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PhD THESIS

SUMMARY

**THE IMPORTANCE OF TRANSPORT IN
REGIONAL POLICY. CASE STUDY:
LOOKOUT OF MOTORWAY
INFRASTRUCTURE IN THE CENTRAL –
NORTH-WESTERN – WESTERN REGIONS.**

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Keywords: *regional development policy, development regions, transport policy, Pan-European corridors, Trans-European Transport Network, motorway infrastructure, impacts of the motorways, trend lines, economic indicators.*

Introduction

Regional policy, in countries like Romania, plays an important role in economic development. Its main purposes are: moderating territorial differences, providing employment, enhancing competitiveness, economic growth, improving standards of living and sustainable development.

Transport represents the nervous system, which connects the various segments of economy and the capacities of goods traffic between states. In lack of an organized transport system on a global level, there is no possibility to benefit in an efficient manner from the advantages of globalization.

Since the dawn of time road infrastructure permitted the circulation of people and goods. Following the introduction of motorways and the development of the automotive industry, road transport registered a remarkable burst and became the most important and accessible type of terrestrial transportation.¹

From the perspective of regional development policy we can affirm that at EU level the principle of solidarity with underdeveloped states and regions manifests itself, as the EU supported financial assistance, especially for underdeveloped regions. The main goal of the regional policy is to attenuate the many inequities which still exist today, on social, economic as well as other levels. These inequities can have a negative influence in the long run not only on the development of the EU as a whole but also on individual level as well.

The EU invested around 347 billion Euro between 2007-2013 in European regions. This investment was intended to serve as a contribution to the development of transport infrastructure, the prosperity of small and mid-sized businesses, a cleaner environment, but also to an improvement in education.

¹ Pencea, R., (2009), *The development of transports, a solution for the development of competitiveness and modernization of Romanian economics (Dezvoltarea transporturilor, soluție pentru creșterea competitivității și modernizarea economiei românești)*, Transport and Logistics Journal, 35th edition, pg. 28-30.

The PhD entitled “*The importance of transport in regional policy. Case study: lookout of motorway infrastructure in the Central – North-Western – Western regions*” presents a scientific research on regional development in the European Union in terms of transport with special focus on Romania, from the point of view of the economical impact of the transport infrastructure in the Central, North-Western and Western regions compared to the Southern and South-Western regions in the period between 2000-2010.

The thesis is divided in 4 chapters and follows a logical sequence of approach. In the first chapters, we present theoretical aspects on regional development, while in the second part of the thesis we elaborate a case study on the economical impact of motorways. In this manner we attempt to provide answers to a series of questions, such as: *What is the purpose of the regional development policy?, What are the roles and functions of the development regions?, How did transport policy evolve in the EU?, Which is the economical impact of the transport infrastructure on economic growth?, When will motorways currently under construction in Romania be completed?*

In order to accomplish the applicative approach, we have decided to select the following hypotheses as starting points:

- the value of economic indicators suggest an increasing tendency in regions, where there are finished motorway segments or motorways under construction;
- in the period between 2013-2025 there will be more motorways built in Romania than between 2001-2013;

We wish to mention the fact that a large part of the data covered in the PhD thesis were taken and offered by the Romanian National Company of Motorways and National Roads (RNCMNR), accessed in month May 2013. The data will be used in the whole thesis.

The motivation on which the choice of this PhD topic is based is that we wished to study the impact of road infrastructure on economic growth and regional development. In the EU, especially in Eastern Europe the vast majority of roads, motorways and railroads are undergoing reconstruction, which leads to a continuous upgrade. The goods are being transported faster and more efficiently, while passengers can enjoy a higher degree of mobility which is well suited to their needs. After the completion of motorways A1, A2, A3, A4 in Romania the transport of goods and passengers will intensify, which is an advantage not only for the country's infrastructure but the most important consequence of this improvement will be a boost for the local economy. Foreign investors will reach their destinations much faster, while the port of Constantza will be connected by motorway with larger cities and commercial centres in Europe.

The main objective of the present thesis is the analyses on a regional level of the economical advantages of motorways, with the help of economic indicators in the Central, North-Western and Western regions. We analysed the possibility of economic boost in regions where there are finished motorways and in case of regions where motorways are under construction or only planned. Moreover, we will analyse the expected length of motorways to be finalized in Romania in the period between 2013-2025.

With the aim of achieving the general objective a series of **specific objectives** stood for the integrant part of the thesis, as follows:

- presentation of the conceptual frame of the regional development policy;
- outlining the roles and functions of the development regions;
- presentation of the history of transport policy in the EU;
- presentation of the Trans-European Transport Networks and Pan-European corridors;
- elaboration of an empiric study in the Central, North-Western and Western regions in comparison with the Southern and South-Western regions in regards to the economical impact of motorway infrastructure;
- presentation of anticipated motorway construction works in the period between 2013-2025 in Romania;

For a correct progress of the elaboration process of the PhD thesis and in regards to reaching the above mentioned objectives, our research followed through different *theoretical and empirical approaches* to outline the impact of infrastructure upon economic growth and regional development. Throughout the thesis, there are several methods of approach used, on a theoretical and practical level: historical, comparative, case study, economic and impact indicators, forecast (using the trend lines) and statistic calculus method, just as the *One Sample T Test and One-Way Anova*.

The *historical method* was being used to highlight the evolution of regional development (chapter 1), but also the role and functions of the development regions (chapter 2). Furthermore, the method was used to outline the history of transport policy in the EU (chapter 3). *The analyses and comparative method* make out one of the most important methods in economic research and have been used in our research for studying the impact of motorways on the economy of the Central, North-Western and Western regions in comparison with the Southern and South-Western regions in the period between 2000-2010 (chapter 4).

To add more depth to the scientific study, we used the *case study method*. We compared different macroeconomic indicators on the level of Central - North-Western - Western, Southern and South-Western regions in order to find an answer to the question: *What is the impact of motorway development on macroeconomic transformations?* (chapter 4).

The most representative of all indicators are the following: occupancy rate, average net nominal monthly salary, GDP/inhabitant, distribution of active enterprises by activity of national economy and turnover.

Using statistic calculus formulas and macroeconomic indicators, we calculated how economic boost manifested itself in the Central - North-Western – Western, Southern and South-Western regions between the years 2000-2010.

A representative technique for forecast analyses is the *forecast method* using the trend lines. Using this method, we present a forecast regarding the construction of motorways in Romania between 2013-2025. While preparing the trend line, we are going to use a polynomial function (chapter 4).

Synthesis of chapter 1: The conceptual framework of regional development policy in the European Union

The first chapter mainly aims at reviewing regional policy, focussing on the regional development framework.

Regional policy represents an important expression of solidarity in the EU, being an internal development policy and part of the community policies. In 1957 regional policy was included in the Treaty of Rome, through which the European Economic Community was born. Beforehand, the signatory must agree that, among others, they are preoccupied with strengthening their economic cohesion and ensuring a harmonious development through the reduction of discrepancies between different regions and underdevelopment of underprivileged areas.

The Treaty of Rome already emphasized the fact that western European integration will not take place without the reduction of regional differences, which impair the free movement of goods, services, capital and persons. In that period regional issues did not get such attention on an European Community (EC) level, due to the fact that the equalization through applying the EU's four movement freedoms was considered helpful in the reduction of territorial differences.

Economical and social cohesion show up in the Single European Act, signed in 1986 by all member states of that time. Its aim was to promote the alignment of underprivileged regions with those developed and the reduction of disparities between different regions; a new dimension appears in the cohesion policy, specifically, an economical, social and territorial cohesion, adding more harmony and sustainability to the territorial development.²

² Hutkai, Zs, (2012), *Regional policy, a multilateral approach of the region as a notion (A regionalis politika, a regio fogalmanak tobboldalú megközelítése)*, scientific journal of the National University of Public Service in Budapest, No. 2012/1, pg. 1-3.

Territorial development as an individual public policy (even in political and administrative practice of the developed Western European countries) appears in the 1950s and 1960s and only becomes unanimously accepted some time later. In the first period, the territorial development policy focused on underdeveloped rural areas, which confronted major issues and with the help of interventions coordinated by the central government of each country they tried to temper the mobility of factors of production (first of all industrial factors) in the benefit of the targeted areas.

In the mentioned period the territorial development policies were not yet clearly defined, the responsibilities were in the hands of ministries with economical attributions (Ministries of Economics/Industry/Public Finance), although the first government institutions meant to provide the management of local development had already been set up.³

In the year 1962, the European Agricultural Orientation and Guarantee Fund had been founded, followed by the General Direction of Regional Policy of the European Commission, founded in 1968.

Starting with the 1970s, several areas, especially historic-industrial areas, were in a critical situation, due to structural changes in economy. The consequences of territorial tensions have manifested themselves on a European level, endangering the achievement of common policies. Within the European Commission, a question regarding the objectives imposed by the Treaty of Rome was raised, more precisely if the reduction of territorial differences can not be accomplished, in case these tasks will be attributed to governments of member states. It became necessary to elaborate regional development policies on community level.

After a long preparation process, a decision has been made at the meeting in Paris in 1972 regarding the elaboration of a common territorial development policy, which would benefit a Monetary and Economic Union. Moreover, a decision has been made in regards to the creation of a special finance fund, the European Regional Development Fund, established in 1975.

³ Szigeti, E. (ed.), (2006), *Territorial and settlement development (Terület-es településfejlesztési ismeretek)*, Hungarian Public Administration Institute, Budapest, pg. 7-8.

This policy, meant to lead to the reduction of territorial differences and bringing about a more harmonious territorial development was entitled **regional policy**. This is due to the fact that it focuses on different, geographically distinguishable territories, which differ from the national level, in that it comprises measures aimed at lowering differences between regions.⁴

In the 1980s the moment for a radical reform of the regional policy on a European level had come. The accession of Greece to the European Community in 1981 also contributed to this, along with the accession of Spain and Portugal in 1986. These lead to more noticeable internal territorial differences.

The Single European Act emphasized another important criteria for the creation of a common market: economical and social cohesion within the Community.⁵ This Act completes the Treaty of Rome by articles 130/A - 130/E, setting the regional policy on new fundaments. The Community declares that it takes actions which lead to the re-enforcement of its economical and social cohesion and the reduction of differences between regions and the development deficit of underdeveloped regions. The principles and instruments of this policy have also been clearly defined.

Through the enforcement of the act, regional policy has been included in the community policies, aiming to enforce the economical and social cohesion by reducing the differences between regions and lowering the deficit level of underdeveloped regions. The Treaty establishing the European Economic Community was supplemented with the title “Economical and Social Cohesion”, which appointed the following: for the promotion of a harmonious and comprehensive development the Community will organize and run its activity in such way that this will result in the enforcement of the economical and social cohesion. The Community strives to reduce the regional differences and the deficit level of underdeveloped regions.

Member states shall run and coordinate their economical policies in such manner, that the aforementioned objectives will be reached. Common policies have an objective right of deepening of the integration and creation of a stable market. Through the implementation of common policies, the EU intends to reach its general objectives.

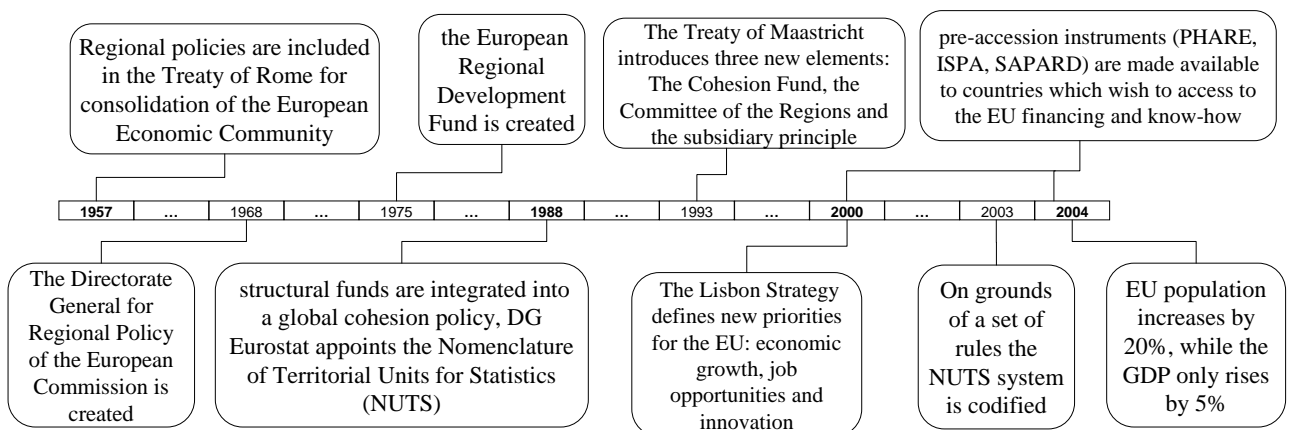
⁴ Szigeti, E. (ed.), (2006), *Territorial and settlement development (Terület-es településfejlesztési ismeretek)*, Hungarian Public Administration Institute, Budapest, pg. 7-8.

⁵ Idem.

For this purpose, the Community will sustain them by structural funds, with the help of the European Investment Bank and other existing financial means.⁶

The infrastructure of transport makes out one of the clearest examples for the objectives reached by means of the Structural Funds and the Cohesion Fund. The promotion of accessibility is vital for the consolidation of regional economies and to benefit the cohesion and competitiveness. EU policies in the domain of transport promote a steadfast mobility for people and goods, assuring efficiency and safety at the same time. There are a series of actions directed toward the trans-European transport networks, of which the most important are: road, railway, waterway, maritime, aerial, urban and multimodal transport.

Graphic 1: A summary of the history of development policy



Source: Adaptation by the author after professional literature.

⁶ Hutkai, Zs, (2012), *Regional policy, a multilateral approach of the region as a notion (A regionalis politika, a regio fogalmanak tobboldalú megközelítése)*, scientific journal of the National University of Public Service in Budapest, No. 2012/1, pg. 1-3.

Synthesis of chapter 2: The role and functions of the development regions

The second chapter provides a theoretical approach concerning the role and functions of the NUTS 2 development regions, options related to regions, generally speaking, various definitions and region types used in the regional approach of development.

The European Council defines the region as a territorial-administrative unit, having an elected authority for public administration and administration of financial measures. The region is a territorial-administrative unit, situated under the level of the state and having an elected authority in public administration and financial measures for sustaining this authority.⁷

The concept of region includes two important aspects: defining and delimiting a territory by different criteria, defining and delimiting a territory through a sub-stately administrative level.

Among the regions, there are also other criteria used when approaching economy from a spatial perspective, for example the area and the zone.⁸

Economical sciences operate with two major types of regions:

a) groups of states on a continuous territory (EU, NAFTA);

b) territorial, of sub-state level – the approach in the domain of regional development;

Professional literature⁹ on regional economics, operate with regions which reflect the internal structure of sub-state entities: homogeneous regions and functional regions (a special case in functional regions are the so-called “nodal regions”).

Both types of regions (groups of states and territorial, sub-state level) can be used as *regions for planning/programming* – in their case, the strongest component of the unit is defined by the territorial-administrative centre and the application of regional development policies and programmes targeting the named area.¹⁰

⁷ Pacesilă, M., (2004), *Regionalization in the states of the EU (Regionalizarea în statele Uniunii Europene)*, Bucharest Academy of Economic Studies – Administration and Public Management Journal, No. 3/2004, pg. 104-111.

⁸ Constantin, D.L., (2004), *Fundamental elements of regional economics (Elemente fundamentale de economie regională)*, ASE Publisher, Bucharest, pg. 14. (Constantin, D.L. quotes from Czamanski, S. (1973), *Regional Science Techniques in Practice*, Lexington Books, Toronto, London, 1992).

⁹ Hoover, E.M. & Giarratani, F., (1999), *An Introduction to Regional Economics*, West Virginia University, Morgantown, pg. 91-97 (Chapter 9).

¹⁰ Constantin, D. L., (s.a.), *Economics and regional policy (Economie și politici regionale) – support for course*, Alexandru Ioan Cuza University of Iași – Centre for European Studies, pg. 4-11, available at http://www.cse.uaic.ro/_fisiere/Documentare/Suporturi_curs/III_Economie_politici_regionale.pdf, accessed 27/11/2013.

Regional analyses based on the NUTS classification of the EU, more precisely analyses based on the development regions¹¹, distinguish two types of regions¹², administrative-normative, functional or analytical regions.

The term “region” has a wide application range. From the perspective of regional development and European integration one can speak about three region categories: regions within states, regions which include more states from a certain geographical region, cross-border regions, grouping geographical areas from one side and the other of borderlands, which are linked by tradition, language, religion and culture.¹³

In the EU we can find administrative and statistical (so called “development”) regions. The Regulation 1059/2003 stipulates that in member states, where no administrative units that can be classified by NUTS criterion can be found, these statistical regions will be aggregated without having administrative role. This was the case for Romania and Hungary. If the administrative regions can be classified by NUTS criterion, then they also have a statistic role for the EU, but this is not mandatory.

NUTS classification offers reference for the following:

- a) collection, development and harmonization of statistical data for EU regions;
- b) socio-economic analyses of the regions;
- c) funding framework for underdeveloped regions, which are eligible for structural funds;

¹¹ Pascariu, G., (2006), *Regional and urban analyses: tools for regional and spatial development (Analiză regională și urbană: instrumente ale dezvoltării regionale și spațiale)* - support for course, University for Architecture and Urbanism “Ion Mincu” Bucharest, pg. 4-5, available at http://www.cse.uaic.ro/_fisiere/Documentare/Suporturi_curs/III_Analiza_regionala_%20si_urbana.pdf, accessed 03/11/2013.

¹² Lengyel, I., (2003), *Competition and territorial development: competitiveness of territories in Hungary (Verseny es teruleti fejlodes: tersegek versenykepessege Magyarorszagon)*, JatePress Publisher, Szeged, pg. 71-93.

¹³ Babeș-Bolyai University- Faculty of Political, Administrative and Communication Sciences, (s.a.), *Analyses of regional policies (Analiza politicilor regionale) – support for course*, pg. 5, available at http://www.apubb.ro/wp-content/uploads/2011/02/Politici_regionale_Suport_de_curs.pdf, accessed 05/04/2012.

The objective of the NUTS classification is to provide equally comparable regions (entities)¹⁴.

In the EU the NUTS classification used for planning has the role of supporting consolidation of the economic unity of the Member States and reducing disparities between them. The NUTS classification is used for collection, compilation and dissemination of harmonized regional statistics.

In our country, the administrative territorial division includes 41 counties and the capital Bucharest, in correspondence with the NUTS 3 statistical level. Regarding the economic development, it should be more efficient if the country would be divided into a smaller number of development regions, formed by grouping counties with complementary development profiles. This restructuring means grouping counties and by Law 151/1998 there were 8 regions created (based on the second level of the territorial classification NUTS 2). It needs to be noted that the regions are efficient only through the voluntary cooperation of the counties in which they were formed.¹⁵ In Romania, developing regions are not administrative units and have no legal entity, which is the result of an agreement between the counties and local councils.

In addition to the EU's NUTS system there is only one similar classification in the world: in October 10, 2002 the Andean Community set for Bolivia, Colombia, Ecuador, Peru and Venezuela the "la Nomenclatura de las Unidades Territoriales Estadísticas de la Comunidad Andina (NUTE ANDINA)"¹⁶ This classification is used similarly to the EU NUTS classification.¹⁷

¹⁴ European Commission (2011), *Regions in the European Union — Nomenclature of territorial units for statistics NUTS 2010/EU-27*, Eurostat: Methodologies & Working papers, Luxembourg: Publications Office of the European Union, pg. 6-7.

¹⁵ European Commission & Romanian Government (1997), *Green Paper on regional development in Romania (Carta Verde a Dezvoltării Regionale în România)*, Phare programme, Bucharest, pg. 34.

¹⁶ Comunidad Andina, available at: <http://www.comunidadandina.org/normativa/dec/anexoDEC534.pdf>, <http://intranet.comunidadandina.org/Documentos/decisiones/DEC534.doc>, accessed 14/01/2014.

¹⁷ Comunidad Andina - Secretaria General (2003), *Estadísticas Andinas en Mapas de Acuerdo a la Nomenclatura de Unidades Territoriales Estadísticas*, available at <http://intranet.comunidadandina.org/documentos/dinformativos/sgdi564.pdf>, accessed 14/01/2014.

Synthesis of chapter 3: Transport policy in the European Union

In the third chapter the emphasis will be on highlighting the main evolutions concerning the history of the EU transport policy.

Transport and TEN are clearly defined in the base treaty¹⁸. They fall within the shared competence between the Union and the Member States.

In Common Transport Policy (CTP) objectives set out in the Treaties are to be followed. Clear conditions are compulsory, defining the parameters for a common internal market for transport. Transport infrastructure will be developed in the manner to ensure the creation of an area without internal frontiers, subsequently achieving the objectives of the EU.

A legal framework is provided for Trans-European Networks to be planned and for the allocation of funds on behalf of the member states. The Cohesion fund is appointed as a source of funding for projects that contribute to the attainment of the Trans-European transport infrastructure.

The transport represents an important area of development for the EU. The existence of an appropriate network infrastructure is essential for the establishment of a unique market. It connects remote areas with main European roads, causing a more balanced growth between Member States and also promotes the development of trade. Market opening in the Member States was essential for a more effective operation of the European Union. Therefore, the single market program called for the liberalization of transport and the principle of freedom to provide services and competition must prevail on the transport market.¹⁹

¹⁸ European Union (2010), *Consolidated versions of the Treaty of European Union and the Treaty on the functioning of the European Union. Charter of fundamental rights of the European Union*, Publications Office of the European Union: Luxembourg, pg. 85., available at http://europa.eu/pol/pdf/qc3209190roc_002.pdf, accessed 07/01/2014.

¹⁹ Szatmari, Z. & Vancsa, I. (2006), *The European Union transport policy and rail transport (Az Európai Unió közlekedéspolitikája és vasutközlekedése)* – Student's Scientific Circle, University of Technology and Economics of Budapest, pg. 3-26.

Common transport policy²⁰ contains the basic rules applicable to international transport within Member States. Founding member of the European Economic Community recognized early the importance of transport services.²¹ "In order to achieve the objectives" set out in Article 2 of the Treaty of Rome, the Community sought and was concentrating efforts for "the adoption of a common transport policy". Following the fundamental principles, the common transport policy was established by the Treaty of Rome, signed in 1957. Transport has a separate dedicated title in the Treaty, Title IV, Articles 74-84.

This provides common rules for transport in the Member States, the terms applicable to the carriers operating on their territory, as well as transport safety measures and ways to improve it, following the objectives of the Treaties.

Treaty of Rome did not reach the infrastructural basis of European transport policy.

In 1962 the first joint plan for motorways²² was established. Funding remains a task for the Member States.

In the 70s the main objective was transport market liberalization, increasing the role of this sector and starting to harmonize transport policy with regional policy.

A new era of the common transport policy began in June of 1985 when the European Commission published the White Paper on the completion of the internal market, which highlighted aspects of the transport market.

In the late 80s and early 90s important progresses in the liberalization and harmonization of transport policies were recorded. In the late 80s other issues on infrastructure development entered the discussion - the Trans-European Networks and the impact of transport on the environment.²³

²⁰ European Union (2010), *Consolidated versions of the Treaty of European Union and the Treaty on the functioning of the European Union. Charter of fundamental rights of the European Union*, Publications Office of the European Union: Luxembourg, pg. 85., available at http://europa.eu/pol/pdf/qc3209190roc_002.pdf, accessed 07/01/2014.

²¹ Zsolnay, T., (2004), *Transport in the European Union (Kozlekedes az Europai Unioban)*, Ministry of Foreign Affairs, Budapest, pg. 2.

²² Direction Generale des Transports – Direction Développement et Modernisation (1962), *Raport sur la situation de l'infrastructure et du parc des transports dans la Communauté*, Tome II, Routes et circulation routiere, available at University of Pittsburgh: <http://aei.pitt.edu/45286/>, accessed 29/12/2013.

²³ European Institute of Romania (2005), *Transport policy (Politica în Domeniul Transporturilor)*, MasterPrint Super Offset Publisher, Bucharest, pg. 1-2.

Within the EU, a rearrangement of the transport modes is becoming noticeable. Road- and air transport are showing important growth, while generating congestion. At the same time, the transport potential of railways and maritime transport on short routes remain insufficiently exploited. Thus, transport alternatives are being lost.

The EU should have and still has the aim to promoting the development of Trans-European Networks as a key element for the creation of the Internal Market and the consolidation of economic and social cohesion.

The construction of Trans-European Networks represents an important element for economic growth and workplace creation. This development includes the interconnection and interoperability of national networks, as well as the access to them.

As for achieving the objectives related to the free movement of goods, services, capital and persons, the EU has set out and developed Trans-European Transport Networks (the idea of TEN appeared at the end of the 1980s, in connection to the proposed Single Market). In the early 1990s, the idea of Pan-European corridors emerged. These are known within the EU as TEN-T.

Synthesis of chapter 4: Case study: The impact of motorway infrastructure on economic growth in the Central, North-Western and Western regions in comparison with the Southern and South-Western regions

Within the present thesis' case study, we have drawn up a comparative research concerning the development regions Central – North-Western – Western, versus the regions Southern and South-Western, from the perspective of the impact of motorway infrastructure on economy growth, throughout the time frame 2000-2010.

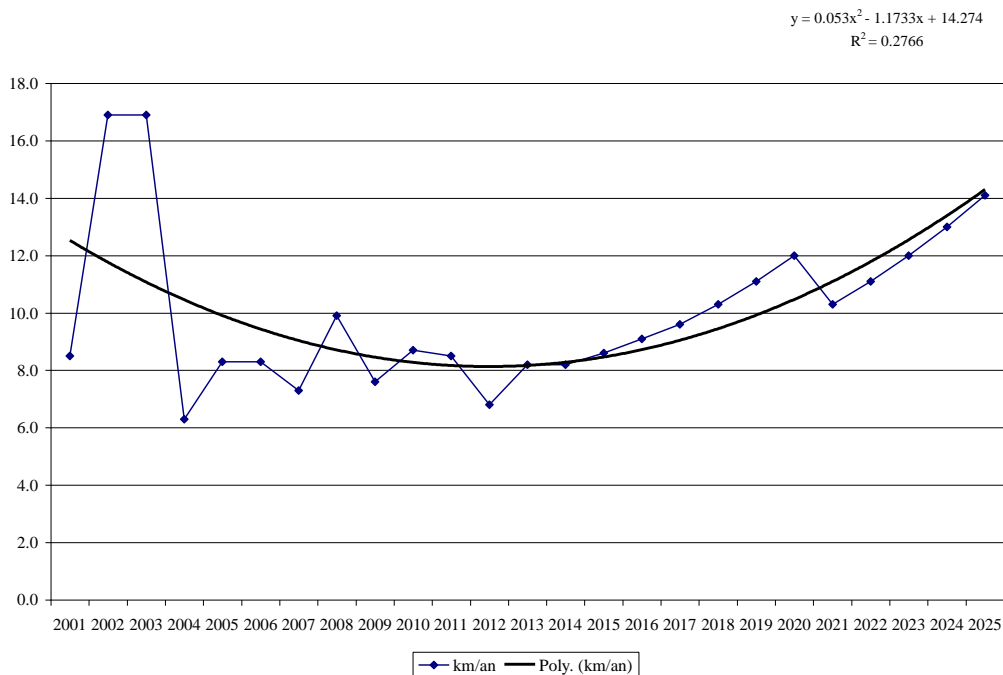
It is of vital importance that the motorways built in Romania be capable of hooking up to a well set up international network. Otherwise, it would be impossible to properly reap the economic benefits a motorway presents. It is common knowledge that Romania is a transit country within the European transport system, bridging Western European markets to those in the Ukraine, Russia, Asia and the Balkans. From this position, the country must profit, which is why it is important that Romania be able to provide conditions adequate for international trade and transit.

Our calculations and their findings provide proof that, if the EU finances the construction of the motorway, in Romania, approximately 10 km of motorway can be built in the space of a year (on one motorway section), while, if funding is provided by the national Government, we can expect 8 km of motorway to be built within the same interval (on one motorway section).

As shown by our findings, within the next period we analysed (2013-2025), 1159 km of new motorways will be built, with $1159 - 430,5 = 728,5$ km more than in the previous period (2001-2013), resulting in an increase by 169%.

Using the trend lines, we presented a scenario based on the assumption that the phenomena and conditions currently in existence will not be altered, and that the process will not be subject to outside influence. In other words, the conditions outside the construction process of the motorway system (planning, funding, administrative capacity) remain unchanged, excluding their deterioration or their improvement. We made a forecast regarding motorways that will be built in the future. We calculated this forecast using trend lines. This trend calculation enabled us to provide a more precise estimate of the future evolution of motorway construction (2013-2025).

Graphic 2: Estimate regarding motorway construction in Romania, during the timeframe 2001-2025, via the Polynomial trend line



Source: Adaptation by the author.

Currently (in the year 2014) from the perspective of the economic approach, there are two different currents worldwide concerning transport policies:

- 1) construction and development of transport infrastructure conditions economic development;
- 2) construction and development of transport infrastructure is poses risks regarding economic development, in that motorway construction may not guarantee economic growth;

In our view, a healthy transport infrastructure provides a lifeline for economic growth (as per option 1), because good infrastructure generates a rise in demand, creates new workplaces, contributes to increase the volume of foreign direct investments, etc.

In our analysis, we used the economic indicators of the Central, North-Western and Western regions, as compared to those of the Southern and South-Western regions, through the period 2000-2010. To calculate the results, we used version 19 of the SPSS statistics program.

The economic indicators used were:

- registered unemployed and unemployment rate;
- average net nominal monthly salary earnings by economic activities;
- regional gross domestic product;
- regional gross domestic product per inhabitant;
- distribution of active enterprises by activity of national economy;
- turnover from local units, by activity of national economy;
- tourists accommodation activity;

In the case of the analysed economic indicators, it can be proven that the regions with motorways or motorways under construction exhibit a more increased development level than regions without motorways.

Analysing the indicators used in the study, we were able to conclude that the Central, North-Western and Western regions provide the best values for most of the indicators (where motorway construction is under way), while the Southern region will only occupy the first place in the case of two indicators (where most of the motorways are already completed).

The period of economic and financial crisis in the new member states can, paradoxically, be perceived, in certain situations, as a trigger of progress. This statement is backed up by the need for „adaptation”, which precludes drawing up new policies and strategies meant to usher in evolution, such as the Common Transport Policy. The totality of efforts concentrated towards finding new solutions of restoring balance, harmonisation and alignment, eventually brings about economic growth.

Final conclusions and proposals

Harmonising infrastructure interests of new member states, with the intention of aligning them to the EU standards presently represents both a prerequisite and a very important “challenge”.

In our view, the construction of motorway infrastructure must benefit national economic performance. A well designed infrastructure is a necessary, but not a sufficient condition for providing efficiency increase of national economic activities, as it contributes directly and indirectly to ensuring macroeconomic stability. Thus, it presents itself as one of the most effective means of regional economic development. Also, it facilitates the connection between Romania and other European states. In this context, it is worth mentioning that the lack of a proper infrastructure can lead to economic imbalances.

Throughout the present thesis, some of the main goals were the evaluation of the economic benefits offered by motorways and forecasting the probable length of the motorways that will be completed in Romania in the period 2013-2025. The main hypotheses were:

- the value of economic indicators suggest an increasing tendency in regions, where there are finished motorway segments or motorways under construction;
- in the period between 2013-2025 there will be more motorways built in Romania than between 2001-2013;

The nodal point of this scientific approach was to provide answers to our hypotheses, which still attract interest, not only from economists, but also from common citizens of our country.

Considering the previously mentioned elements, the findings obtained through the application of the different testing methods (based on the research methods we enumerated earlier) can be summed up as follows:

- we provided an estimate (forecast) of future motorway evolution by means of the trend lines. This was meant to offer key reference points to subsequent planning. At the same time, we forecasted results expected in connection with the motorway construction in Romania in the period 2013-2025. Motorway construction makes up an essential pillar for economic growth of every EU economy and the construction of these networks in Romania based on past years' experience, requires a long time interval.
- both the One Sample T Test and the One-Way Anova significantly revealed that, in our analyses, that motorways are economically justified and that their economic utility can be demonstrated;
- the general conclusion that can be drawn following this analyses, is that completed (but only completed) motorways have a positive impact upon regional economy. Consequently, future strategies must be oriented towards the construction of new motorways.

Additional personal contributions, based on the findings of our argumentation, are as follows:

- the structuring of knowledge concerning the conceptual framework of the regional development policy and the EU transport policy, by consulting a vast bibliography, containing numerous articles and specialised studies, which allowed us to present the impact of motorways on economic growth;
- setting up an evolutive pathway concerning motorway construction in Romania;
- providing a comparative analyses of various economic indicators in different development regions;
- identifying a new “motorway-economy” relationship, in order to help prove the increased economic growth opportunity in the presence of motorway, as well as this role in sustainable development;
- new EU member states, including Romania, exhibit increases in motorway construction. However, in comparison with the EU average, there is still room for ample action;

In our view, motorways must be constructed along the main Trans-European and national routes, as well as the most economically relevant European roads. In the case of motorways, the proper transit and supply needs of international and transit traffic need to be taken into consideration and the country needs to reap economic benefits from this situation.

Based on these results, we consider it necessary to draw up a set of proposals regarding future motorway projects in Romania. Therefore, we attempt to provide an answer to the question: *How should the future motorway network in Romania be designed, in order to provide proper economic growth?*

In accordance with this context, we consider the following possible proposals (recommendations) useful. It is our belief that at least another five motorways and two connecting roads should be constructed, in order to provide a proper response to Romania's road traffic needs.

Our motorway proposals take into account the routes of the European roads which transit the country. These European roads are currently the most congested in Romania, with an additional rise in traffic values expected in the near future. The necessity of a rebalancing in road traffic distribution thus becomes abundantly clear.

In conclusion, we believe it would be necessary to construct at least 360 km (Lugoj – Drobeta-Turnu Severin – Craiova – Calafat) + 60 km (Timișoara – Moravița) + 56 km (București - Giurgiu) + 310 km (Focșani – Botoșani - Suceava – Siret) + 185 km (Bistrița – Vatra Dornei – Câmpulung Moldovenesc – Suceava) = 971 km of motorways in the near future, in order to provide faster, safer and more efficient road traffic in Romania.

Based on the results obtained from the case study, we estimate that between 2013 and 2025, approximately 1159 km of motorways should be built. This means that all our previously mentioned motorway proposals could be translated into reality.

Moreover, we believe that two connecting roads (2 x 2 lanes) between Craiova – A1 and Sebeș (A1) - Turda (A3).

Figure 1: **Our future motorway proposals in Romania**



Source: Adaptation by the author based on information provided by RNCMNR in February 2014.

Taking into account all these aspects, we must reiterate that the present thesis only represents a starting point in studying the impact of motorways on regional economy. Precise economic evaluations and impact studies can be carried out effectively only in the case of completed motorways.

As the regions we analysed do not have completed motorways linked to other national or international motorways, we are unable to carry out a precise analyses of their impact on regional economy.

We would also like to mention the possibility of expanding the analytic hypotheses of the present thesis, by including the indicators of other Romanian development regions within the research sample, or even regions of other EU member countries.

The final point of our research is marked by the highlighting of the main contributions to the professional literature (especially the European one) in this field, but also the limits found in the course of any research. Although the results obtained have a deep anchoring regarding Romania's motorways, we should also rest our attention on the limitations of the research, of which we will mention the difficulty in accessing the data regarding motorway construction, specifically, the RNCMNR database. The analyses of motorway impact on economy growth posed a real challenge we confronted.

We believe that proposing improvement options based on the economic analyses we created can significantly contribute to an increase in traffic, which, in its turn, would generate economy growth.

In this context, Romanian transport policy must adapt to the continuously dynamic requirements of EU economy and substantially serve the EU goals for sustainable social and economic development of 21st century Romania.

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