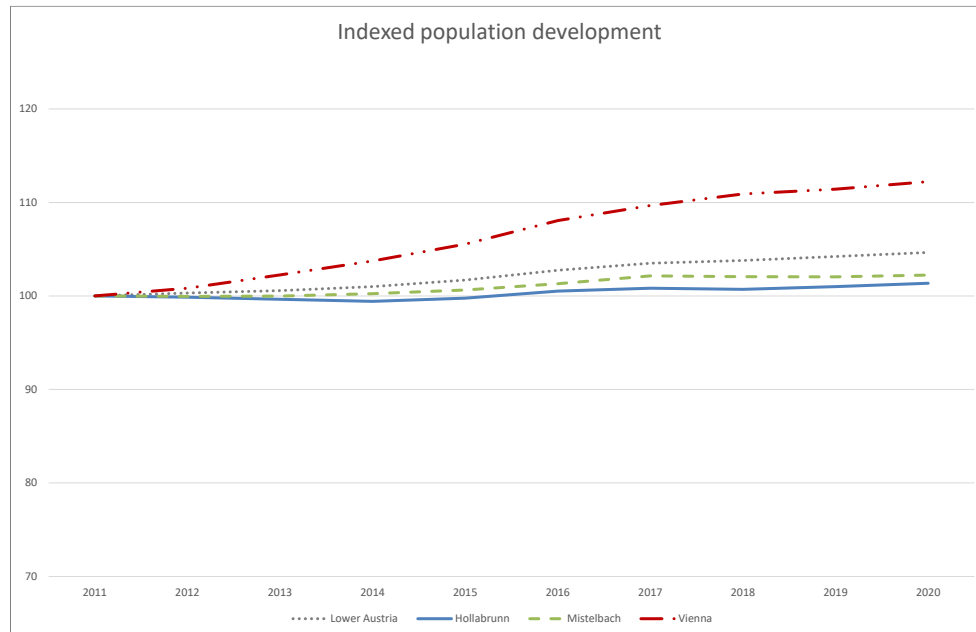
Jobs are referred to, in absolute terms, in proportion to population development. An increase in the resident population increases the number of potential job seekers. There are also structural changes that affect the number of jobseekers regardless of the population trend. The most important structural element of the last decades can be cited here as the increasing employment of women (Huemer, 2017).

The starting point for assessing a commuter incentive is the general availability of jobs in the regions examined in comparison to one another. A first analysis of the statistical data is therefore concerned with population development. The second analysis looks at the availability of jobs in the four selected regions.

The following figure shows the indexed development of population growth for the selected regions Hollabrunn and Mistelbach as well as Lower Austria and Vienna.

All four selected regions show population growth. The most dynamic population growth is clearly Vienna, with a significant increase since 2015 and an index value of 112 at the beginning of 2020 (end of 2019).

Figure 26: Indexed population development 2011 to 2019



Source: Statistik Austria STATcube, population per region at beginning of year since 2011, own calculation and indexation

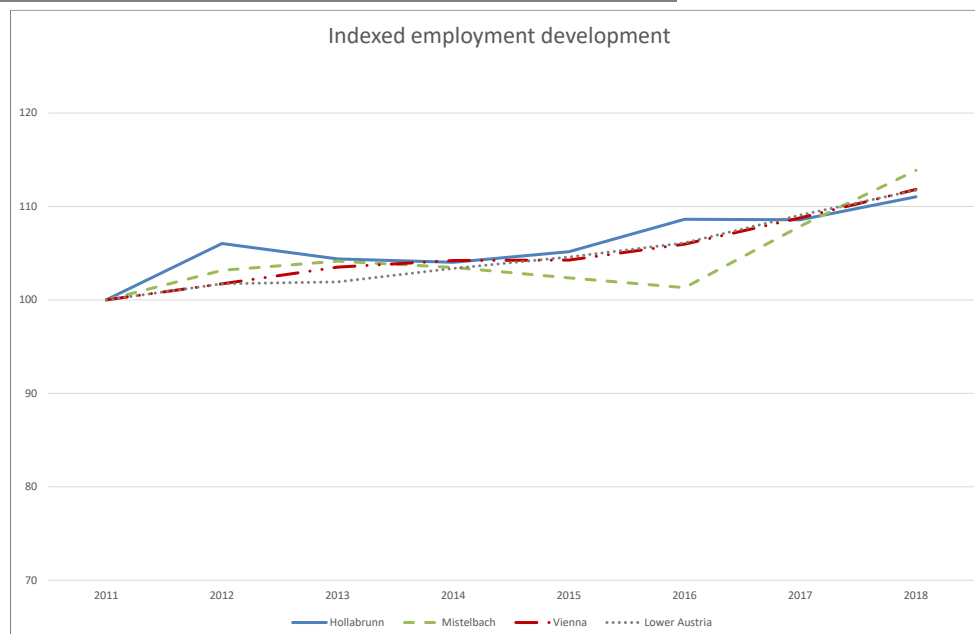
Lower Austria only achieved an index value of 105 by the beginning of 2020 (end of 2019). The municipalities of Hollabrunn and Mistelbach, which are further away from the metropolitan region of Vienna, are well below Vienna and also below the growth of Lower Austria as a whole.

The lower growth rates of Mistelbach and Hollabrunn indicate different dynamics of the population development in the metropolitan region of Vienna, in the Viennese suburbs in Lower Austria and in the growth regions of Lower Austria (state capital St. Pölten, industrial region Wiener Neustadt) outside the metropolitan region. An in-depth analysis of the background to the different population development cannot be carried out within the scope of this master thesis, but the different recordings of immigrants could potentially play a relevant role.

For further analysis of these different dynamics, the statistics relating to the development of employment are researched in the next step.

Statistics Austria has provided the employment data (number of employees (total) per municipality from the workplace census) annually since 2011. However, only the latest year is available on the website and in the data cube, which is currently 2018 (http://www.statistik.at/wcm/idc/idcplg?IdcService=GET_NATIVE_FILE&RevisionSelectionMethod=LatestReleased&dDocName=104407).

Thankfully, Statistics Austria provided a special report for the municipalities of Hollabrunn and Mistelbach as well as for the federal states of Lower Austria and Vienna from 2011 to 2018. This data was in turn indexed.

Figure 27: Indexed regional employment growth 2011 to 2018

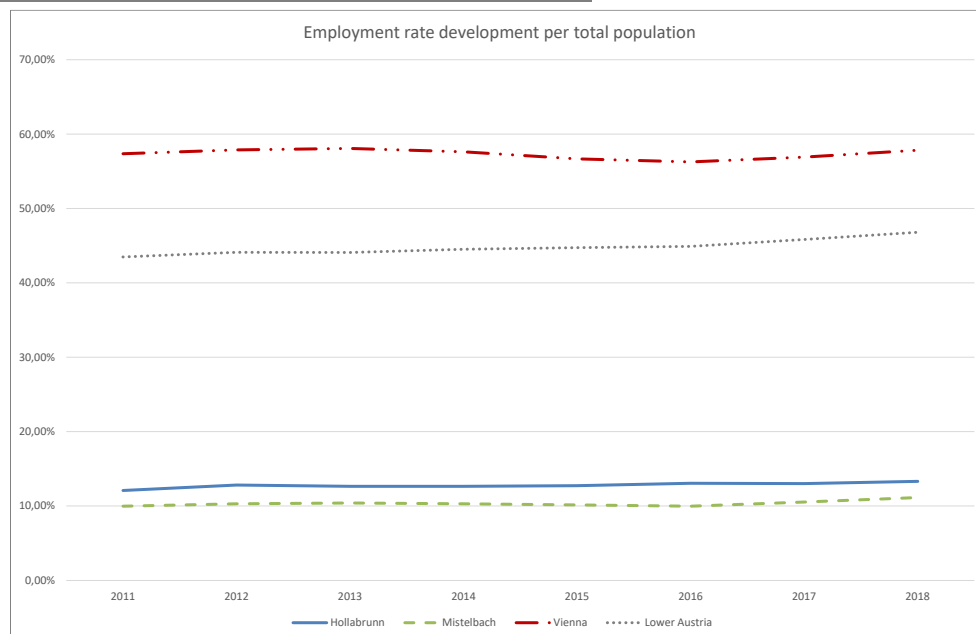
Source: Statistik Austria, special analysis by directorate population (department registry census), own calculation and indexation

This special analysis shows particularly exciting developments for the four regions considered. While Vienna is roughly following the population development trend in terms of employment (index is about 112 in 2018 for both time series), employment in Lower Austria and in Hollabrunn and Mistelbach is growing significantly faster than the population. This could be considered a trailing effect from 2011 in context to the growing employment of women in rural areas of eastern Austria. The growing employment of women requires higher employment growth than the growth of population. These additional jobs are apparently more likely to be created in Lower Austria and, to a lesser extent, even outside the metropolitan region.

On the basis of this analysis, it is not yet possible to make a final assessment of whether this is due to demographic pressure in these regions (increased pressure to search for female workers) or whether the shortening of transport and communication routes and the structural shifts in the direction of the service and online industries will enable new jobs outside the more expensive metropolitan area.

Whether these significant volume effects can only be assessed if the jobs are set in relation to the workable population or, in simplified terms, in relation to the total population is yet to be addressed. The simplified variant that can be mapped within the researched data set is shown below. Lower Austria has a clear focus on new jobs. “The regional spatial regulation is about the creation of jobs in the region. It is to avoid the commuting or to generate less commuting” (regional planning Lower Austria, 2020).

The mid-size cities also do a lot to attract new jobs. The discussion is ongoing. “The W3 project (development of commercial and residential locations along the S3) ran for 2 years and pursued the goal of promoting the settlement above all of private companies and commercial enterprises or counteracting emigration. The current project has focused on business development. Barriers at the border in an economic sense are to be gradually dismantled and subsequently lead to regional economic growth” (H_GR_20120619).

Figure 28: Employment rate development 2011 to 2018

Source: Statistik Austria, STATcube, own cross referencing of employment and population data

The number of jobs in relation to the population is significantly higher in Vienna than in Lower Austria. Vienna has created much more jobs in the past than all the other regions. This analysis impressively confirms the thesis of a big city's strong job engine, as the example of Vienna shows.

However, the distance between the rural municipalities of Hollabrunn and Mistelbach and Vienna and also Lower Austria as a whole is dramatic. A massive reason for the unchanged need for a strong commuter movement is likely to be revealed for Hollabrunn and Mistelbach. There is a substantial lack of jobs.

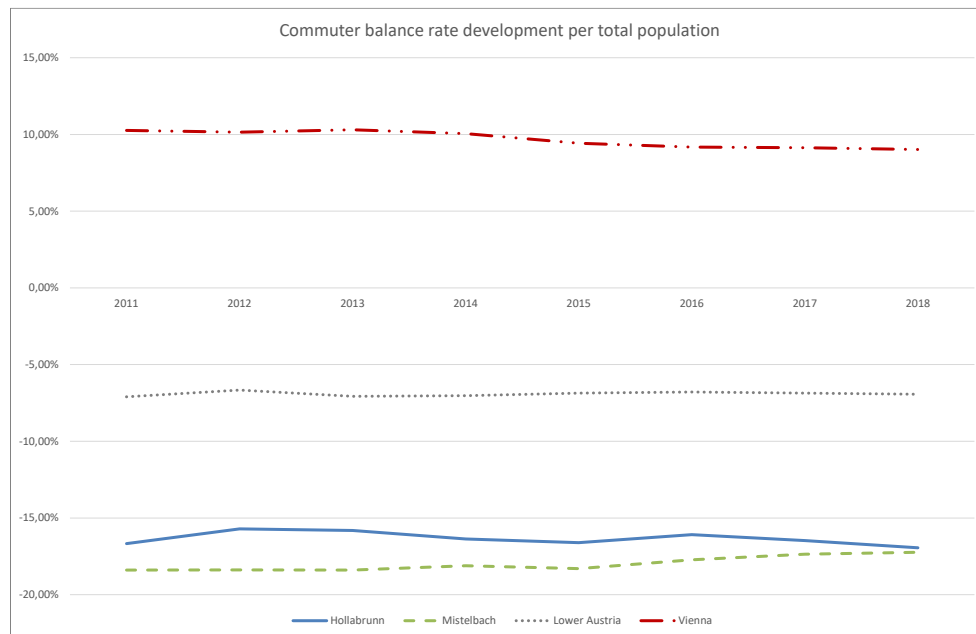
The growth of jobs in Hollabrunn and Mistelbach would have to be continued for decades with this currently accelerated speed in order to actually achieve a noticeable relief of the commuter movement. This may be due to workplace supply in Vienna and other regions of Lower Austria.

In the past 10 years, no noticeable relief has been seen on the basis of the statistical data. But the long-term data shows that the recent job increases stopped a long-term trend of negative commuting balance for Hollabrunn and Mistelbach. This is an exciting development.

In Vienna there is a slight decrease in the employment rate, which clearly shows that the growth in jobs cannot keep up with the dynamic development of the population (accelerated by migration since 2015).

The number of jobs in Vienna and in other regions of Lower Austria is still significantly higher than in the municipalities of Hollabrunn and Mistelbach, which are located outside the metropolitan region. A high number of commuters can therefore be expected also in future, but the growth will be stagnating. The commuter balance between 2011 and 2018 shows this clearly.

Vienna has a high positive commuter balance (incoming-commuters minus outgoing-commuters) in relation to the total population, while Lower Austria has a slightly negative balance. Hollabrunn and Mistelbach have a very high negative commuter balance in relation to the total population.

Figure 29: Commuter balance rate development 2011 to 2018

Source: Statistik Austria, STATcube, own cross referencing of commuter and population data

The high stability of the commuter balances in recent years is also noticeable. There are apparently no strong changes in the commuter movements in the last 10 years or the actual dynamics cancel each other out.

The supply of jobs appears to be highly correlated with the commuter balance. Unless there is a massive change in the supply of jobs, there is no parallel change in the commuter balance. As a result of suburbanization, however, numerous companies have settled outside of Vienna, which has caused a change in the flow of commuters.

“Many companies want to get out of the big city. Also, from the commuter belt. [...] In many areas there is simply no more space. And there we secure areas for the future where we can develop these things” (town planning Hollabrunn, 2020).

Not all commuters commute to Vienna, but many have found jobs in Vienna’s suburbs and in other communities in Lower Austria. The high number of jobs in Lower Austria underscores the availability of this option for commuters outside the metropolitan region.

Jobs are an important issue of the political debate in Lower Austria. “This is about rural areas, that we need to develop further. Because we are of course seeing that new jobs are being created, especially in metropolitan regions. Which in turn means that a decline in the share of earnings is to be expected and also in local taxes in those regions that are already having a hard time due to their geographic location. [...] That means we have to act as a country! I think you have to invest here, especially in the rural area to keep these communities, these regions alive. These communities need the money to be able to continue to live” (NÖ_LT_20120613).

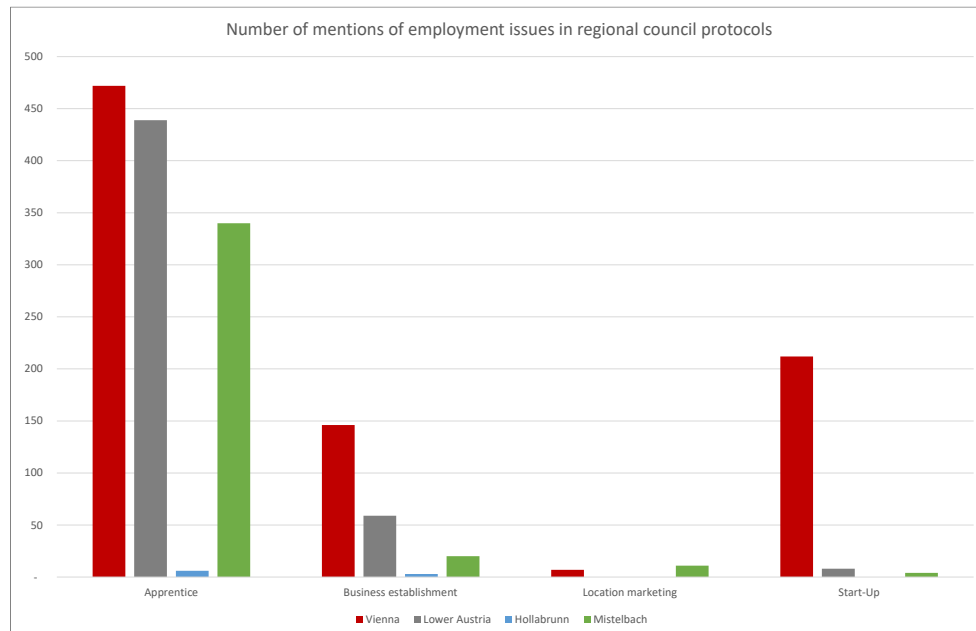
“Rather, with a proper sense of proportion, the funds that are available are used in such a way that we do not have an urban-rural or rural-urban divide, but rather that people say that something is actually being done for everyone in Lower Austria. And the more money we invest here, the more we invest in the future. Let’s invest in jobs, ultimately in securing

business locations. We invest in industrial areas, but also in business parks. We invest in the future!” (NÖ_LT_20141023). There are many more examples like these.

The long-term development, as presented in the introductory part, shows a change in the commuter balance over time, especially in the municipalities of Hollabrunn and Mistelbach. While Lower Austria has had a stable commuter balance compared to Vienna since the early 1990s, the significant deterioration in the commuter balance from Hollabrunn and Mistelbach has only changed in the last 10 years. Vienna, on the other hand, was able to increase its large positive commuter balance again from 2001 to 2011, but since 2011 there has been a noticeable decrease.

The political debate in the regional councils shows interesting differences regarding the frequency with which certain employment terms are mentioned. The following figure presents a selection of four issues, apprentice (representing the need for skilled labour with dual training background at the job and in vocational school), business establishment (representing the need to look for new companies invited to the region), location marketing (professional marketing for business establishment) and start-up (representing a new type of innovative companies, that are assumed to create new jobs).

Figure 30: Mentions of employment issues in regional council protocols 2011 to 2018



Source: Word protocols of regional councils 2012 to 2018, own code analysis and calculation

Mistelbach shows a very active debate about employment issues, much more active than Hollabrunn. The issue of apprentice is obviously a very important one for Mistelbach (we will see further evidence in the school place analysis later). Also, the establishment of new companies seems to be in the focus of the city council of Mistelbach.

Vienna apparently has a lively debate about start-up companies and is more actively discussing about business establishment than Lower Austria. Lower Austria does not see this much need for business establishment discussion compared to Vienna as the recent employment development data confirm in a way.

In the regional development plans of Lower Austria and Vienna the employment issues play an important role. There are own chapters for the envisaged regional employment measures.

Vienna links the employment issue to digitalisation, science and research as well as innovation.

10.3. Historical, political, and cultural factors

“From the beginning of human settlement, the relationship between town and countryside have been considered a central divide in our human experience. At the basis of much of the urban planning debate on urban boundaries historically, but especially right now, has been the need to use less land for more people that move to or move inside urban areas [...] The belief in the importance of regulating urban form for the benefit of environmental sustainability and social justice has led us to a strong consensus in the planning profession that dense is good (Keil, 2018: 172).

The urban population density also shapes a stronger cultural form. The intensified exchange with different influences is much stronger than in less densely populated regions. It is hardly surprising that progress is concentrated in urban areas.

In addition to the advantages of urban space, the negative effects are also concentrated, as we have discussed in the chapter on the history of urban agglomeration. The negative effects on the environment and living conditions have come into focus as newer research topics.

“The production of urban space is a major process through which capital accumulation ‘takes place’ and through which it generates all manner of systemic inequalities as well as climate change-relevant perturbations” (Keil, 2018: 173). These perturbations provide enough grounds for discussion between the rural and urban populations.

Both the urban and the rural population see advantages for their own existence in the respective living environment. The historically long migration from rural areas to the big city continues to shape awareness in Vienna still today. This attitude is reflected in the political discussion in the committees of the City of Vienna.

“I would like to draw your attention to something that is currently being discussed a lot, namely the issue of rural exodus. While Vienna is a living, breathing, pulsating city, rural life is more of a tristesse” (W_GR_20170928).

“Above all, as a city, we have a very diverse culture here, because this city is also diverse and the people who live in it are very different, from people who come from the federal states, from people from abroad who are young, who are older, who are interested in folk music, in Viennese songs, in theatre, or in visual and modern art and culture. The cultural offerings are just as diverse as this city is and the people in it, and that’s how it should be” (W_GR_20151211).

The citizens of Vienna experience themselves living in a lively and attractive city. The numerous international awards as the most liveable city in the world (rankings by the UN, the British magazine Economist and the Mercer consulting agency) reinforce this self-image.

The expansion of the urban culture and way of life does not stop at the gates of metropolitan city Vienna but is penetrating more and more into rural areas. This changes attitudes and lifestyles. The increasing employment of women in rural areas is a very good example of this.

The cultural and political expansion of the city is unsettling the people in the country. In the interwar period and in the post-war period it was the social democratic ideas that caused concern in the country, now it is the growth of the green party.

The ÖVP (Christian democratic party) worries about the consequences of cross state migration: “It cannot be that our children go to Vienna and come back as Greens” (red,

ORF.at/Agenturen, 2020), ÖVP club chairman August Wöginger warned the elderly at an election rally in Ried im Innkreis (regional town in Upper Austria). “Those who sleep and eat in our house also have to vote for the Christian democratic party” (ibid) said Wöginger at his appearance in the small town in Upper Austria.

The quote is aimed at the rural population who feel they are on the defensive. Of course, part of this mood is the result of a political calculation. The targeted complaints against Vienna and the veining of Vienna are used by the ÖVP to create political opinion. In Vienna, this is also perceived in the city parliament:

“The bashing fits in well with the fact that it takes place to a certain extent. If you grow up in Vorarlberg, like me, you hear all the time, Wasserkopf Vienna. Not everyone there has a fundamentally positive attitude towards the state capital. [...] The ÖVP has really managed to tell a story about Vienna that has nothing to do with reality, right across the parish hall, into every small village” (W_GR_20170928).

Different realities of life also generate different priorities. Housing projects are an example of this different point of view. While Vienna clearly relies on rental, cooperative apartments and community apartments, private homes are the declared aim of Lower Austrian politics.

Sometimes the strict ideological orientation is also somewhat exaggerated. So, the successor solution for a social housing is not a rented apartment, but the purchase of the social housing a property. This leap in social improvement is more a wish than a reality.

“In the past few years, we have succeeded in providing thousands of fellow citizens with individual living space and happily procuring their own home. But we do not forget about those who may be in acute financial or social emergency either. The so-called residential assistance has existed here for over 10 years. [...] The Niederösterreich Wohnen association rents an apartment and, as I said, accompanies the tenant for a year until their private and professional life is put back into order. And then there is also the possibility of taking ownership of the apartment” (NÖ_LT_20170622).

Only private homes and condominiums but no rental apartments are needed in Lower Austria. This statement is reminiscent of: Because what cannot be cannot be what cannot be.

Another area that shows interesting differences between Hollabrunn, Mistelbach, Lower Austria and Vienna is the area of culture. The following figure is an evaluation that shows the different cultural formats mentioned in the regional councils of the four regions over a 7-year period. The culture formats evaluated were of course deliberately selected to reflect the different preferences. The result is very meaningful and partially confirms the cultural divide.

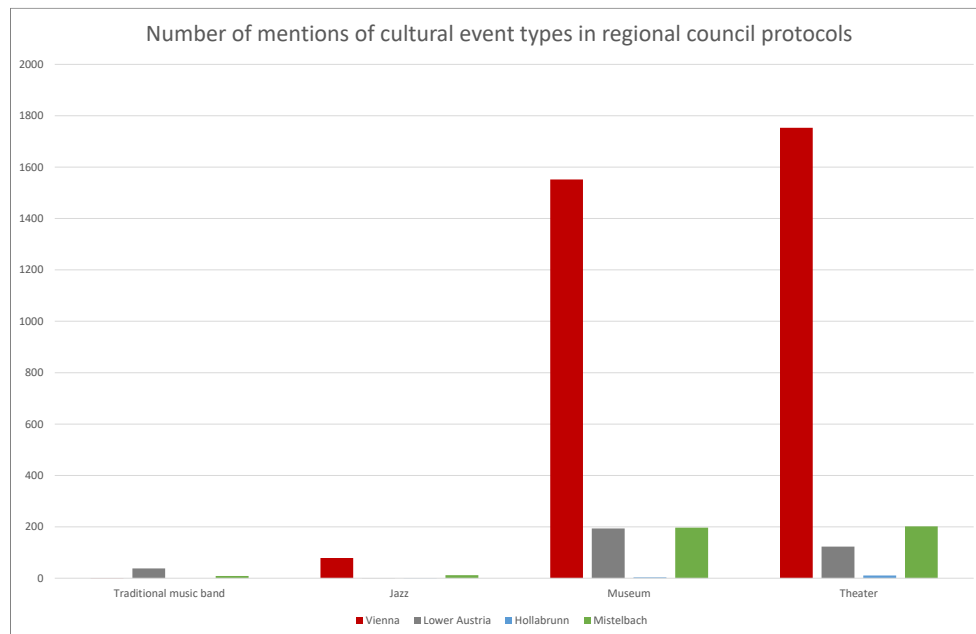
Traditional music bands were only mentioned once in a 7-year period in city council of Vienna. Even the conservative forces seem to have another cultural focus in Vienna. They do not bring in traditional music bands on the agenda.

In Lower Austria 38 mentions in the regional parliament show, that this cultural event type is still relevant for Lower Austria. In Hollabrunn it was not an issue at all. In Mistelbach the traditional music band was mentioned 9 times.

The city council of Mistelbach is much more debating cultural issues than the council of Hollabrunn and even the parliament of Lower Austria. This is impressive. Also impressive is the new museums quarter in Mistelbach with the museum for the polarizing action artist Nitsch.

Events are important for Mistelbach. “As a central location, as a district town, you have to offer events. This is due to the number of inhabitants alone. [...] If you see it purely economically, you have to close it. Of course, you do not do that” (town planning Mistelbach, 2020).

Figure 31: Mentions of cultural event types in regional council protocols 2011 to 2018

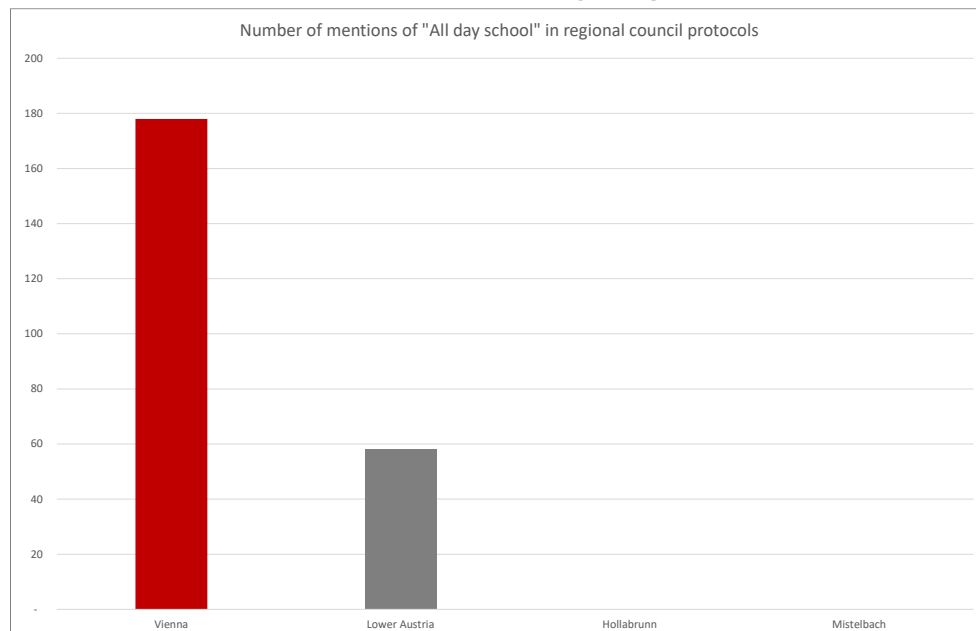


Source: Word protocols of regional councils 2012 to 2018, own code analysis and calculation

Vienna is dominating the cultural institutions of the “high culture” but Mistelbach gives a strong sign of life in cultural terms.

The growing employment of women changes the gender composition of commuters. The employment growth in Lower Austria, Hollabrunn and Mistelbach is assumed to be influenced by this structural change. However, in the political debate in Hollabrunn and Mistelbach the issue of “all day school” is not present at all.

Figure 32: Mentions of "All day school" in regional council protocols 2011 to 2018



Source: Word protocols of regional councils 2012 to 2018, own code analysis and calculation

The all-day school concept might still be identified as a part of urban culture or social democratic ideology invading the family values of rural areas. In fact, there is a common commitment to this type of school across all political parties. This is also shown by the names in the Lower Austrian state parliament.

But there are also many encouraging findings in the minutes of the regional councils. A sign that time does not stand still is presented below.

“High-performance broadband infrastructure forms the backbone of a modern society and is indispensable in the digital age for comprehensive participation in economic, social and cultural life. It is the declared goal of the Province of Lower Austria to enable all Lower Austrians and the Lower Austrian economy to have comprehensive access to ultra-fast, sustainable and high-performance broadband Internet by 2030” (H_GR_20160315).

Counter measures to reduce the rural urban divide and make use of the digital dividend. This could be a promising approach.

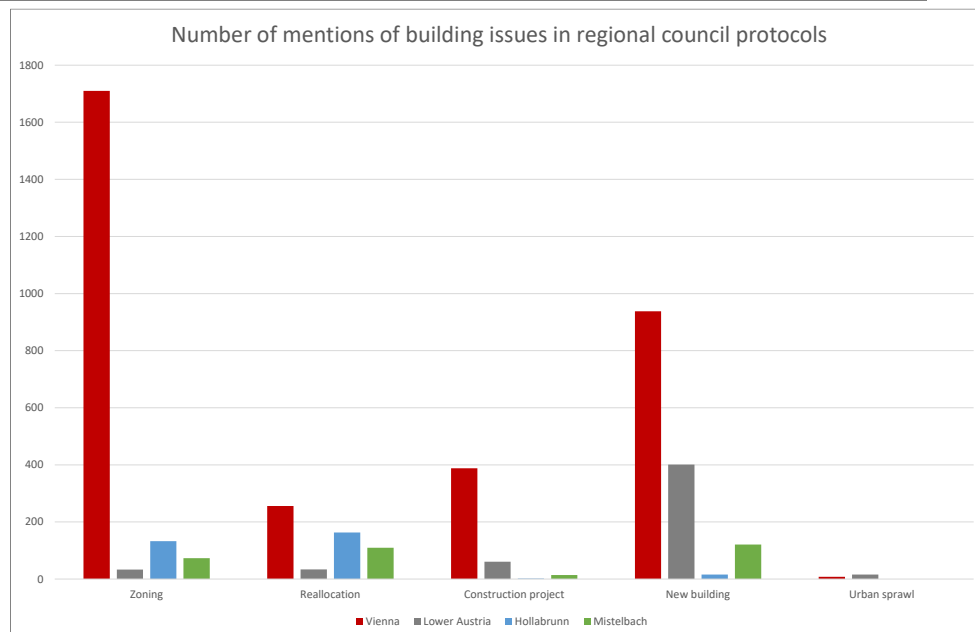
These so-called tensions are not always technically unfounded. There are also different needs between rural and urban spaces. “I would not connote these tensions negatively per se. We just have different requirements. Much that works in the city just doesn't work in the countryside. It's just like that. How you come together anyway and find a common denominator can be described as tension” (city planning Vienna, 2020).

10.4. Institutional factors

Commuting is also affected by institutional factors through the interaction between public policies and market forces (Dijst and Vazquez, 2007).

While in the US market forces dominate the urban development pattern, in Europe public policy measures for managing urban development are predominantly in place with various degrees of effectiveness (Lin et al., 2015).

Figure 33: Mentions of building issues in regional council protocols 2011 to 2018



Source: Word protocols of regional councils 2012 to 2018, own code analysis and calculation

An interesting comparison emerges when the frequency of the building themes in the regional councils is compared with that of the negative effects such as urban sprawl. Urban sprawl is obviously not a big issue in all four regional councils. There may still be a lack of awareness of the problem. It is hardly surprising that the measures relating to urban sprawl have not been successful.

In the planning departments today, the problem of urban sprawl is at least a topic of discussion. “The urban sprawl may also increase due to Corona and in the future in general, especially in the surrounding area, to Lower Austria” (city planning Vienna, 2020).

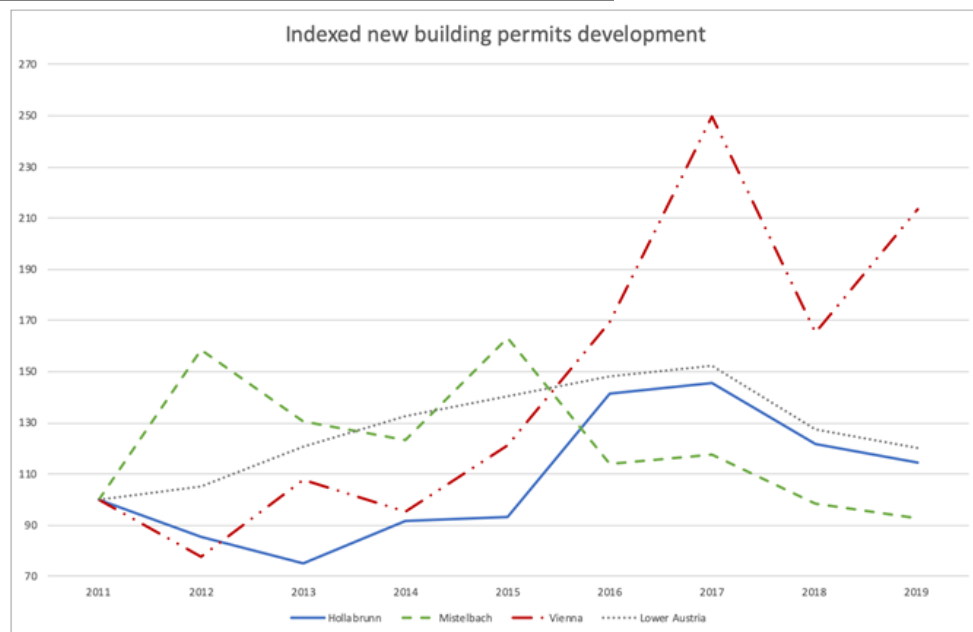
In contrast to the not always successful attempts to avoid urban sprawl, there is a strong focus on housing supply, school places supply, sufficient shopping areas (importance decreased in recent years) and the fight against crime to improve the security situation and the population's feeling of security.

10.4.1. Housing supply

After jobs, the available and affordable housing supply is assumed to be the next most important factor influencing the attractiveness of regions and triggering commuter movements.

The development of the newly available housing was mapped using the statistics on the new building permits for homes and apartments. This appears to be a suitable measure since the building permits determine the available housing supply with a follow-up period of 1-2 years.

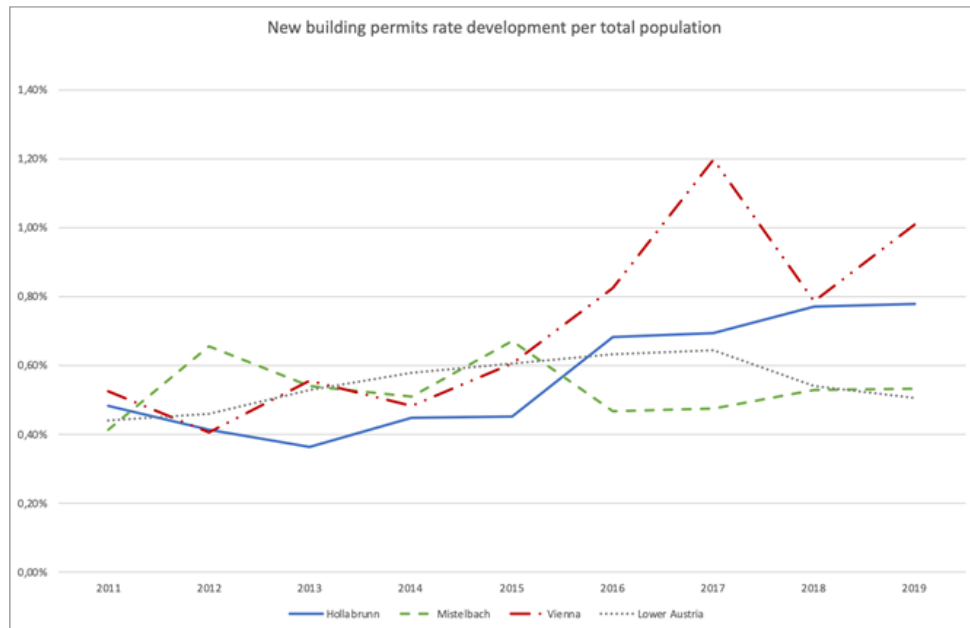
Figure 34: Indexed building permits growth 2011 to 2019



Source: Statistik Austria STATcube, new building permits per municipality (data 2017 to 2019 for Hollabrunn and Mistelbach are extrapolations based on the data of Lower Austria) and federal state, own calculation and indexation

Lower Austria and Mistelbach had issued significantly more new building permits from 2011 to 2015 than Vienna and Hollabrunn. Hollabrunn begins in 2016 with a significant expansion of new building permits. The same applies to Vienna, which has been clearly lagging behind the other regions, before suddenly showing strong growth from 2016 onwards.

In order to be able to better assess the dimension of new building permits, these were related to the population number.

Figure 35: New building permits rate development 2011 to 2019

Source: Statistik Austria, STATcube, own cross referencing of new building permits and population data

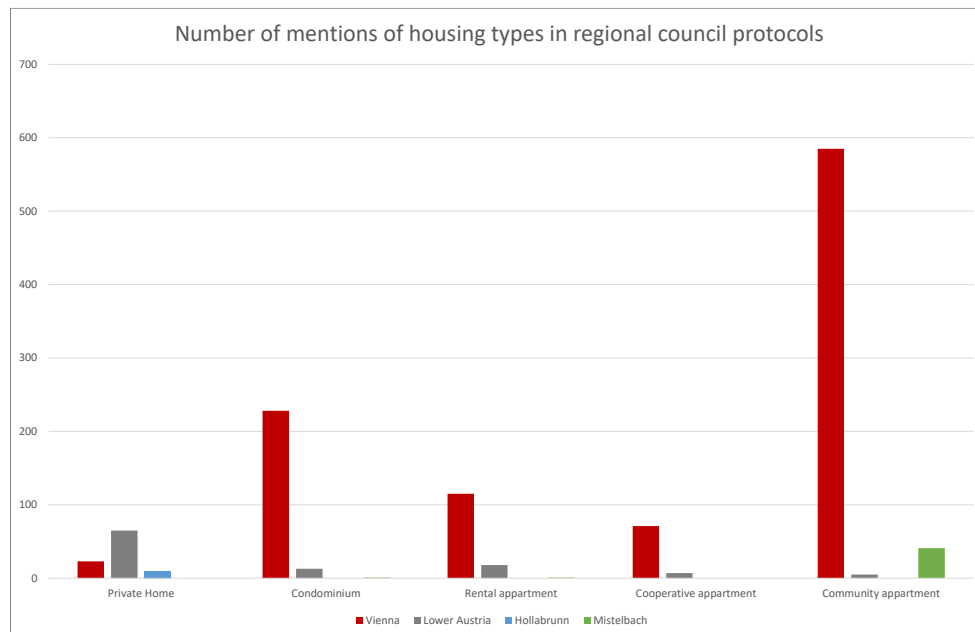
The result shows that all four regions issue new building permits with a very similar ratio to total population until 2015, which does not suggest any dramatic shifts in commuter movements due to changes in the housing market. Housing prices and rents should not rise because of lack of building activities if these activities are covering all different price levels.

The high level of new building activity in Vienna, however, combined with the high number of incoming commuters, might create additional pull factors in the future.

The mentions of housing types in the regional council protocols 2012 to 2018 show a clear picture of different focuses.

While Vienna still has a strong focus on community apartments, the second important housing type in Vienna has become condominium which is quite surprising compared to cooperative apartment and rental apartment. Vienna seems to discuss housing issues also for higher income people to offer them attractive housing supply. It might reflect the more intensive activities of private real estate developers that offer mainly condominiums in more expensive living areas (in the green belt of Vienna).

The discussion has a strong focus on community housing in Vienna. There are hundreds of examples like the following: “We need a proper housing program in the city with thousands of council flats annually. [...] If we don't do that, the housing shortage will increase” (W_GR_20131119).

Figure 36: Mentions of housing types in regional council protocols 2012 to 2018

Source: Word protocols of regional councils 2012 to 2018, own code analysis and calculation

In Lower Austria the issue of private homes is dominating the debate which is reflecting the dominance of private homes compared to all types of rental apartments in Lower Austria. The parliament in Lower Austria obviously has less issues to discuss regulations of private real estate activity and the regional parliament sees less need to intervene in private market activities at the federal state level.

What could become a challenge in the future is the poor treatment of the issue of cooperative housing. In this respect, Lower Austria falls behind compared to Vienna.

The cities of Hollabrunn and Mistelbach show interesting differences. Hollabrunn only tackles the issue of private homes. The planning department also confirms this strong focus. "The demand has become extremely high to move to the country. [...] The major housing developers, in particular, have already secured land in this regard in recent years. [...] We are talking more about single-family houses when it comes to the new zoning plans" (town planning Hollabrunn, 2020).

Mistelbach only tackles the issue of community apartments. In Mistelbach seems to be a different debate regarding the housing issue. PGO estimated population growth has apparently woke up the city council in Mistelbach. In Hollabrunn all types of rental apartments are not discussed at all in a 7-year period. This could become a problem in future years.

In the regional development plans the housing issues play a very important role. The STEP 2025 has several chapters to structure all the housing and building activities that should guarantee a city development that meets the demands of the living population in Vienna.

Lower Austria has its focus on the development of regional housing in balance with the socio-demographic development of the population.

Mistelbach also has a strong focus on the housing issue due to the population development estimated by the PGO for Mistelbach.

10.4.2. School places supply

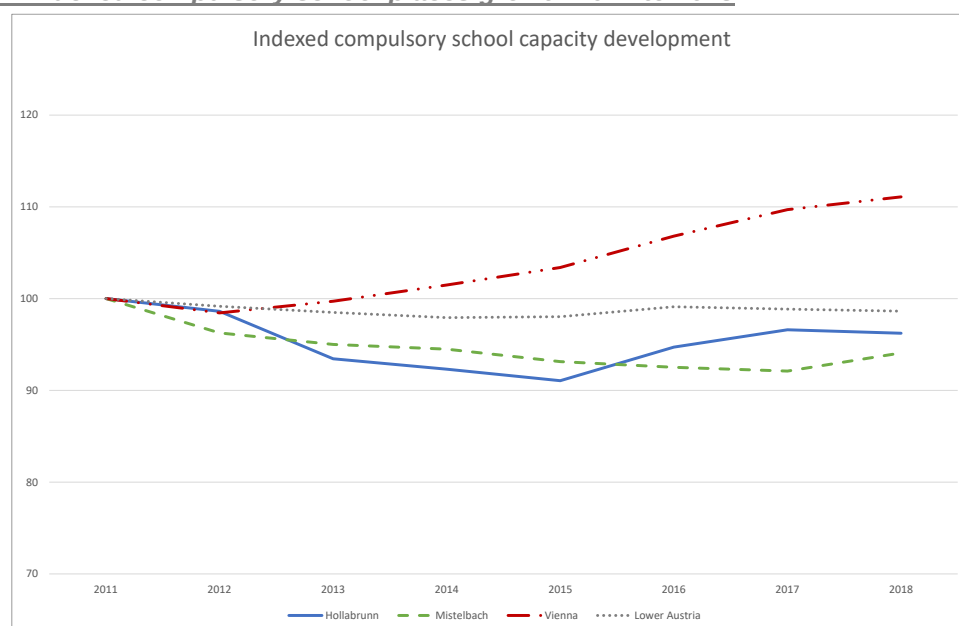
The next section analyses the statistical data on school and training places.

At the beginning there is the indexed compulsory school places data (elementary school, middle school and secondary school).

It is noticeable here that the supply of compulsory school places in Vienna is developing much more dynamically than in Lower Austria and in Lower Austria more dynamically than in Hollabrunn and Mistelbach.

This lack of dynamism could mean a demographic problem in the medium-term in Hollabrunn and Mistelbach. Obviously, there are fewer children for the existing compulsory school facilities, and they have had to adapt the school places offered accordingly. However, in around 10 years' time there will be a lack of young people and young adults who are most likely to shape and determine the future of a region.

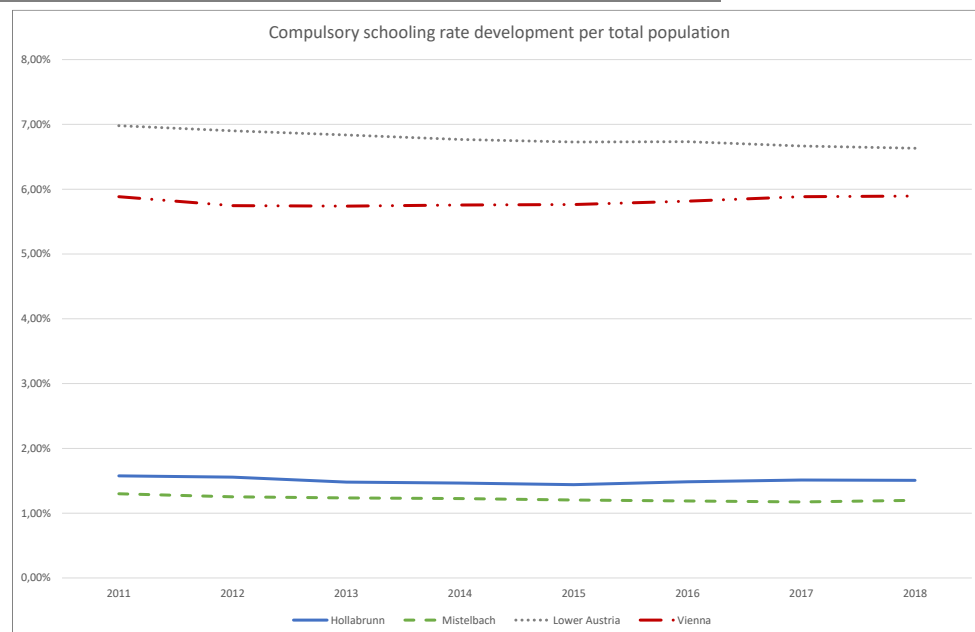
Figure 37: Indexed compulsory school places growth 2011 to 2018



Source: Statistik Austria, STATcube, compulsory school places, own calculation and indexation

Whether the causes lie in the change in female employment or in a lower migration movement outside the metropolitan region is not examined further here.

The next figure shows the development of compulsory school places in relation to population development.

Figure 38: Compulsory schooling rate development 2011 to 2018

Source: Statistik Austria, STATcube, own cross referencing of compulsory school places and population data

It is interesting that the compulsory schooling rate in Lower Austria is generally somewhat higher than in Vienna. The supply of schools in the suburbs around Vienna could be an explanation regarding commuters from Vienna or the general population structure (number of school-age children) in Lower Austria. Both analytical approaches will not be pursued further in the context of the present work.

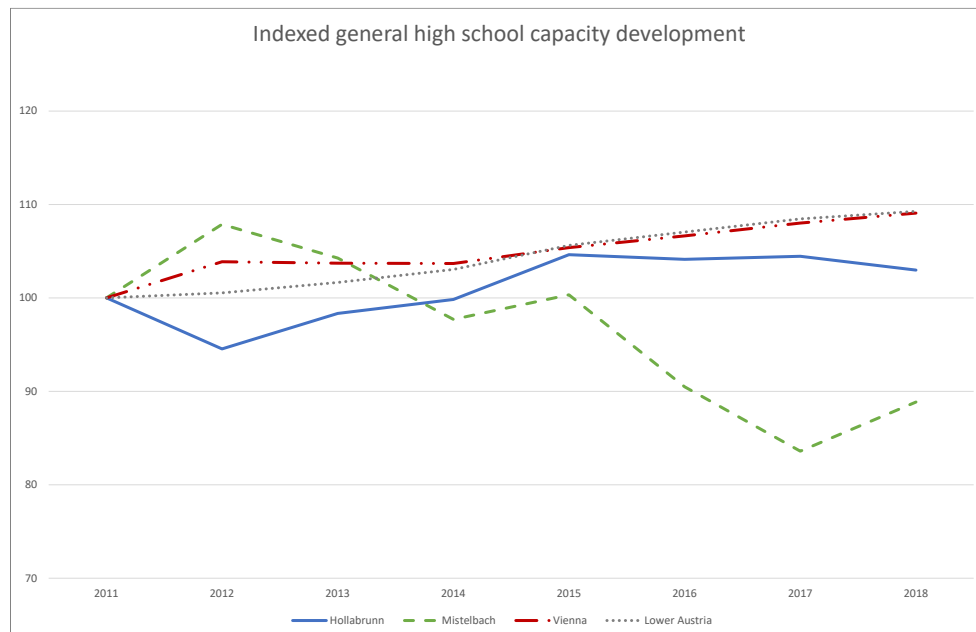
The large gap between Lower Austria and Vienna versus Hollabrunn and Mistelbach in the proportion of compulsory school places in relation to the total population is very striking. A connection with the clearly negative commuter balance of Hollabrunn and Mistelbach could be assumed by looking at this data.

The offer of compulsory school places could be in the surrounding communities of Hollabrunn and Mistelbach (care of compulsory school children by grandparents) or along the commuter routes or at the destinations of the commuters (care of compulsory school children by commuting parents). This is a question which should be subject to further investigation, as per recommendations for further study.

There are clear differences between the figure for compulsory school places and the figure for high schools and vocational school places.

The supply of general high schools (AHS) is developing dynamically in Hollabrunn, Lower Austria and Vienna. The development in Mistelbach is less positive. There is a significant decrease here. Combined with the decline in compulsory school places, this is a worrying trend.

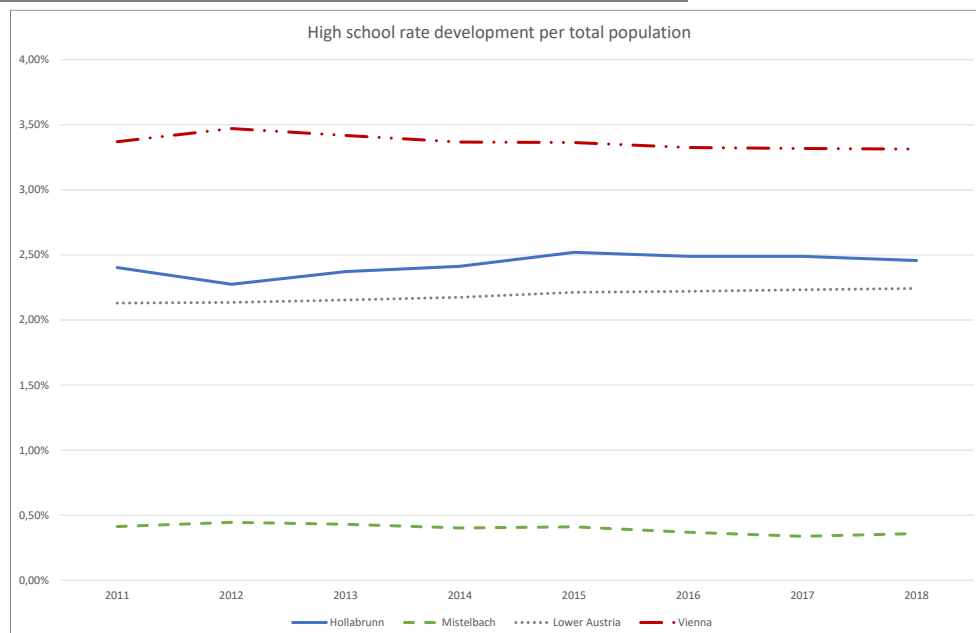
Figure 39: Indexed general high school places growth 2011 to 2018



Source: Statistik Austria, STATcube, general high school places, own calculation and indexation

Vienna and Lower Austria show a similar trend. Lower Austria is evidently experiencing a catch-up effect with the AHS and is expanding the range of general high schools. Vienna meets the growing demand from the general population development with a growing supply. Hollabrunn can keep up here for the most part. Mistelbach is clearly degrading here.

Figure 40: General high school rate development 2011 to 2018



Source: Statistik Austria, STATcube, own cross referencing of general high school places and population data

In relation to the total population, Vienna is clearly ahead of Lower Austria and Hollabrunn when it comes to high school places. The high proportion of AHS students in Vienna is repeatedly discussed in public.

In relation to the population, the number of general high school places in Hollabrunn is impressive. The data show that Hollabrunn is a high school town with a strong AHS offer in the federal state of Lower Austria. Hollabrunn is above total Lower Austria. Mistelbach's AHS places are very low and offer significantly less future potential in this segment than Hollabrunn.

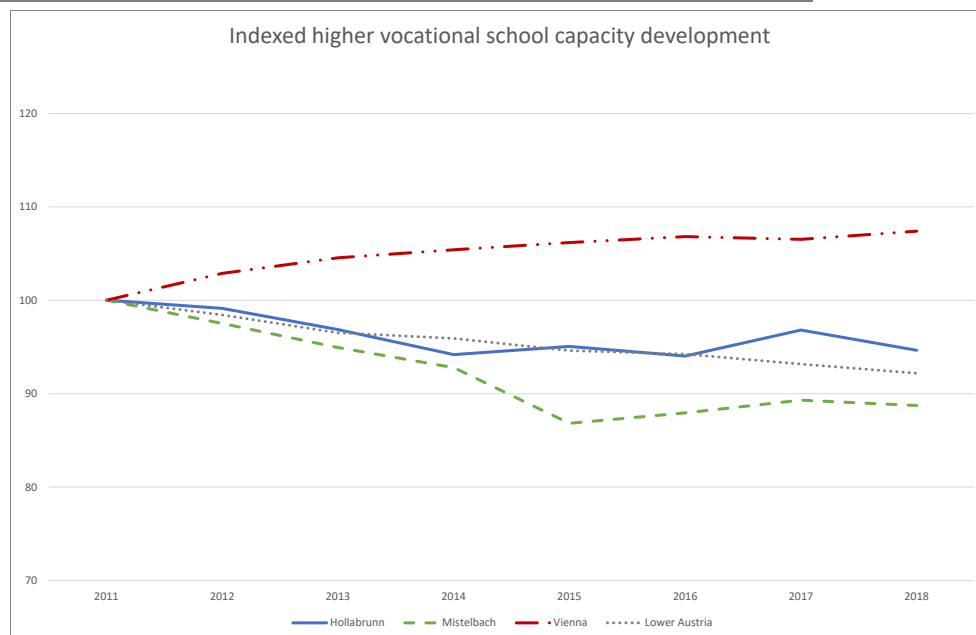
When it comes to higher vocational schools (primarily commercial and technical high schools), Vienna is developing much more dynamically than Lower Austria and also more dynamically than the municipalities of Hollabrunn and Mistelbach.

This trend should give education planners in Lower Austria thoughtful thought, as the skilled workers of tomorrow will increasingly have to go to higher commercial (HAK) and technical schools (HTL).

Here Vienna offers a growing supply that should improve the quality of the workforce. In addition, the graduates of the higher technical schools also represent an important part of the young generation in the MINT subjects at the universities and technical colleges. The emerging "digital revolution" or "second machine age" (Brynjolfsson and McAfee, 2014) needs significantly more graduates of MINT subjects.

As a society, we are looking for these graduates, despite most of the next generation being trained in vocational colleges.

Figure 41: Indexed higher vocational school places growth 2011 to 2018

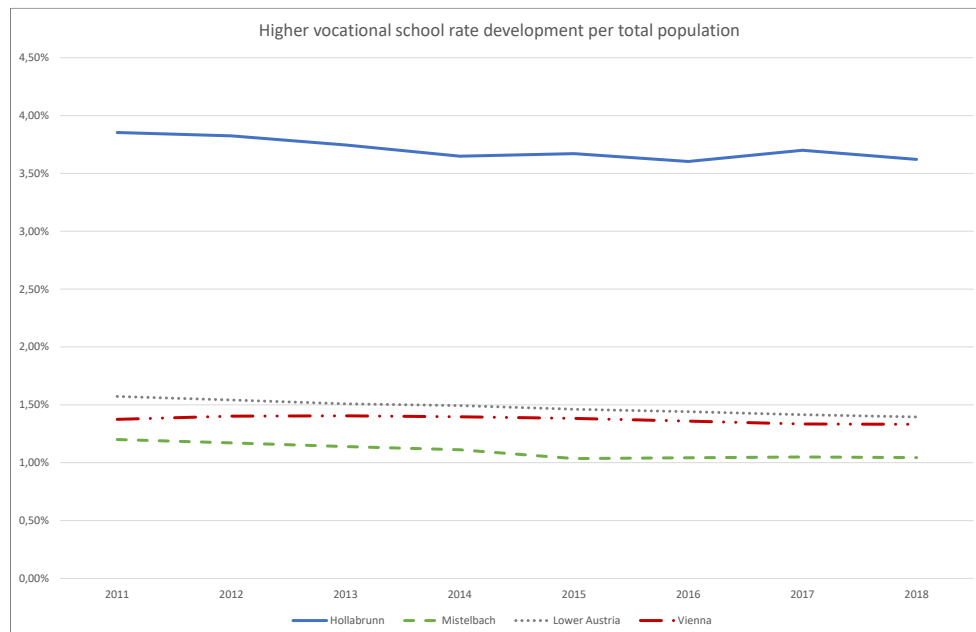


Source: Statistik Austria, STATcube, technical high school places, own calculation and indexation

The proportions of higher vocational school places in relation to the population are very interesting.

Hollabrunn is at the forefront when it comes to the ratio of higher vocational school places to the population. Hollabrunn apparently provides an attractive higher vocational school offer that goes far beyond the immediate catchment area.

Figure 42: Higher vocational school rate development 2011 to 2018

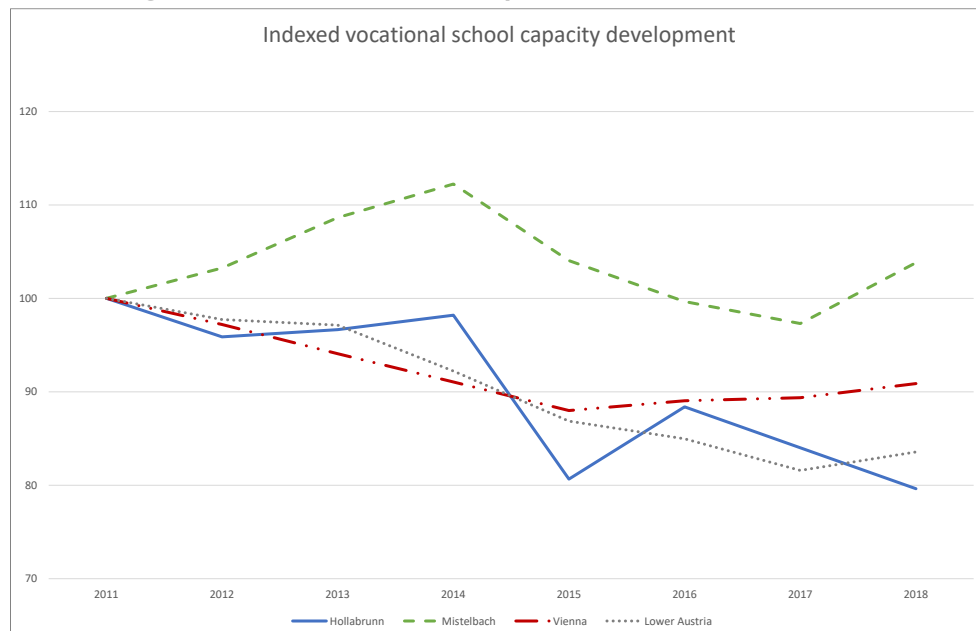


Source: Statistik Austria, STATcube, own cross referencing of technical high school places and population data

This creates a different type of commuter movement in Hollabrunn, which defines a regional centre as the destination for this commuter movement. However, with the general and technical high schools, the number of jobs is not large enough to change the generally negative commuter balance in Hollabrunn.

Mistelbach on the other hand is more dynamic in vocational school places than the other three regions.

Figure 43: Indexed growth of vocational school places 2011 to 2018



Source: Statistik Austria, STATcube, vocational school places, own calculation and indexation

Here the development in both Vienna and Lower Austria can be described as critical.

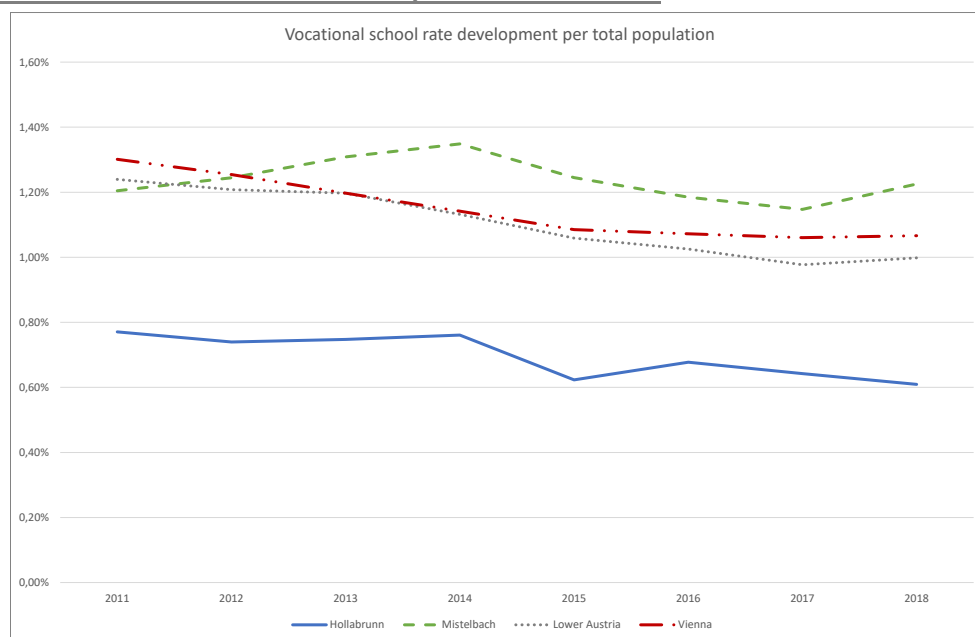
The increasing demand for skilled workers is not reflected in the number of vocational school places (especially the schooling of apprentices). In connection with the population development, these numbers become even more dramatic for Vienna.

Mistelbach has developed better here, but it is unlikely to be as broadly supported as the high school supply in Hollabrunn.

The institutional offering in terms of vocational school places (apprenticeship training) could represent a promising specialization for Mistelbach. Mistelbach has built up an offer of vocational school places that goes well beyond the needs of the resident population. The availability of vocational school places alone will not be sufficient, however, because an attractive cluster of commercial and industrial companies in the area of the vocational school offers is required in order to build up a strong regional network with a focus on said schools. The establishment of a university of applied sciences and a regional research facility could possibly round off the institutional offering in Mistelbach. In any case, this topic would have to be further analysed by those responsible for regional planning, as well as the political decision-makers in Mistelbach.

In relation to the population, the number of vocational school places in Mistelbach is only slightly higher than the numbers in Vienna and Lower Austria. The reversing trend in recent years has been positive, while the trend is down in all other regions.

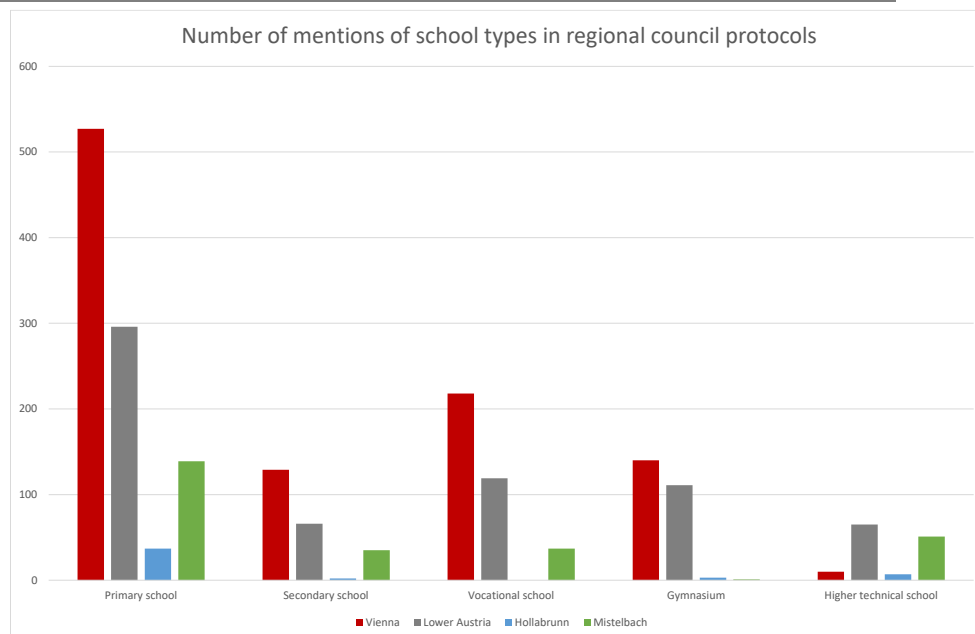
Figure 44: Vocational school rate development 2011 to 2018



Source: Statistik Austria, STATcube, own cross referencing of vocational school places and population data

The training of apprentices is a rising problem, as the data from Lower Austria and Vienna show. Therefore, the problem of skilled workers in the eastern region is likely to further increase. Skilled workers from neighbouring countries will be needed to compensate for the falling numbers of apprenticeship training provided.

The political discussion in the regional councils partly reflect the different priorities but there are also surprising differences. Obviously, the planning departments set other priorities than those broadly articulated in the political debate.

Figure 45: Mentions of school types in regional council protocols 2012 to 2018

Source: Word protocols of regional councils 2012 to 2018, own code analysis and calculation

One example of this difference of action and debate is the little discussion about HTLs (higher technical schools) in the city council of Vienna.

Hollabrunn is a very active school town but the debate in the city council does not reflect this issue at all. Could this become a problem when a city becomes too satisfied?

Mistelbach puts emphasis on all school issues except Gymnasium (general high school). The technical high school has a real high focus compared to all other regions. This supports the idea of a technical cluster in combination with the vocational school places in town.

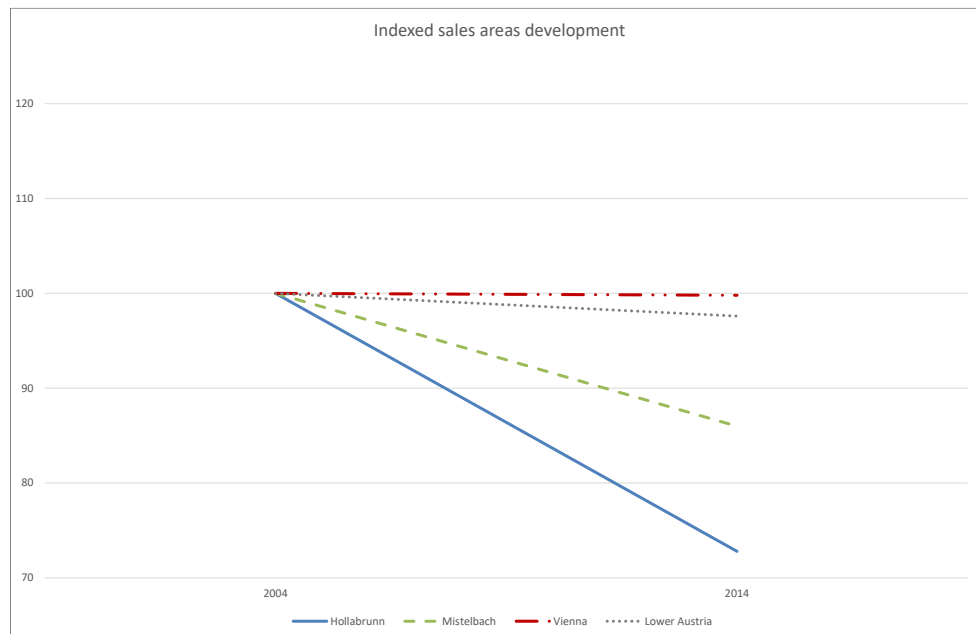
Mistelbach sees itself in the current planning concept adequately supplied in the basic supply of the educational institutions even with a population growth. Work on expanding the facilities should only be carried out in childcare (Stadtgemeinde Mistelbach, 2014).

10.4.3. Shopping area supply

The next area of analysis concerns the availability of shopping, leisure, recreation and cultural facilities. Unfortunately, there is no statistical data on the last three subject areas. However, it is obvious that the range of leisure and cultural facilities in Vienna is significantly higher than in all other regions and cities in Austria. When it comes to recreation, the assessment is much more difficult. Outdoor activities have become very popular in recent years.

Hard facts are only available for the development of sales areas. Unfortunately, the available statistical material is also very thin here. There are only two measurement points over time offered by Statistics Austria, the years 2004 and 2014.

Figure 46: Indexed sales areas growth 2004 to 2014

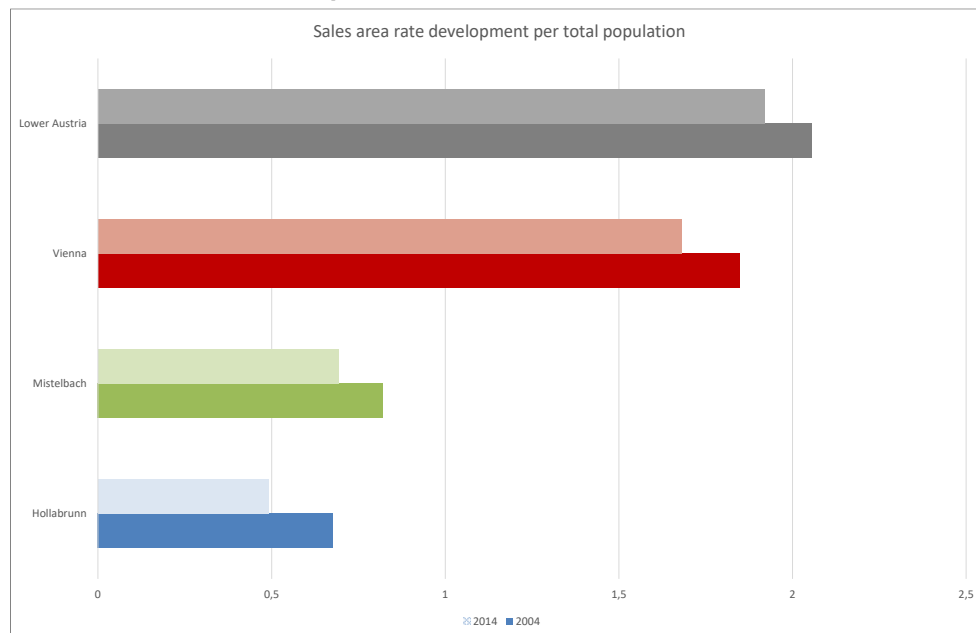


Source: Statistik Austria, STATcube, sales areas per region, own calculation and indexation

These two measuring points show that the supply of retail space in Lower Austria as well as in Hollabrunn and Mistelbach is declining. The supply remains stable in Vienna. The decline in the medium-sized towns Hollabrunn and Mistelbach is stronger than in Lower Austria.

This development in relation to the population shows a general decline.

Figure 47: Sales areas rate development 2004 to 2014



Source: Statistik Austria, STATcube, own cross referencing of sales areas and population data

There is a significantly higher supply of retail space in relation to the population in Vienna and in Lower Austria (most probably in Vienna's suburbs in Lower Austria) than in Hollabrunn and Mistelbach. The decline in Hollabrunn is very strong. The availability of retail space evidently

follows the availability of jobs to a greater extent than the housing supply. In any case, an unchanged high level of motivation towards commuting can be derived from the shopping facilities on offer according to the regional sales areas.

The increasing importance of online shopping, however, significantly reduces the importance of regional retail sales areas. This may even offer people in the more remote regions better shopping opportunities than ever before. In this sense, the regions outside the metropolitan region could even be among the winners of the growing online offers. The logistics centres are also being built around the metropolises and offer new jobs in the Vienna suburbs in Lower Austria and in the Viennese metropolitan region. Commuters do not have to commute to Vienna but to closer workplaces in other regions around Vienna.

However, the mid-size-cities of Hollabrunn and Mistelbach fight against the loss of sales areas, especially in the city centres.

“Online shopping is progressing, making it more difficult for stationary trade” (town planning Mistelbach, 2020).

“Like many other cities, Hollabrunn is faced with the fact that the creation of retail parks and shopping centres will lead to a migration of shops from the inner city to these centres” (H_GR_20121211).

“The fight against vacancies in the city centre is one of the declared goals of the members of GRA 6 for 2018 (and beyond). In order to use as many empty buildings or business premises as possible in a meaningful way, an incentive should be created for tenants to settle in an empty business premises in the central zone of Mistelbach” (M_GR_20180314).

10.4.4. Quality of life (safety aspect)

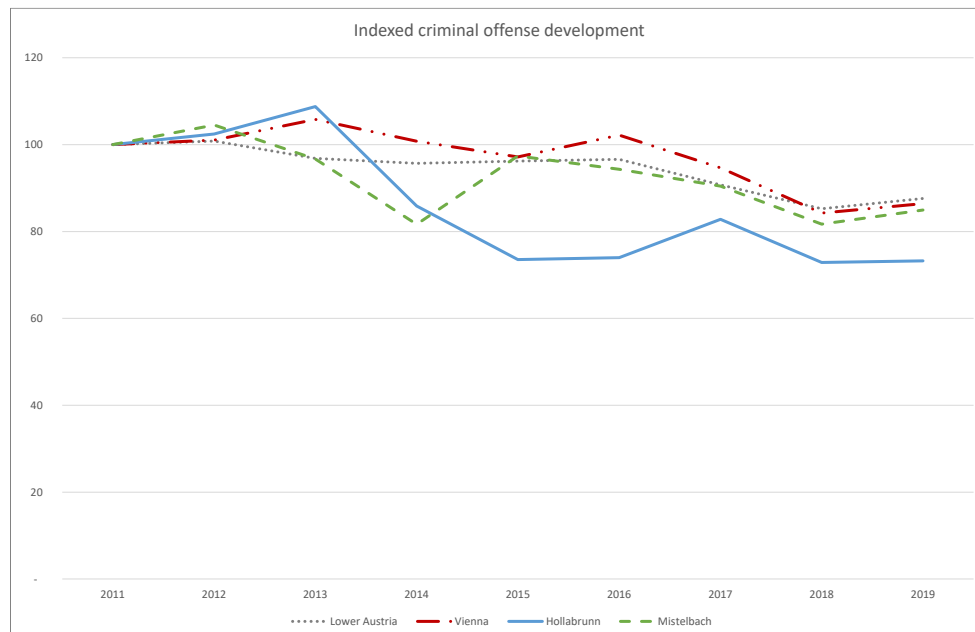
The last area of analysis deals with the factors that determine the quality of life in a region. Unfortunately, there is no statistical material on the supply of green spaces or indices on the proportion of green spaces in the housing areas. Therefore, the issue of green space provision and the demand for it cannot be further analysed with the available statistical data.

Only on the topic of security is there a statistical starting point, namely the development of offenses (crimes and offenses). Crimes refers to those offenses that are punished with a prison sentence of 1 year or more; offenses to those that result in a prison sentence of less than 1 year.

The Federal Ministry of the Interior has prepared a special analysis of the reported crimes and offences for Hollabrunn, Mistelbach, Lower Austria and Vienna for the period 2011 to 2019 and thankfully made it available for this work.

The indexed evaluation of the offenses reported shows a decline over the entire period, especially since 2013. There was a slight increase in 2019.

Figure 48: Indexed criminal offense development 2011 to 2019



Source: Austrian federal ministry of interior, special evaluation of number of offences, own calculation and indexation

If you look at the number of offenses in relation to the population, there is a clear difference between Vienna and Lower Austria, Hollabrunn and Mistelbach. The number of offenses in relation to the population in Vienna is almost three times as high as in the other regions. The gap has narrowed but is still more than double. The need for security could be one reason why people move from the big city of Vienna to the surrounding suburbs or even outside the metropolitan region.

Figure 49: Criminal offense rate development 2011 to 2019

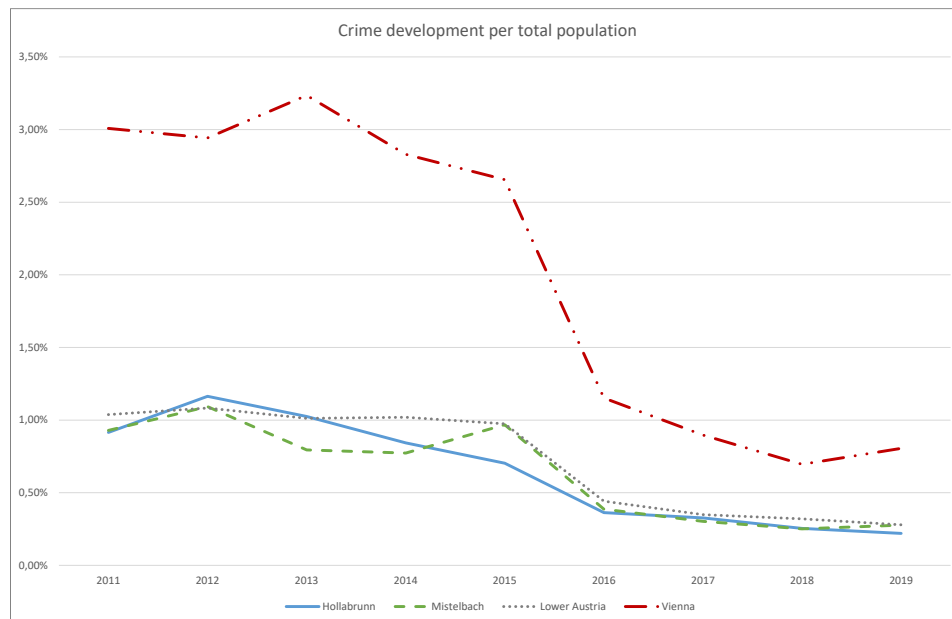


Source: Austrian federal ministry of interior and Statistik Austria, own cross referencing of number of crimes and offences and total population

The difference between Hollabrunn and Mistelbach on the one hand and Lower Austria on the other hand is not very big. From a security point of view, the suburbs around Vienna are already safer than Vienna, and there is no need to move to more remote areas like Hollabrunn or Mistelbach for security reasons.

If one differentiates offenses according to crime and misdemeanour, it turns out that crimes in Vienna are falling significantly. The difference to the other regions becomes very small.

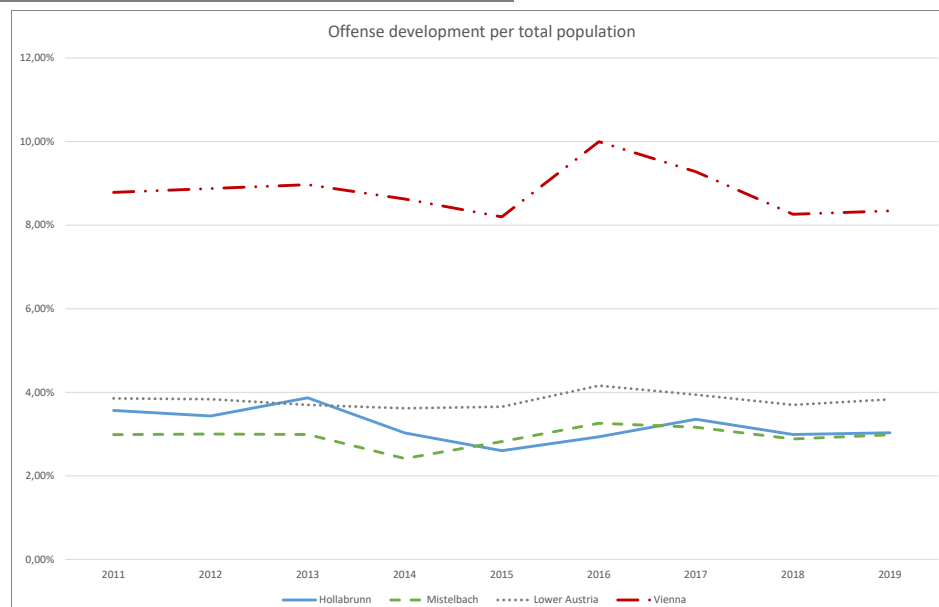
Figure 50: Crime rate development 2011 to 2019



Source: Austrian federal ministry of interior and Statistik Austria, own cross referencing of number of crimes and total population

But the number of offenses remains relatively stable in the period under review.

Figure 51: Offense rate development 2011 to 2019

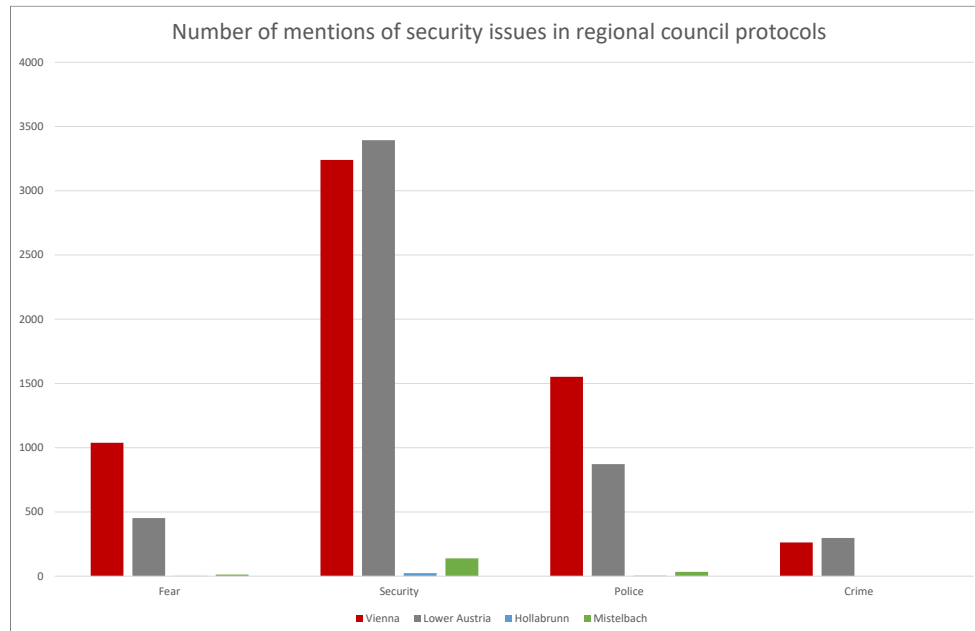


Source: Austrian federal ministry of interior and Statistik Austria, own cross referencing of number of offences and total population

This then applies to all those crimes that may affect the need for security in everyday life, rather than those which are much more severe. That could also be a reason why the majority of the population does not perceive the improvement in the security situation as such.

Security is also a real big issue in the regional parliaments of Vienna and Lower Austria.

Figure 52: Mentions of security issues in regional council protocols 2012 to 2018



Source: Word protocols of regional councils 2012 to 2018, own code analysis and calculation

Several thousands of mentions are registered in the council protocols of Vienna and Lower Austria. It is apparently no big issue in the cities of Hollabrunn and Mistelbach. When it comes to crime then there are no mentions at all in Hollabrunn and Mistelbach.

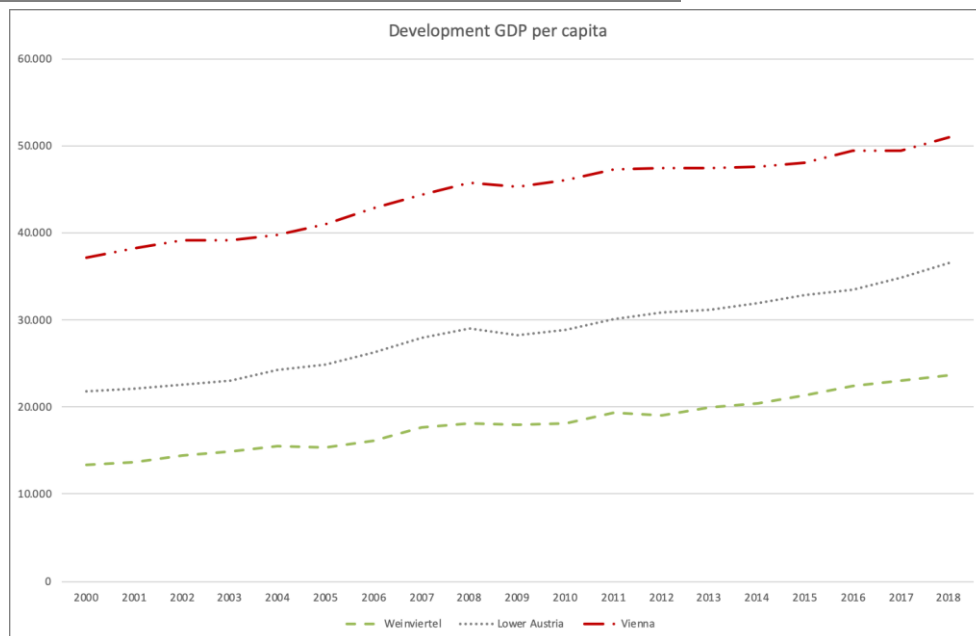
It is doubtful whether the need for security has a relevant impact on commuting. In any case, there are no significant developments in the balance of commuters to be observed that correlate with the crime data.

10.5. Economic factors

The economic development is measured on the one hand by the regional GDP development and on the other hand by the regional GDP per capita and by disposable income per capita.

The GDP data and GDP per capita continue to show a dominant role for the city of Vienna compared to Lower Austria as well as the region Weinviertel (representing Hollabrunn and Mistelbach).

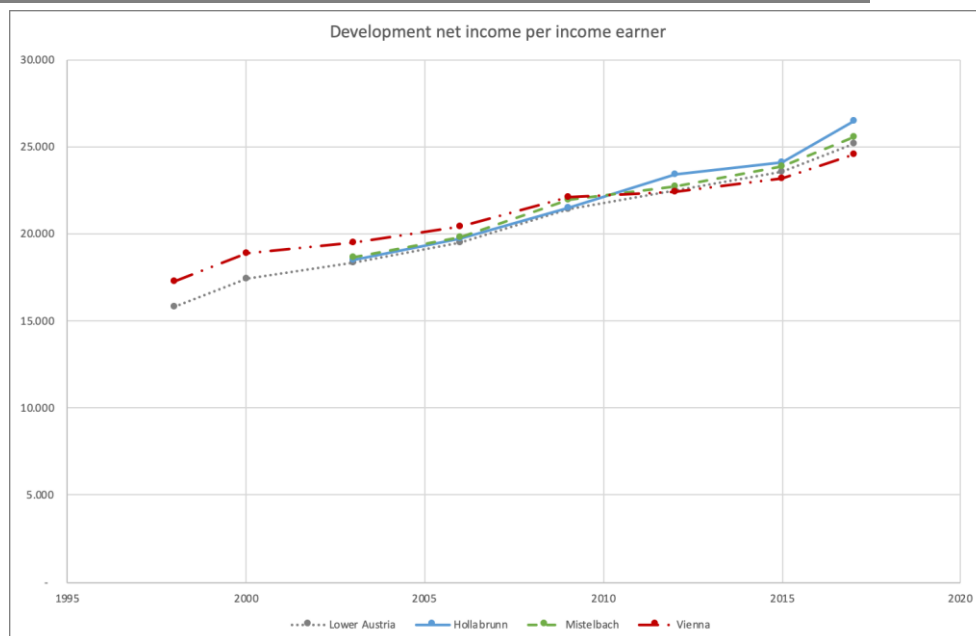
The following figure shows GDP per capita.

Figure 53: Development regional GDP per capita 2000 to 2018

Source: Statistik Austria, STATcube, Volkswirtschaftliche Gesamtrechnung, regional GDP NUTS 2

Unfortunately, the data for disposable income is not available for Hollabrunn and Mistelbach. Therefore, Statistics Austria was asked for a special evaluation from the integrated wage and income tax statistics for the 4 regions. Thankfully, this special evaluation was made available.

This analysis shows the development of the net income per wage and income earner (which does not correspond to the classification per capita / per total population, but still gives a good insight into the income development of the 4 regions).

Figure 54: Development regional net income per income earner 1998 to 2017

Source: Statistik Austria, special evaluation, integrated wage and income tax statistics, 2020

The results are very impressive. They show that, since around 2010/2011, the net income in Lower Austria, but particularly in Hollabrunn and Mistelbach, has become higher than that of Vienna. This trend continues until 2017 (the last currently available year).

This changes the economic framework for commuters and potential job seekers from the border region to the metropolitan area (represented by Hollabrunn and Mistelbach). Considering the opportunity costs of commuting (travel costs, increased time expenditure, higher food expenditure minus commuter flat rate), the incentive for commuting decreases if the achievable net income in the target region of Vienna becomes less attractive.

This recent economic development should already have its effect, as the recent commuter numbers in Hollabrunn and Mistelbach have stagnated since 2011. Of course, several effects come together here, and it is not just the income influence that is at work here. The additional job offers in the region as well as in other regions in Lower Austria change the incentive to commute long-distance to Vienna.

11. Discussion

Moving the federal state administration of Lower Austria in the end of the 1990s from Vienna to new capital St. Pölten started a new dynamic in Lower Austria. The polycentric development became a reality in Lower Austria. Before that, the transport and logistics interests were more focussed on Vienna also in the government and in the regional parliament of Lower Austria because they were both located in Vienna.

After the new capital decision, a more decentralized development plan became important in balancing the vital interest of the different regions of Lower Austria. The region of St. Pölten was a big winner, therefore the other regions (Waldviertel, Weinviertel, Industrieviertel) needed more attention and new infrastructure projects. The Weinviertel-highway became a discussion issue in this context because of an assumed lack of frequency. This discussion is still lively as documented in the following quote from the Vienna regional parliament discussions: "The Lower Austrian ÖVP wants to pass the problem on to Vienna. She spends a lot of money on cars, for example on 'ghost highways' like the A5, which leads to the Waldviertel or Mistelbach, where you have to be afraid because you always drive alone. Lower Austria spends money on this (W_GR_20140625)."

In figure 6 the increasing dynamics of regional commuting compared to other state commuting can be perfectly understood. The growth pattern changes significantly in the 1990s. The other state commuting has a reduced speed since then. However, there is still a growth rate in the other state commuting in Lower Austria. The growth rate for Hollabrunn and Mistelbach stagnated after 2011. There is no decline yet but almost no more commuting growth.

This is quite an interesting result, but the explanation might not be found completely in the fact and figures captured in this work. A more detailed analysis of all the regions around Vienna in the metropolitan area would be necessary.

As presented in the chapter "Jobs-population spatial relationship", there is an enormous gap in terms of the available jobs per capita in the municipalities of Hollabrunn and Mistelbach compared to the metropolis of Vienna and also compared to total Lower Austria. Figure 28 shows a difference in the number of jobs per capita of a factor greater than 5.

This gap might explain to a high degree the absolute number of working commuters in Hollabrunn and Mistelbach. According to McDonald, employment is the key component for understanding the urban form (McDonald, 1987). As long as this job gap exists, there will be a necessity for inhabitants in Hollabrunn and Mistelbach to commute out of their cities. Vienna offers the highest number of jobs, so Vienna will stay a target for commuters from Hollabrunn and Mistelbach.

The recent employment growth rates (indexed development as shown in figure 27) give some hope, but it will take more than a lifetime to narrow the gap between the mid-size cities outside the metropolitan area of Vienna and the metropolitan city of Vienna. Vienna does a lot of work to improve the attractiveness of the city for national and international businesses (compare mentions of business establishment and start-up in figure 30). The question of the sustainability of a development always arises. If the underlying dynamics are not properly recognized and the right decisions are made in Hollabrunn and Mistelbach, then a trend can quickly change again. This shows the history of the four regions worked on.

Another interesting finding is the trend in disposable net income as shown in figure 54. The net income of the wage and income earners in Hollabrunn and Mistelbach as well as total Lower Austria have outperformed the wage and income earners in Vienna in the recent years since 2011. The strong migration and increasing population since the year 2000 has obviously

reduced the incomes in Vienna. The employment growth did not meet the demand of the growing population as the comparison of the indexed population growth rate and the indexed employment growth rate confirmed for Vienna (figures 26 and 27).

The total of wage and income earners in Hollabrunn and Mistelbach now have more net income than wage and income earners in Vienna (on average). What will be the impact of this new situation on commuting? It might reduce the incentive to travel to Vienna or to the Vienna area for a job for inhabitants of Hollabrunn and Mistelbach from a net income perspective. But in the end, it is a question of the total number of available jobs in the region. If there is a lack of jobs than commuting is still necessary.

In the long run regional retail spending and all types of investments (real estate, furniture, vehicles, businesses, financial assets) will grow in the economically prosperous region due to the growing net income. The development perspectives for Hollabrunn and Mistelbach should be positive because of this income growth.

Instead of an economic rural urban divide the figures confirm an economic catching-up process, even overtaking the big city of Vienna. Vienna shares its economic prosperity with its neighbouring regions. Vienna communicates this fact far too little. The economic opportunities for Hollabrunn and Mistelbach are growing through the redistribution of wealth from the urban agglomeration.

These opportunities must be used properly. Hollabrunn and Mistelbach must invest into their infrastructure to meet the expectations of the growing population and their income. Hollabrunn must also attract people to move to Hollabrunn as the population numbers show. The opportunities offered by the last migration wave were not optimally used by both cities in term of population growth. Perhaps that was also wanted politically. The numbers of compulsory school places give cause for concern, both in Hollabrunn and in Mistelbach (figure 37). There could be a demographic problem hidden in these numbers. In any case, that should be analysed further by the planning departments in Hollabrunn and Mistelbach.

No major changes are expected in the area of housing. The cities of Hollabrunn and Mistelbach issue enough new building permits to cover the population growth (figures 34 and 35). The planning department of Mistelbach is aware of the challenges. "What is known about Vienna is simply that population growth is spilling over. The PGO said that 20 years ago. And that's what we prepare for" (town planning Mistelbach, 2020).

Hollabrunn and Mistelbach are not behind Lower Austria as a whole. Vienna has issued a significantly higher number of new building permits in order to be able to cover the strong population growth. Due to the strong demand in Vienna there must not be a pull factor for commuters from Hollabrunn and Mistelbach.

Hollabrunn shows very little or no interest in cooperative apartments or community apartments as the analysis of the council protocols confirms (figure 36). Mistelbach does discuss this issue. For younger people and young families, the supply of affordable housing is an increasingly important issue. The growing net income (an average figure) of Hollabrunn and Mistelbach has a different impact on different wage and income earner groups. The percentage of housing cost for younger people could become an incentive to move to other living areas away from Hollabrunn.

The pure focus on own houses is also a cultural and political issue. For the Christian democratic movement, the goal of becoming a single home owner, is very important. During the research for this work, an ideological bias was identified on several issues. One example of

this was the debate about new building permits. Another example concerns the topic of all-day school, which was completely absent at Hollabrunn and Mistelbach (figure 32).

Schools play a very important role for Hollabrunn (figures 39 to 42). Hollabrunn sees itself as a real higher school town with supra-regional importance. Hollabrunn started a cooperation with a private university in Germany and universities in Vienna and Lower Austria to bring university graduate education to Hollabrunn (first program offered 1999). Hollabrunn could become an integrated education centre with higher school and university students. This will be a very challenging goal however for Hollabrunn as many bigger cities in Austria compete for universities and vocational colleges. Becoming a university town would also be a cultural challenge for a mid-size city like Hollabrunn. Would this cultural change be supported by the local citizens?

With its vocational schools and the growth of vocational school places (figures 43 and 44), Mistelbach has an interesting starting point for a business cluster and for innovations in the skilled worker environment. In this regard, Mistelbach today lacks a technical college and an innovation centre. These could be development goals for Mistelbach's new development concept.

The quality level of the development concepts of Vienna and Lower Austria is definitely higher than the level of the concepts of Hollabrunn and Mistelbach. Both planning departments of the two federal states apparently benefit from the improved cooperation. At the level of the federal states there is obviously a success through the improved cooperation in the PGO.

The planning department of Lower Austria should make better use of PGO on the city level. PGO offers a treasure of data and information that could be used by the cities of Hollabrunn and Mistelbach. Mistelbach referred to PGO data but Hollabrunn did not so far. However, the new development concepts are under way in Hollabrunn and Mistelbach and offer a perfect opportunity for a better usage of PGO knowhow. The lack of usage of PGO or SUM knowhow by the federal state of Lower Austria and the cities of Lower Austria is a frustrating problem as the following statements shows:

“In the last few years, I have seen the opposite trend. I actually see a stronger positioning of the state of Lower Austria as the state of Lower Austria, almost more in contrast to Vienna than in cooperation with Vienna” (SUM, 2020).

The lack of cooperation does not only affect the cities of Hollabrunn, Mistelbach and Vienna. Apparently, there is also a lack of cooperation between the cities in Lower Austria. “You just address the topics and just see if you can copy something here and there or learn a little something. But the cooperation between Hollabrunn and Mistelbach is not there” (town planning Mistelbach, 2020).

The security issue shows that there are clear differences between a large city like Vienna and the medium-sized towns of Hollabrunn and Mistelbach (figure 49). Hollabrunn and Mistelbach as well as total Lower Austria lie significantly below Vienna's crime statistics per capita. In Vienna, the high number of minor offenses remains a cause for security concerns.

“There are the Viennese who cannot understand why someone lives in the country-side because there is no good public infrastructure. But there are also the Viennese who like to live in Mistelbach because they appreciate the peace and quiet and that you do not have to be afraid here. Nothing will happen here in a big way” (mayor of Mistelbach, 2020).

In terms of crimes, Vienna has succeeded in dramatically improving the situation (figure 50). Regarding the offenses, the record is unfortunately not that good (figure 51). The numbers

stay high here. That would have to be considered in Vienna in the new STEP and security policy. Otherwise the migration out of the city could increase among higher income citizens.

If we come back to the cultural and political tensions between Vienna and Lower Austria, smaller or larger residues of these tensions were discovered again and again. The protocols of the regional council meetings give a good impression about the still existing tensions. In the Vienna council protocols Hollabrunn and Mistelbach are representing backward or provincial places if mentioned at all. Highways to these cities are addressed as 'ghost highways'. There is a strong sense of self in Vienna. However, arrogance always comes before decline. Vienna must also closely follow developments and take the right measures. The right decisions have apparently been made in the area of higher education and university training places. A very big problem is emerging with regard to vocational school places (figure 44). If Vienna does not initiate a trend reversal here and increase the number of school places and the attractiveness of apprenticeships, then in the medium and long term this will cause numerous problems on the labour market. In addition, the problems with the quality of services and businesses will worsen.

The self-confidence of the medium-sized cities Hollabrunn and Mistelbach still needs to be strengthened in terms of cooperation with the city of Vienna (compare the interview passages of the mayor of Mistelbach and the heads of the planning departments of both cities). The economic development of Hollabrunn and Mistelbach in recent years is quite impressive (figures 27 and 54). Both cities have reached Vienna in terms of employment growth and net income of wage and income earners.

However, there are still financial issues to be solved. "An oversized bonus for the federal and state capital Vienna was negotiated for the financial equalization. That has been disadvantageous, seriously disadvantaging, small- and medium-sized towns and municipalities for many years. And we feel that every day because we simply do not have the budget" (mayor of Mistelbach, 2020).

After decades of chasing after them, Hollabrunn and Mistelbach have caught up with Vienna in recent years. That should actually be a good basis for approaching Vienna more openly. Cooperation needs the will on all sides. This will must also be developed in Hollabrunn and Mistelbach.

If the hand is not stretched out, there is a risk that the other side will also pull back, which is expressed in the following quote: "And my impression is somewhat that a certain disenchantment has taken hold on the Viennese side. That you only care about your own things now" (SUM, 2020).

It should actually be apparent to all parties in the metropolitan region of Vienna that there are close relationships and connections. A coordinated development helps everyone involved. This does not mean first and foremost renouncing one's own interests, but rather a vote taking into account one's own interests.

If you finally look at the overall picture of the work, you end up with Lefebvre and Harvey: The urban-rural-divide in the eastern region of Austria is fading, at a different pace, but it is.

12. Conclusion

At the end we come back to the two research questions asked at the beginning. The first research question tackles the influencing factors and how these factors are reflected in the regional development concepts of the four selected regions.

What are the recent developments of spatial, institutional, and economic factors that influence commuting in the eastern region of Austria and to what extent are these facts reflected in the current agglomeration policies of Lower Austria, Vienna, Hollabrunn and Mistelbach?

In this work the more recent developments of spatial planning, job-population-relation, institutional factors (housing, school places, sales areas and crime development) and socio-cultural and political factors were presented. Similar facts and figures as well as comparable analysis can also be found in the publications of PGO and SUM as well as in the development concepts of Lower Austria and Vienna. These facts and figures can only be found to a limited extent in Mistelbach's old development concept. When working out the new development concepts in Hollabrunn and Mistelbach, the tackled analysis issues are increasingly considered.

The availability of jobs in the regions was confirmed as the main influencing factor for commuting. The importance of jobs as a key factor for spatial form has been documented several times in the scientific literature. The clear gap in the number of available jobs per capita between Vienna and the medium-sized cities Hollabrunn and Mistelbach was surprising. That remains a major challenge for Hollabrunn and Mistelbach.

The federal state of Lower Austria was able to catch up strongly with Vienna. Vienna has reacted to the population development and has significantly increased the number of new building permits. In Vienna the biggest open challenge seems to be in the area of smaller crimes, where there is a very large and stable distance from rural areas.

In summary, it can be stated that the technical basis for the creation of spatial development concepts has been significantly improved. While the connection between the spatial concepts is shown in the development concepts of Lower Austria and Vienna, the connection between the concepts at the level of the cities of Hollabrunn and Mistelbach with the city of Vienna is still completely missing. In this context, the coordination work of the PGO should also be rolled out at the city level.

Since the regions of Lower Austria and Vienna are among the winners of the opening up to the east, there are good prerequisites for increasing cooperation in spatial planning in the medium and long term.

The second research question tackles the historical urban-rural-divide between Lower Austria and Vienna.

What traces of the long-lasting political and socio-cultural tensions between Lower Austria and Vienna can be found in the current agglomeration policy guidelines, in the decision-making process of the legislative bodies, in the administrative implementation of these guidelines and with the high-ranking people involved?

In the present work numerous references are presented that document the socio-cultural and political gap between urban and rural regions. It can be confirmed that there are still traces of the longstanding socio-cultural and political conflict. In Vienna there is great self-confidence thanks to the top rankings in international city comparisons. Cities like Hollabrunn or Mistelbach are still described as backward and provincial in the political discussion. In Hollabrunn

and Mistelbach there is apparently still too little self-confidence about the economic and social success achieved. The will to cooperate with Vienna is not that strong. That still needs to be worked on.

When it comes to the big issues such as jobs and housing, there is also very great similarity in the four regions.

The political and socio-cultural tensions should be dealt with more consciously, both in the individual regions (in the planning departments and in the political decision-making bodies) and in the cooperation institutions. It is expected that a more conscious examination of this will enable a productive further development of the professional spatial and also the political and public debate.

Of course, there will continue to be conflicts of interest and a dispute over limited tax resources for public spending. If the historical tension is discussed more consciously, then this can help in finding an acceptable solution for Lower Austria (including Hollabrunn and Mistelbach) and Vienna.

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14. Interview transcript directory

City planning Vienna. 2020. Interview with Alexander Scholz on September 22, 2020. Vienna.

Mail Fellner. 2020. Mail from Beate Fellner on October 12, 2020

Mayor of Mistelbach. 2020. Interview with Erich Stubenvoll on September 15, 2020. Mistelbach.

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SUM (Stadt-Umland-Management). 2020. Interview with Renate Zuckerstätter on September 14, 2020. Vienna.

Town planning Hollabrunn. 2020. Interview with Stephan Smutny-Katschnig on September 24, 2020. Hollabrunn.

Town planning Mistelbach. 2020. Telephone interview with Erwin Hoffmann on September 28, 2020. Vienna.

The author has the transcripts of all interviews. They are written in German.