



Transport Policy as a Way to Strengthen Geostrategic Position – A Review of Vienna as a Centre of Air and High-Speed Rail Transport in Central Europe

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ABSTRACT

Vienna's geostrategic importance fluctuated through the ages because of the power clashes and subsequent political and socio-economic impacts on the population. This paper assesses its current position in a historical context and then focuses more on the socio-economic dimensions such as interconnectedness and other transport aspects of the geostrategic position. Air and environmentally friendlier modes of passenger transport like high-speed rail are considered and analysed in the European context. This paper also reviews the results and issues dealing with the development of the Vienna Airport and the progress of high-speed railway projects in the Central European Economies (CEEs) after the European Union's enlargement in 2004. The results suggest that after a restoration period of Vienna's geostrategic position between 1995–2005, there is currently only a moderate and slowly growing exercise of power, control or influence over the CEEs. The results suggest that there is competition from busier German hub airports as well as the growing importance of CEE airports in transit and growing passenger transport performance figures. The lack of environmentally friendly high-speed infrastructure as a viable option instead of the fastest air travel is preventing Vienna to strengthen its strategic position. Its strategic importance is highly affected by the underdeveloped transport networks in CEEs and the future development of the Vienna Airport as a major transport hub.

KEYWORDS

geopolitics; economic policy; passenger transport; Austria; airport.

1. INTRODUCTION

Vienna was historically the political and transport centre of the Austro-Hungarian Empire, which extended over the territory of today's Central and Eastern European countries. Its geostrategically significant location was also reinforced by its position as a key railway hub. It lost this position after 1918, falling to the level of a metropolis of one of the many small Central European republics [1–3]. Its importance in Central European transport declined even more after the Second World War when the communist Eastern Bloc was established. After its dissolution in 1989 and the accession of the Czech Republic, Hungary, Poland, Slovakia and Slovenia to the European Union in 2004, Vienna found itself back in the same political unit with the former parts of the Danube Monarchy.

Given the location of Vienna in the middle of the European Union, it has a unique opportunity to be the centre of air and high-speed rail transport in Central Europe. This paper focuses on the geopolitical and socio-economic dimensions using an interdisciplinary perspective. The objective is to assess Vienna's geostrategic

perspective, historical context and current transport policy while focusing on the Vienna Airport and the development of high-speed railways in the Central European region. We utilise historical and economic analysis methods to review Austrian transport policies regarding air and high-speed passenger transport.

The analysis of the geostrategic perspective on transport policies is a rather unexplored territory. When it comes to the implementation of high-cost state-of-the-art transportation technologies like high-speed trains and hub airports, countries can strengthen their political presence over the international transport system. “Upping the game” means understanding the advanced relationships between countries [4] and, in terms of transport policy, also current strategic partnerships with neighbouring countries.

The strategic decisions of policymakers are influenced by all kinds of national, international and global stakeholders. Decisions regarding transport infrastructure are about sustainability because (1) they are targeting incomes and contribute to economic growth across sectors of a nation’s economy in the long term, and (2) they are considering eco-innovative technologies [5].

Geo-strategic analysis is aimed at long-term costs and benefits. For example, a geo-strategic railway network for freight services can have a great increase in international trade that can further intensify wider social and economic benefits [6]. The costs of transport systems and infrastructural projects can increase with unexpected delays and quality issues and contribute to higher public debts and political instability.

Cost-benefit analysis is commonly used in assessing environmental policies (environmental impact assessment) and new regulations (regulatory impact assessment). This approach can be understood as an agenda of the antiregulatory ideology under the cover of scientific objectivity [7]. This applies also to the issue of geostrategic planning and the solution is to mitigate the impact of cost-benefit analysis as one of the many decision-making factors.

A modern infrastructure network that makes journeys quicker and safer is the European Union’s ultimate transport policy goal. Sustainable and smart transport is seen as a cornerstone of European integration because it supports and develops the free movement of individuals, services and goods [8]. To spur the innovation and building of infrastructure for highspeed environmentally friendly journeys, all scheduled collective travel under 500 km within the European Union should be carbon neutral by 2030.

Environmentally friendlier collective travel can be achieved in such a short time only by reducing short-range air transport and offering collective high-speed rail transport. This is a simple cost-benefit analysis because a feasible alternative in the form of electric commercial aircraft is still not available on the market and is going to fly shorter distances up to 300 to 400 km after 2030 [9].

France was the first country to implement a transport policy regarding carbon-neutral EU goals based on the recommendation of the Citizen’s Convention on Climate in the 2021 French government decree. This regulation “...encourages the use of the train, rather than the plane by prohibiting domestic flights when rail alternatives exist in less than two and a half hours with the exception of air links which mainly provide the transport of connecting passengers” [10].

In other countries, like Belgium, Netherlands, Germany and United Kingdom, there are rather voluntary initiatives and governments try to implement policies to introduce environmental taxes or “carbon fees” regarding short domestic flights when a feasible rail alternative exists.

Similar policies are possible only in countries with high-speed rail infrastructure. According to the definition used by the European Commission’s statistical division, high-speed rail are lines or sections of lines designed for trains that can go faster than 250 km/h at some point during the journey [11]. Of course, the definition is not perfect and can change over time due to new technologies and countries adopting their definitions of “fast enough rails” [12]. The countries where trains can go faster than 250 km/h are Belgium, Germany, Denmark, Spain, France, Italy, Netherlands, Poland and the United Kingdom at the end of 2020. Austria is slightly lagging behind the definition boundary with a maximum allowed speed of 230 km per hour and a total of 67 km of high-speed rail infrastructure with a theoretical maximum speed of more than 250 km per hour at the end of 2020.

2. DATA, METHODOLOGY AND RESEARCH FOCUS

Data on European airports, transport performance and high-speed infrastructure comes from Eurostat and other European Commission sources (Mobility and Transport Statistical Pocketbook). The international data

about airports comes from Airports Council International. Basic descriptive statistics are used to complement the literature review. Given the specificity of the topic, the review protocol was not necessary, and we have run a full review. We still followed the commonly used procedures for systematic reviews across disciplines (preferred reporting items for systematic reviews and meta-analyses). We used the Scopus citation database and Google Scholar database to search for important papers using “Vienna geostrateg*” as a search phrase without a date of publication limitation. Given the limited number of papers in Scopus, we also went through cross-references to academic books and papers dealing with transport and geopolitics in general via the Google scholar services.

Historical analysis is based on the methods of economic history, which deals with the economic development of society and offers an orientation in extremely complex socio-economic development processes. We also draw on the fact that it stands very close to other scientific disciplines, which in part helped us to carry out the analysis and reach our conclusions. These are mainly political history, history of technology, history of transport, historical and political geography and geopolitics [13, 14].

We work with the concept of geostrategy and understand it broadly as a geopolitical term for targeted action to exercise power, control or influence over regions [15–17]. Traffic networks are infrastructures that form the basis for economic and political structures in a region. The geopolitical perspective of Austria is reflected in the transport networks. A special emphasis is placed on the Viennese airport and its future development [18]. In this study, we build on the modern concept of the geography of transport in Rodrigue, Comtois and Slack [19]. We have not found Cohen’s theory of geostrategic and geopolitical regions to be fully applicable to us, while we still find John Friedmann’s World City Hypothesis inspiring [20].

We are basing our analysis on the further use of meaningful cost-benefit analysis as we discussed in the introduction. Such analysis is methodologically possible, for example, in the framework by Browne and Ryan [21], and there is a possible extension of the framework by using declared moral principles [22].

As far as the definition of Central Europe is concerned, we refer to the conclusions of Moskalewicz and Przybylski [23], which clearly assess the discussions so far. In our analysis, we have not focused on the definition of the term Central Europe, and have not worked with it except in reference to the location of Austria-Hungary in Central Europe [24]. At the same time, we did not use the term of a multinational region Centrope (includes the NUTS 2 sub-regions: Vienna, Lower Austria, Burgenland, Western Transdanubia, Bratislava, Western Slovakia, Southern Moravia and Southern Bohemia) [25]. For our analysis, we used the definition by the Organisation for Economic Co-operation and Development (OECD) which uses the term “Central and Eastern European Countries (CEECs)” for a group of countries comprising Albania, Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic, Slovenia and the three Baltic states: Estonia, Latvia and Lithuania [26].

We chose CEECs also because of the historical development, as Austria’s transport history goes back deep into the past, and the present has inherited various elements of it. Until 1918, Vienna was the political and transport centre of the state, which included the Czech Republic, Hungary, Croatia, the Slovak Republic, Slovenia, parts of Poland and Romania, while its sphere of influence also included Albania and Bulgaria. Only the three Baltic states did not share a common history with the Danube Monarchy [27–30].

The study will evaluate the historical circumstances of the development of passenger rail and air transport in the Austrian metropolis concerning its geographical location and the political and economic developments after 1945 (*Table 1*). It will summarise the main historical milestones that caused Vienna to lose its position as one of the most important passenger transport centres in Central Europe. It will also place special emphasis on Austria’s adaptation to the EU transport policy and will discuss possible future developments and a possible role in the development of the CEEC VRT network.

We utilised historical transport performance indicators of air and train travel from publication series named Statistisches Handbuch für die Republik Österreich (1950–1991); Amtliche Eisenbahnstatistik der Republik Österreich (1951–1995); Informationen der Bundessparte Transport und Verkehr der Wirtschaftskammer Österreich (2011–2020); Zahlen Daten Fakten (2007–2021); Statistik Straße und Verkehr (2000–2018); EU transport in figures. Statistical pocketbook (2011–2018); Panorama of transport. Statistical overview of transport in the European Union (1970–2001) [31–37].

Table 1 – Austrian transport performance indicators between 1950–1970 [31]

Year	Number of train passengers	Number of train passenger-kilometres	Number of air passengers carried
1950	135,101,576	4,292,619,000	100,000 ^E
1955	≈ 158,548,407 ^E	5,574,772,000	150,470
1960	177,421,722	6,839,497,000	466,812
1970	170,164,353	6,437,528,000	511,400

E – own estimation based on simple linear prediction

Do the geostrategic location of Vienna and the political and economic developments in Central and Eastern Europe after 1989 and 2004 create the conditions for the restoration of the central position (OstWest-Hub) of the Austrian capital in the field of VRT and air transport in Central Europe, respectively vis-à-vis the CEECs? Does Vienna have a significant advantage in passenger air transport and VRT over the CEECs as measured by the number of passengers at Vienna Airport compared to airports in the CEEC capitals and the number of kilometres of VRT lines?

3. HISTORICAL BACKGROUND

At the turn of the 19th and 20th centuries, Vienna took a central position and was one of the five most important European political and transport centres. It was the age of railroads in the Austro-Hungarian Empire. After 1918, Austria became a relatively small state in comparison to Germany, France and Spain. During World War II, Vienna was at the mercy of the Nazi Germany. However, the importance of Austria grew again between 1945 and 1955. It was the only successor country to Austria-Hungary to develop capitalism freely. The other successor countries had to establish a centrally planned economy, and their economic development slowed down and was under Soviet control in the newly established Eastern Bloc.

Friedmann [20] classified Austria in the 1980s as a peripheral country compared to other European countries, and Vienna, due to its location and proximity to the then Eastern Bloc, as a secondary city, not even among the 30 strategically important world cities. This is, of course, a situation that Vienna has been trying to remedy ever since.

Another circumstance that led to the increase in Austria's geostrategic importance was the disintegration of the communist Eastern Bloc after 1989 and the restoration of democracy and private entrepreneurship in the CEECs [38-40]. The geographical location of Vienna, its proximity to the borders with the Czech Republic, Slovakia and Hungary, as well as its location on one of the very promising trans-European routes – the Danube – create conditions for the eventual renewal of Vienna's position as a key transport hub for CEECs in our area of air and rail (high speed) passenger and goods transport (*Figure 1*). Lichtenberger [41] pointed out Austria's improved position after 1989 and a sort of "historical comeback" because Austria could have taken the initiative and been an important geostrategic player in the central European region again.

The idea of a geostrategic space called "Middle Europe" is older than the Cold War division of Europe and has gained importance given the recent war conflict in Ukraine. As Walters [42] pointed out that even at the turn of the century the terms "Central" or "Middle" Europe "...denote a supranational state that would serve as a strong buffer zone between the great powers of Germany and Russia".

Historical context (the legacy of previous Austrian-Hungarian systems) is an important part of the Austrian geostrategic vision. The advantage of Austria lies in the historical experience of political stability and gained knowledge in transport policy-making in comparison to its eastern neighbours. "The Austrian transport strategy evolved over the last 40 years from a sectorial, demand-fulfilment-driven transport strategy towards an integrated multi-modal, demand-management-driven transport strategy including some environmental issues" [43]. The Austrian government and EU institutions are favouring the use of railways for freight and passenger transport over road and air transport [44]. This is reflected also in the ÖBB framework plan 2021–2026, and more than 17.5 billion euros will be invested in modern rail infrastructure projects [45]. With these projects, Austria has great potential to exercise the leading position in negotiating common infrastructure within the

“Middle European” countries and strengthen its geo-strategic position. However, there are some issues in the train and air sector, and the development there is rather complex and can limit Vienna’s geostrategic intents.

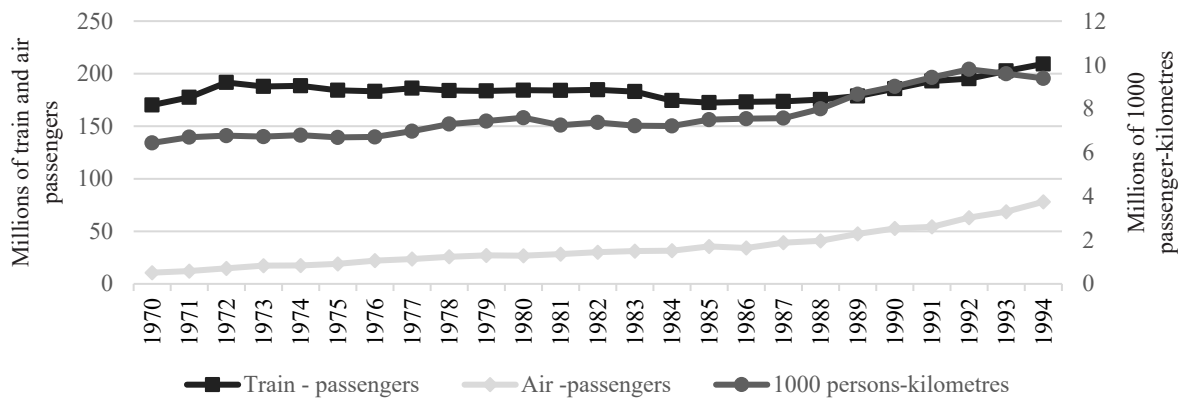


Figure 1 – Austrian transport performance indicators between 1970 and 1994

3.1 Air transport

For the examined period, we have observed the continuous growth in the number of passengers transported. Increasing mobility and the improved social framework conditions can, from a historical perspective, be named as the main influencing factors for successful Austrian passenger air transport. At the time of Austria’s accession to the EU, the largest Austrian airlines in terms of passenger numbers were the Austrian Airlines Group (Austrian/Tyrolean) and Fly Niki (Niki Luftfahrt GmbH). Both companies have linked up with German firms, Austrian Airlines Group has been a member of the Lufthansa Group since 2009, and in 2011 Fly Niki was integrated into the German airline Air Berlin. The German reunification has had a positive impact on the Austrian economic market. The traditionally close relations with Germany can be further intensified [46].

Vienna remains by far the most important airport in Austria, accounting for 79.3% of all flights and 83.3% of all passengers handled in 2014 [47]. From 2000 to 2014, the number of passengers increased by almost three quarters, while the number of flights grew comparatively weakly at around 8%. These increases were mainly attributable to scheduled services, which rose steadily.

Regarding passengers’ final destinations, there has been little change since 2000: most passengers travelled within Europe. Looking at the airports reached by aircraft departing from Austria, short-haul flights are the most common. Since 2000, an average of 94.3% of all airports served were in Europe. This was followed by more distant destinations such as Asia (3.3%), Africa (1.6%) and the Americas (0.8%). The enroute airports, i.e. those airports to which passengers handled in Austria fly directly, were located on average 88.1% in Europe, 7.2% in Asia, 2.5% in Africa and 2.2% in the Americas [30].



Figure 2 – Austrian transport performance indicators between 1996–2020

While there was a steady increase in both the number of flights and passengers between 2000 and 2008, both indicators fell due to the September 11 attacks in 2001 and the economic crisis in 2009. In 2004, the Austrian aviation industry recovered. While routes to North America continued to face a decline in passenger numbers, demand for intra-European flights was already on the rise again. Due to the accession of the CEECs to the EU and the importance of the Vienna Airport as an East-West hub, 11.0% more aircraft movements and 15.3% more passengers were reported [47]. The opening up of the East heralded a further economic upswing and could be described as setting the course as well as reinforcing the favourable economic trend. Austria has been gaining importance and developing from its former geopolitical peripheral position into an important interface between Western and Eastern Europe (*Figure 2*). Once again, the destinations in the east of the continent have proven to be an important cornerstone of the Austrian Airlines network. In this difficult environment, the Vienna Airport has developed into an important partner as a major European transfer airport between East and West [48].

An important change at the beginning of the 21st century was the overwhelming emergence of low-cost airlines that currently dominate the market. An almost unmanageable number of low-cost airlines, which continues to grow almost daily, is in the daily competition for customers. The management of Flughafen Wien AG realised at the beginning of the 21st century that short-haul flights up to a distance of 500 kilometres will be replaced by rail in the medium term. To remain competitive, the airport must have its own long-distance train station. Rail is becoming a decisive factor, especially with regard to environmental compatibility [49].

3.2 Rail transport

The idea of a railway connecting the Central European cities of Berlin, Prague, Vienna and Budapest was presented at the World Congress on Highspeed Rail in Brussels in 1992 [50]. From the geostrategic perspective, Vienna as the Austrian capital city is in the very centre of the European Union and that “banana-shaped” axis between Berlin and Budapest. Vienna can be seen as a future centre of air and high-speed rail transport in the region.

In the early 1990s, Vienna maintained its position as the important central station on the “Magistrale for Europe”, also known as the Trans-European Transport Networks (TEN-T) project – a high-speed railway line between Paris and Budapest. However, Austria stayed behind Germany and France along with other CEECs in building high-speed infrastructure with speeds over 250 km per hour. Developing CEECs aimed at speeds around 160 km per hour and Austria to a maximum speed of 200–250 km per hour.

The overwhelming speed of the unification process of Europe after 1995, the NATO enlargement and the eastward enlargement of the EU in 2004 led to a revision of the geostrategic situation of Austria. Berlin took the initiative as the seat of a European economic power and reduced to some extent the importance of Vienna in the CEEC region, starting a strategic economic cooperation with the so-called Visegrad countries [51].

Why is Vienna not the centre of air and high-speed rail transport in Central Europe yet? By the 250 km per hour definition, there is high-speed rail infrastructure in Austria; however, train operations are not allowed yet at a higher speed than 230 km per hour. This was also the case in the countries surrounding Austria (Czech Republic, Hungary, Slovakia and Slovenia) at the end of 2020. In Austria, the main focus is on the Western Railway line to become highspeed by definition and to reduce travel time between Munich, Salzburg, Linz and Vienna to one hour each. The idea of the Eastern Railway line is not progressing. The goal is to have the main line from Vienna to Bratislava and continue south via Győr to Budapest. The technology involved is aiming at speeds around 320 km per hour, which would shorten travel times between Budapest and Vienna to less than two hours.

4. SOCIOECONOMIC BACKGROUND

The cost and benefits of high-speed rail projects in comparison to air transport or road projects are essential not only for geostrategic decision-making. Such decisions are difficult to make because the geostrategic intentions are rather not included in complex cost-benefit analyses (CBAs). Such CBAs are also burdened with the estimation of social and environmental costs and benefits, as positive and negative externalities. In terms of explicit infrastructure costs, high-speed rail infrastructure is multiple times more expensive in comparison to other means of transport simply due to the initial cost of the investment, like tunnels, bridges, noise barriers, purchase of land, administrative-territorial proceedings etc. [52]. To decide on such a huge investment in small emerging economies like the Czech Republic or Slovenia is problematic. For example, the benefits for the Czechs are rather questionable, and the advantage is seen only from the connected European perspective;

transport infrastructure investments are also mostly needed in the underdeveloped networks of roads and highways first [53].

The recent 600 million euro Austrian Airlines bailout came with some climate protection compromises and allowed further development of high-speed rail transport [54]. In Spain, Germany and France (before the latest ban), high-speed rail transport contributed to a decrease in air travel, especially for under 500 km journeys [55]. Austria has yet another incentive to travel by train and that is the new ticket levy. This new tax rate is 12 € per air ticket, except for passengers on flights under 350 km, where the tax rate is 30 € per chargeable passenger.

Up until now, geostrategic decision-making of building high-speed rail projects was mostly justified and pushed only as “green compromises”. We know that the construction of railroads contributed to the growth of nations in the past [56–58]. However, the benefits were mostly economic in cheaper transport costs, and trains allowed for new goods and commodities to be distributed across long distances to new markets. Can there be similar new huge benefits in terms of geostrategic economic advantage, other societal and environmental gains and positive externalities today?

The societal and environmental dimension depends on a large enough market with a high demand for high-speed rail travel to fill the high-speed trains with more passengers per airplane and also ensure returns from the initial investment [59, 60]. Even then, not every high-speed train project contributed to the economic growth of cities in China because of their different economic needs and initial endowments [61]. Also, in the UK, the socioeconomic impact of high-speed rail is based on an ex-post assessment methodology that is burdened with endogeneity, conflicts between macro and micro-based estimates and problematic assessment of sectoral spillovers. That is why these projects had rather a nontransformative effect on the economy [62]. They needed to be coupled with other policy interventions such as land-use policies and policies towards labour markets, skill development etc. Only then can they trigger positive economic and societal effects.

From a European perspective, the benefits are only possible when we are taking into account future aggregate economic network effects [63]. Canadian insights are aimed at the subjectivity of many stakeholders involved when dealing with social and environmental effects [64]. So, the societal and environmental dimension is rather subjective, and the analysis should focus on the following: if there is no government subsidy for the construction or operation of the high-speed rail, will there be a high-speed rail infrastructure? If not, what are the positive externalities that justify public support?

5. RESULTS – VIENNA AS A HUB AIRPORT

The position of the Vienna Airport is also known as that of a “hub between Western and Eastern Europe”. Hub airports are usually the home bases of alliance carriers and also the largest airports in the world. However, according to the number of passengers carried, Vienna Airport did not reach the importance of hub airports such as London Heathrow in 2008 [65].

The importance of the Vienna Airport has been slowly growing over time; however, the performance is about one-third in comparison to London Heathrow, which is the busiest airport in Europe. To be precise, there are several airports in London, and two of them are busy airports in comparison to Vienna. There were five times more passengers carried in both biggest London airports than in Vienna in 2015 (Table 2).

Table 2 – Relative transport performance, London Heathrow = 100%, passengers carried [66]

Airport	2005	2010	2015	2020
London Heathrow (absolute)	67,915,403	65,884,143	74,989,795	22,109,726
London Heathrow (baseline)	100.0%	100.0%	100.0%	100.0%
Atlanta (Busiest US Airport)	126.5%	135.6%	135.3%	194.1%
Paris Charles de Gaulle	79.2%	88.3%	87.7%	100.7%
Frankfurt	76.9%	80.5%	81.4%	84.9%
Amsterdam	65.0%	68.6%	77.7%	94.5%
Madrid	61.8%	75.7%	62.4%	77.4%
London Gatwick	48.3%	47.6%	53.7%	46.0%
Rome	42.1%	55.0%	53.9%	44.5%
Vienna	23.4%	29.9%	30.4%	35.3%

The importance of transit passengers for the Vienna Airport is growing as well (Table 3). The share was fluctuating around the mean value of 0.30 %; however, in the latest non-crisis years, it was over 0.40 %. At the Frankfurt Airport, the share is lower, about 0.1 % in 2018 and 2019 [67]. In London, the share is substantial and there are 34–35% of transit passengers in 2018 and 2019 [68].

Table 3 – Share of transit passengers at Vienna Airport between 2005 and 2020 [69–73]

Year	Passengers (Arrivals, departures, transit)	Transit	Share of transit
2005	15,846,898.00	43,463.00	0.27%
2006	16,842,532.00	33,317.00	0.20%
2007	18,754,702.00	35,427.00	0.19%
2008	19,734,635.00	47,006.00	0.24%
2009	18,101,829.00	56,154.00	0.31%
2010	19,682,590.00	62,632.00	0.32%
2011	21,096,398.30	55,683.00	0.26%
2012	22,165,733.00	37,346.00	0.17%
2013	21,999,820.00	26,891.00	0.12%
2014	22,482,884.00	78,300.00	0.35%
2015	22,774,878.00	103,030.00	0.45%
2016	23,350,452.00	100,674.00	0.43%
2017	24,392,129.00	106,302.00	0.44%
2018	27,037,317.00	94,625.00	0.35%
2019	31,661,718.00	154,010.00	0.49%
2020	7,813,743.00	16,167.00	0.21%
Mean value	20,858,641.14	65,689.19	0.3%

The Vienna Airport has a growing competition in the CEEC region. There are 10 airports in the capital cities of the CEECs: Sofia, Prague, Lennart Meri Tallinn, Riga, Vilnius/International, Budapest/Liszt Ferenc International, Warszawa/Chopin, Bucuresti/Henri Coanda, Ljubljana/Brnik and Bratislava/M. R. Stefanik Airport. On average (2005–2020, Table 4), CEEC airports are at 27% of the Vienna Airport transport numbers. For example, the Prague Airport has an average of 58% (100% equals Vienna transport average), and the numbers were rather fluctuating. In Warsaw, the mean value is 51 % and the share has been growing since 2010. One of the reasons can be the distance from the Vienna Airport.

Why is Vienna not one of the most important global cities as a major transport hub? Vienna profited from the geostrategic changes in Europe in the 1990s. The transformation of the CEECs led to an increase in FDI inflow and outflow activities and a re-orientation towards the CEECs. Less than 300 km away from Vienna, there were new emerging markets but also new competitor cities like Budapest or Prague. Urban planners, entrepreneurs and capital owners had to reformulate their planning paradigms [75]. However, the balance of capital control did not increase significantly over time and Vienna has not been able to upgrade its position in the global city network [76]. London, Paris, Frankfurt and Amsterdam retain a prominent role in the network of global cities in the highly developed EU region. Vienna mostly increased its “hub status” between 2000 and 2012 [77].

In the concept of “gateway cities” [78], there are up to five requirements for Vienna, and these features influence development along with global networks in their peripheries. Physical infrastructures are needed to support logistics and transport of goods and passengers. The infrastructure in the CEECs is weaker than in Germany or France. The connections between the CEECs and Vienna are still in development in terms of high-speed rail and roads. Innovative manufacturing sectors provide geostrategic importance, and Vienna can be the manager of those industrial capacities. Strategic decision-making and management and knowledge-intensive corporate services are concentrated in gateway cities. Gateway cities are also essential nodes in global production networks and generate knowledge.

Table 4 – Relative transport performance, Vienna = 100%, passengers carried [74]

Year	Wien	CEEC Airports average	CEEC Airports average (100% = Vienna)	Prague (100% = Vienna)	Warsaw (100% = Vienna)
2005	15,846,898	4,307,244	27.2%	67.7%	44.7%
2006	16,842,532	4,452,656	26.4%	68.4%	48.2%
2007	18,754,702	4,790,048	25.5%	65.9%	49.2%
2008	19,734,635	5,015,286	25.4%	63.8%	48.0%
2009	18,101,829	4,544,714	25.1%	64.1%	46.0%
2010	19,682,590	4,705,907	23.9%	58.5%	44.3%
2011	21,096,398	5,010,574	23.8%	55.6%	44.3%
2012	22,165,733	5,104,235	23.0%	48.6%	43.3%
2013	21,999,820	5,319,314	24.2%	49.8%	48.6%
2014	22,482,884	5,527,927	24.6%	49.5%	47.1%
2015	22,774,878	6,027,280	26.5%	52.1%	49.2%
2016	23,350,452	6,771,314	29.0%	55.6%	55.0%
2017	24,392,129	7,952,454	32.6%	63.0%	64.6%
2018	27,037,317	8,916,942	33.0%	62.2%	65.7%
2019	31,661,718	9,462,780	29.9%	56.3%	59.6%
2020	7,813,743	2,181,188	27.9%	46.8%	N/A
Mean	20,858,641	5,630,616	27%	58%	51%

Infrastructure is highlighted also in the concept of “mega and major hubs”. Major hubs with significant growth have been Dubai, Istanbul and Narita International Airport. All of them invested in capacity building (new connections and infrastructure). In large urban regions, we can observe intensifying competition to attract passengers among mega and major hub airports [79]. Multi-airport cities have an advantage, and Vienna is neither a major hub nor a multi-airport city. According to [80], it does not qualify to be a “world airline hub”, and in comparison to other airports it has a very low total number of flights and a low proportion of long-haul flights.

6. CONCLUSION

Vienna belongs to the centres of air and high-speed rail transport in Central Europe; however, as revealed by our review and historical analysis, its geostrategic position is not meeting its full potential. In both modes of travel, there are infrastructural issues. The usual maximum train operating speed of the high-speed rail network is below the European standard of 250 km per hour and there are hardly any high-speed rail connections to other CEECs where there is the highest potential to regain the geostrategic advantage. The Vienna Airport is not a major hub in comparison to London, Amsterdam, Frankfurt, Madrid or Rome and is rather in competition with other CEEC airports.

Vienna’s geostrategic importance fluctuated between extremes. It was a “capital city of Europe” in the golden era of the Holy Roman Empire as well as “one of the secondary cities” in a peripheral country due to its location and proximity to the Eastern Bloc. The current “historical comeback” is mitigated by the influence of Germany, especially in transport and low-cost airlines connecting in “low-cost airports” in multi-airport cities.

The idea of rail-connected Central European cities is an unfulfilled vision, and there is hardly any consensus on the high-speed rail network and its questionable viability given the demanded higher maximum speeds and direct and indirect costs related to infrastructure. Austria had a golden age of trains in the past and built an interconnected railway network throughout the Monarchy. Now its influence is limited to European Union transport policy negotiations. Rail networks are quite extensive in the CEECs; however, their transformation to

high-speed travel is not on the agenda. As in the historical development of Austria, the CEECs' infrastructural investments are primarily needed in their underdeveloped networks of roads and highways.

We agree that Vienna has the potential; however, infrastructural development in the CEECs is preventing it from regaining a strong geostrategic position. Given the technological development and knowledge spillovers, the competition in the region is heated. The CEECs are a market opportunity, but their capital cities are direct competitors for becoming geostrategic cities.

This competition can be transformed into cooperation if the major cities in the region are connected through high-speed travel or supported by other high-speed infrastructure (roads, electric aircraft etc.). Also, Austria has to increase control over knowledge and capital flows in the CEECs and compete more with Germany, France or Benelux.

The geopolitical perspective of Austria is still reflected in the transport networks and future development of the Vienna Airport as a major transport hub. Since 2004, the rapid pace recognised in previous years has been decreasing. The crisis of 2008 was preventing Vienna as well as other CEEC airports from progressing. However, the current Covid post-pandemic, the Green Deal and the Ukrainian war conflict are opportunities to strengthen the geostrategic position of Vienna. Future research can focus on potential growth in demand for transport in the region as the war conflict changed some of the flows of goods and services.

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František Stellner, Marek Vokoun, Pavel Szobi, Marek Kasa

Dopravní politika jako způsob posílení geostrategické pozice: přehled Vídně jako centra letecké a vysokorychlostní železniční dopravy ve střední Evropě

Abstrakt

Geostrategický význam Vídně v průběhu věků kolísal v důsledku mocenských střetů a následných politických a socioekonomických dopadů na obyvatelstvo. Tento článek hodnotí její současné postavení v historickém kontextu a poté se více zaměřuje na socioekonomické dimenze, jako je propojenost a další dopravní aspekty geostrategického postavení. V evropském kontextu jsou zvažovány a analyzovány letecké a ekologicky šetrnější druhy osobní dopravy jako je vysokorychlostní železnice. Tento článek rovněž podává přehled výsledků

a otázek zabývajících se rozvojem vídeňského letiště a stavem projektů vysokorychlostních železnic ve středoevropských ekonomikách po rozšíření Evropské unie v roce 2004. Výsledky naznačují, že po období obnovy geostrategického postavení Vídně v letech 1995-2005 dochází v současné době pouze k mírnému a pomalu rostoucímu uplatňování moci, kontroly či vlivu na střední a východní Evropu. Výsledky naznačují, že existuje konkurence ze strany vytíženějších německých uzlových letišť, stejně jako rostoucí význam letišť ve střední a východní Evropě v oblasti tranzitu a což naznačují také jejich rostoucí čísla výkonů osobní přepravy. Nedostatek vysokorychlostní infrastruktury šetrné k životnímu prostředí jako reálné možnosti namísto nejrychlejší letecké dopravy brání Vídni v posílení jejího strategického postavení. Její strategický význam je silně ovlivněn nedostatečně rozvinutými dopravními sítěmi ve střední a východní Evropě a budoucím rozvojem vídeňského letiště jako významného dopravního uzlu.

Klíčová slova

geopolitika; hospodářská politika; osobní doprava; Rakousko; letiště.