



REGIONAL ANALYSIS OF CHALLENGES AND NEEDS

for the South Moravian Region

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<i>CORCAP partner(s)</i>	<i>Related catchment area (area of analysis)</i>	<i>Related cross-border relations</i>
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1. CURRENT SITUATION ANALYSIS

1.1. Geographical and socio-economic description of the area, delimitation and definition of its catchment area

The South Moravian Region is located in southeast of the Czech Republic and is one of 14 regions of Czech Republic. Its bordering with 5 other regions of Czech Republic and also with two countries - Austria and Slovakia. In comparison with other regions is South Moravian Region 4th largest in Czech Republic and also 4th largest according to its area. In population density takes South Moravian Region 3rd place and same place it has in GDP. In GDP per capita is South Moravian Region 2nd in Czech Republic. Thus, region is among those bigger and wealthier in Czech Republic, the same applies for its capital Brno, which is also 2nd largest city in Czech Republic.

1.1.1. Geographical data, relief, natural and administrative boundaries

As was stated in introduction, South Moravian Region is one of 14 regions in Czech Republic and is among those larger and wealthier. Its further divides into Blansko, Brno-City, Brno-Country, Břeclav, Hodonín, Vyškov and Znojmo), 21 administrative areas of extended authority municipalities and 34 districts governed by an authorised municipal authority. Part of South Moravian Region with special status is military training area Březina, which is located in northeast of the region.

Figure 1 Selected demographical data of South Moravian Region

Number of inhabitants as of 1 January 2018	1,183,207
Number of inhabitants as of 31.12. 2018	1,187,667
Marriages	6,156
Divorces	2,683
Live births	13,594
Deaths	12,542
Increase through immigration	3,408
Total increase	4,460

The area of the region is 7,188 km², which makes nearly 10 % of the area of whole Czech Republic and majority of South Moravian Region area (60 %) is covered with farming land from which more than 80 % is arable land, which is way more than Czech Republic average. Thanks to its geomorphology, significant part of the region is located in lowlands - typically Dyjsko-Svratecký úval and Hornomoravský úval that are known for their quality soils and thus agriculture is important typically in Znojmo and Vyškov district. Typical agriculture products are cereals, oilseed rape and sugar beet. But among these products, there is one with “special status” because South Moravian Region has 90 % of all vineyards in Czech Republic, therefore viticulture is typical mainly for south of the region in areas such as Pálava, Mikulov of Velké Pavlovice.

From previous paragraph is obvious that south of South Moravian Region are mainly lowlands, but on southeast and also southwest relies is starting to change and gaining altitude. In the west, there is national park Podyjí and Jevišovická upland, west of Brno is Hornosvratecká highland, north part of Jihomoravský



region is Svitavská upland, northeast Drahanská highland and east are Chřiby and Bílé Karpaty. Therefore, we can conclude that mainland of South Moravian Region are mainly lowlands but on borders attitude rises. Highest point of South Moravian Region is in Bílé Karpaty Mountains - Durda (836 m) and lowest point is the confluence of the Morava and Dyje Rivers near Lanžhot (150 m).

1.1.2. Identifying the corridor and determining its catchment area

From transportation point of view, South Moravian Region could be seen as intersection of routes between north-east and east-west and this is given historically because even in the ages of Roman empire, historians assume that south Moravia was part of one of the most important trade routes - Amber Road which was connection between Baltic and North Sea with Mediterranean Sea. Connection between west and east part was historically possible mainly thanks to Trstenická/Česká Road which exact path is not generally agreed among historians but is known that it connected Praha with Brno and continued farther east. Therefore could be seen, that South Moravian Region is for long time intersection of routes and nothing changed up to date.

Nowadays the most important road is D1 motorway which connects Praha with Brno (- Ostrava, Poland). This motorway is part of IV. Pan-European Transport Corridor which connects Germany (Dresden) and Turkey (Istanbul). D1 is also part of TEN-T corridor Orient/East - Med. It is also the busiest motorway in the Czech Republic, with maximum traffic about 100 000 vehicles per day near Prague but busy traffic is on the whole motorway, traffic jams are nothing scares and although modernisation is in process, there are discussions that it won't make situation much better as traffic is increasing every year and motorway is on its traffic limits.

Train connection in west-east direction is in Czech Republic not so direct as road and major railway transit corridor is traced outside Českomoravská highland in flatter terrain. Therefore main connection between east and west is possible via 1st transit corridor which connects Germany with Slovakia and also passes South Moravian Region and Brno. In South Moravian Region there is also important crossing of corridors because in Břeclav meets 1st a 2nd transit corridor. Problem of 1st corridor is that it still has some part to be modernised/constructed, so trains are not able to use maximum speed in whole length of corridor. Another problem is its capacity, as it is nearly fully used and there is not space for adding more trains.¹

In the north-south direction, road connection is not so developed, as nowadays there is still lacking motorway and north of Brno there is only road of national importance I/43. South of Brno there are motorways D2 to Bratislava (Slovakia) and D3 to Wien (Austria), but this motorway is not completely constructed and in south Moravia is still yet to be finished. Traffic is not so heavy on these two motorways, traffic jams are not so common as on D1 and the only problematic part could be near Brno, where are intersections of all previously mentioned motorways. D2 motorway is also part of TEN-T network as its part of Baltic-Adriatic corridor.

Train connection in north-south direction is possible via 2nd transit corridor which connects Poland and Austria and also passes through South Moravian Region. As was said in previous paragraphs, intersection of corridors is Břeclav, where intersects 1st and 2nd transit corridor. In comparison with 1st transit corridor, 2nd is constructed nearly in its whole length, only possible bottlenecks could be section of corridor through train stations in Ostrava and Přerov, but majority of corridor length is finished.

¹ Source: <https://www.e15.cz/byznys/doprava-a-logistika/szdc-koridor-z-prahy-na-moravu-prestava-vlakum-stacit-1282726>



1.1.3. Connections with relevant TEN-T and RFC corridors in the area

When focus is shifted towards connection with relevant road and rail corridors in the area, we can more deeply focus on information briefly mentioned in previous subchapter and also keep division in two directions - north-south and east-west as these two directions differ in quality of connection and also in amount of traffic.

In east-west direction, road connection is quite good, because of D1 motorway which connects Praha with Brno (- Ostrava, Poland) in east direction and on the west part of Czech Republic is possible connection to Germany via motorway D5 which goes through Plzeň to Dresden in Germany. Other possible connection is from Prague to Ústí nad Labem via motorway D8, but this motorway is not yet completely finished as it is missing a few kilometers near borders. D1 is part of IV. Pan-European Transport Corridor which connects Germany (Dresden) and Turkey (Istanbul). D1 is also part of TEN-T corridor Orient/East - Med

If we focus on rail connection, unlike on roads, there is no more or less straight line connection between east-west because railway between Praha and Brno avoids Českomoravská highland and goes in flatted terrain in Labe and latter Svitava valley. That means significant extension of the length of connection, because railway is about one quarter longer than road connection. East-west connection in Czech Republic is part of TEN-T network - Orient/East - Med corridor. Railway from Germany enters Czech Republic near Ústí nad Labem and from there, there are several possible railways on both sides of Labe river (namely railways no. 072, 090, 231, 010). Some of these railways connect Ústí to Praha, some railways are staying off Prague and goes directly to Pardubice. From Pardubice, there is railway no. 10 which goes to Česká Třebová and from there, there are two options of connection. Western goes straight north through Brno to Břeclav (railways no. 260 and 250) and then to Austria or Slovakia, eastern connection goes from Česká Třebová to Olomouc and Přerov to Břeclav and then to Austria or Slovakia. From Přerov Orient/East - Med corridor overlaps with Baltic Adriatic TEN-T corridor.

TEN-T corridor via Brno is also part of RFC corridor no. 7 Orient/East Med which goes from Ústí nad Labem to Prague and then to Pardubice in one branch of the corridor and alternatively directly from Ústí nad Labem to Pardubice. From there, there is only one version of connection - via Brno to Břeclav and then to Austria and Slovakia. In annual reports of RFC corridor no. 7 it is possible to find out, that volume of requested PaP capacity is strongly increasing from 1 377 072 km RD in 2016 to 3 642 234 km*RD in 2019 and the main traffic flow is on the part of corridor (DE) - Děčín - Praha - Bratislava - Budapest and more east axis.

In north-south direction, situation with road connection is more difficult as there is no complete motorway in whole Czech Republic. Only complete partially north-south connection is possible from Poland via Ostrava on D1, D35 and D46 motorway to Brno and from there via D2 motorway to Bratislava - Slovakia. This connection is part of TEN-T corridor Baltic Adriatic. But this route is about one thirds longer than straight line distance. Straighter road connection is possible only via roads of national importance, but these are only one lane roads therefore not so suitable for long distance transport.

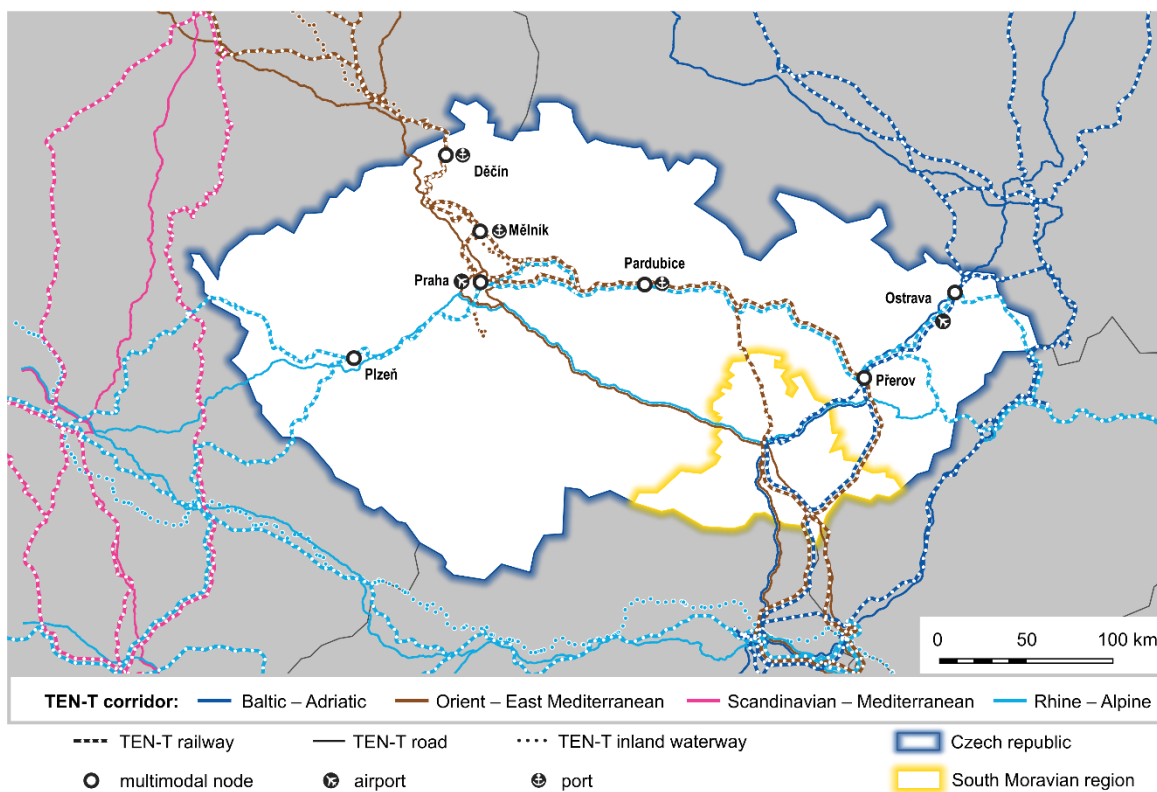
When focus is shifted toward rail connection, west part of Baltic Adriatic TEN-T corridor is placed on Czech rails. From Poland both railways are coming together in Bohumín and from there rails continue via completed conventional railway no. 270 to Přerov. From Přerov, there are two possible connections to Břeclav and further to Austria under TEN-T network, but only one is completed. Completed connection is via Otrokovice on railway no. 330, connection via Brno on railways no. 300 and 250 is yet to be upgraded, because railroad no 300 is only single track railway and the speed is limited, therefore this connection is not so suitable for rapid transport. Also via through Brno is not aimed on freight transport as is planned for passenger trains. Connection via Otrokovice is also part of RFC corridor no. 5 Baltic-Adriatic. It is possible to find out that on this RFC corridor no. 5 there is need for constructing new terminals to increase the share of rail transports in the total goods transport and the same applies for constructing modern transshipment terminals.



On top of previously presented corridors, which are more or less similar between TEN-T network and RFC corridors, Czech Republic has partially two more RFC corridors. Ford one is RFC 8 North Sea-Baltic and the second one is RFC 9 Czech-Slovak/Rhine-Danube. From these two previously mentioned RFC corridors, RFC 8 is present in Czech Republic by its “dead end” to Prague from Dresden. Also for this corridor applies that volume of requested capacity is growing annually.

Last RFC corridor if no. 9, which is another example of east-west connection as it currently goes from Praha to Slovakia. There are plans to continue this RFC corridor more to the west in several branches to connect existing corridor with Wien, Regensburg, Nurnbergm, Frankfurt/Main, Stuttgart and Strassbourg. However, nowadays, RFC9 or as it is called CS corridor only goes from Praha through Pardubice, Česká Třebová, Přerov to Slovakia. From Přerov, there are two branches of corridor, northern via Ostrava and souther via Váh river valley to Žilina.

Figure 2 TEN-T corridors in the Czech Republic



Source: Custom made map



1.1.4. Examination of technical parameters of the area

Roads in South Moravian Region are in many cases of poor quality. The most serious problem in this case is the poor quality of the surface on the D1 motorway, which is the backbone road in the west-east direction.² The current reconstruction of the motorway is not going to be completed until the next few years. Generally, inadequate quality of 2nd and 3rd class roads afterwards causes excessive traffic on the 1st class roads. Attention must also be paid to bridges whose poor technical condition can strongly affect region passability.³ A very good example is the necessary reconstruction of the bridge near Letovice and Černá Hora (road I/43; E461).

The railway network in the Czech Republic is generally very old, which affects its capacity and track speed. Since 1993, only the I. and II. corridors have undergone significant reconstruction in the South Moravian Region. This modernization made it possible to increase throughput and speed (up to 160 km/h), but at nowadays the capacity is fully depleted. The other lines lag behind; some have not been renovated for decades (up to 40 years).⁴ There are no high-speed rail (HSR) in the region and Czech Republic.⁵

1.1.5. Examination of intermodality and terminals in the area

In the South Moravian Region is no terminal allowing cargo transfer between all modes of transport (roads, railways, waterways). On the southern outskirts of Brno is located the Terminal Brno, which serves as an intermodal terminal (road/railway). The volume of transferred cargo is 43 000 TEU per year. The terminal on his own has capacity reaches 300 TEU.⁶ Freight is transferred between trains from Germany (Rostock) to trucks heading mainly to Southeast Europe (Bulgaria, Romania, Turkey etc.).⁷

1.1.6. Bottlenecks, barriers

D1 has contemporary insufficient capacity in direction to Praha, especially in the surroundings of Brno. In addition, unfinished motorways D35 and D43 do not offer a full-fledged alternative motorway route in the north-south direction. The parallel road I/43 (E461) offers just limited capacity and leads via the built-up areas of municipalities. This also limits the potential use of the D11 motorway in the west direction (-Hradec Králové, -Praha, -Germany). The most significant limitation is the unsatisfactory capacity of the Brno - Přerov railway single-track. This track is currently used for long-distance passenger transport but does not meet the requirements of the international corridors.⁸ Freight transport on the I. railway corridor between Brno and Česká Třebová (-Praha, -Germany) is limited due to considerable passenger transport. This applies both to long-distance transport and to suburban transport near Brno. The alternative route leading through Havlíčkův Brod in the Vysočina region (track no. 250) offers the additional required transport capacity, but its use limits the hilly terrain. This in turn can significantly increase cost of transporting goods and therefore becomes track uncompetitive.

² Source: <https://m.kr-jihomoravsky.cz/Default.aspx?PubID=182101&TypeID=7>

³ Source: <https://aktualne.cvut.cz/zpravy-z-medii/20190402-skoro-tisicovka-mostu-je-ve-velmi-spatnem-az-v-havarijnim-stavu-letos-se>

⁴ Source: <https://m.kr-jihomoravsky.cz/Default.aspx?PubID=185601&TypeID=7>

⁵ Source: <http://www.czech-raildays.cz/2014/buletin2014.pdf>

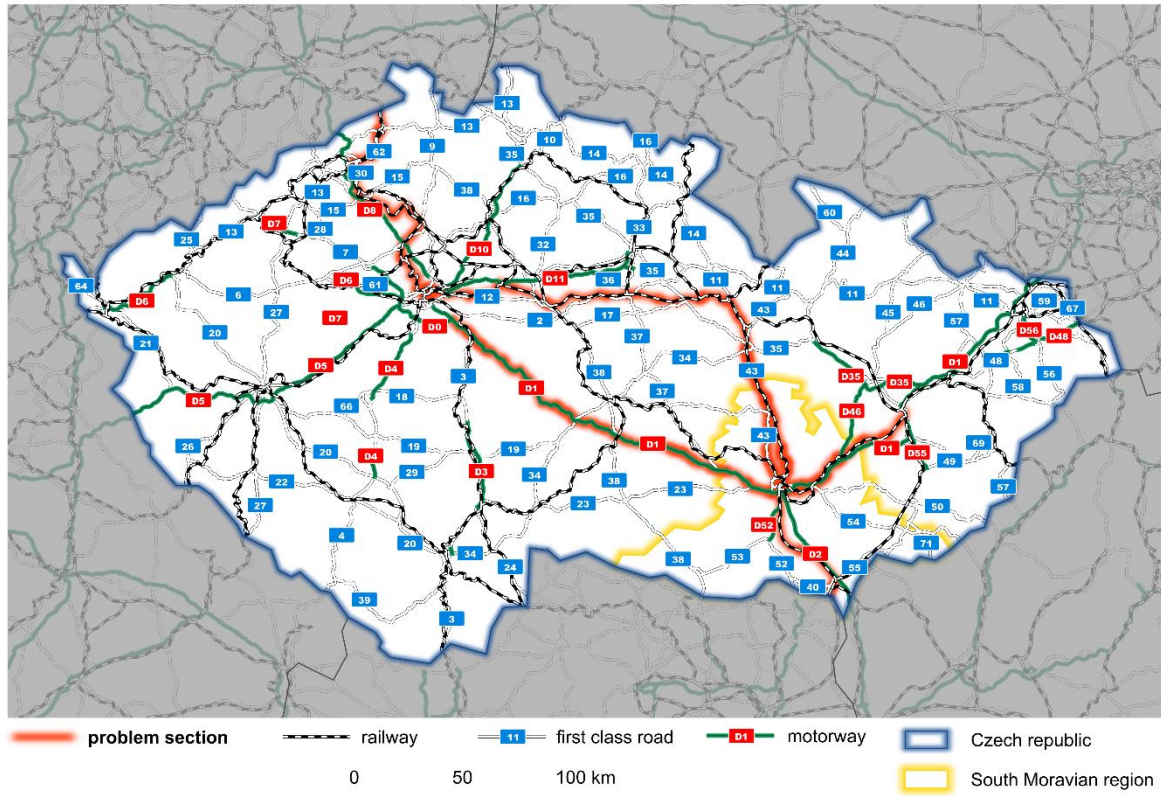
⁶ Source: [https://www.mdcz.cz/getattachment/Dokumenty/Kombinovana-doprava-\(2\)/kombinovana-doprava-\(1\)/Prekladiste-KD-v-CR-2018.xlsx.aspx?lang=cs-CZ](https://www.mdcz.cz/getattachment/Dokumenty/Kombinovana-doprava-(2)/kombinovana-doprava-(1)/Prekladiste-KD-v-CR-2018.xlsx.aspx?lang=cs-CZ)

⁷ Source: <https://zeleznicar.cd.cz/zeleznicar/zpravodajstvi/v-terminalu-na-kraji-brna-nalozime-papir-i-elektroniku/-1861/20,0,,/>

⁸ Source: <https://m.kr-jihomoravsky.cz/Default.aspx?PubID=182101&TypeID=7>



Figure 3: Bottlenecks and overloaded parts of infrastructure system



Source: Custom made map

1.2. Presentation of the transport infrastructure system

To present transport infrastructure system is better start with broader picture of the whole Czech Republic and then focus mainly of South Moravian Region, because transport system isn't some isolated entity, but creates interconnected system on high organisational level. Therefore, next figure shows selected characteristics of road and track network of Czech Republic.

Figure 4: Characteristics of transport system of Czech Republic⁹

Total length of operated lines	9 572 km (2018)
Total road and motorway length	55 744 (2018)
Length of motorways	1 215,7 km (2018)
Length of 1 st class roads	5 817,9 km (2018)
Total number of locomotives	1 999 (2018)

⁹ Source: https://www.sydos.cz/cs/rocnka_pdf/Rocnka_dopravy_2018.pdf



Total number of electric and diesel railcars	1 089 (2018)
Wagons owned by the commercial rail operators	32 231 (2018)
Total number of passenger cars	5 747 913 (2018)
Total number of lorries and road tractors	710 622 (2018)

Source: Sydos

In next figure we can see selected characteristics of transport of South Moravian Region in comparison with whole Czech Republic and is obvious that length of roads and lines have nearly same share of whole Czech Republic as it is about 8 %. That means, in comparison with share of South Moravian Region with area of Czech Republic (cca 10 %) and on inhabitants of Czech Republic (about 11 %), transport system has smaller share therefore it is not as saturated as it probably should be. If we focus on number of passenger cars and lorries and road tractors, there is share quite similar with before mentioned other characteristics.

Big difference is possible to see in length of 1st class roads as these have only 7,69 % share of whole length of Czech Republic. But motorways have higher share, therefore is possible to conclude that lack of 1st class roads is also due to number of motorways. But as was stated in previous subchapters, motorway system in South Moravian Region is not yet finished and there are motorways yet to be constructed.

Figure 5 Characteristics of transport system of South Moravian Region¹⁰

	Value (year)	Share of Czech Republic
Total length of operated lines	785,4 km (2018)	8,21 %
Total road and motorway length	4 284,4 km (2018)	7,69 %
Length of motorways	160,3 km (2018)	12,81 %
Length of 1 st class roads	422,1 km (2018)	7,26 %
Total number of locomotives	N/A	N/A
Total number of electric and diesel railcars	N/A	N/A
Wagons owned by the commercial rail operators	N/A	N/A
Total number of passenger cars	594 778 (2018)	10,35 %
Total number of lorries and road tractors	81 146 (2018)	11,42 %

Source: Sydos

¹⁰ Source: https://www.sydos.cz/cs/rocnka_pdf/Rocnka_dopravy_2018.pdf



1.2.1. Transport infrastructure characteristics (road, railways, waterways, airports)

To speak about transport infrastructure, two main modes of transportation in South Moravian Region are roads and trackways, because as was showed previously, these two modes of transportation has biggest share and operation amount.

On multinational level, we can present as top level International E-road network and South Moravian Region is crossed by these E-roads:

- E50: Germany - Rozvadov - Plzeň - Praha (motorway D1) - Brno (1st class road I/50) - Uherské Hradiště - Starý Hrozenkov - Slovakia
- E59: Jihlava - Znojmo (motorway D1 and 1st class road I/38; on motorway D1 are E50 and E65 overlapping) - Hatě - Austria
- E65: Poland - Harrachov - Turnov - Praha (motorway D1) - Brno - Břeclav (motorway D1, 1st class road E50 and motorway D2 are overlapping) Slovakia
- E461: Svitavy (1st class road I/43) - Brno (2nd class road II/640, 1st class road I/42, 1st class road I/23, motorway D1) - Mikulov (1st class road I/54 and 1st class road I/52) - Austria
- E462: Brno (D1 MÚK 1st class road I/52, Vyškov 1st class road I/46) - Olomouc - Český Těšín - Bílsko - Bělá - Tychy - Poland

Among E-roads, there are also motorways, in South Moravian Region there are 4 motorways, but only 2 are finished as D43 a D52 needs to be finished or even planned (D43).

- D1: Praha - Brno - Ostrava - Poland
- D2: Brno - Břeclav - Bratislava - Slovakia
- D43: Brno - Svitavy - connection to D35 near Moravská Třebová
- D52: Brno - Mikulov - Austria

On national level, South Moravian Region has 14 1st class roads - I/38, I/55, I/71, I/19, I/23, I/43, I/47, I/50, I/51, I/52, I/54, I/70, I/40, I/53 (last two are only in area of South Moravian Region). Roads of 2nd class has South Moravian Region 60 with total length of 1 476 km which creates 33 % share of all roads in region. Another lower level of roads is 3rd class roads with total length of 2 494 km which means 54 % share of all roads in region. Density of road system is 62,5 km per 100 km² and 39,3 km per 10 000 inhabitants. Highest density per km² has Brno-město district (76,1 km) and lowest Hodonín district (50,1 km). Quite different is density per 10 000 inhabitants as lowest density has Brno-město district (4,7 km) and highest density Znojmo district (87,4 km).¹¹

If we focus on rail transport, in South Moravian Region we can find out these national level railways, but only two are connecting the region with forereigh countries (these are underlined):

- no. 240 Brno - Jihlava - Havlíčkův Brod
- no. 241 Znojmo - Okříšky
- no. 246 Znojmo - Břeclav
- no. 248 Znojmo - Šatov - Austria

¹¹ https://digilib.k.utb.cz/bitstream/handle/10563/12588/němcová_2010_bp.pdf?sequence=1&isAllowed=y



- no. 250 Havlíčkův Brod - Brno - Slovakia
- no. 260 Brno - Česká Třebová
- no. 300 Brno - Přerov
- no. 330 Břeclav - Přerov
- no. 332 Hodonín - Holíč nad Moravou
- no. 340 Brno - Uherské Hradiště
- no. 342 Bzenec - Moravský Písek
- no. 343 Hodonín - Veselí nad Moravou
- no. 344 Veselí nad Moravou - Vrbovce

Other means of transport are really scarce in South Moravian Region as there is no waterway nor any public port. Thus, we can mention only Batův kanál, which was constructed as a tool for transporting coal from south Moravia to Otrokovice in 30's but nowadays is only a tourist attraction. Also other kinds of transportation connected with water are mainly tourist attractions and we can mention Kníničky dam, Vranovská dam, river Dyje in Břeclav, ponds in Lednice-Valtický area and river Punkva in Moravian carst.

Air transport has in South Moravian Region one important node - Brno airport which offers several scheduled flights (destinations Berlin, London, Milano), charter flights and also cargo flights. There are 5 other public airports which have a statute of aeroclubs and have mainly grassy runways - Břeclav, Brno-Medlánky, Vyškov, Znojmo and Kyjov. For medical purposes, in Jihomoravský kraj there are several HEMS of two types - ground (Boskovice, Břeclav and Blansko) and roof HEMS (Brno-FDN, Brno-IBC, FN Brno, Kyjov).

Last part of this subchapter focuses on the operation amount of the transport system and in the figure below it is possible to find out that the biggest number of transported passengers has passenger cars and rail, with bus having a quite dramatically lower share.

Figure 6 Passenger transport by mean of transport¹²

Passenger transport performance by passenger cars	2 489,6 mill.	77 971,0 mill. passenger-km
Passenger transport performance by rail	189,5 mill.	10 286,0 mill. passenger-km
Passenger transport performance by bus	340,2 mill.	10 950,4 mill. passenger-km
Sum (with above non-mentioned means of transport)	5 211,5 mill.	129 967,2 mill. passenger-km

Source: Sydos

¹² Source: https://www.sydos.cz/cs/rocnka_pdf/Rocnka_dopravy_2018.pdf



1.2.2. Multimodal interfaces

Multimodal interfaces present modern and effective way how to easily and quickly switch between different means of transportation of goods. Its key characteristic is that goods are transported under a single contract, but performed with at least two different modes of transport; the carrier is liable (in a legal sense) for the entire carriage, even though it is performed by several different modes of transport (by rail, sea and road, for example). The carrier does not have to possess all the means of transport, and in practice usually does not; the carriage is often performed by sub-carriers.¹³

Looking at the geographical location of South Moravian Region and its position on transport network in (inter)national level, there are no great urges to realize multimodal transport, as roads and railways have quite a good connection to neighboring countries (see previous subchapters). Also, as is showed in subchapters which are to follow, in South Moravian Region, there are no producers of such goods that would require multimodal transport. Therefore South Moravian Region is not a place where such goods are produced but as its transition region, there is need for transferring goods during transport. In whole Czech Republic, according to Ministry of Transport¹⁴, there are only 17 terminals and one of the is located in Brno and is called Terminál Brno.

Terminál Brno is located in south part of city (Brno - Horní Heršpice) and was re-opened in 2007 as demand for combined transportation was increasing again after drops which occurred after 1989 events and transformation of economy of Czech Republic. In 2012, terminal was reconstructed and nowadays is owned by 2 rail cargo companies ČD Cargo a Rail Cargo Operator - CSKD. Due to location of Brno, it operates between two modes of transportation: road/railway and handles around 1200 trailers each month.¹⁵

In future is possible, that South Moravian Region will have another multimodal terminal, as there are ideas about building one in Hodonín and it is planned that it would operate between water/road and railway. But since initial plans in 2015 there is no visible progress toward construction the terminal as it requires change of Hodonín master plan, building road bypass of Hodonín which would also work as access road to terminal. Therefore it is unsure whether or when would be this terminal constructed.

1.2.3. Cross-border links

Cross-border link in transportation are conditioned by existing transport infrastructure therefore they were briefly presented in previous subchapters about transport system. From South Moravian Region is best road connection to Slovakia (its capital Bratislava) via motorway D2. To Austria (and its capital Wien) is connection possible by partly finished Czech motorway D52 and motorway A5 in Austria. Connection to Poland is possible by combination of motorway D1, D35 and D46. Via railway, connection to these three nearest neighbouring countries is possible by RFC corridors no. 5 and no. 7.

South Moravian Region doesn't have any possible connection to neighboring countries via waterways, nearest river ports are located in Slovakia - Bratislava or in Wien - Austria, both these ports are on Danube river. But to access both these ports, there is need to use different modes of transport and transfer good on ships directly at port therefore it is not frequent mode of transportation for goods from South Moravian Region.

¹³ Source: https://en.wikipedia.org/wiki/Multimodal_transport

¹⁴ Source: [https://www.mdcr.cz/Dokumenty/Kombinovana-doprava-\(2\)/kombinovana-doprava-\(1\)](https://www.mdcr.cz/Dokumenty/Kombinovana-doprava-(2)/kombinovana-doprava-(1))

¹⁵ Source: <http://terminalbrno.cz>



Last possible mode of transportation is air cargo which is possible from Brno-Tuřany airport which since 2007 also operates cargo with 3 750 tons of cargo transferred in 2018.¹⁶ This airport have good connection to motorway D1 and railway, therefore is viable option for air transport of goods mainly to areas such as Middle East, Russia, Ukraine, Far East and area around Caspean sea. From Brno operates mainly their cargo holders: Panalpina, WTS Aviation, DHL-Dansas, Air Transport Solutions, TNT.¹⁷

1.3. Presentation of major economic activities and the settlement system

1.3.1. Description of the settlement system

The South Moravian Region consists of 673 municipalities, which are concentrated in 21 districts (for a more detailed description se chapter 1. 1. 1.) The Region is distinctly monocentric.¹⁸ The core of the region is the city of Brno with approximately 400,000 inhabitants. Nevertheless, commuting to work and to schools toward the metropolis means an increase above approx. 100,000 people for the city daily. Brno is the second largest city in the Czech Republic and significant administrative, economic and cultural centre. The rest of the South Moravian Region is form mostly by a large number of medium and small-sized municipalities that create dispersed urban system.¹⁹

Settlement of the region near The Vysočina Region (and north of Brno) is more scattered and the villages are more rural. In contrast, valleys (Lower Morava Valley, Dyje-Svratka Valley) are characterized by higher population densities and higher average population sizes of settlements. The largest cities except Brno are Znojmo (approx. 35,000 inhab.), Břeclav (approx. 25,000 inhab.) and Hodnonín (approx. 25,000 inhab.). Total population density is one of the largest in the Czech Republic and reaches to 164 people per square kilometre.²⁰

According to Czech Statistical Office (CSU), which responsible for statistical data in the Czech Republic, population of The South Moravian Region at the end of 2018 was 1,187,667 inhabitants which was more than 4,000 inhabitants more than in the start of year and growing number of inhabitants is long time trend in south Moravia, because The South Moravian Region is getting bigger every year since 2003. In whole territory comparison, The South Moravian Region is 11 % of whole population of the Republic.

¹⁶ Source: <http://www.brno-airport.cz/letiste/tiskove-zpravy/Brnenske-letiste-loni-odbavilo-pres-pul-milionu-cestujcich-Nejoblibenejsi-destinaci-zustava-Recko-a-od-dubna-si-budete-moci-zaletet-i-do-Berlina/>

¹⁷ Source: <http://www.brno-airport.cz/b2b/cargo/vseobecne-informace/>

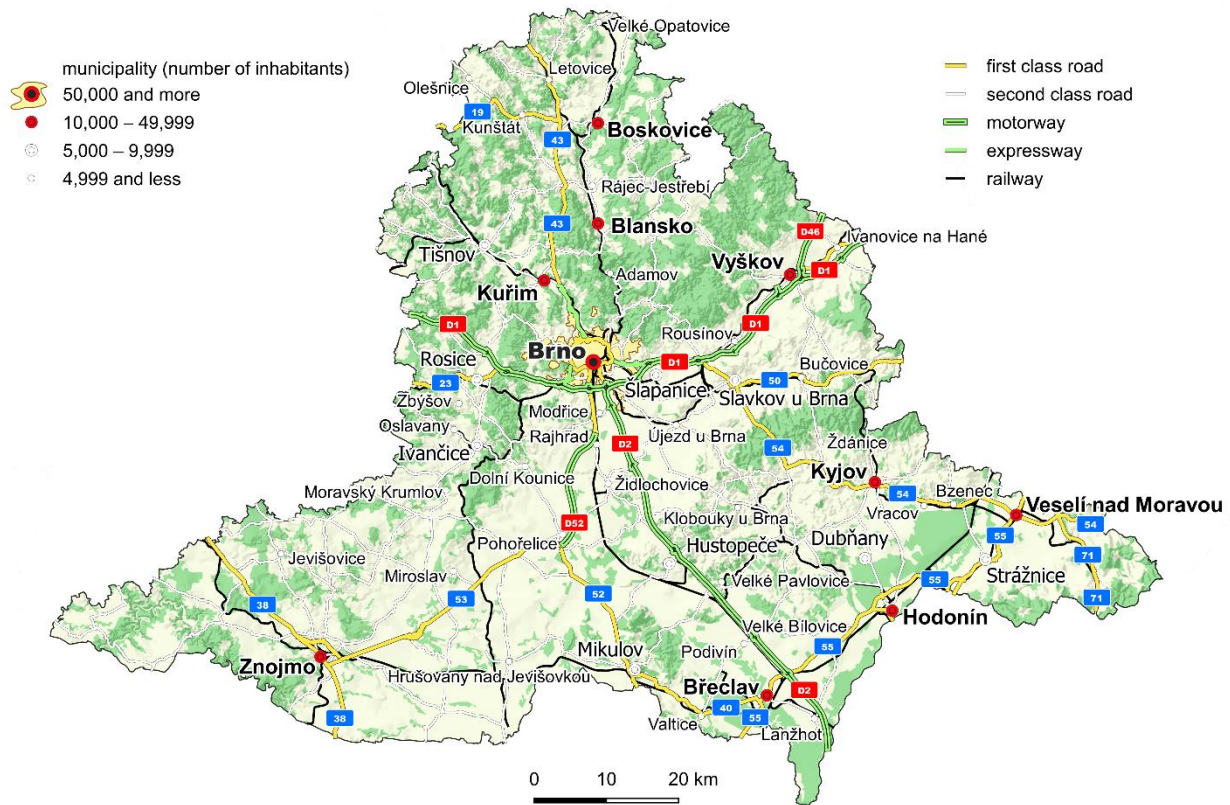
¹⁸ Source: <https://m.kr-jihomoravsky.cz/Default.aspx?PubID=310075&TypeID=7>

¹⁹ Source: https://www.kr-jihomoravsky.cz/archiv/orr/tematicky_atlas_jmk_3_vydani_1.pdf

²⁰ Source: https://www.kr-jihomoravsky.cz/archiv/orr/tematicky_atlas_jmk_3_vydani_1.pdf



Figure 7 Settlement in the South Moravian Region



Source: Custom made map

1.3.2. Demographical and socio-economic situation

The South Moravian Region has the second highest GDP value in Czech Republic with 450 100 CZK per capita (after Prague region) and 531 billion CZK in total.²¹ Overall, it has a 10 % share in the economic performance of the Czech Republic.²² Brno alone generates more than half (53 %) of the Region's GDP. Therefore, it ranks among the most economically powerful areas in the Czech Republic. In terms of GDP per capita, the South Moravian metropolis exceeds both the Czech Republic and European Union average. If the average value is expressed by number 100, then Brno has value 141 within the European Union.²³ The figure n. 8 below show shares of individual economic sectors in the South Moravian Region in 2017

²¹ Source: <https://www.czso.cz/documents/10180/61165702/1805101.xlsx/8f9fd3b1-25cd-43aa-a732-b657952add9f?version=1.3>

²² Source: <https://www.czso.cz/csu/xb/makroekonomicke-udaje-v-jihomoravskem-kraji-v-roce-2017>

²³ Source: <http://download-data-v1.s3-website-us-west-2.amazonaws.com/production/download-data?id=103204811400219056456/1aRoPqLnN57Vomn1vNZpZNumUuHeYyYf>



Figure 8 Economic sectors in the South Moravian Region²⁴

Sector	Share [%]
Agriculture, fisheries and forestry	2,5
Industry	27,2
Building (industry)	6,6
Business, transport, accommodation	19,4
ICT	6,3
Finance, insurance	3,4
Real estate management	8,0
Science	7,5
Administration, health and social care	16,5
Others	2,6
Summary	100

Source: CZSO

The secondary sector thus accounts for 33.8 % and the tertiary sector 63.7 %. The municipalities that have the largest share of agricultural workers are mainly in the southwest part of the region (Znojmo, Mikulov). The secondary sector is dominated by municipalities in the north of the region (Tišnov, Kuřim, Blansko) and also municipalities in the east, ie. Kyjov, Veselí nad Moravou. In Brno, the tertiary (quaternary) sector prevail (science, ICT etc.).

The unemployment rate has generally been low in the Czech Republic in last few years. In June 2019, the share of unemployed persons in the Czech Republic was only 2.6 %. The share of unemployed persons in the region was 3.1 % in the same quarter of a year and Brno has 3.8 %.²⁵ The share of the unemployed in the Czech Republic in 2018 (year-round value) was 3.2 % and in the region 3,9 %.²⁶ In terms of territorial distribution of unemployment within the South Moravian Region (share of unemployed persons), the worst situation is in the southwestern part of the region. It includes Znojmo, Hodonín and Veselí nad Moravou districts. The best situation is contrary in districts and cities near Brno. These are Blansko, Vyškov and Slavkov u Brna. Share of unemployed persons for these administrative districts is up to 2 %.²⁷

²⁴ <https://www.czso.cz/csu/xb/makroekonomicke-udaje-v-jihomoravskem-kraji-v-roce-2017>

²⁵ Source: <https://data.brno.cz/232-2/>

²⁶ Source: <https://www.mpsv.cz/documents/20142/848077/anal2018.pdf/760053b9-9f64-b616-5453-2447ee935b7e>

²⁷ Source: <https://www.mpsv.cz/documents/20142/1053329/Nezam%C4%9Bstnanost+v+ORP+1119.xlsx/f2e32576-fea9-f412-7f33-d81753f6d635>

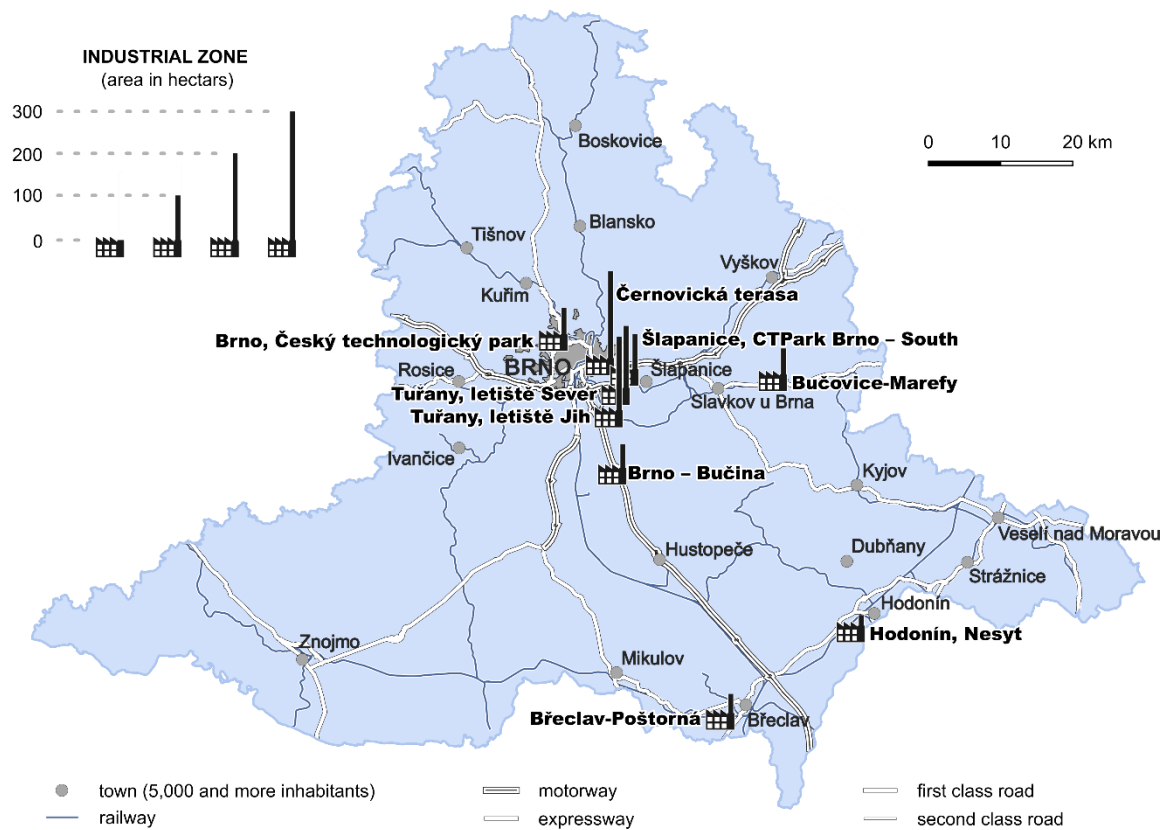


Figure 9 The main industrial zones located in the South Moravian Region²⁸

Name of industrial zone	Area
Brno - Blučina	55 ha
Brno - Český technologický park	60 ha
Břeclav - Poštorná	44 ha
Bučovice - Marefy	60 ha
CTPark Brno - South, Šlapanice	81 ha
Brno - Černovická terasa	200 ha
Hodonín - Nesyt	24 ha
Tuřany, letiště Jih	169 ha
Tuřany, letiště Sever	143 ha

Source: This data can vary by source; however, these areas should not be omitted.

Figure 10 The main industrial zones located in the South Moravian Region



Source: RISY, custom made map

²⁸ <https://www.risy.cz/cs/krajske-ris/jihomoravsky-kraj/regionalni-informace/prumyslove-zony>



1.3.3. Description of cross-border relations

The South Moravian Region is an important transit region in both international and national transport. A wide range of commodities is transported by railway company ČD Cargo. In the Region can be emphasized for example - from mineral resources are transported sand (Bzenec-Přívovz), gravel (Vyškov, Rakšice), as well as clays for brick production (Velké Opatovice). One of the largest customers Českomoravský cement (Blažovice) transports cement and slag in quantities of approx. 500,000 tonnes. His primary destination is in Central Bohemia Region (Beroun). Woodworking companies are also important customers. The largest loading of wood (in 2014) takes place in Rájec-Jestřebí, where different companies loads on trains 20 thousand tons of wood in summary. On the second place is then station Šebetov and for instance also Velká and Veličkou. As examples Stora Enso (Ždírec nad Doubravou) and Wood & Paper (Hlína) may be mentioned, in both cases is carried by their name wood, wood chips and other wood products.²⁹

Oil, for company MND, is transported from Nemočice, Zdounky and Vlkoš in the east of the region. It is currently about thousands of wagons with oil per year (despite the completion of the Družba oil pipeline between Uhřetice-Klobouky). Among the solid fuels it is necessary to mention coal from the mines in the the Ústí Region, which is transported to the power plant in Hodonín. Important position among other commodities have malts. Approximately 35,000 tons of malt are transported by rail from Hodonice near Znojmo. Malts are usually exported to Germany, Poland, but also to Switzerland. In addition, the final products are also transported, such as the production of Budweiser Budvar.³⁰

By statistic:

Figure 11 Cargo transport by rail only in the South Moravian Region

Year	2014	2015	2016	2017	2018
Cargo	92,2	512,7	124,5	132,9	184,7

Source: Sydos

Figure 12 Cargo transport by roads only in the South Moravian Region:

Year	2014	2015	2016	2017	2018
Cargo	28 936,1	33 200,4	31 331,1	36 735,4	40 265,8

Source: Sydos

As tables on the top show, amount of goods transported has increased in recent years. Strongly represented is transport by roads. Data for water and air transport are not available.

²⁹ Source: https://www.cdcargo.cz/cs_CZ/pj-brno

³⁰ Source: <https://www.cdcargo.cz/documents/10179/1735870/Jihomoravsk%C3%BD%20kraj.pdf/9412acaf-e86f-4de3-a471-1c94750eded6>



Figure 13 Export and import between regions and The South Moravian Region

Export (in thousands of tons)	by roads			by railway		
	2016	2017	2018	2016	2017	2018
Prague	557,3	469,2	266,2	4	5,5	22,2
Central Bohemian Region	874,3	720,0	628,8	279,2	268,7	268,7
South Bohemian Region	326,4	421,1	463,2	18	18,6	22
Plzeň Region	146,9	141,2	138,5	10	16,6	29,8
Karlovy Vary Region	20,1	32,1	42,3	13,2	15,1	9,1
The Ustí Region	159,5	146,4	116,0	43,2	62,1	116,3
Liberec Region	162,8	103,6	77,5	1,1	3,9	4,4
Hradec Králové Region	385,9	282,8	291,2	1,5	1,6	2,7
The Pardubice Region	538,1	752,3	294,1	22,1	14,2	20,3
The Vysočina Region	1413,0	1044,2	1564,3	27,6	41	34,7
The Olomouc Region	1120,0	984,1	1492,5	46,1	47,5	24,2
Zlín Region	888,7	852,0	904,0	19,1	9,1	19,4
Moravian-Silesian Region	670,6	672,3	839,9	101,6	110,2	171,6
Total	7263,5	6621,3	7118,6	586,5	614,1	745,3



Import (in thousands of tons)	by roads			by railway		
	2016	2017	2018	2016	2017	2018
Prague	446,7	439,3	321,7	6,3	7,9	5,3
Central Bohemian Region	969,9	691,7	683,6	62,4	59,9	34,2
South Bohemian Region	237,5	341,6	381,4	18,4	20,7	17,9
Plzeň Region	79,7	123,5	116,5	0,3	1,1	0,5
Karlovy Vary Region	77,4	56,9	107,8	6,8	4,3	5,3
The Ustí Region	223,4	213,7	84,4	81,1	80	105,7
Liberec Region	121,4	88,7	94,5	33,6	34,4	25,9
Hradec Králové Region	296,8	146,1	397,5	0,8	0,2	0,8
The Pardubice Region	621,4	632,3	591,7	29,8	31,1	26
The Vysočina Region	834,0	917,8	1 104,0	4,5	5,4	6,7
The Olomouc Region	1 212,4	1 525,8	1 642,7	174,6	172,2	151,3
Zlín Region	1 073,5	1 037,4	1 030,1	22	10,8	8,8
Moravian-Silesian Region	666,1	859,2	779,3	136,4	155,4	183,3
Total	6 860,1	7 074,2	7 335,2	577,1	583,4	571,8

Source: Sydos



As table shows, The South Moravian Region exports very strongly to The Vysočina Region, The Olomouc Region, Moravian-Silesian Region and Zlín Region. From the Czech regions to Prague and in conjunction with the Central Bohemian Region. On the contrary, very weak export is to Karlovy Vary Region. From the reverse point of view, The South Moravian Region heavily imports from same regions as it exports. Differently seem only The Pardubice Region, which is more significant export region for The South Moravian Region. Data for water and air transport are not available

Figure 14 Export by country (in thousands of tons) from The South Moravian Region

Export destination\year	by roads			by railway			by water ways		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Total	23151	20600	17076	19649	19660	20324	92	63	57
Belgium	357,0	281,4	193,9	123,0	71,2	184,4	3,3	4,2	1,1
Bulgaria	12,0	0,6	12,0	13,9	15,9	19,8			
Denmark	127,7	85,5	53,7	61,5	68,3	63,2			
Estonia	0,0	0,0	0,0	0,0	0,0	0,0			
Finland	26,5	5,4	0,0	0,1	0,1	0,0			
France	577,5	551,9	447,4	44,7	31,4	51,0	18,1	16,3	5,4
Croatia	30,0	35,1	40,9	83,9	81,7	35,8			
Ireland	0,0	4,4	0,0	0,0	0,0	0,0			
Italy	1113,7	696,7	732,1	627,3	666,6	745,2			
Lithuania	0,0	11,5	3,6	0,0	0,8	0,0			
Latvia	13,9	9,9	16,4	0,0	0,0	0,0			
Luxembourg	17,3	13,0	11,6	5,2	3,9	5,4			
Hungary	790,0	758,0	555,4	908,5	696,0	744,3			
Germany	10701	9745,3	7707,4	7648,7	7771,7	7871,2	69,3	40,6	51,1
Netherlands	532,6	322,5	212,8	895,8	957,5	1043,0	1,5	2	0
Poland	616,3	625,1	486,2	2313,5	2467,0	2216,7			
Portugal	42,7	28,5	27,3	0,0	0,0	0,0			
Austria	3135,6	2962,0	2344,4	3186,2	2774,7	2942,3			
Romania	45,8	92,3	61,6	161,1	197,4	304,9			
Greece	22,8	19,5	31,5	33,5	39,4	40,8			
Slovakia	3914,0	3442,6	3263,6	2475,5	2487,7	2860,0			
Slovenia	57,0	103,5	63,3	520,1	641,3	647,1			



United Kingdom	298,7	229,4	103,3	0,0	0,0	0,0			
Spain	230,4	168,4	235,2	28,0	43,6	41,1			
Sweden	166,7	98,3	83,0	64,7	63,1	44,9			
EU total	22829	20290	16686	19195	19079	19861	92	63	57
Liechtenstein	0,0	0,0	0,0	0,0	0,0	0,0			
Norway	46,2	18,9	25,9	0,2	0,4	0,4			
Switzerland	149,2	111,6	116,0	24,7	32,9	28,7			
EFTA total	195,4	130,5	142,0	24,8	33,3	29,0	x	x	x
Belarus	0,0	0,0	0,0	0,2	2,0	5,3			
Bosnia-Herzegovina	0,0	0,0	28,3	83,0	118,4	60,5			
Moldova	0,0	0,0	0,0	0,0	0,0	0,0			
Russian federation	90,9	65,7	101,3	99,3	166,2	218,8			
Turkey	33,7	70,3	99,0	11,0	14,2	8,8			
Ukraine	1,6	18,4	6,8	7,5	12,3	11,8			
Other ITF countries total	126,1	154,4	235,4	201,0	313,1	305,2	x	x	x
Others	0,0	25,3	12,7	228,6	235,0	129,2	x	x	x

Source: Sydos

Figure 15 Import by country (in thousands of tons) to The South Moravian Region

Import destination\year	by roads			by railway			by water ways		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Total	17218	14281	12560	29137	28319	30373	52	28	17
Belgium	563,6	478,3	261,0	94,5	116,7	84,4	3,4	8,4	3,1
Bulgaria	15,6	13,1	15,0	6,3	9,7	0,4			
Denmark	63,5	26,2	40,9	3,5	4,6	4,6			
Estonia	0,0	0,0	0,0	0,0	0,0	0,0			
Finland	35,6	0,0	0,0	0,0	0,0	0,0			



France	485,8	378,7	435,5	25,7	32,7	41,6			
Croatia	32,9	5,9	16,0	0,4	0,4	149,0			
Ireland	0,0	0,0	0,0	0,0	0,0	0,0			
Italy	858,4	637,2	784,0	200,2	291,0	310,3			
Lithuania	0,0	16,9	0,0	3,5	4,2	1,9			
Latvia	13,4	14,6	0,0	0,0	0,0	0,0			
Luxembourg	11,8	8,2	0,0	2,9	2,2	2,1			
Hungary	598,8	673,5	699,4	288,2	292,6	335,1			
Germany	8148,9	6174,2	4636,1	9145,8	9431,9	10730	30	16,9	8
Netherlands	707,8	408,0	330,2	1337,9	1298,4	1370,4	19	3,6	6,1
Poland	686,8	935,5	951,9	5752,2	5681,2	5775,6			
Portugal	19,2	27,3	0,0	0,0	0,0	0,0			
Austria	1796,2	1772,6	1544,2	2091,6	2118,3	2259,3			
Romania	36,2	92,6	112,2	82,9	101,0	135,5			
Greece	24,3	0,0	31,6	79,5	68,8	40,1			
Slovakia	2152,3	1945,0	1972,3	9498,8	8332,1	8403,3			
Slovenia	49,7	110,9	66,8	177,4	274,1	360,0			
United Kingdom	196,8	111,8	52,7	0,0	0,0	0,0			
Spain	220,6	125,1	179,0	0,0	0,0	0,0			
Sweden	118,6	99,5	74,4	8,0	11,3	8,7			
EU total	16836	14055	12203	28799	28071	30012	52	28	17
Liechtenstein	26,6	0,0	0,0	0,0	0,0	0,0			
Norway	25,4	25,8	12,5	0,0	0,0	0,0			
Switzerland	97,7	93,4	76,4	24,9	38,9	41,7			
EFTA total	149,7	119,2	88,8	24,9	38,9	41,7	x	x	x
Belarus	39,9	10,6	10,8	0,2	5,4	31,3			
Bosnia-Herzegovina	0,0	0,0	4,3	141,4	32,4	68,8			
Moldova	3,8	0,0	5,7	0,0	0,0	0,0			
Russian federation	81,2	48,2	133,1	56,8	93,9	145,8			
Turkey	107,0	21,2	112,7	0,0	0,4	0,0			
Ukraine	0,0	1,7	2,0	30,0	8,0	18,0			



Other ITF countries total	231,8	81,5	268,5	228,4	140,0	263,9	x	x	x
Others	0,0	26,1	0,0	85,3	69,2	54,9	x	x	x

Source: Sydos

1.3.4. Presentation of companies in the area (manufactures, logistics, transport), identifying their activities

Figure 16 Export by commodity (in thousands of tons) from The South Moravian Region

Export \ year	by roads			by railway			total by percentage		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Agriculture, forestry, fish and other fishery products	4630	5069	2866	69	103	118	12%	12%	6%
Coal (lignite), oil and gas	343	43	215	23	22	15	1%	0%	0%
Ores of metals and other sources	15404	18672	20571	111	84	157	39%	43%	43%
Food products, beverages and tobacco	2322	2074	2110	18	17	21	6%	5%	4%
Textiles and leather (products)	181	297	137	0	1	0	0%	1%	0%
Wood and cork (their products, excluding furniture), paper products	836	1149	1048	0	0	0	2%	3%	2%
Coke and refined petroleum products	335	1300	209	1	8	2	1%	3%	0%
Chemicals, rubber and plastic products, nuclear fuel	388	664	1011	5	6	6	1%	2%	2%
Other non-metallic inorganic products	6006	6728	6524	339	375	426	16%	16%	14%
Metals, metal structures and metal working products, excluding machinery	1193	1206	2072	0	0	0	3%	3%	4%
Machinery and equipment not elsewhere specified, computers, radio, television, optical instruments	517	1064	783	0	0	0	1%	2%	2%
Means of transport	573	591	572	11	10	10	1%	1%	1%



Furniture	45	53	60	0	0	0	0%	0%	0%
Waste and other used materials	2886	2028	6647	90	78	108	8%	5%	14%
Shipments, parcels	640	773	845	0	0	0	2%	2%	2%
Equipment and material used in transport	546	499	424	2	1	1	1%	1%	1%
Baggage carried separately from passengers (things to repair etc.)	10	8	12	0	0	0	0%	0%	0%
Combination of the things that are transported together	838	1018	1064	0	0	0	2%	2%	2%
Unidentifiable items	903	121	217	41	41	62	2%	0%	1%
Other items	0	0	0	0	0	3	0%	0%	0%
Total	38595	43357	47384	711	747	930	100%	100%	100%

Source: Sydos

Water transport is negligible.

Figure 17 Import by commodity (in thousands of tons) to The South Moravian Region

Import\ year	by roads			by railway			total by percentage		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Agriculture, forestry, fish and other fishery products	4721	5245	2928	149	89	106	13%	12%	6%
Coal (lignite), oil and gas	387	64	256	55	41	51	1%	0%	1%
Ores of metals and other sources	15027	18366	20204	178	170	197	39%	42%	42%
Food products, beverages and tobacco	2905	2425	2375	2	0	0	7%	5%	5%
Textiles and leather (products)	209	297	103	0	0	0	1%	1%	0%
Wood and cork (their products, excluding furniture), paper products	784	1366	1024	1	0	0	2%	3%	2%
Coke and refined petroleum products	311	1217	218	19	29	37	1%	3%	1%
Chemicals, rubber and plastic products, nuclear fuel	409	836	1029	35	27	30	1%	2%	2%



Other non-metallic inorganic products	5473	6149	6320	69	122	135	14%	14%	13%
Metals, metal structures and metal working products, excluding machinery	1184	1386	2140	41	45	51	3%	3%	5%
Machinery and equipment not elsewhere specified, computers, radio, television, optical instruments	497	1148	847	0	0	0	1%	3%	2%
Means of transport	624	623	604	19	13	15	2%	1%	1%
Furniture	74	58	47	0	0	0	0%	0%	0%
Waste and other used materials	2823	2213	6650	94	106	110	7%	5%	14%
Shipments, parcels	530	735	1007	0	0	0	1%	2%	2%
Equipment and material used in transport	434	473	346	3	2	4	1%	1%	1%
Baggage carried separately from passengers (things to repair etc.)	15	16	6	0	0	0	0%	0%	0%
Combination of the things that are transported together	679	920	1204	0	0	0	2%	2%	2%
Unidentifiable items	1108	271	292	39	73	20	3%	1%	1%
Other items	0	0	0	0	0	0	0%	0%	0%
Total	38191	43810	47601	702	716	756	100%	100%	100%

Source: Sydos

Water transport is negligible.

1.3.5. Industrial production, major floater (origin) and destination points

Economical centre of South Moravian Region is Brno, which has long industrial tradition starting with textile manufactures in 19th century. During 20th century, main field of industry became engineering with well-known companies such as Zbrojovka, ZETOR, Královopolská or První brněnská. After economic transformation after 1989, several companies went bankrupt and ceased to exist or were bought by foreign companies - f.e. ABB or SIEMENS. Another important industrial part of South Moravian Region was Blansko and Adamov, which were important during socialist era and there were companies like Adamovské strojírný or ČKD Blansko. Like Brno companies, era of Czech economic transformation was rough for these companies and nowadays they exist in very small version of socialist themselves. Other important cities with industrial production are Kuřim - TOS, Drásov - SIEMENS or Břeclav - OTIS Escalators.



Main directions for export of industrial production from South Moravian Region are according to Regional Chamber of Commerce³¹ to European Union countries and focusing mainly on Germany, Poland, Slovakia, France and Italy. If we look little bit deeper into these countries we can say, that number of south Moravian industrial companies is owned by German companies (f.e. SIEMENS).

1.3.6. Agriculture production, food processing

Chapter about general geographical information about South Moravian Region said that the region is located in south Moravia and due to its physical geography and geomorphology is also one of the warmest parts of Czechia therefore its optimal for agriculture. Best areas are Dolnomoravský and Dyjsko-Svratecký úval with its high-quality soils which are used typically for production of cereals - whey, barley and corn. Other typical crops are for example tomatoes or cucumbers (these are famous for pickled version historically produced in Znojmo), apples or apricots. Livestock is typically represented by pigs or water poultry.

Food industry is mainly located in south and east part of South Moravian Region (where the weather conditions for agriculture are best) and typical fields are meat processing (f.e. Tišnov - Steinhauser), processing of sterilized vegetables (f.e. Bzenec) or sugar factoring (f.e. Hrušovany and Jevišovkou).

Thanks to its temperatures, south part of South Moravian Region is also suitable for wine therefore Břeclav, Mikulov, Šatov, Velké Pavlovice and many other south moravian settlements are well known for their wine production. Last but not least is typical Czech field of food industry - brewing as South Moravian Region have 4 big breweries in Brno (Starobrna - member of Heineken group), Znojmo, Černá Hora and Vyškov and number craft breweries.

1.3.7. Logistic, storage and distribution points

Majority of storage and distribution points is in South Moravian Region located in close distance to motorways (D1, D2, D52) and the most typical example are storages and logistic points around Brno. One example for all could be CTPark Brno which has nearly 82 ha of area and 10 000 m² of storage space. Is located near Brno's city centre on the D1 motorway between Prague/Ostrava. Brno international airport and train station are just a few minutes' drive. Another similar examples from same developer are CTPark Modřice or CTPark Brno-South which are also located near important roads or railways.

Due to optimal position on transportation network, Brno is very popular option for logistic or storage facilities and developers are planning or building new areas in more peripheral position to Brno. Typical example is Prolongys Park Brno which is located 10 km away from Brno in village Syrovice but still has good transportation position as is located on D52 motorway. This park is currently under construction (also partly opened) and will have total area of 90 000 m² of storage space. Another planned facility Brno Airport Logistic Park is located right at Brno-Tuřany airport, where developer Panattoni plans to build facility with 105 000 m² of storage space.

³¹ Source: <http://moravskehospodarstvi.cz/article/ekonomika/jihomoravske-firmy-orientuji-svuj-export-zejmena-na-zeme-eu-pomaha-jim-k-tomu-konjunktura/>



1.4. Presentation of freight characteristics

1.4.1. Partners (market actors)

Active companies are often grouped within organizations of transporters. The purpose of these associations is to assist individual carriers in their justified requirements and needs in the field of freight transport development. These organizations also respond to changes in law, provide specialized advices, monitor traffic situation at different intervals, or possibly help with visa applications. These organizations operate usually across the country. For example, can be mentioned ČESMAD BOHEMIA, ŽESMAD, The Association of Forwarding and Logistics of the Czech Republic, The Transport Union (the Union of Employers and Businesses in Transport), ADSSF, Czech Logistics Association etc.

In the South Moravian Region, there is relatively a large number of transport companies. However, there is no publicly available database with the possibility of detailed comparison of individual companies. List of companies is than presents large and most visible companies.

Companies and their headquarters (sorted by name):

- ADOSA a.s., Rosice, Zastávecká 1030
- AGRO SERVIS CZ, spol. s r.o., Rajhradice, U Sýpky 1
- BEST TRANSPORT SPED, a.s., Brno-Černovice, Černovice, Hájecká 1068/14
- BODOS Czech Republic a.s., Boskovice, Mánesova 2266/1a
- BORS Břeclav a.s., Břeclav, Bratislavská 2284/26
- CARGO-HORTIM, spol. s r.o., Brno-jih, Horní Heršpice, Kšírova 616/242
- ČSAD Brno - Černovice, a.s., Brno-Černovice, Černovice, Hájecká 1068/14
- ČSAD Hodonín a.s., Hodonín, Brněnská 3883/48
- ČSAD Kyjov a.s., Kyjov, Nětčice, Boršovská 2228/5
- ČSAD Tišnov, spol. s r.o., Tišnov, Červený Mlýn 1538
- JAPO - transport s.r.o., Popůvky, Vintrovna 395/25
- JEREX, a.s., Brno-střed, Zábrdovice, Příkop 843/4
- ZOŠI TRANS, s.r.o., Nové Bránice 235

In the case of rail transport is also logic to mention companies that do not have headquarters in The South Moravian Region but are affiliate to transport in the region. List of companies, as in previous example, presents large and most visible companies.

- BOHEMIAKOMBI spol. s r. o., Praha 1, Opletalova 6 (also combined transport)
- ČD Cargo, a. s., Praha 7, Holešovice, Jankovcova 1569/2c
- LKW WALTER Internationale Transportorganisation AG, Wiener Neudorf Industriezentrum NÖ-Süd, StraÙe 14 (headquarters, affiliation with Terminal Brno, a. s.)
- Rail Cargo Logistics s.r.o., Brno-jih, Dolní Heršpice, Vídeňská 188/119d
- Rail Cargo Operator - CSKD s.r.o., Praha 3, Žižkov, Žerotínova 1132/34
- SPEDICA, s.r.o., Sokolov, Jednoty 1931

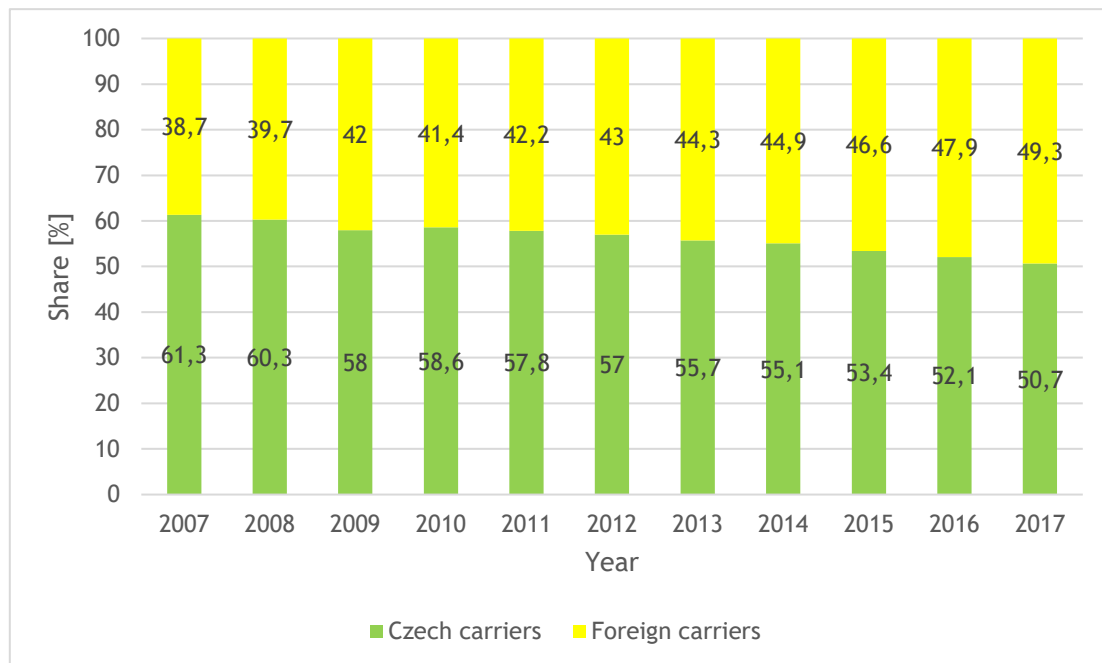


However, number of Czech transport companies (not just from The South Moravian Region) is in decline. This is currently caused by 3 major factors:

- Large part of market overtakes transport companies from south-eastern Europe (Bulgaria, Romania and other countries from the Balkan);
- In recent years the number of job seekers in transport sector has been decreasing significantly, employment of foreigners outside the EU is problematic due to visa procedure;
- Countries as France or Germany burden companies by demand of guaranteed salary for drivers (as is it for home companies).

This situation is shown, for example, by toll payment on Czech motorways. Since 2007, the share of Czech carriers has been steadily decreasing. Currently, the ratio of Czech carriers is approximately 50 %, but the tendency is still declining.

Figure 18 Share of toll payment



Source: ŘSD

1.4.2. Current major directions

In terms of conventional railway tracks, the Czech Republic is connected to the four main corridors (Eastern and Eastern Mediterranean, Baltic-Adriatic, Rhine-Danube and also North-Baltic). In this sense there is no possibility to stronger interconnections. High-speed trains can provide new connections, but their projection is planned currently for personal transport (see 2.2). Truck transport prevails in the west-east direction (the Balkan/Hungary - Germany). This is, beside other facts, due to the effort of transport companies to avoid the Austria, because freight rates in Czech Republic reach only half or even a third of Austrian rates.³²

³² https://www.mdcz.cz/getattachment/Dokumenty/Strategie/Koncepcie-nakladni-dopravy-pro-obdobi-2017-2023-s-v/MD_Koncepcie_nakladni_dopravy_w.pdf.aspx



1.4.3. Dimensions of the freight traffic

All results for dimensions of freight traffic are from Traffic census 2016³³ and from result we can say, that the busiest section of road in South Moravian Region is motorway D1 in part which is crossing Brno. Average traffic estimated in trucks per one workday is nearly 23 500 units. Also six another most busy sections of roads are on motorway D1 around Brno, and it can be said that biggest traffic is crossing of Brno and as the distance from Brno is rising, the intensity of traffic is slowly dropping, but still, it is estimated about 15 000 trucks per work day. Apart from motorway D1, among most busiest roads is another motorway D2 in section where is leaving Brno with about 14 300 trucks per day. Apart from motorways the most busiest road is I/52 in Brno which is working as feeding road for motorway D52 and traffic is there about 12 200 trucks per working day.

The results for road freight traffic could be concluded that with higher level of road and bigger settlement the road is crossing the higher is traffic. That is situation of all motorways in and near Brno, other roads are also most busy near Brno. Apart from Brno, we could also mention I/52 near Mikulov near Czech-Austrain border, I/40 between D2 and Břeclav, I/38 between Znojmo and Czech-Austrian border and II/385 between I/43 and Kuřim.

Informations about rail freight transport intensity are not well publicly accessible and only possible source with quasi usable informations are timetables of passenger trains. But from one diploma thesis³⁴ could be at least made estimations about total rail traffic intensity as author combines passenger and freight transport. From this informations could be said that the most frequented railway in South Moravian Region is 1st transport corridor in whole area of region with average daily traffic of 130 or more trains. Second transpit corridor is not so frequented as daily traffic is between 100 and 130 trains. It could be supposed that on these corridors is also the grossest share of freight transport, on the rest of rail ways in South Moravian Region is total traffic smaller and with focus put on cities these other rail ways are connecting it could be supposed that freight transport is not much frequent.

1.4.4. Presentation of loading devices

As in whole Czech Republic exists only 17 terminals, only one is located in South Moravian Region and it is Terminál Brno. In 2012, terminal was reconstructed and nowadays is owned by 2 rail cargo companies ČD Cargo a Rail Cargo Operator - CSKD. Due to location of Brno, it operates between two modes of transportation: road/railway and handles around 1200 trailers each month.³⁵ In 2003 gantry crane laying on the dock carried manipulation was put out of order and after reconstruction only loading devices present in Terminál Brno nowadays are two reach stacker wheel cranes Hyster with max load capacity of 45 tons.

1.4.5. Presentation of current technology (workflow and operation), capacity limits

Not available in South Moravian Region.

³³ Source: <http://scitani2016.rsd.cz/pages/informations/default.aspx>

³⁴ Source: <https://theses.cz/id/jfjgp3u/>

³⁵ Source: <http://terminalbrno.cz>



1.5. SWOT analysis

1.5.1. SWOT analysis of the system of freight transport

<i>Strengths</i>	<i>Weaknesses</i>
<ol style="list-style-type: none"> 1. Position on crossroads of two corridors 2. Transportation network is more or less build and still usable for transport 3. Favourable geomorphology conditions - no big mountains, no need for tunnels and other demanding constructions 4. Enough capacity of border crossings 5. Network of existing logistic centres 6. Relatively cheap fuels 7. Cheap fees for using transportation network 	<ol style="list-style-type: none"> 1. Not finished construction of motorways (mainly in North - South direction) 2. Insufficient capacity of railway in East - West direction 3. Possible problems with rail hub in Brno 4. Non-existing big logistic centrum
<i>Threats</i>	<i>Opportunities</i>
<ol style="list-style-type: none"> 1. Depleted capacity of transport roads and rails 2. Lack of rest areas on roads 3. Lack of truck and train drivers 	<ol style="list-style-type: none"> 1. Switch of freight transport from road to rail 2. Improvement of amenities for truck transport 3. Fastening the connection to neighboring countries

1.5.2. SWOT analysis of the framework conditions for the pilot action

<i>Strengths</i>	<i>Weaknesses</i>
1. ...	1. ...
2. ...	2. ...
3. ...	3. ...
<i>Threats</i>	<i>Opportunities</i>
1. ...	1. ...
2. ...	2. ...
3. ...	3. ...



2. ANALYSIS OF FREIGHT TRENDS (TIME RANGE 2030 / 2050)

2.1. Possible directions of developments

Nowadays, freight transport is concentrating on transit corridors. However, due to their heavy use by personal transport, it is becoming increasingly difficult to provide enough routes for freight trains. Heavily used railways (freight and personal transport both) currently leads to a requirement for fast freight trains (railway track must be quickly released in the given section). Rather maximization of existing track use can bring higher efficiency in freight transport (new business models, cooperation between customers, shipment grouping, technical standardization of infrastructure, telematic etc.).

The next step is strengthening places that are currently classified as bottlenecks. For the South Moravian Region is particularly important transport in the west-east direction. However, in this sense is The Region in fact notably limited in further steps (planning), because capacity of transport system depends both on the national infrastructure priorities and especially on bottlenecks in other regions (f. e. strengthening the section Choceň - Ústí nad Orlicí (-Česká Třebová) etc.).

2.2. Possible new connections

The new connections are feasible by construction of train high-speed infrastructure. Major directions quite copy conventional tracks.

- (Berlin-; Bruxelles, Paris) Dresden - Prague - Brno (-Bratislava, Budapest; Wien)
- Prague - Plzeň (-Bavaria)
- Prague - Hradec Králové - Wrocław (-Warszawa)
- (Italy-) Wien - Brno - Ostrava - Katowice (-Warszawa)

Nevertheless, this new infrastructure is not going to directly provide capacity for freight transport. High-speed trains are currently discussed and planned for personal transport thereupon the remaining capacity of the conventional track should be used freight trains. On the other side, it is not yet decided whether high-speed track will be used by used only by high-speed trains (inflexibility with regular trains). Only theoretically can be mentioned Danube-Oder-Elbe channel, which could develop water transport. However, this project does not have any definite plan or time schedule.

2.3. Terminating links (if any)

It is not expected that some of the directions will be interrupted in near future.



3. PRESENTATION OF PLANNED DEVELOPMENTS (SCREENING OF DOCUMENTS)

3.1. Identification and presentation of strategies and documents with relevance for spatial planning and infrastructure planning

In this chapter can be listed documents at different scale levels. These documents thus combine the interests of local governments, but also national interests. However, there are not listed general strategic documents (e.g. Strategie Brno 2050). These may also partly affect freight transport vision, but they do not aim primarily at freight transport because of their wide scope.

3.2. Analysis of contents of identified strategies and documents

The documents listed below are only selection of documents relating to freight transport strategies and vision. They are focused to both spatial planning and transport infrastructure issues.

National documents

- The Transport Policy of the Czech Republic for 2014-2020 with the Prospect of 2050
 - Generally formulated transport policy, strategy and vision. References to the legislation of the Czech Republic.
- Koncepce nákladní dopravy pro období 2017-2023 s výhledem do roku 2030 (available in Czech language)
 - It addresses the issues of insufficient railway capacity, the unfinished motorway network in the Czech Republic and also specify railway and road transport structures that should be finished in (near) future.
- Koncepce vodní dopravy pro období 2016 - 2023 (available in Czech language)
 - Water transport has a relatively low impact on the environment, and it is energy effective. Currently, however, using water transport is not very common. This potential is main idea of this document. It focuses on basic topics - maintenance of waterways, development of ports and wharfs, multimodal access etc. It is the first cohesive document on water transport.
- Koncepce letecké dopravy 2016-2020 (available in Czech language)
 - Analysis of the current situation in air transport (except freight transport). It directly defines the potential of airfreight transport.

And others.

Regional documents

- Studie Aglomeračního projektu brněnské příměstské železniční dopravy 2020 (available in Czech language)
 - This is comprehensive analytical document specially related to the Brno metropolitan area, nevertheless wider context is also included. Freight rail transport in document is solved, partly with respect to the new Brno railway station, partly due to the capacity of tracks.



- General dopravy Jihomoravského kraje and General krajských silnic Jihomoravského kraje (available in Czech language)
 - These are the basic documents relating to transport in the South Moravian Region. They contain an assessment of the current situation of transport infrastructure, include visions and outlooks for future (mainly in context of personal transport), propose solutions to transport development and transport infrastructure and emphasise priorities

3.3. Presentation of completed and ongoing projects and actions

- Electronic toll collection in the Czech Republic is currently in use for more than 1,400 km of roads, mainly motorways. From 1 January 2020 has been toll also extended to a further 868 km of I. class roads. Since 2020 has also been used (new) satellite technology.³⁶
- Other limitations for trucks are currently discussed in context of lower-class roads (including total driving closure).³⁷
- Currently, the change of voltage system on Czech railway is actively discussed. The aim is to install an alternating voltage of 25 kV throughout the Czech Republic, the northern part of the republic still operates under 3 kV DC voltage.³⁸
- Speeding up of railway connections includes two pilot projects in the South Moravian Region. In advanced phase (geodetic works) are section Brno - Přerov and Brno - Vranovice.³⁹
- Increased transport of wood or wood products caused by calamity of bark beetle is still continues. It is possible to estimate a similar trend for two following years. The government supposes to help with repair-damaged lower classes roads.⁴⁰
- The D1 motorway is still under reconstruction. Reconstruction will increase safety and especially ensure smooth flow of traffic.
- Completion of the D52 motorway as well as the D1 motorway (section Říkovice - Přerov) will alleviate the traffic burden of the surrounding municipalities. In the case of D1 (earlier named section), it is also expected to relieve traffic at the expense of D46 (section Vyškov - Olomouc).

³⁶ <https://www.mdcz.cz/Media/Media-a-tiskove-zpravy/Prehledne-Na-techto-silnicich-l-tridy-budou-od-l>

³⁷ Source: <https://ct24.ceskatelevize.cz/domaci/2938874-stat-chce-zakazat-sjezd-kamionu-na-silnice-ii-a-iii-trid-zvazuje-se-i-dalsi-omezeni>

³⁸ Source <https://www.mdcz.cz/Dokumenty/Drazni-doprava/Zeleznicni-infrastruktura/Koncepcie-prechodu-na-jednotnou-napajeci-soustavu-n>

³⁹ Source: <https://www.vlaky.net/zeleznice/spravy/7545-Sprava-zeleznic-vloni-nepolevila-v-modernizaci-zeleznicni-site-a-budov/>

⁴⁰ Source: <https://www.euro.cz/politika/na-opravy-komunikaci-po-kurovcove-tezbe-pujde-230-milionu-korun-oznamila-dostalova-1464382>



4. SPATIAL ASPECTS OF NODES IN TRANSNATIONAL TRANSPORT

4.1. Needs and requirements for improvement of node functions

- In the South Moravian Region is currently missing a large multimodal terminal that would be fully accessible for all transport companies (public terminal). In this sense, storage capacity for transporters is currently insufficient.
- The important element affecting the future of transportation (also nodality) in the region will be the relocation of The Brno Railway Station to the southern part of the city (variant “River”) from old town centre. The new station should respect the need for freight trains to pass through Brno and will be set aside specific lanes. Possible technical adjustments will be verified in this context also for others (related) stations - Brno-Židenice, Brno-Černovice, Brno-Maloměřice (marshalling yard of freight transport).⁴¹ Currently, freight trains do not have to pass through the Brno main railway station and use a branch cargo haul.
- The development of freight terminals must be linked to development of airfreight transport. At this moment, freight transport at the airport Brno-Tuřany exists, but its potential is significantly extensive. It is also possible to consider of building a freight siding. The D1 motorway and industrial zones are also close to the airport.

4.2. Process of node development (analysis of the processual dimension)

Many of introduced infrastructure projects have been discussed for more than 20 years, some even longer. Their construction, besides other things, is in many cases delayed due to disorganized law environment. This situation can be improved by the new Building Act, especially in cases of linear constructions (motorways etc.).⁴² The new Building Act is currently being commented on.⁴³ It is currently envisaged that the new Building Act could be in force in 2023.⁴⁴ This term is only expected and may change at any time. The mentioned infrastructure projects, due to their different nature, are at different stages of implementation. For this reason, it is very difficult to say when they fulfil the principles of nodality. Already mentioned example is The New Railway Station in Brno.

⁴¹ Source: <https://www.brno.cz/doprava/velky-mestsky-okruh/prestavba-zeleznicniho-uzlu-brno-europointbrno/historie-zub-europointbrno/>; <https://www.brno.cz/brno-aktualne/tiskovy-servis/tiskove-zpravy/a/zeleznicni-uzel-brno-ma-byt-u-reky-rozhodla-centralni-komise-ministerstva-dopravy/>

⁴² Source: <https://www.uur.cz/images/1-uzemni-planovani-a-stavebni-rad/konzultacni-stredisko/seminare/2017/prezentace/04-nsz-dopravni-stavby-md-Janecek.pdf>

⁴³ Source: <https://www.mmr.cz/cs/ostatni/web/novinky/na-potrebe-noveho-stavebniho-zakona-je-shoda,-prip>

⁴⁴ Source: <https://ct24.ceskatelevize.cz/domaci/3028274-ministerstvo-upravi-navrh-stavebniho-zakona-zachova-urady-na-urovni-obci>



4.3. Networking activities

In the case of the Czech Republic are highways and I. class roads state property. Administration, modernization and maintenance of these routes is provided by a state-established organization Road and Motorway Directorate of the Czech Republic (Ředitelství silnic a dálnic ČR, usually abbreviated as ŘSD). On the contrary II. and III. class roads are owned by individual regions and administer by their organizations. They also take care of its maintenance. Local roads are then in municipal administration. National railway infrastructure manager is "Railway Administration" (Správa železnic, usually abbreviated as SŽDC), which works nationwide. The planned infrastructure constructions for (freight) transport are in overwhelming superiority strategic projects of (inter)national importance. In this sense, the South Moravian region must communicate very intensively with its partners and their representatives. Successful interconnection of the system depends on cooperation in both the administrative steps (purchase of land etc.) and the construction itself (closures coordination).



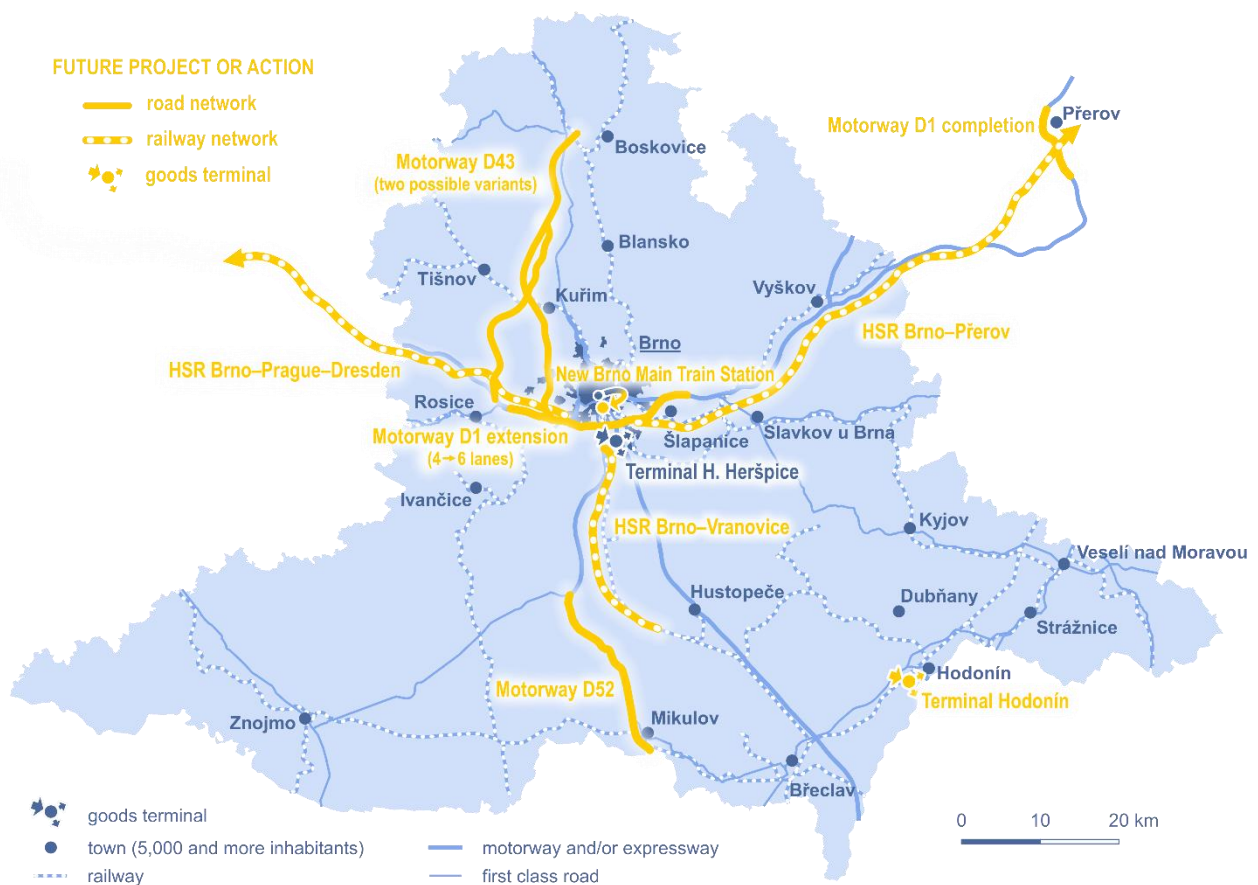
5. PRESENTATION OF NECESSARY ADDITIONAL DEVELOPMENTS

5.1. Identification of regional challenges and regional needs

The needs and challenges of a regional character in the South Moravian Region largely correspond to the needs of a (inter)national character. Especially with regard to restrictions, reconstruction (exclusions), possible developments and other actions, it is necessary to ensure no mutual blocking of (freight) modes of transport.

5.2. Maps with possible improvements

Figure 19 Future (freight) infrastructure projects



Source: custom made map

5.3. High speed lines for freight trains

Current situation with high speed lines for trains is not very optimistic as there are some plans but it is supposed that these new railways won't be freight only and they will be shared with passenger trains as there is in Czech Republic preference towards passenger transport. Therefore is problematic to say when and where these lines will be constructed.



But looking into conceptions about railways in Czech Republic, there high speed lines which are currently called “Rychlá spojení”⁴⁵ which are being planned as a part of cross-european railway network. Europe could be divided into three territories because west of Czech Republic, there are developed high speed lines, good connection whether east of Czech Republic the infrastructure is not so developed and not so frequently used. Czech Republic is “somewhere in the middle” as there is high density of rail network but without high speed connection and thus great potential for development.⁴⁶ Therefore high speed lines are tool how to connect Czech Republic into European transportation network and how to stay up to date in development of rail transport with neighbouring countries.

Rychlá spojení are new concept which combines high speed only lines modernization of current lines for higher speeds. Rychlá spojení are planned in three hierarchical levels as the top level is international connection between Germany (Berlin, Dresden) - Prague - Brno and from there either to Austria (Wien) or Poland (Warszaw) via Ostrava. Second level are national connection between regional capitals and the lowest level is aiming on connection on interregional connection in Czech Republic.

Great question is not when these high speed connection will be put into use but when their construction will start. First parts of high speed lines are planned to start being constructed in 2020´s and these will be located near Czech biggest cities - Prague and Brno. One possible section to be started among first sections is Brno - Vranovice, where is planned new high speed line which is in future planned to Břeclav (Czech-Austrian border) but from Vranovice to Břeclav is possible that there won´t be new high speed line but only modernisation of existing line. Second section with high probability of soon start of construction is high speed line from Prague to Ústí and Labem, where is also planned brand new line. Another planned “Rychlé spojení os”⁴⁷ between Brno and Přeřov with modernisation of existion railway which is insufficient for today need of transportation.⁴⁸

All these lines are planned to be finished until 2030 and rest of Rychlá spojení is planned with finished construction till 2050. The most important high speed line with this time horizon is connection between Prague and Brno but up today, there is not definite agreement where this new high speed line will be constructed as there are north and south variants of connection. Another high speed line with construction horizon of 2050 is connection between Přeřov and Ostrava which also planned as new high speed line.⁴⁹

5.4. Presentation of future capacity utilization and modal shift

As all these high speed connection are currently in the state of plans are not a single part of them started to be constructed is highly uncertain to estimate future capacity utilization and modal shift, especially for freight transport. Správa železnic (Czech railway administrator) presented some estimated but only for passenger transport and from their data is seems the most used high speed line will be “Rychlé spojení” no. 1 between Prague and Brno with estimated traffic of 70 000 persons per day in both directions. From Prague to Ústí and Labem and also from Přeřov to Ostrava estimated count with 50 000 passengers. After finishing all high speed connection in 2050, it is also estimated that connection travel times will be halved as Prague to Brno travel time will change from 2 hrs 32 mins to 1 hour. Similarly travel time between Ostrava to Brno will change from current 2 hrs 17 mins to 40 minutes.⁵⁰

⁴⁵ Rapid services

⁴⁶ Source: <https://www.sizi.cz/file.php?nid=14068&oid=5300673>

⁴⁷ Rapid services of axis

⁴⁸ Source: <https://www.mdcz.cz/getattachment/Media/Media-a-tiskove-zpravy/Ministr-Tok-Vysokorychlostni-trate-potrebuji-novy-MD-Program-rozvoje-rychlych-spojenu-v-CR.pdf.aspx>

⁴⁹ Source: <https://www.sizi.cz/file.php?nid=14068&oid=4665874>

⁵⁰ Source: http://www.top-expo.cz/domain/top-expo/files/smart-city/smart-city-2019/ted/prezentace/cech_radek.pdf



It is important to stress out that previous numbers are estimated of Czech rail operator and more precise information about capacity and modal shift are impossible to get as everything depends of the speed of construction of these high speed lines and changes in transportation preferences and patterns in some 10 to 30 years. But if we extrapolate current situation in freight transport we could suppose that road freight transport is at its peak and there is not so much space to increasing as main roads are on its maximum capacity therefore it could be supposed that some portion of freight transport will shift to railway. But until construction of high speed lines there is not so much space for growing of rail freight transport as also main corridors are nearly fully used.

5.5. Business model of new lines / developments

Similarly, as in previous subchapter, it is hard to say in this part of development of whole high speed lines network in Czech Republic but few things are for sure. Investor of their connection will be Czech Republic with possible usage of subsidy from European union. In planned cash flow of high speed lines construction there are annually needed 20 or more billions of CZK until some 2035 the till 2050 it will cost Czech Republic annually around 10 billions of CZK.⁵¹

Similar case is road connection which will be also financed by Czech Republic with help of European subsidy and the probability of cooperation between public and private sector in Public Private Partnership project is decreasing. Therefore, it could be supposed that vast majority of development both on road and railway will be financed and operated by public sector - Czech Republic via its organizations such as Správa železnic and Ředitelství silnic a dálnic (road administrator).

5.6. Improvement of regional and cross-border accessibility (opportunities provided by the rail sector)

Possible plans are very scarce as there is possibility of increasing capacity of connection to Austria and also to Slovakia and there are no more possible project which could be mentioned in this part of document.

5.7. Possible chronology of developments

Possible chronology of development is again hard to predict but as was said in previous subchapters possible development are high speed lines between Prague and Ústí and Labem, Brno - Vranovice and Brno. Přerov which are planned with finishing horizon in 2030. But it's hard to predict as majority of these plans is lacking completion of all legal actions (stabilization of corridors for these high speed lines in planning documentation and also further and more precise plans) which could bring significant delays as all steps of development planning are very lengthy in Czech Republic.

5.8. Possible pilot projects

Once again it is hard to find out any examples and if there are any, we must bring examples from neighbouring countries as there is currently no development in Czech Republic. One example could be finishing of construction of highway from Austria to Czech Republic - highway A5 which only need to finish several kilometres to provide complete highway connection between Wien to Czech borders. But on the Czech side, there are no signs of development as there are discussions on parameters of possible connection. Another example from foreign countries could be completations of road ring around capital cities of Slovakia

⁵¹ Source: ibidem



and Hungary which brings possibility of acceleration of (inter)national highway transportation as traffic is avoiding city centres and thus speed of transportation is increasing. Again, in Czech Republic there are no similar examples as road ring around Czech capital Prague is still to be finished and also South moravian capital Brno is lacking finished road ring.



6. STAKEHOLDER ANALYSIS AND STAKEHOLDER INVOLVEMENT

6.1. Identification of relevant stakeholders

6.1.1. For the implementation of pilot actions

<i>Level of influence and power</i>	+	<i>Keep satisfied</i>	<i>Key players</i>
		1. Rail transport operators 2. Road transport operators 3. Citizens 4. Producers 5. Customers	1. Private entrepreneurs 2. The South Moravian Region 3. The Czech Republic 4. Associations of rail and road transport operators - ŽESNAD, ČESMAD
		<i>Monitoring</i>	<i>Keep informed</i>
	-	1. Municipalities 2. Ministries 3. Chamber of commerce	1. The public 2. Media 3. Local producers 4. Local customers
	-		+
		<i>Level of interest and commitment</i>	

6.1.2. For the elaboration of Corridor Capitalisation Plans

<i>Level of influence and power</i>	+	<i>Keep satisfied</i>	<i>Key players</i>
		1. Rail transport operators 2. Road transport operators 3. Citizens 4. Producers 5. Customers	1. Ministry of Transport 2. The South Moravian Region 3. ...
		<i>Monitoring</i>	<i>Keep informed</i>
	-	1. Municipalities 2. Ministries 3. Chamber of commerce	1. The Public 2. Media 3. Local producers 4. Local customers
	-		+
		<i>Level of interest and commitment</i>	



6.2. Description of the approach towards stakeholder involvement during the elaboration of the regional analyse of challenges and needs

The most important stakeholder involved during the elaboration of the regional analyse of challenges and needs was the Assembly of the South Moravian Regionavian region. Other stakeholders are not directly influenced by South Moravian Regionavian region therefore they were not directly approached.



7. ANNEXES

No additional annexes are included.

7.1. Maps

7.2. Figures

7.3. Tables