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Impacts of Transportation and Logistics on Economic Development of Select Balkan (Transition) States

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Abstract

Christian Lous Lange once stated that, "Modern techniques have torn down state frontiers, both economic and intellectual. The growth of means of transport has created a world market and an opportunity for division of labour embracing all the developed and most of the undeveloped states". A cursory perusal of the first and latest policy frameworks of transition countries reveals poor frameworks in transport network as one of the key challenges to national economic competitiveness, sustainable development initiatives, and broad-based uplifting.

This research work explores the impact of transport and logistics in the economic development of the selected Balkan countries while illustrating the factors involved in the efficient performance of transportation and logistics management. Transport infrastructure investment relates to economic growth.

Therefore, it is advisable to allocate sufficient funds to the sector. In developed countries, additional transportation investment has had little impact on the overall accessibility and often results in the change of business patterns and mode trends but not economic growth. However, lack of management information on the impact of high economic growth and equal access to energy demand results in a severe backlog in electricity-generating infrastructure. Similar challenges face the freight logistics because of lack of management information. Focus has been on building a sustainable competitive advantage through logistics as a means of differentiation from competition.

Based on the case studies, we used a comparative approach that employed ANOVA and Regression statistical analysis techniques to establish the relationships among different variables studied. The key transport related variables studied are energy, environment, and final consumption of households, which were found to directly relate with the impact of transportation on economic development in the Balkan countries.

The study determined the impact of transport infrastructure on the economic development of the transition countries (Albania, Bulgaria, Serbia, Croatia, Kosovo, Macedonia and Montenegro). We considered the final consumption of households on transport for these countries from 2004 to 2013, and corresponding years', 'C-values', 'ENE' and 'ENV' were also compared. The data collected was analysed using SPSS (Version 21) software. We projected data from the 10-year period using a 'linear trend' for the 2014 to 2030 and the impact evaluated using the C-values, ENE and ENV. Existence of significantly high correlation among these variables implies that growth of transportation facilities improves the economic development of the transition countries.

All these aspects validate the results and enlighten on the impact of transportation on the economic development of these nations. The outcomes from this research could serve as a tool when drafting national long-term strategies as well as informing decision-makers of the strong relationship between economic development and the level of development of transport infrastructure.

Key words: Transport, Balkan countries, strategies, SPSS analysis, logistics operations, economic development

Zusammenfassung

Christian Lous Lange sagte einst, dass “Die moderne Technik hat Staatsgrenzen, sowohl wirtschaftlich als auch geistig, abgebaut. Die Zunahme der Bedeutung des Transports hat einen eigenen Weltmarkt und eine Möglichkeit der Arbeitsteilung entwickelt, entwickelte und unentwickelte Staaten umfassend“. Eine überblicksmäßige Durchsicht der ersten und aktuellen politischen Rahmenbedingungen von Transformationsländern zeigt an, dass schlechte Voraussetzungen im Transport- bzw. Verkehrsnetzwerk der betroffenen Staaten einige der größten Herausforderungen für die nationale Wettbewerbsfähigkeit, die nachhaltigen Nachhaltigkeitsinitiativen und die Aufwertung auf breiter Basis. Diese Forschungsarbeit untersucht den Einfluss und die Bedeutung von Transport und Logistik auf die wirtschaftliche Entwicklung von ausgewählten Balkanstaaten. Zusätzlich werden wichtige Einflussfaktoren in der effizienten Leistung von Transport-und-Logistik-Management dargestellt.

Investitionen in die Verkehrsinfrastruktur korrelieren mit wirtschaftlichem Wachstum. Deshalb ist es ratsam, diesem Sektor ausreichende Mittel zuzuordnen. In Industriestaaten haben zusätzliche Verkehrsinvestitionen wenig Einfluss auf die gesamte Zugänglichkeit gezeigt. Oft resultierten daraus Änderungen in Geschäftsmuster und –trends, nicht aber Wirtschaftswachstum. Doch fehlende Managementinformationen über die Auswirkungen des hohen Wirtschaftswachstums und den gleichen Zugang zu Energiebedarf führt zu einem schweren Nachholbedarf in der Energieerzeugungsinfrastruktur. Der Fokus lag auf den Aufbau eines nachhaltigen Wettbewerbsvorsprungs durch die Logistik als Mittel der Differenzierung vom Wettbewerb.

Basierend auf Fallstudien wurde für diese Forschungsarbeit ein vergleichender Ansatz gewählt. Es wurde ANOVA und die Technik der statistischen Regression gewählt, um Zusammenhänge zwischen untersuchten Variablen aufzufinden. Die Schlüsselvariablen, die in Relation zum Transport gesetzt wurden, sind Energie, Umwelt und der Endverbrauch von Haushalten. Diese Variablen hängen unmittelbar mit dem Einfluss von Transport auf die Wirtschaftsentwicklung in Balkanstaaten zusammen.

Diese Studie ermittelt den Einfluss der Verkehrsinfrastruktur auf die Wirtschaftsentwicklung in ausgewählten Transformationsländern (Albanien, Bulgarien, Serbien, Kroatien, Kosovo, Mazedonien und Montenegro). Für die Studie wurde der Endverbrauch aller Haushalte in diesen Ländern von 2004 bis 2013 herangezogen. Vergleichend dazu wurden die Daten der entsprechenden Jahre von „C-Values“, „ENE“ und „ENV“ aufgenommen. Die Analyse der relevanten Daten wurde mit der Software SPSS (Version 21) durchgeführt. Es werden Daten aus dem Zeitraum von 10 Jahren und die evaluierten Einflussfaktoren, durch Anwendung von C-Values, ENE und ENV, mit einem „linearen Trend“ von 2014 bis 2030 projiziert. Signifikant hohe Korrelationen zwischen diesen Variablen unterlegen, dass der Ausbau der Verkehrsinfrastruktur die Wirtschaftsentwicklung von Transformationsländern begünstigt.

All die Aspekte, die die Ergebnisse validieren, sollen den Einfluss des Transports auf die Wirtschaftsentwicklung dieser Nationen beleuchten. Die Ergebnisse dieser Forschungsarbeit können als Grundlage bei der Aufsetzung von nationalen langfristigen Strategien verwendet werden. Sie können aber auch als Informationsgrundlagen für Entscheidungsträger hinsichtlich des starken Zusammenhangs zwischen Wirtschaftswachstum und dem Entwicklungsstand der Verkehrsinfrastruktur dienen.

Schlüsselwörter: Transport, Balkanländer, Strategien, SPSS Analysis, Logistik, Wirtschaftswachstum

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ACRONYMS AND ABBREVIATIONS

ACAA	-Albanian Civil Aviation Authority
AE	- Adriatic Euro Region
AII	- Adriatic-Ionian Initiative
AM	- Airspace Management
ATC	- Air Traffic Control
ATM	- Air Traffic Management
ATP	- Autonomous Trade Preference
BAC	- Business Advisory Council
CARDS	- Community Assistance for Reconstruction, Development and Stabilization
CBK	- Central Bank of Kosovo
CEE	- Central and Eastern Europe
CEFTA	- Central European Free Trade Agreement
CRTN	- Core Regional Transport Network
C-values	- Final consumption of Households for Transport
DG	- Directorate-General
EBRD	- European Bank for Reconstruction and Development
EC	- European Community
ECAA	- European Common Aviation Area Agreement
ECON	- Level of economic impact of transport
EIB	- European Investment Bank
ENE	- Energy Taxes (in %),
ENV	- Environmental Taxes (in percentage of total taxation)
ERTMS	- European Rail Traffic Management System‘ENE’ and ‘ENV’.
EU	- European Union
EULEX	- European Union Rule of Law Mission in Kosovo

FDI	- Foreign Direct Investment
FYROM	- Former Yugoslav Republic of Macedonia
GDP	- Gross Domestic Product
GOK	- Government of Kosovo
IBM	- Integrated Border Management
ICT	- Information and Communication Technologies
ITS	- Intelligent Transport Systems
IFI	- International Financial Institution
IIWB	- Invest in the Western Balkans
IPA	- Instrument for Pre-Accession Assistance
IWW	- Inland Waterways
JIT	- Just in Time
KCAA	- Kosovo Civil Aviation Authority
KEK	- Kosovo Energy Corporation
KRA	- Kosovo Road Administration
MDG	- Millennium Development Goals
MFN	- Most Favoured Nation
MOIK	- Ministry of Infrastructure (Kosovo)
MoU	- Memorandum of Understanding
NATO	- North Atlantic Treaty Organization
NEWEN	- Netherlands and Western Balkans Environmental Network
NSI	- National Statistical Institute
PMOU	- Paris Memorandum of Understanding
PPI	- Preliminary Project Idea
PPP	- Public-Private Partnership
RAMS	- Road Asset Management System
RCC	- Regional Cooperation Council
RFID	- Radio frequency identification
SAA	- Stabilization and Association Agreement
SAP	- Stabilization and Association Process
SCM	- Supply Chain Management
SEE-FAB	- Functional Airspace Block for South East Europe
SEETO	- South East Europe Transport Observatory
SPSS	- Statistical Package for the Social Sciences
SFR	- Socialist Federal Republic
SIDA	- Swedish International Development Cooperation Agency
SOK	- Statistical agency of Kosovo
TEN-T	- Trans-European Transport Network
TSI	- Technical Specifications for Interoperability
TTFSE	- Trade and Transport Facilitation in Southeast Europe
UGB	- Urban Growth Boundaries
UN	- United Nations
UNDP	- United Nations Development Program
UNECE	- United Nations Economic Commission for Europe
UNEP/MAP	- United Nations Environmental Programme / Mediterranean Action Plan
UNMIK	- United Nations Interim Administration Mission in Kosovo
USSR	- Union of Soviet Socialist Republics
WTO	- World Trade Organization
ZEV	- Zero Emission Vehicles

CHAPTER 1

1.0 INTRODUCTION

1.1 Background of the study

Western Balkans has been experiencing a technique of change in the perspective of possible promotion to the European Union [EU]. The Western Balkans comprise of the states that developed after the breakdown of the Socialist Federal Republic of Yugoslavia [SFR Yugoslavia], with the special case of Slovenia, which entered the EU in 2004, and the expansion of Albania. With regard to transport, countries to the west of the Balkans either received greater budgetary allocations following political events of the 1990s (countries of the former Yugoslavia). Alternatively, these countries may have applied a free noninterventionist policy (e.g. Albania) which had limited significant interrelations with neighbouring Balkan states. The academic, political, and topographical intricacies of the locale render the Western Balkans an interesting instance of the provincial transport joining and possible EU promotion.

This work intends to acquaint the onlooker with the present state of transport and base improvement in the Western Balkans as well as investigating the tests that the aforementioned countries confront in a bid to shape stronger transport connects. In the light of the aforementioned tests, particular strategy proposals are stated.

I expected them to contribute towards improving the transportation service of the Balkan countries.Under the section on economics, overall tests (fringe intersections and absence of interethnic collaboration) are broken down primarily, given that they influence the transport system in its total. This prepares for investigations of every particular transport sub-sector (air, way, rail, sea, inland conduits). Undoubtedly, the report ends up with various transport arrangement proposals, which I introduced dependently upon the past transport analysis.

The European Union has collected an advancing part in the district, since the early 2000s. The extents that clash avoidance, emergency administration, recovery, and venture, activities are concerned. The EU has donated about 6 billion Euros in the 2000-5 periods; accordingly, the EU is as of now, by a wide margin, the district's "best critical actor." Likewise, it is noteworthy that many EU partner states (for example Italy, Romania, Bulgaria, Greece and Slovenia) revel in close land closeness in any case, additionally, normal authentic and social ties, which build their investment in the locale's remaking ventures.

Finally, the EU is investing in building a solitary, multimodal trans-European transport system [ten-T] over the European mainland, which will tie seamlessly with the South Eastern Europe Core Regional Transport Network [core Network], presently improved in the Western Balkan district under EU uphold. Subsequently, an examination of the Western Balkans transport area is inadequate without a nearby study of the EU's part of the district.

Examined in general, the Western Balkans has a huge undertaking in the field of transportation foundation. The countries that rose up out of the disintegration of Yugoslavia need to restore and develop the transport connections that tied them together after the annihilation of the Yugoslav Wars. Albania, additionally, should improve tracks with its neighbours, on the result of the comrade administration's noninterventionist arrangements. In the meantime, the whole locale should concentrate on the transport systems' modernization process.

The Cold War years, coupled with the technique of Yugoslavia's disintegration, handed down an old-fashioned transport arrangement, which has a mess of "making for lost time", to do before it can start to hope to measure up with EU measures. Finally, the imagined transportation system will not just consider

a mixture of security, satisfactoriness, and natural issues, and yet join itself with the more extensive, EU transportation tracks. Along these lines, the growth of an incorporated transport system is a venture that needs watchful arranging, plentiful financing and constantly checking that should be carried out to completion.Area wide transportation level constitutes an extraordinary opportunity: if correlations between current trades levels in the Western Balkans and those after the disintegration of the Yugoslav state has made the necessary conclusion.

Consequently, there is presently a significant space for development. The nearby vicinity of the Western Balkan countries not primarily to each other and yet to paramount exchange tracks towards the more excellent Mediterranean, European and Asian locale, in consolidation with the way that transportation parts are commanded by economies of scale, infer that genuine ventures in such divisions are liable to prepare noteworthy monetary additions in the long run. In this way, from the perspective of foundation growth, the Western Balkans today constitutes both a one of a kind opportunity and a significant test.

1.2 Problem Statement

Infrastructure plays a central role in developing countries, both economically and socially. The positive relationship between infrastructure and economic growth has been widely disseminated and analysed. Norman and Kraft (2009) stated that, with some improvement in the provision of infrastructure, we expect to find progress in the economy as a result of better connectivity, reduced transportation costs and improvements in the supply chain in general.

However, the infrastructure also has a significant impact on social development, although some area policies do not recognize and explore this relationship properly.

The same series above provides conclusions that "the basic infrastructure and the efficient provision of services vehicle infrastructure are territorial. Therefore, they are economic and social development because they integrate and reticulate the territory, make it accessible from the outside and allow their people to connect with the environment, services as well give it critical to the production and development of conditions and quality of life of people.

Infrastructure, therefore, not only increase competitiveness and reduces production costs, thereby expanding the activity commercial, private investment and capital accumulation, but also facilitates social development most disadvantaged regions economically and socially.

At the regional level, the development of a coordinated infrastructure, allows not only a development in the provision of infrastructure services, but also promotes political integration and social cooperation between countries, helping to meet some shortfall in the provisions of certain natural resources that some countries may register.

Moreover, adequate supply of works of infrastructure and the efficient provision of related services promote the development of competitive national and regional benefits as well as a greater degree of specialization. The results of proper infrastructure development lead to economic growth and provide the conditions for economic and social development, by way of improvements in factor productivity and competitiveness of the economy (Banister & Berechman, 2001).

Transport as a driving force linked to the previous point for developing countries, transport services also have a central role economic growth of the economies. Thus allowing the movement of people, raw materials and finished products through transport networks designed to comply with offices in a timely manner at the lowest cost at the local, national or international level. It did not happen to oil and subsequently returned to lower ranks; the onset of the crisis reaffirmed the importance of economic costs of transportation and

logistics as a way to keep competitiveness of economies (Hub, 2008).

While it is important to increase the margins of international competition, should not leave out analysis of the internal flights and transport facilitation traditional problems transport, as these are important sources of cost overruns and transportation logistics.

When troubleshooting these problems, it can result in significant cost savings in the transport of exported goods. On the other hand, internal productivity improves the economy thereby lowering the costs for late paying citizens. This has a social impact especially among the lowest income sectors (Kaltschmitt, 2007).

The reason for this, among other factors, seems to be the duplication of functions and, in some cases at the open competition between state agencies, which affects the efficiency of public intervention and private proposal.

There are many cases in Latin America, where the ministry of infrastructure or charge of public works infrastructure design, exists independently of transport, as if the infrastructure and transport services that make use of it, could exist as independent. One wonders if the operation of the latter does not generate changes in demand for infrastructure, or externalities in the economic and social development of the nation (Kegelmann 2010).

If the above, it adds a ministry of planning that analyses regional development agency and a promotion of private investment, it is clear that in such bureaucratic complexity, coherence sectoral policy and, above all, major development issues can be easily relegated to second place and lost in multiple product delays contingency policies prevailing national at the time.

However, the simple creation of a ministry public works and transportation does not solve the problem, if your establishment is not inserted into a true plan of integration of both sectors, through a redesign of the regulations and how it is structured and organized as a State (Ministry of Trade and Industry 2011).

The transport operation is common to observe a multitude of policies and standards that regulate and improve the various modes of transport, but without a systemic and integrative granted its real consistency and enables regulation and control (Norman & Kraft, 2009).

Therefore, State participation is necessary for the proper and harmonious development of the area, whether Norman and regulating each mode transportation, encouraging modal complementary and competition between modes, planning the future development so as to have the tools and infrastructure logistics needed to promote economic development in a sustainable environment.

The absence of specific policies in promoting capacity of the sector in many our countries is another problem. One reason for this may lie precisely in the lack of integration of policies that address the problems, loses sight of the whole, neglecting regulatory issues and work to support the development of the area (Institute for Spatial Planning, 2004).

The Balkan countries that constitute the aforementioned states that rose up out of the ancient socialist Yugoslavia, incorporating Croatia, Bosnia-Herzegovina, the former FYROM or the Yugoslav Republic of Macedonia, Kosovo, Serbia, and Montenegro (which pronounced freedom from Serbia on February of 2008) and their needs distinguished to date by 65 states, incorporating the United States.

Five of the European Union states, incorporating Greece, had not distinguished Kosovo's autonomy), power with Slovenia and without Albania, which made it to the EU in the year 2004. The former Yugoslav republics profited from a sensibly large amount of investment interconnectedness, that cut off by the occasions of the 90s cut off, while Albania throughout the Cold War sought after an autonomous and noninterventionist arrangement, which blocked any generous exchange interfaces with its neighbours in the Balkans.

1.3 Purpose of the study

The overall goal of the work is to examine the concept of transportation, and logistics impact of economic developments in a holistic context. This work focuses on the transition countries Albania, Bulgaria, Montenegro, Croatia, Serbia, Kosovo, and Macedonia. The main goal of this thesis is to develop a new formula to calculate the economic impacts of transport in the Western Balkan countries. The most well known inspiration for contemplating investment advancement issues is as a reaction to neighbourhood concerns about inimical effects of proposed ventures, or as a variable in venture standing or choice. Their utilization of advertising purposes to satisfy natural results that are necessities is not healthy.

The crucial reason for this study is the recognition that there are some distinctive purposes for open bureaus to be assessing budgetary growth ways. Relying on the study cause or problem to at hand, the type of research and appropriate strategy may be distinctive. In this manner, the talk of accessible dissection systems arranged based based on the distinctive inspirations for leading these thoughts over.

Table 1 Owen prepared Source: Transforming the Western Balkans (Centre for Strategic and International Studies)

TRANSPORT SECTOR BUDGET(year 2000)		
1 Bulgarian Lev = 0.69 United States Dollar		
ITEM	COST (IN LEV)	COST (IN $)
Transport	2,000,000.00	1,380,000.00
Incomes	39,802,000.30	27,463,380.21
Outcomes	77,634,000.50	53,567,460.35
Subsidiary	27,946,000.00	19,282,740.00

There are many distinctive routes to view and measure budgetary infrastructure influences. The proper measures depend to a limited extent on the motivation behind the research (e.g., for profit takes the examination, for arranging, for government funded training, or for post-venture assessment), and the sort of undertaking and affect range.

One of the objectives of this study is to encourage specialists grasp how to select fitting strategies to answer particular researches regarding the budgetary increase effects of transportation ventures. Along these lines, the discourse of earlier research in the literary works composed by the motivation behind the study. There are four categories of reason for mulling over monetary advancement sways. They are:

1) Forecasting of needed effects of proposed undertakings for speculation choice making,

2) Planning and administrative study of proposed undertakings (counting environmental effect reports),

3) Public instruction about the present budgetary quality or part of an existing office; and

4) Evaluation of the real effects of past (finished) ventures

1.4 Aims & Objectives

Although the aggregated Western Balkan countries, transportation vision for the Western Balkans is developed. Concisely, this does not infer an elevated level of homogeneity.

It was obvious that the first stage for an operational Balkan transport system might require the inversion of harm created throughout the 1990s. This got a double objective. To start with, it connoted the restoration

of annihilated transportation interfaces inside every state and around distinctive locales of every nation. Second, it included the encouraging of local collaboration and a significant decrease in the overall result of the transportation factors between ethnic groups as the overall goal is to improve a working transportation arrangement.

A supplemental issue that ought to be tended to for the modernization of existing transport interfaces. Inexpertly developed or missing streets and railroad systems regularly torment transportation in the Western Balkans. Out of date systems, which have not been raised to-date since their development during the past decade, constitute a snag to any endeavours in a transport mix. System modernization is to some extent a guarantee that security, security instruments are solidly set up, and achieving livable development is possible without further environmental debasement.

Altogether, the primary focus regarding transportation basis is the infrastructure of a modernized, useful transportation system which, with the support of the global neighbourhood, will seamlessly interface the Western Balkan countries inside their particular district, and additionally with neighbouring areas, and which will manufacture the ability to fulfil future exchange requests. This system will along these lines give an impetus for financial infrastructure and improve the locale's political solidness and security.

Aims and objectives:

1) To understand the importance of transport and logistics in the development of a country
2) To illustrate the factors involved in the efficient performance of transportation and logistics management.
3) To understand the effect of transport and logistics on economic developments
4) To analyse the transition countries (Albania, Bulgaria, Montenegro, Croatia, Serbia, Kosovo and Macedonia) regarding the transport and logistics operations and their impact on the economy.
5) To study the impacts of using C-values, ENE and ENV in discerning the existence of high correlations among these variables. That is, the growth of transportation infrastructure improves the economic development of transition countries.
6) To compare the transportation operations of different countries and the economic performance

1.5 Research Questions

The following research questions guided the study:

1) What are the influences of logistics and transportation in the economic world?
2) Which are the various functions and features of the supply chain for efficient management of logistics in the transport industry?
3) How important is the transport and logistics for the development of the transition countries (Albania, Bulgaria, Montenegro, Serbia, Croatia, Kosovo and Macedonia)?
4) Influence automation road transports economic developments Southern Europe (western Balkans countries).

1.6 Scope and Future Studies

This work specifically responds to future aspects in logistics and transportation industry and the influence on the economies of the Balkan states. The research will also enlighten on the operations and functions of logistics and transportation management in the economic development in these countries. The main aim of the study is to access a much-needed bridge between transportation and economic development. The outcomes will be significant to scholars interested in economics, transport and development research,

policy-makers and the public in general towards understanding the linkage between transport and economic development.

The work examines transportation interactions with employment and income levels, surveying some policies installed to capitalize on the socio-economic effects of transport infrastructure locally and regionally, and analyse the result of advances in transport technologies in future development. Partly, due to the general liberalization of markets, there have been major changes in the institutional environment with a provided transportation. These changes inevitably affect wider economic systems and development although in turn these changes influence transportation networks.

We developed this work from a variety of themes and the contributors has adopted and implemented a wide range of academic approaches in their analyses. In the longer term, radically diverse freight transport outlined alternatives. In addition, research, development, and implementation will be very considerable. The application of alternative, sustainable, economic and business models, such as a retreat from globalization, may also occur, though this is unlikely to happen. The study reflects on the relationship between the transport and the economic growth through the Pearson correlation coefficient. This can be achieved using the variable's C-values, ENE, and ENVY. However, the data can be used to project into the future (for 17 years) and the variables are compared.

This type of comparison adds value to the argument and improves the validity of the results. This study also includes the development countries Albania, Bulgaria, Montenegro, Croatia, Serbia, Kosovo, and Macedonia in addition, thereby improving the representative nature of the results. The projected values are first regressed using ANOVA then tested for their 'goodness of fit' later correlation analysis. All these features add up to the validity of the results and throw more light on the impact of transportation on the economic development of the transition countries. When considered against some of humankind's greatest achievements, such as space exploration and the enormous advances in healthcare and medicine, exploring more sustainable approaches to freight transport would seem tenable. Presently in Europe, this sustainability may not be achievable within the next 40 years.

1.7 Rationale for the Study

Since logistics advances from 1950s, there were many researches focused on this area in different applications. Due to the current trends of nationalisation and globalization, the significance of logistics management has seen a tremendous multisectoral growth. Industrial logistics optimizes existing production and distribution-chain processes. Using the existing resources and sound management techniques, the efficiency and competitiveness of enterprises could be enhanced (CNT, 2008).

The key element in a logistics chain is the transportation structure, which bridges different economic activities. Transportation accounts for about 30% of logistics costs. Transportation systems mainly affect the performance of logistics systems. Transportation is central in the production channel, from manufacturing through delivery to consumers. Only a good coordination between each parts would bring the benefits to a maximum. The transportation-economic development linkage is a challenging relationship to establish and debate information done for many years. However, there is number of activities that transportation can promote. This ranges from an appropriate setting that experiences the development of its accessibility through infrastructure investment to improve usage of existing transportation resources through supervision.

1.8 Significance of the study

The transportation sector significantly influences the development of the nation and consequently the welfare of its citizenry. Effective transportation systems provide opportunities for economic and social development with the multiplier effect on the overall economy, including improved access to markets, increased employment opportunities alongside other further investments. In contrast, incapable and unreliable transport systems can have economic implications, such as reduced or missed investment and employment opportunities. Transportation exerts great influence on the social and economic aspects in a country mostly unintentionally, which may lead to unforeseen repercussions such as congestion at transportation terminals, or traffic jams on the roads.

Transport services and infrastructure have spillover effects that extend beyond employment as well as an additional benefit from direct and indirect involvement in the transportation industry. For example, transporters contract supplies and service businesses locally (Christopher, 1998). These businesses in turn purchase inputs, generate revenue and offer employment opportunities contributing to the development of the local or national economy. Further cycles of local re-spending and re-investment generate additional revenue and employment. Similarly, household income spent from such employment thereby creates opportunities for local employment and income. Due to the cycles of spending locally, the overall effect on the economy of a country surpasses the original investment, expenditure and employment enhanced by passenger and cargo transport services.

In general, transportation can have direct, indirect or related economic impacts on the economy. Directly, transportation effects accessibility, creates employment, adds value, expands markets and saves time and related costs. Indirect multiplier effects include a reduction in the price of goods or services while the variety widens. In addition, indirect value-addition and jobs from local purchases by firms, which depend directly on transportation projects, may be visible in addition to inter-linkages with other sectors of the economy. Transport related impacts arise from the output from economics engagements and companies that depend on efficient passenger and cargo transport systems. For example, a cost-efficient importation of iron and coal as inputs, and affordable export costs for final products in required by many steel industries. Efficiency is mandatory for retailers, distributors and manufacturers regarding transportation and seaport handling of inputs and products.

Mobility is a fundamental and important feature of any economic activity because it fulfils the basic need of movement from place to place by passengers, cargo and information. Each country has its own level of mobility and most countries are constantly in development concerning this aspect. Countries with better development opportunities incidentally exhibit greater mobility. Hence, mobility is a dependable indication of development. Providing mobility/ transportation provides services to clients, creates and expands employment, generates revenue and invests funds.

The transportation industry has both microeconomic and macroeconomic benefits to any economy (Thompson, 2001). At a larger scale, transportation/mobility is related to the productivity level, employment and revenue in the national economy, e.g. in many developed economies, 6% to 12% of the GDP is contributed by the transport sector. At the microeconomic level, producers, consumers and production costs are dependent on transportation efficiency and cost-effectiveness. On average, transportation accounts for 10-15% of the household budget and approximately 4% per unit cost of production in industries though this varies with subsectors.

This research emphasized on the assessment of impacts of infrastructure on economic development, which include networks, performance, reliability, market size, and productivity. Networking involves setting up channels or improving the existent networks. Improved transport infrastructures boost performance of existing passenger cargo mobility. Such infrastructure must be reliable in performance, punctual and with minimal loss or damage. This enhances the access to a wider market to improve on economies of scale, which then increases productivity due to easier access to inputs, and markets.

Developments in transportation have occurred since the start of the industrial revolution and have relations to economic growth. Different developed modes of transportation tend to be adapted at certain stages in human societal development. Historically, no single mode of transport that is attributed to economic growth; instead, several methods have been incorporated depending on the functionality and geographical locality. Early trades routes laid down a primary distribution system, which eventually expanded through, water transport and resulting in the establishment of early multinational firms. Since the 18th century, significant movement of humans and goods linked to the expansion and establishment of international and even intercontinental systems of transportation as seen in North America and Australia. Transport has critically enhanced such migrations leading to economic and social transformations globally.

Transportation has also been a part of territorial authority and exploitation especially during colonialism where transport systems necessitated extraction and movement of raw materials from the developing world into the then industrialised countries. In recent times, cargo port development has strategically integrated many features in the global economy as evident in China.

Therefore, investing in transport infrastructure facilitates as a springboard for regional development, more so in developing countries, particularly in road transport. Convetionally, it been assumed that investing in transport infrastructure tends to produce more wealth than consuming investments (Vermilion, 2004). But still, transportation investments tend to be wealth-consuming if not strategically placed or planned, for example projects described as ‘bridges to nowhere (e.g. parking and sidewalks). In such scenarios, investments in transport can consume wealth becoming counter-productive.

Efficiency and sustainability of the transportation industry is essential to regional development although the transport-economic wealth path is unclear. In certain regions in the world, transport companies and related infrastructure are the key components in enhancing sustainable and balanced regional or continental development, through improvement of access in less developed regions and marginalised social groups.

Transportation investments also tend to reach a point of diminishing marginal returns. Although initial infrastructure investments will realise high returns due to the provision of new options to mobility, more developments are likely to end in lower returns; at a point, marginal returns even go below zero.

This is characteristic of a development from wealth production to wealth consumption in economic growth. The general assumption is that extra investments in transportation will have a multiplier effect similar to the original investments and can lead to capital misallocation. In retrospect, economic effects of investment in transport are almost significant when infrastructure was underdeveloped or non-existent and very little in a well-developed and extensive network. As such, each independent transport infrastructure project is independently considered (Chris, 2007).

1.9 Nature of the study

Conventional transport economic development tends to focus on particular influences (travel time, congestion delay, vehicle operation costs, and some accident costs), but overlooks and undervalue others that are often significant (parking costs, vehicle ownership costs, and incremental costs of induced travel). As a result of these omissions, what analysts report as the economic impacts (or net present value, or benefit/cost ratio) of a transport project are often a subset of total economic effects.

More comprehensive analysis considers a wider set of economic impacts (Evelyn Evert, 2009). Transportation policy and planning decisions tend to support economic development to the degree they increase efficiency by reducing unit costs (cents per tonne-mile or dollars per passenger-trip) and favouring higher value travel (emergency, freight, service, business travel and high occupancy vehicles) over lower value travel. Policies that reflect on efficient market principles tend to support economic development.

Market distortions that under-priced transport activity or unnecessarily reduce accessibility options can result in economically inefficient travel, in which marginal costs exceed marginal benefits.

Some of these impacts are widely recognized in transport policy and project development, whereas some are overlookedor undervalued. Economic development is sometimes a primary planning objective, but other times overlooked. Both extremes can lead to bad decisions: economic development strategies that contradict other planning objectives, or decisions to achieve social and environmental objectives that contradict economic development.

Complete analysis considers economic, social, and environmental objectives together, to identify truly optimal policies. Although the transportation contributes to economic productivity it also imposes significant economic costs, so excessive mobility can be as economically harmful as too little.

1.10 Summary

This chapter presented the background of the integration of the macroeconomics and examined two economic impact models. The problem of the study was presented and its role in the development countries and its relationship between the infrastructure and economic growth. The rationale of the study pointed out a comparison of the logistics from 1950 until 2010. Numerous focus areas were discussed and their applications to be depending on the area.

The importune emphasis of this study of the Balkan Region is taking all the factors since it is the least economically developed region in the EU. This is a detailed research by evaluating the trends to focus on particular influences of such as (governments, population and commercial markets and the monopolies in the area).

More so, the formulated research questions used in the study on the focus area during data collection. In summary, this chapter indicated the significance and the rationale for this study.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction (Globalization of transport)

As one of the old industries, transport industry has undergone immense advancements. The move has attracted researcher's attention in order to gather progressive information of policy concern. As a result, a vast knowledge base is available in the field for this work. Equally, logistics since its usage in the World War II has drawn tremendous focus from researchers and practitioners. Realization of supply chain management in 1990s heightened the value of outbound logistics. In his scholarly work, Poirier 1999 recognizes supply chain management as an important tool for business improvement. Also, (Croom, 2000), (Min & Zhou, 2002) and (Ho, 2002) are excellent logistic related review articles.

Recently the role of logistics In supply chain system was redefined by the move towards global supply chain management. The reason for the emphasis was the importance of speed in the success of global supply chain and consequently global logistics. Due to its value, (Vidal and Goetschalckx,1997), (Goetschalckx, 2002) and (Maxell and Gargeya, 2005) carried out surveys on the global logistics. In their analytical literature review of (Cohen and Millie, 1997), they pointed the lack of practicality in many reported global supply chain models hence making it hard to implement. Additional they singled out the exclusion of international markets price and demand uncertainties

There is a need to address the decision-making under uncertainties surrounding the global supply chain system to avoid the expensive and disastrous consequences herein. The stochastic programming which was initially introduced by (Beale, 1955), (Dantzig, 1955), and (Charnes and Cooper 1959) is a suitable tool for coping with a class of mathematical models and algorithms in which the data may be subject to significant uncertainty. General references on stochastic programming are presented by (Madansky, 1960), (Kall and Wallace, 1994), Birge and Louveaux (1997), and Dupaćová (2002).

However, much of the work on global logistics problems under uncertainty mainly focuses on the changing exchange rate. (Nougat and Kulatilaka, 1994) Develop a stochastic dynamic programming model that explicitly treats supply chain flexibility as the equivalent of purchasing an option whose value is dependent upon the exchange rate. They consider a two-country production-switching model and derive optimal cost functions. This model does not consider detailed operational characteristics (e.g. Multiple products or supply chain stages) and becomes intractable for more than one exchange rate process (such as when operating in more than two counties). Dasu and Li (1994) provided optimal strategies for a firm whose plants are located in different countries where there is developed exchange rate variability and a stochastic programming model.

Kouvelis and Sinha (1995) formulate a model that allows for switching of production models for a firm in a foreign country. They present a profit-maximizing, multi period, stochastic dynamic programming formulation, and conclude that a strongly depreciated home currency favors an export policy, while a strongly appreciating home currency favors a joint venture or wholly owned subsidiary. Graman (2006) thinks global firms can significantly reduce lead time and inventory carrying costs by adopting multi mod logistics.

2.2 Different Modes of Transportation

In general, the following five provides a link to transport technology and economic development where a specific mode or system emerged:

a) **Seaports:** Linked with the early stages of European expansion from the 16th to the 18th centuries are supported the development of international trade through colonial empires, but were constrained by limited inland access.

b) **Rivers and canals:** The first stage of the industrial revolution in the late 18th and early 19th century's was linked to the development of canal systems in Western Europe and North America, mainly to transport heavy goods. This permitted the development of rudimentary and constrained inland systems of distributions.

c) **Railways:** The second stage of industrial revolution in the 19th century was intimately linked to the development and implementation of rail systems, some transcontinental, enabling a more flexible inland transportation system (Jeroen, 2007).

d) **Roads:** Individual transportation made it a possibility to have a commodity available to the masses, especially after the Second World War. This process was reinforced by the development of national highway systems. The 20th Century made it possible for the improvement or read and transport networks.

e) **Airways and information**

The latter part of the 20th century saw the development of global air and telecommunication networks in conjunction with the globalization of economic activities. New organization, control and maintenance capacities were made possible. Electronic communications have become consistent with transport functions, especially in the rapidly developing realm of logistics and supply chain management.

2.3 Technology Innovation in Transportation Sector

Some Technological innovations have been created to come up with solutions to the needs of this rapidly growing transport sector. Developments in telecommunications, e-commerce, customs, and delivery services have changed traditional airline services by providing travel information, ticket sales, Internet check-in, automatic paging, and onboard internet access as well as by establishing an infrastructure to order, ship, track, and deliver goods to customers. Advances in safety, security, and environmental protection systems have also become a high priority within the industry.

With innovations constantly changing, the air employment environment must also change to keep up with new systems. Job opportunities will increase as passengers and cargo traffic expand in response to increases in population, income, and business activities.

Positions as pilots, flight attendants, baggage handlers, aircraft and avionics equipment mechanics, and computer and service technicians are seen as growth opportunities, and applicants with a college degree, technician training, and flying experience will be in demand. Marine freight shipping industry helps in the transportation of large amounts of lower valued goods across oceans using commodity-specific vessels.

Ocean carriers are segregated into classes of bulk, specialized, and general cargo carriers, Bulk carrier vessels are designed to deliver large shipments of a single commodity. These commodities fall into three

categories namely; dry bulk, liquid bulk, and specialist bulk. Dry bulk products include iron ore, coal, grain, phosphates, and bauxite as well as steel products, cement, gypsum, sugar, salt, and forest products. Major liquid bulk products are oil and liquid chemicals where as specialized bulk commodities include motor vehicles, refrigerated cargo, and cargo with specific handling instructions. General cargo and containership lines specialize on smaller shipments of manufactured or intermediate goods such as electronics and textiles but have the ability to carry small amounts of grain and liquid chemicals.

The economic upturn has increased demand for TL freight transportation, but concerns over driver shortages and high turnover rates continue to plague the TL industry, raising recruitment and training expenditures. As stated by Traffic World, a transportation trade weekly, hiring a new driver costs between $3,000 and $9,000, and replacing a driver can cost up to $15,000. The need for drivers is so great that trucking companies are hiring inexperienced drivers and finding they have to make outlays for insurance costs and claims paid out for damaged cargo.

2.4. The Future of Transport industry

Facing the worldwide competition, the improvement of logistics system should be advanced by both private companies and governments. Weeld and Roszemeijer (Ho, 1997) discerned three revolutions in business that have substantial impacts on the purchasing and supply strategies of the manufacturing sectors.

The following revolutions of the globalisation of trade (the coming of the information era and more demanding consumers that have continuously changing preferences have lead to even more innovations. There are various main characteristics of future logistics development (Echenique, 1994). To start with, the government roles keep competitiveness of industries; the government has to lead the way to assist the logistics industries. For instance, the idea of freight village of city logistics provides the environment to promote logistics efficiency and to reduce operation costs. However, it involves large of investments and some problems relating laws and national policies. Without the lead and the support of government, achieving the plan is difficult.

On Growth of international goods transport, the factors bellow contributed to the up-growth of international freight transport.

1. The blossoming of E-commerce pushes ahead the international business activities.

2. The change of production strategy needs international cooperation, e.g. importing the semi-finished products from countries with cheaper human resources to those with higher technology to assemble the final goods.

3. The pressure of globalised market, such as World Trade Organization (WTO), pushes local industries to promote themselves to reach an international standard and face the worldwide competition (Jonathan, 2008).

There is the Improvement of services hence providing a good customer service becomes a necessary requirement of business operation with the intense competition of global market. The quality of services is the main factor to affect consuming behaviour among the enterprises with high similarity. The service systems involve several-developed techniques now, such as Efficient Consumer Response (ECR) and Quick Response (QR). In the near future, techniques that are more new would be applied in providing better services for customers (Arthur, 2000).

The Revolution of logistics operation in which IT techniques and its products brings efficiency and fluency to the logistics systems have improved the logistical services. Radio Frequency ID (RID) is one of these techniques. The main difference between the bar-code system and RID is that RID does not need the action of scanning the barcode on goods. RID could save manual operation time dramatically. RID systems could sense the amount of good input in the tags automatically and immediately when the costumers push their trolley through the exit (Carroll, 2004).

The industry is likey to experience improved logistical facilities. The advancement in the development of logistics is based on several techniques and complete theories in the current times. High-tech facilities and systems, such as ITS, could bring more possibilities and advantages to logistics. Case Study, the improvement of related facilities, e.g. Forklift Trucks, is necessary for transport efficiency. In the future, factory automation will be the main target for the whole supply-chain procedures (John, 2007). It could help to improve efficiency and also reduce the operation costs.

Channel cooperation between companies is a possible scenario to save the logistics costs; a key concept is to maximize the usage of available transport capacity. Integrating the logistics demands between numerous departments helps achieve this purpose. In practice, a conglomerate could develop its own logistics service for the branches. For some medium size companies, they could cooperate transport channels with others.

Specialized logistics delivery- One of the notable trends of logistics industries is specialized delivery service. For instance, delivering fresh food from the place of origin needs low-temperature containers. Computer chips, gases and petroleum need particular conveyances to carry. The demand for these goods is rising since the products became cheaper. In additioin, the development of logistics centres is good for industry promotion and the development of national economic system

The alliance between middle-small size delivery companies is an important trend in the future. The strategy could help to expand service areas and increase service quality, and meanwhile raise the loads of single trips to reduce delivery costs (Buckley, 1992). How to deliver products to consumers' hands is a common consensus of operators. Integration of logistics and e-business is the future trend. In order to get more advantageous positions (to build a complementary and dependent relationship networking industries, such as Yahoo and e-Bay), usually have to collaborate with logistics industries.

The integration could reduce the middle-level procedures. The producers could immediately give the products over to the terminal customers. (Goldstein, 2007) This could reduce expenses and also administer sources more efficiently. Besides, the companies do not have to take the costs of inventory and warehouse, and therefore they become modernized industries of low cost, more efficiency and division of specialty.

2.5 The relevance of logistics and transportation

Logistics system has a more and more important position in our society activities. To start with, transportation and logistics systems have interdependent relationships that logistics management needs transportation to perform its activities and meanwhile, a successful logistics system could help to improve traffic environment and transportation development. The improvement of transport efficiency could change the overall performance of a logistics system because transportation contributes the highest cost among the related elements in logistics systems, in addition, transportation plays an important role in logistics system and its activities appear in various sections of logistics processes.

Without the linking of transportation, a powerful logistics strategy cannot bring its capacity into full play. The review of logistics system in a broad sense might help to integrate the advantages from different application cases to overcome their current disadvantage. On the other hand, the review of transport systems provides a clearer notion on transport applications in logistics activities. The development of logistics will be still vigorous in the following decades and the logistics concepts might be applied in more fields. (Todd, 2007).

2.6 Road transport

America in 1800 consisted of 16 states and just over 5 million citizens. The vast and impenetrable landscape made travel difficult and as a result people tended to live very local lives. However, over the next hundred years, roads were built, canals dug, rivers improved, and rails laid, which allowed Americans to spread out and conquer the continent. Road construction is one of the first improvements in American infrastructure. Roads constructed to connect North West major cities and the northeast, which at had first been little more than dirt trails but later improved with gravel or wooden planks. Travel on these roads was slow going - the trip from Boston to New York.

2.7 Components of the road infrastructure

It is moderately expensive to provide Road infrastructures compared to most of other infrustructures. However, there is a wide divergence of costs, from a gravel road to a multi-lane urban expressways. Because vehicles have the means to climb moderate slopes, physical obstacles are less important than for some other land modes, namely rail. Most roads are provided as a public good by governments, while the vast majority of vehicles are owned privately. Capital costs, therefore, are generally assumed by the society, and do not fall as heavily on one source as is the case for other modes. Unlike many transport infrastructure where the network is paid for by the user through a pricing mechanism, 95% of the financing of road infrastructure is covered by the public sector, leaving the remainder covered by tolls. The public offering of free road infrastructure conveys several advantages to the private sector, but can also lead to serious problems.

The main advantage is clear; the users of roads commonly do not bear the full operating costs implying that road transportation tends to be below the real market price. For road freight transportation, this can be seen as a subsidy as road maintenance is not part of the operating costs, but is indirectly present with taxes and tolls. As long as, there is spare road capacity this situation works for the benefit of trucking. However, when congestion starts to arise, users have limited, if any, influence on the construction of new and improved infrastructure to mitigate the problem since they do not own the infrastructure and are using it for free. Lobbying public entities to receive public road infrastructure investments can is a very long process, subject to constant delays and changes. Road users thus become trapped in a situation they can do little to change since it is provided free of charge. This can be labeled as the "free roads curse".

This is due to the size constraints imposed by governments' and also by the technical and economic limits of the power sources and what infrastructures can bear weightwise. In most jurisdictions, trucks and busses have more specific weight and length restrictions which are imposed for safety reasons.

In addition to this, there are limits on the traction capacities of vehicles because of the considerable increased energy consumption that accompany increases in the weight of the unit. For these reasons, the carrying capacities of individual road vehicles are limited.

2.8 Cost and benefit analysis on road transport

The Costs include rights of way, development costs (planning), construction costs, maintenance and administration costs, losses in land taxes (urban environment), expropriation costs (money and time), and external costs (accidents and pollution). On the other hand, ther revenue include registration, gas (taxes), purchases of vehicles (taxes), tolls, parking, and insurance fees.

Another form of indirect income concerns traffic violations (e.g. speeding) that are using the pretext of public safety to hide revenue generation practices by local governments. In many cases governments' have been inefficient custodians of road infrastructure as it is tempting because of high costs to delay maintenance or improvements. Budgetary problems are also inciting selling assets to increase revenue and reduce expenses.

2.9 Technology in road infrastructure

Road transportation is the mode that has expanded the most over the last 50 years, both for passengers and freight transportation. Such growth in road freight transport has been fuelled largely by trade liberalization as modal shares of trade between the United States and its NAFTA partners suggest.

This is the result of growth of the loading capacity of vehicle and an adaptation of vehicle for freight (e.g. perishables, fuel, construction materials, etc.) or passengers (e.g. School bus) demand for speed, autonomy and flexibility. New types of problems, such as a significant growth of fuel consumption, increasing environmental externalities, and traffic congestion and a multiplication of road accidents have also emerged.

All road transport modes have limited potential to achieve economies of scale. This is due to size and weight constraints imposed by governments' and also by the technical and economic limits of the engines.

In most jurisdictions, trucks and busses have more specific weight and length restrictions which are imposed for safety reasons. While in the United States, the maximum gross vehicle weight is 36 metric tons (80,000 pounds), while in Europe and China these figures are 40 (88,000 pounds) and 49 (100,000 pounds) metric tons respectively.

In addition to this, there are limits on the traction capacities of vehicles because of the considerable increases in energy consumption as a ccompany increases in the vehicle weight. For these reasons, the carrying capacities of individual road vehicles are limited.

The variables because of the impacts that they have on the total transport industry of the seven Balkan countries that are concerned in this study. These variables include virtually every aspect of each country as far as civil, commercial and environmental factors are concerned. The following model shows the association and relationship of the variables that discussed above, and the way that they relationship between economic impact of transport to the Balkan countries: economic Situations

The Equation:

$$ECON = \frac{(\Sigma T_{ene} + \Sigma T_{env})\,(\Sigma C_{final})}{\left(\frac{SD_{ave}}{n}\right)}$$

Ecuation 1 : Relevance of the Variables

Where:

Δ = change,

∑=summation of

ECON = level of economic impact of transport

Tene = Energy Taxes (in %)

Tenv = Environmental Taxes (in %)

Cfinal = Final Consumption of Households for Transport

SD = Standard Deviation

Ave (subscript) = average

n = number of test samples (years)

2.10 Chapter summary

The chapter was on the previous studies on transport industry in the Western Balkans and other regions. The focus was to look in to the cost and benefits of various modes of transport. There are documented reviews of the trends and advancements witnessed in the transport industry on the role of integration of technology in transport and the function of logistics in this sector. In addition, the chapter focused on acquiring secondary data to complement the available primary data.

The secondary sources include the journals, textbooks, magazines, and government's articles. These were source of data on transport in various countries covered by the work. More so, the chapter had several aspects of road transport such as the technological aspects.

The relationship expressing the relevance of the study variables given in an equation comprised of various variables such as economic impact, taxes, and consumption on transport. The chapter provided a transitional platform for further discussion on the impacts of transportation on economies of the individual Western Balkans countries.

CHAPTER 3

3.0 METHODOLOGY

3.1 Introduction

This methodology chapter presented the roadmap upon which the work formulation using the research approaches or techniques in acquiring data. In this case, a research design presented in the form of a structure and a research approach related to the study selected.

The significance of this chapter was to fulfil the purpose of study, research questions and available resource to pave way for accomplishing a concrete research. In this case, the chosen research design involved four chronological steps namely; selection of research philosophy, secondly research approach, thirdly research technique and fourthly the modes of data collection. The data collection technique was both through primary and secondary research.

After data collection, the study embarked on data analysis and presentation as well as discussion of the result. Below was the structure of the study.

Figure 1: Structure of the Study

3.2 Research Design

After making the choice from research philosophy; positivism or phenomenology the research approach; deductive or inductive approaches was taken into considered. Research technique; quantitative or qualitative and data collection method; primary or secondary this portion also elaborate matters of validity, reliability and generalisability of proposed study. It was worth noting that, to design an appropriate form of these all elements was essentially merged together in accordance with the demand of research study.

Research is an endless effort for truth that brings to light new knowledge or corrects previous errors and misconceptions and adds to the existing body of knowledge in an orderly manner. For this part, the author applied procedures and adopted to conduct the study in order to answer the initial thesis questions.

The design encompassed an indepth literature review and results from a structured questionnaire. Descriptive data were typically collected through a questionnaire survey, an interview or observation. A formal structure was suitable for conducting such type of research especially for quantitative data. We choose a conclusive research method. Decision making was based on the findings on results obtained from survey as well as from literature review.

3.3 Statistical Survey

The behavioural conditions of data and involuntary analysis explained the itemised data captured in the study and provided scientifically for tabulation.

3.4 Validity

The research paradigm ensured the relevance and suitability of the content available in the secondary data as facts that would provide coverage of the objectives of the study.

The validity of the data checked after carrying out adequate research and acquiring the required information for the review. This was then contained in the validity index of the research as acquired. The validity of the secondary data affected by key mainstreams, in connection with that, the progressive index of secondary data not permitted and hence provided a limited coverage of information. Further, the aspect of data quality based on the available sources, as evidenced by records, journals and other vital sources of data references. The acquisition of suitable materials in view of company's privacy adequately measured on how well the company is prepared to share the information.

3.5 Data collection

Infrastructure from these countries remains a changing situation whereas the governments keep the data as new developments emerge. As a result, the suitable data for this study were from secondary sources provided by governmental officials, journals, and library books. This was a wide range of literatures also presented in websites from where data is collected. To keep updated on the situation of infrastructure and economic development, the study also relied on collecting data using online surveys, questionnaires, and interviews to get primary data.

The choices for the data collection techniques depended on various factors that make either of the techniques have its advantages and its disadvantages. Major concern was on time and cost constraints. In addition, the following factors taken into consideration during the study, the reliability, credibility, and usefulness of the data collected. The purpose of this chapter is to delineate the research methodology used to test the relationships hypothesized in the previous chapter. First, the data collection process and resulting sample characteristics is discussed followed by details on the measurement / analysis development process and provide definitions for the constructs and proposed measurement scales.

3.6 Data collection and sample characteristics

To promote generalizability to the population of salespeople implementing strategies in a variety of organizational, industrial and countries contexts, it is necessary to select a sampling frame that provides a heterogeneous sample of salespeople. Though single-firm sampling frames are used in sales research and do have the advantage of higher response rates (Dixon and Schertzer, 2005), (Mulki, 2008), they do not allow for inter-country variance.

Examination of recent survey research conducted in the eastern EU countries domain reveals relatively low response rates associated with multiple transport investment. In the analysis chapter you can see shows some of the most current transport investment and its impact survey research.

Due to these low investments rates and the need for a relatively large improvement on the transport infrastructure to conduct the constraining factor analysis, data collection conducted through panel data

collection organisations (SurveyMonkey), SurveyMonkey (and formerly Zoomerang) maintains a nationally representative panel of business-to-business. Government to business and data from this source in examinations involving the managers has appeared in multiple academic journal articles (e.g. Darrat, Amyx, and Bennett 2010; Friend et al. 2013).

As Darrat et al. (2010) note, recently high-quality business journals have been publishing online panel data extensively and many of these studies involve managers (Grisaffe and Jaramillo 2007; Gonzalez et al. 2010; Rutherford et al. 2011). An invitation requesting participation in the analysis for the Impact of Transport in the specific countries sent to all panel managers employed in the local authorities and in the ministries of transport of the specific countries. In total, the managers accepted and completed survey. The vast majority of these potential managers indicated they were primarily involved in business-to-consumer rather than government to business.

The intent of this work is to examine the strategic implementation by business-to-business and Government – Business investments and involments for the investments on Transport and its impact on the country's economy. The managers accepted to take survey at will. After attaining 116 acceptable responses, the survey was closed yielding a 89.8% response rate. Of these 116 responses, three deleted for missing or inaccurate data leaving 113 respondents (89.3%).

These managers provided detailed feedback on their perception of transport efficacy and clarity for all investment included in the analysis. I used multiple modes of collection to maximize the amount of feedback generated from this report sample for incorporation into the survey instrument. I used a common pretesting approach to talking with participants after they took the report and discussing areas of concern. I also included a text box after every set of questions so that the sales people could write down their comments and concerns immediately rather than having to recall them later. By using both of these approaches, rich information was gleaned and scale content and format was altered consistent with managers' feedback to optimize the items for the main data collection. I sought to reduce CMV by careful planning and survey design. First, anonymity was clearly stated and assured respondents that there was no right or wrong answers to prevent evaluation apprehension. Additionally, different question formats inserted into the survey can help reduce method bias. Accordingly, in addition to the primary Likert-type scales, I used a semantic differential format. Last, we varied the scale anchors throughout the survey.

3.7 Data Analysis

During data analysis, we used quantitative and qualitative methods of research to analyse the data. The data was mainly analysed using descriptive statistics such as frequency tables, percentages, bar charts and histograms. This enabled the researcher to describe the distribution of scores or measures on the impacts of transport infrastructure on economic development of selected Post-Transitional Balkan Countries. We presented data in word as well as frequency tables.

3.8 Reliability

Reliability is a measure of the degree to which a research instrument yields results consistent with the available data obtained from secondary sources. According to Christensen & Kasten (1988), reliability refers to consistency and stability in measurements. To establish the reliability of the existing data, the research used the methods of expert judgment basing on the available information in order to test and improve the reliability of the information provided.

3.9 Chapter Summary

This chapter mainly focused on designing a comprehensive methodology in resemblance of proposed research study. However, research is undertaken to get findings about a topic by taking into consideration some facts, data analysis, experiences, concepts, hypotheses, principles and laws.

A well-designed research defines the problem clearly; takes on proper technique, discourses objective evidence, argues logically and provides valuable inferences, which provides the researcher with ractical insight of complete study. It is critically important to carefully select the appropriate methodology for research by considering the purpose of study, research questions and available resource.

The process of research design lead the researcher's towards accomplishing concrete research. In this case, the study embarked on both the quantitative and qualitative research approach because they are inseparable. That is why the study had both primary and secondary research and data sourcing were from both primary and secondary sources.

Examples of the primary sources were interviews, questionnaires, and survey. On the other hand, the secondary sources included books, journals, and websites the formation of an appropriate research design it involved the four-chronological steps. Data collection techniques were also discussed the selection of either of them is made in accordance with the requirement of research study.

This was selected from positivism or phenomenology, research approach; deductive or inductive, research technique; quantitative or qualitative and data collection method; primary or secondary this portion also elaborate matters of validity, reliability and generalisability of proposed study.

CHAPTER 4

4.0 TRANSPORTATION IN THE BALKAN STATES

In this works is determined the impact of transport infrastructure on the economic development of the South East Europian countries/ Balkans contry as the stady cays is analysed contry: Albania, Bulgaria, Serbia, Croatia, Kosovo, Macedonia and Montenegro.

Figure 2: South East Europe map,
source: http://www.alternative-consulting.com /03/02/2014

4.1 Serbia

Very few advancements resulting from road transport innovations have been documented. The Law approving changes I-VI to the European Agreement on the work of groups of vehicles, occupied with the worldwide way transport, the Law confirming the Agreement on the universal carriage of perishable foodstuffs and on the uncommon gear utilized for such carriage was received in December 2012.

The advanced tachograph framework was presented in January 2013 and the Road Traffic Safety Agency began issuing memory cards for computerized tachographs. The Agency has pressed on to expand its ability by filling 47 of the 65 arranged posts.

A Road Safety Coordination Body was established to ensure a reduction in the number of accidents that took place in September 2012.

An enabling enactment is not yet received according to the EU governance on access to the worldwide street showcase and the occupation of street transport administration. The driving and rest times of drivers is influenced by the local transport and the transport wellbeing conditions for tunnels.

The transparency of the expenses charged EN 41 EN for unique transport operations surpasses the allowed vehicle measurements.

It also adds up to mass and hub stack need guarantee. Further arrangement with later street security and hazardous merchandise acquisition is still essential. There has been some degree of advancement in rail transport.

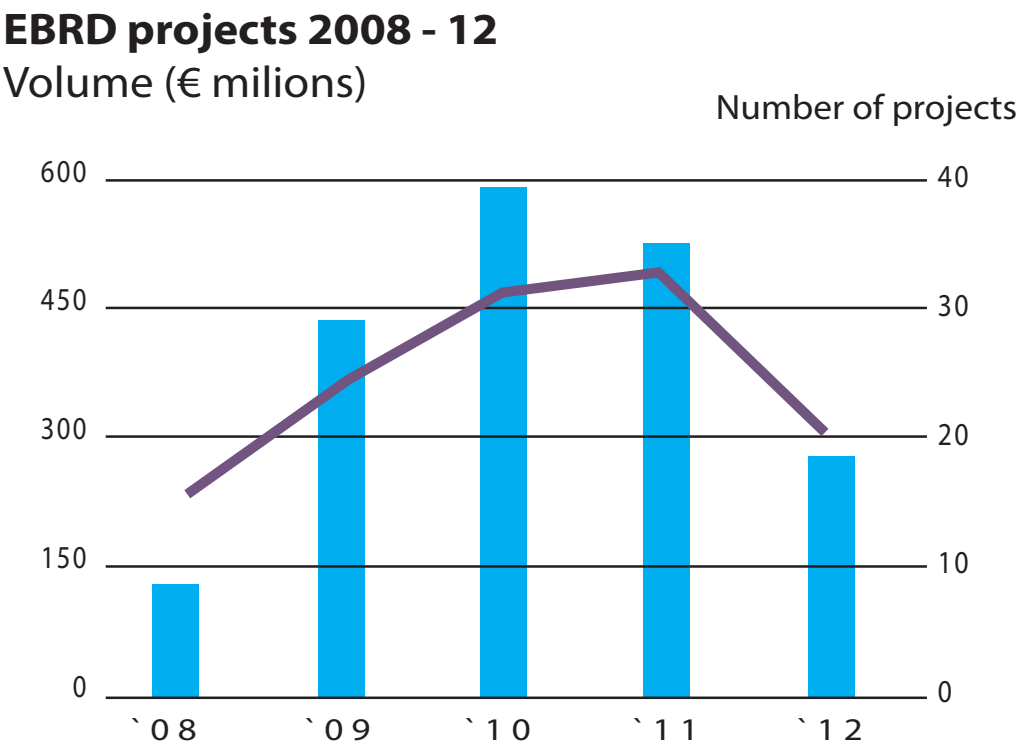


Figure 3: European Bank reconstruction and developments

Source : http://www.ebrd.com/pages/country/serbia.shtml

A few advancements were made in the range of Inland Passage transport. Achieving enactment on the system, strategy and the cost of a unique examination for route wellbeing reviewers and on the arrangement of the official route, wellbeing assessor's personality card was received in February 2012. A rulebook on the capability and conditions for getting proof for capability of an installed team part of the vendor inland conduit vessel was received in July 2012. The execution of river information services is progressing just as is that of the river Sava. The law on obligations and the basics of property relations in air transport and planning to arrange national procurements with the EU enactment on travellers' right was received in November 2012. A particular national form to uphold the law is yet to be in place. Procurements arranging with the EU and universal standards (Montreal Convention) on air transporter risk in the occasion that some mischances are presented.

SECTOR BREAKDOWN OF CURRENT PROJECTS SERBIA

Table 2 European Bank reconstruction and development,

Source http://www.ebrd.com/pages/country/serbia.shtml

1	Industry, Commerce & Agribusiness	18%
2	Energy	17%
3	Financial institutions	26%
4	Infrastructure	39%

1	Corporate comprises agribusiness, manufacturing and services, property and tourism and telecommunications.
2	Energy comprises natural resources and the power sector.
3	Financial sector includes investments in micro, small and medium-sized enterprises via financial intermediaries.
4	Infrastructure comprises municipal environmental infrastructure and transport.

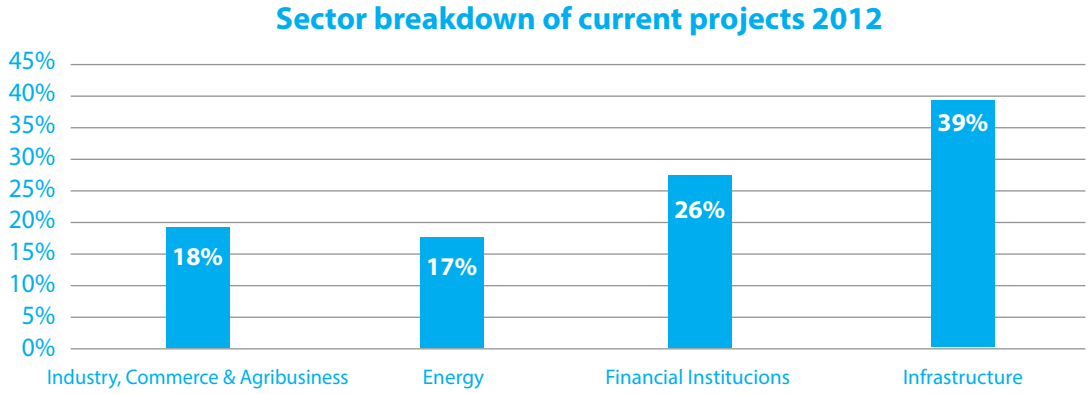


Figure 4: European Bank reconstruction and developments
Source http://www.ebrd.com/pages/country/serbia.shtml

4.1.1 Conclusion

A few advancement might be accounted for in the zone of transport arrangement, especially in the street, inland conduits and air transport. Further fortifying of limit is required, specifically for authorization and review. The new Law on Railways and the Railway Safety and Interoperability law need to be embraced. Consideration ought to be paid to reasonable market access; EN 42 EN further enterprises need to be made in detachment of framework chief and route specialist, and also a legitimately characterized controller (Otter, 2009). Overall, Serbia is decently progressed in its arrangement with the acquis in the region of transport arrangement.

4.2 Kosovo

In the Trans-European systems, Kosovo has progressed in enabling the 2004 Memorandum of Understanding on the growth of the South-East Europe Core Regional Transport Network and in the South-East Europe Transport Observatory. The development of route 7 has proceeded. Some restoration and support was done for route 6.

Kosovo's fundamental street framework venture, the expressway to the Albanian outskirts, remains an issue of concern because of its excessively towering expenses as a stake of Kosovo's aggregate plan, which presses on to jam out speculations in other transport ranges. The Multimodal Transport Strategy and Action Plan is being upgraded and some operational destinations being altered with the main aim of improving the economic standards of the area (ASTRA, 2014).

The trans-European Corridor IX, as listed in the Ruse-Stara is composed of extended road length of 598 kilometres. This provides a comprehensive link of other existing road networks within the scope of the transport coverage in the Balkan region, which boosts economic activities in the area because transportation is a utility that other economic development programs and activities rely upon. There has been a constrained advancement in the territory of highway transport. New criteria for authorizing cargo transport administrators were received in a regulatory guideline. The Road Safety Council has not met since September 2011 and the Road Safety Programme suspended its practice. The rate of movement crashes.

Whilst somewhat diminishing in 2011, this rate remains towering vertical and sometimes indicating it is inadequate. The genuine absence of human assets and satisfactory fiscal portion influenced the Kasovo Railway systems. A possibility study for rail track, which is part of the territorial centre system, was finished. However, no IFIS are intrigued.

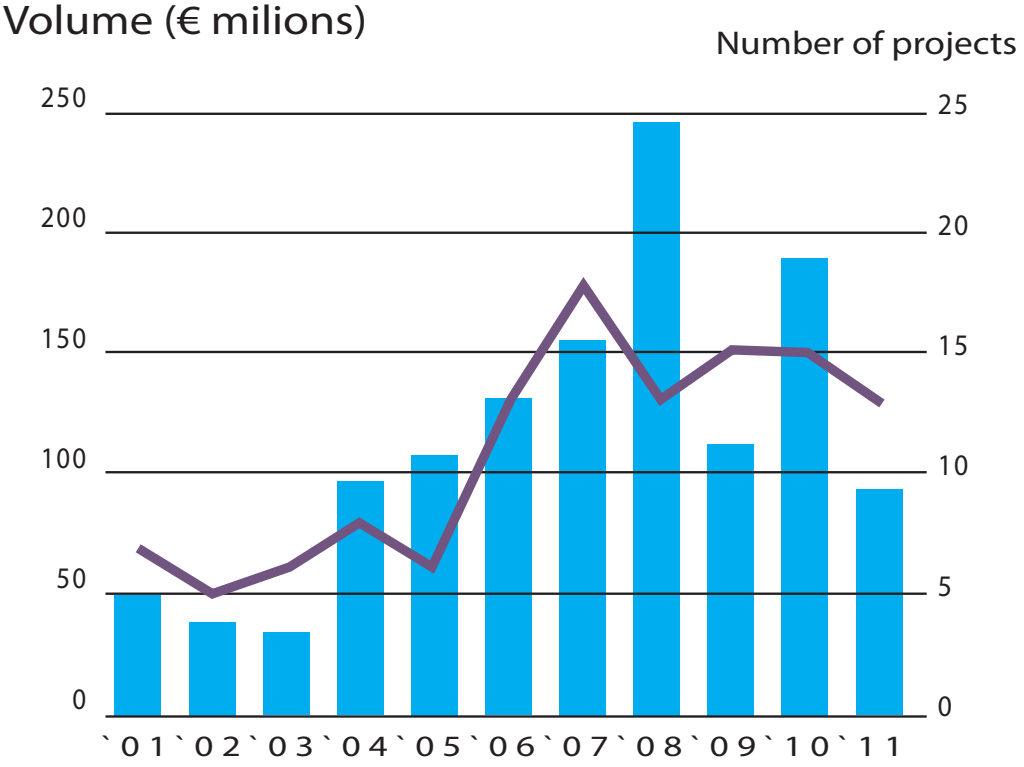


Figure 5: Source: European Bank reconstruction and developments

Source : http://www.ebrd.com/pages/country/kosovo.shtml (september 2013)

SECTOR BREAKDOWN OF CURRENT PROJECTS KOSOVO

Table 3 European Bank reconstruction and development - Kosovo

Source http://www.ebrd.com/pages/country/kosovo.shtml

1	Industry, Commerce & Agribusiness	9%
2	Energy	10%
3	Financial institutions	21%
4	Infrastructure	60%

1	Corporate comprises agribusiness, manufacturing and services, property and tourism and telecommunications.
2	Energy comprises natural resources and the power sector.
3	Financial sector includes investments in micro, small and medium-sized enterprises via financial intermediaries
4	Infrastructure comprises municipal environmental infrastructure and transport.

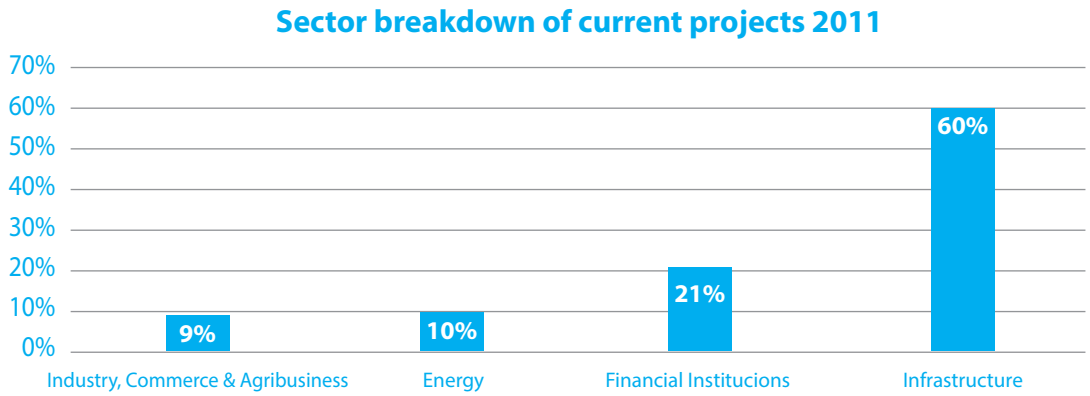


Figure 6 : European Bank for reconstruction and developments

Source : http://www.ebrd.com/pages/country/kosovo.shtml

The empirical analysis above provides an important project breakdown and the subsequent volume spending in millions from 2001 to 2011. The overall investment in infrastructure amounted to 60% of the total resources allocated to the Western Balkans for its economic and infrastructural development.

4.2.1 Conclusion

There have been a few advancements in air transport. Execution of national enactments has been advancing with respect to monetary regulations. Different fields are needed in the first stage of the European Common Aviation Area Agreement (ECAA). The Flawless International Airport was reclassified as being 'schedules facilitated' from July. Kosovo still ought to enable components of the EU Regulation on allotment of spaces. En 47 En the Kosovo Civil Aviation Authority (KCAA) is not a part of the framework institutionalization and security appraisal on outside airplanes as an outcome of contradiction on status. The leading flying restorative focus was affirmed in January and it issued its first therapeutic declarations for air movement controllers in March.

Laws on building air route benefits and additionally mischance examination still need to be received. In Air Traffic Management, Kosovo strives to make exceptional advancement in administration of its ECAA commitments with the centre now being on usage and guaranteeing a feasible structure for the National Supervisory Authority. Kosovo's aeronautics sector presses on to improve as a consequence of overflight limitations infringed by Serbia, which has a money related effects on the air specialists and a natural effect for the district.

Generally speaking, an arrangement with the EU transport network is progressing. Kosovo presses on to make robust advances in flight, yet is hampered by issues regarding its status. The improvement of routes appears differently in relation to the level plans given to this transport mode, which is a result of the oversized speculation in one way activity. Further ventures to enhance railway security and improve Kosovo Railways are needed.

4.2.2 Economic trends of Kosovo

The analytical overview of Kosovo's economic growth provides an important emphasis on its approach to existing and newer economic variances and in particular, how the transport network has benefited from the country's import/export sector. However, this research provides a considerable scope, given the status of Kosovo's direction based on human potential and the strength of its economic and export growth. The critical relevance of the complexity of Kosovo's financial structure is by far comparatively wide in scope

and the governance methodology is itself intensely weighted on the existence of a common financial system (Grabbe, 2006). The distinct financial system in an empirically coordinated structure, which has definite mission, reflects the EU's operational objective. The enlargement of the EU block and the accommodating structure draws a huge financial impact on the operational capabilities of Kosovo (Schimmelfennig & Sedelmeier, 2005). The system highlights the mergers that have comparatively evidenced in subsequent structures making up the total economic composition of Kosovo and its relations.

4.2.3 Relationship with other Balkan States

The specific design of the financial systems in Kosovo distinctly correlates with the independence in conceptually all major metrics that are market based. This is operationally classified in accordance with the changing reconstruction efforts. The usefulness of the adopted newer economic measures including integrating its existing infrastructure as well as improving the nature and the scope of its wider monetary stability meant that Kosovo's GPD would double by the end of 2013. According to Kosovo's Economic Plan strategy, the country's reconstruction would amount to about 30% of its total economic investments.

An additional review of transport sector reflects an orientation of a standardized economic recovery platform in an ailing economy. This suggestion, according to Brandt (2002), provides a highly differentiated financial friction that critically demonstrates the overall policy frameworks as well as the asymmetrical concentrations of the financial situations of various economies. In optimized monetary related policies, the enlargement of the financial recovery ratio in Kosovo depicts a resourceful scaling of sustainable sensitivity issues that need delicate financial organization. The Kosovo financial capacity is hugely dependent on the internal policy considerations, which commit its states to act by influencing the indebtedness margin reduced to a marginal level (Falkner, 2005).

However, in the aftermath of the global economic crisis, a widened financial gap revealed a compounded stress in the overall rules and basic operational policies. The initial existence of stress control structures as well as procedural economic management systems within the country did not absolutely sustain a near future recovery effort (Grabbe, 2006). With specific references to Kosovo, the weaknesses exposed by poor and imbalanced built-up of the financial systems demonstrated how macroeconomic engagements had fundamentally derailed recovery efforts. Reverse economic trajectory evidenced by the deregulation of EU financial systems supported the occurrences of fundamental emergency recovery policies against the backdrop of foreclosures and other detrimental decisions. The financial deficits and the severed GDP curtained with a huge debt burden highlighted the effects of Kosovo on the EU financial situation (Grabbe, 2006). The low growth levels witnessed largely at the height of the global economic crisis illustrated the average bail up efforts and the determinants of credible balances of trade in the overall financial system of the potentially severed economies.

The analysis of financial models according to Allen and Gale (2001), clearly define the consolidation policy framework that features the financially active models provisionally adopted by an average growth potential as well as future coordination efforts that would affect the building capacity of its transport system. According to Epstein and Rachel (2008), the enlargement of Kosovo's transport sector in the EU is continuously dependent on social models and the greater gains in the financial systems of other states.

4.3 Albania

In November 2012, the administration embraced the overhauled five-year National Transport Plan as the prevailing instrument for choice making and vital arranging in the transport part in Albania. There was

almost no advancement in road transport. We changed the Road Code in December 2012, presenting new procurements on expert preparing and introductory capabilities of trucks and transports' drivers. EIB (2009a) actualizing enactment received on vehicle enlistment. Since September 2012, we issued advanced tachograph cards for drivers and associations. To begin with, drives on way upkeep concessions have begun on the abnormal amount connect with some EN 43 En remaining street upkeep issues. Further authoritative arrangementt is required in the field of confirmation to the occupation of street transport specialist and access to the street haulage market. There were no growths on roadworthiness tests, driving licences and vehicle assessments. There are no arrangements to present speed limiters.

Selection of the new specialized measures for way transport is as of now pending. Street well-being presses on to constitute a major issue. The way-end toll in the nation remains astoundingly heightened. Street well-being principles are not enough dissuasive, legitimately authorized, and no viable complete security fights. The enactment on hazardous merchandise has not yet received.Rail transport has advanced although in a small way. Settled in August 2012, the fringe intersection concurrence with Montenegro. The new Railway Law is even now anticipating appropriation. A system proclaimed and distributed. Assets distributed to upkeep of rail base are deficient, with the danger of further disintegration of the system.

There was no advancement to report as respects inland conduits transport. There was no advancement on joined together transport. Because of air transport, administrative arrangement small advancements has made with the acquis. In November 2012, Revisions of the Air Code received. Achieving recieved enactment with a perspective to further adjusting air activity, administration and aeronautics wellbeing regulations with the acquis has been of help. Bringing about enactment pointing at arrangement on opening designation entered into power in September 2012. Administrative corrections embraced in November 2012 to build the freedom of the Albanian Civil Aviation Authority (ACAA). Not withstanding, execution of the first stages of the European Common Aviation Area Agreement remains moderate. There were no growths observing ground taking care of and airstrip charges, which remain unmanageable. The unwavering quality of air activity checking is a reason for concern. The Acaa still needs qualified staff and depends vigorously on outside masters for security oversight jobs. The managerial and specialized limit circulating everywhere transport part remains frail (Pallis and Tsiotsis, 2006).

However, there are litte advancements on sea transport. The reorganisation of the Maritime General-Directorate has been finished. Ship Registry and Seafarers making Units on top of another Sector managing Flag State Control and Port State Control. The Maritime Code altered in November 2012, developing the right to give cabotage administrations to Eu hail bearers and canceling the necessity that ships' chiefs must be Albanian nationals. A choice on reporting conventions for sea movement from or to European Union ports received, pointing at arrangement with the acquis. The confinement rate of vessels flying the Albanian banner has progressed. Nonetheless, further deliberations are instructed to fortify the Flag state and Port State Control. Albania has not yet asked for participation to the Paris Memorandum of Understanding on Port State Control and stays on the boycott banner of this organisation.

No advancement documented in the region of satellite route. Albania right now has no arrangements to take an interest in the Galileo satellite route programme.

4.3.1 Conclusion

There has been a small advance on transport strategy, essentially concerning cabotage in the oceanic division. Further deliberations are needed on arrangement with the transport acquis and to enable enactment successfully. Regulatory and specialized limit remains feeble over the diverse modes of transport, especially

on account of flight and way wellbeing. Rail framework support is a concern and needs more assets. On the whole, arrangements are not progressed

4.3.2 Economic Trend in Albania

According to Skaggs (1997), a huge financial meltdown is a reflection of an excessive collapse of the entire financial system. The global environment significantly affected the Albanian economy and these particular infused significant financial constraints in the lst quarter of 2012. The foreign demand growth was extremely slow in 2008 and there was an evidenced slum in the overall aggregate demand.

SECTOR BREAKDOWN OF CURRENT PROJECTS IN ALBANIA

Table 4 European Bank reconstruction and development - Albania
Source http://www.ebrd.com/pages/country/albania.shtml

1	Industry, Commerce & Agribusiness	23%
2	Energy	31%
3	Financial institutions	8%
4	Infrastructure	38%

1	Corporate comprises agribusiness, manufacturing and services, property and tourism and telecommunications.
2	Energy comprises natural resources and the power sector.
3	Financial sector includes investments in micro, small and medium-sized enterprises via financial intermediaries.
4	Infrastructure comprises municipal environmental infrastructure and transport.

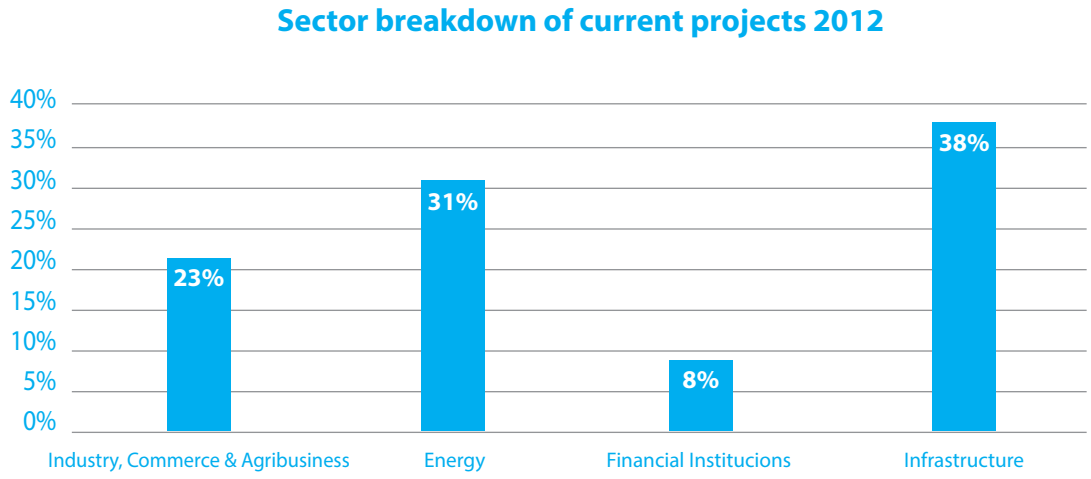


Figure 7: European Bank for reconstruction and developments
Source : http://www.ebrd.com/pages/country/albania.html

Consequently, according to Lehman (2007), the procedural considerations of collapsing financial systems in Albania reflect perhaps a continuing failure of individual states to recover from weakening financial environments. The years that preceded the global economic downturn demonstrated in Albania by the level of shocks that weaker states within the EU were performing. These determinants illustrate the geographical scope of the crisis as well as the major determinants of all simultaneously recurring situations.

Kamin (1999) states that the Albanian financial situation evidenced by differential developments in comparison to the state control financial system. These experiences comparatively create a revolving financial model of the inferential phase at the coordination of the basic financial situation. The previous undertakings in Albania reflect its unique financial system, and concerns of dissimilar determinants that inhibit a growth forecast within its zones.

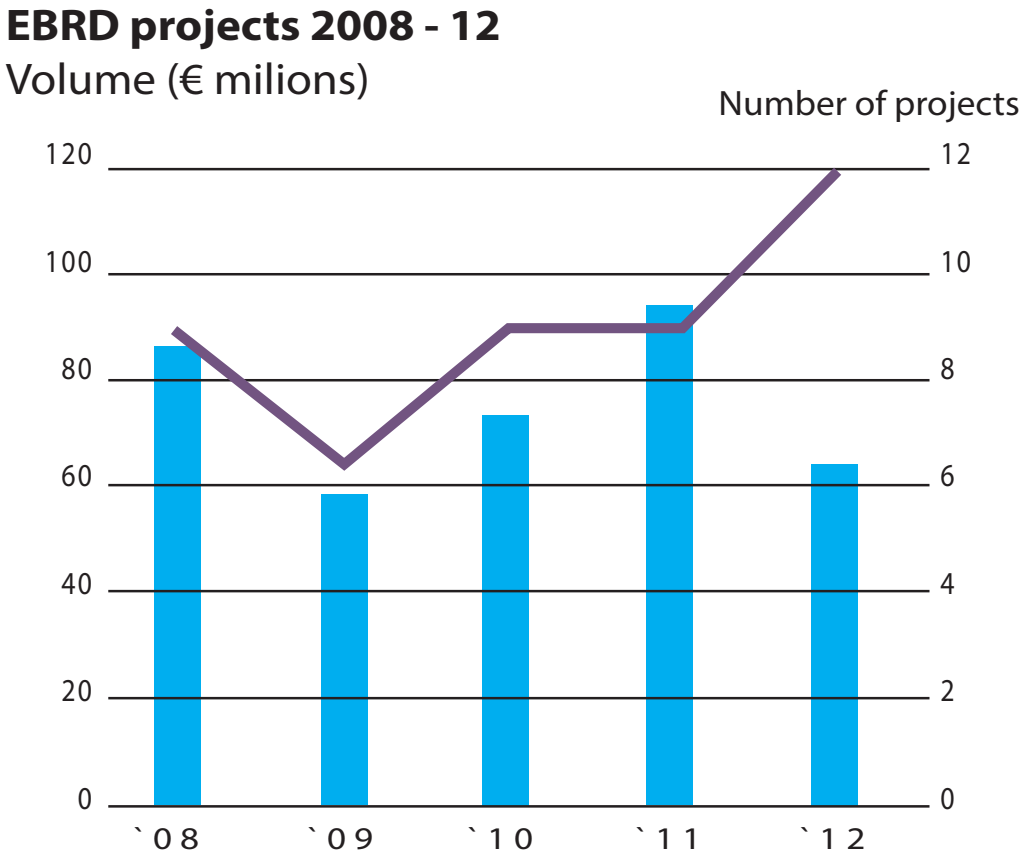


Figure 8: European Bank for reconstruction and developments
Source:http://www.ebrd.com/pages/country/albania.shtml (september 2013)

The common currency, according to Reinhart & Rogoff (2009) characteristically decomposes the initiated perceptions of waning financial trend in its recovery cycles. The culmination of the crisis warranted by an accelerated poor economic policies and attempted policy reinforcement hit hard by market related challenges.

Falkner and Oliver (2008) explain the compliance ratios in the stabilization factor of Albania, which has continued to close the average financial forecasts among the weaker states. Accordingly, the transport infrastructure in the country significantly shrunk because of the imbalances evidenced in the changing economic stability experienced within its economic growth metrics.

The amplification of the financial sector and forecast determinants have conceptually only enlarged the tax content and made the economic recovery to be dysfunctional (Trauner, 2007).

In view of the Albanian financial crisis, the anticipation of its imbalances shows a slowing growth deficit in the arbitrated forecasts, narrowed by the driving forces of the budgetary legislations. Presently therefore, the huge gap in the macro financial challenges demonstrates a persistent low level of financial evolution (Grabbe, 2006).

The cumulative spending and the country's fiscal stimulus showed a huge gap in its operational scope.
The observable trend reflected Albania has consolidated fiscal policy and it explored the existing fiscal restriction, which according to the existing economic policies in Albania, must be measured up to the existing laws. Hence, its overall budgetary status for the transport sector dropped in its aggregate and this substantially meant that the realized expenditures would experience a downward trend from about 19% in 2008 to 12% in 2013.
The total value of export also contracted by about 0.7%, though the budgetary income increased significantly by 2.3%. By developing its infrastructure, the signal was positive and it proved a predictably positive trend in long-term stability, including a guided foreign currency supply.
Further, the country's compliance position in the transport sector development is in line with the Pan-European Corridors specifications IV, V and X. This implies that its functional extension would also cover other segments designed to manage and harmonize the transport network in South Europe.

4.4 Macedonia

In Macedonia, Street transport has a few advancements. Execution of the enactment on computerized tachographs proceeded. Executing enactment embraced on working hours, on concession to the occupation of way transport administration and on business access. Make further administrative advancements can concerning access to the worldwide market for transport benefits keeping in mind the end goal to arrange with the latest acquis.

The Road Safety Council worked with a decreased plan because of changes to the Law on Insurance. Accordingly, the amount of street wellbeing crusades diminished. The regulatory limit for executing the street wellbeing approach needs further change.
The state transport examinations were ventures up, yet the regulatory limit of the state transport inspectorate still needs to more expantion.
Further arrangement with later way wellbeing and perilous products acquis is still indispensible. Arrangements in the way transport division are progressed. On the other hand rail transport has gained some small advancements. The level of track- access charges imposed from cargo prepares still has a negative effect on the aggressiveness of rail against way transport and because of larger amounts on the Coridor X line, victimizes worldwide activity.

Protracted methods for authorizing and security accreditation on top of continuous court methods deflected line administrators from entering the business.
A change to the law on tracks to abandon all yet the state-possessed rail admin until increase turned around arrangement with acquis accomplished in past years. Towering charges and market conclusion further fall apart the abject salary scenario of the base chief, without giving the aimed positive social consequences for the State admin.
The Safety Authority was built, however its En 41 En regulatory limit still ought to be fortified. The methodology to make another mishap examination substance inside the Government Secretariat-General has not been finished yet. There was a confirmed Joint Border Crossing Agreement with Kosovo. Further arrangement with the route acquis is still essential.

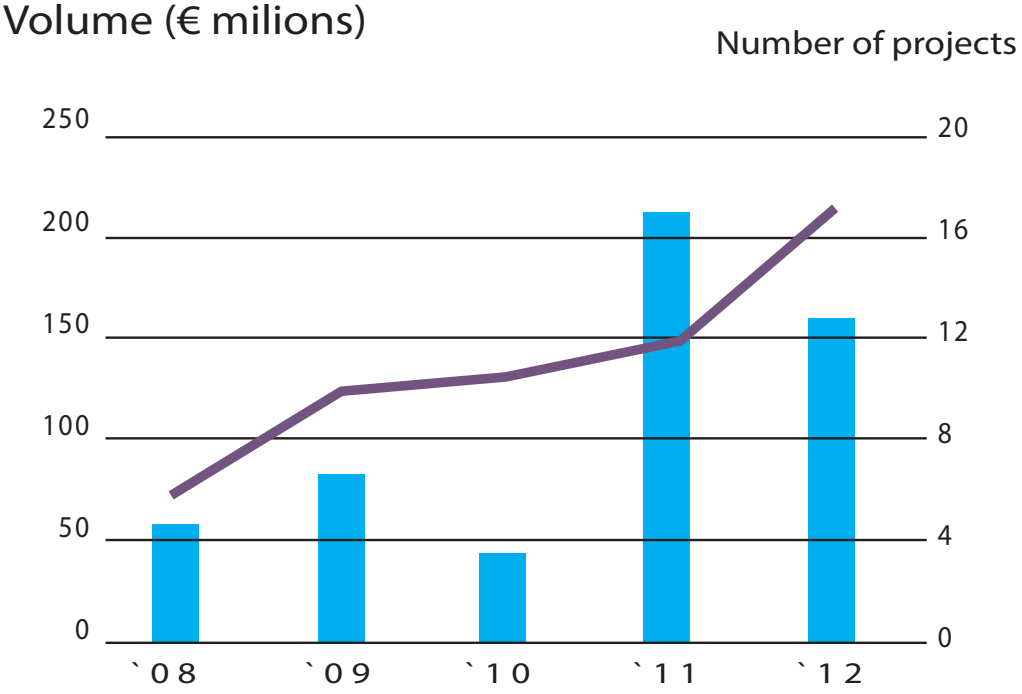


Figure 9: The European Bank for Reconstruction and Development

Source : http://www.ebrd.com/pages/country/fyrmacedonia (September 2013)

SECTOR BREAKDOWN OF CURRENT PROJECTS MACEDONIA

Table 5 European Bank reconstruction and development - Macedonia

Source http://www.ebrd.com/pages/country/macedonia.shtml

1	Industry, Commerce & Agribusiness	12%
2	Energy	30%
3	Financial institutions	9%
4	Infrastructure	49%

1	Corporate comprises agribusiness, manufacturing and services, property and tourism and telecommunications.
2	Energy comprises natural resources and the power sector.
3	Financial sector includes investments in micro, small and medium-sized enterprises via financial intermediaries.
4	Infrastructure comprises municipal environmental infrastructure and transport.

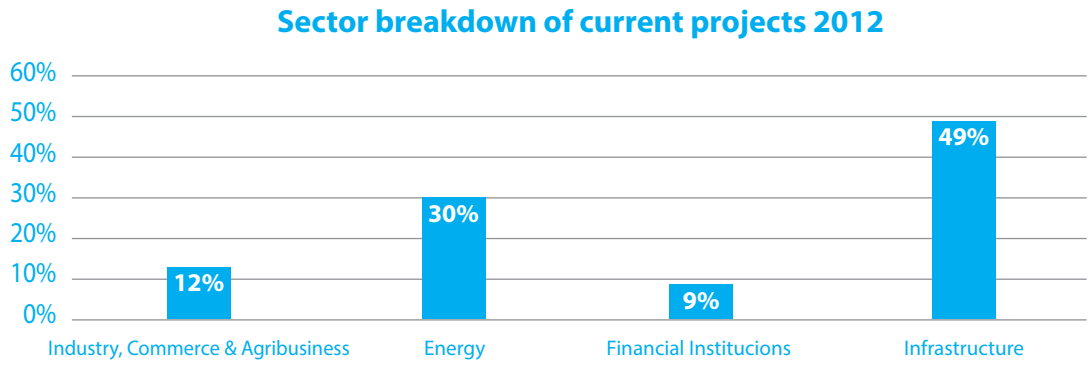


Figure10: European Bank for reconstruction and developments
Source : http://www.ebrd.com/pages/country/fyrmacedonia

Advancements made on the account of inland conduits transport. Security assessments and authorizing are underway. Region of joining transport also recorded some advancement. The readiness of a vital study for multi-modal junctions began in April 2012. The arrangements here are in advancement. On the other hand, air transport has recorded advancements.

The Law on Aviation corrected to present national subsidies for administrators with the point of growing tourism and air transport. On the other hand, the similarity of the aforementioned alterations to the procurements of the European Common Aviation region seem to be examined dependent upon information gathered at the 2012 appraisal visit. Advance observing the first stage of the survey on Ecaa assention is still some work done on the premise of the aforementioned information. In contrast to all this air, transport has shown exceptional advancement.

The air navigation administrations supplier is still understaffed. The Civil Aviation Agency, in its ability as the autonomous administrative form, preceded its exercises. However, human assets for assessments still need to be fortified. Three parts selected as autonomous examiners to research mischances and genuine episodes. The autonomy of the mishap examination form still affirmed. In the territory of air transport arrangements are reasonably progressed. However, setllite showedNo advancement compered tp other modes of transport.

4.4.1 Conclusion

There was a small advancement in transport arrangement. In street transport, there was a few advancement on acquis arrangement, yet street security needs further change. The track enactment needs further arrangement with the acquis.

A legitimate change to shut the route market for rivalry until EU promotion turned around as of now realized arrangement with acquis. The managerial limit of the Rail Safety Authority still ought to be reinforced. The Accident Investigation Committee for rail transport should get operational so as to function as a free figure. For the most part, arrangements around there are reasonably propelled.

4.4.2 Macedonia economic trends

The theoretical perspectives of a modelling structure that reflect a financial crisis in Macedonia demonstrate the inbuilt economic challenge and potential effects associated with it. In view of Reinhart and Rogoff (2009), the financial crisis defines the inability of a country to sustain its financial system and consequently leading to foreclosures, merging and in some instances, a total rundown witnessed.

Krugman (2010) explains the initial factors aiding financial crisis in Macedonia attributed to the global financial crisis. The macroeconomic proponents demonstrate the foreign currency imbalances within the market economy and in excessive view, the demonstration excessive currencies in the market.This vulnerability, according to Obstfeld & Rogoff (1996), heightened by speculative dilemmas of existing fiscal imbalance that viewable economic models could not adequately decompose.
The provisional generation of monetary values in a counterbalance scenario stipulates the existence of equilibrium uplift within the volatile economy (Allen and Gale, 2001). The generational disequilibrium factor enlightens the shifted focus on research work of Hartmann (2003) who demonstrated factors aiding competition and stability within the banking system.

In references of foreign currency regulatory concerns, the key bank based presentation in Macedonia exhibited the geographical life cycle of the financial integration throughout the modelled outward banking model. The relative comparisons envisaged the return of a generalized GDP economic model (Rajan and Zingales, 2004). The review structure enlisted the EU financial support to enhance the capability of Macedonia at the times of financial difficulties, reflecting the predominant legislative principles in the EU financial markets. Thus, according to Drazen (2004) the political economy in the subsequent growth potential demonstrates the innovational characteristics in the financial market and this further demonstrates how comparative case reference could enrich the otherwise diminishing financial position of Macedonia. The concerns of a deepening financial asset ratios amounting to procedural comparative variations over time in Drazen (2004) reflect crisis and reforms within the EU. The objectivity of the less significant banking roles envisioned by Macedonia in the later period of 2008 shows its weak banking control modes and similar high value tax evasion strategies suggested being co-factors hindering the country's recovery indicators. European Commission (2007), Interim Forecast observes that only domestic borrowing and reduced internal currency fluctuations could rapidly revive the imbalances that Macedonia itself submerged into a better nation.

The resultant assumptions are the great depression mirror like the consequences that virtually affects practically all financially related platforms. In this submission, the evidenced devastating consequences for the stock markets as well as on the tax revenues and commodity prices largely contributed to a weakened economy of Macedonia during this time. The review of related financial times (Belke and Polliet, 2009) mentioned how liquidity in poorer EU states affects household prices.

The industrialization policy of Macedonia and stagnation of basic commodity prices provided a shared index over time and a considerable price fluctuation experienced persistently waged a low influx of weak financial dynamics. The liquidity aspects in Macedonia were noticeably higher and the broad ratio of the provided commodities in the market suggested otherwise.

The transport infrastructure in Macedonia has greatly modernized and the changing dynamics in the entire policy enactment have meant that its transport needs have uniquely modernized to meet the increasing needs of the citizens. There are newer constructions including the highways, which connect the country to the Eastern part of Europe. The high-speed railway line connects Macedonia and the Near East, connecting through Eastern frontier and into Albania.

4.5 Croatia

Transport has encountaerd a few advancements in transport development. Execution of the enactment on advanced tachographs proceeded. Executing enactment embraced on working hours, on concession to the occupation of transport specialist and on business access.

Further authoritative advancement concerning access to the global market for transport benefits with a specific end goal to arrange with the latest acquis. The Road Safety Council worked with a diminished plan because of corrections to the Law on Insurance. Thus, the amount of street well-being crusades lessened. The authoritative limit for accomplishing the way security approach needs further change.

The state transport reviews were ventures up, however the regulatory limit of the state transport inspectorate still expanded. Further arrangement with later street well-being and hazardous merchandise acquis is still indispensible. Arrangements in the street transport division are propelled (Djukan, 2004).Rail transport accounted small advancement. The level of track-access charges collected from cargo prepares still has a negative effect on the aggressiveness of rail against way transport and because of larger amounts on the Coridor X line, victimizes universal activity. Extensive techniques for authorizing and security affirmation in addition to progressing court's methodology discouraged route administrators from entering the business. Towering charges and market conclusion further break down the abject pay scenario of the foundation boss, without giving the yearned positive social consequences for the State specialist.

The Safety Authority secured, yet its regulatory limit still ought to be fortified. The technique to secure another mischance examination element inside the Government Secretariat-General has not been finished yet. The Joint Border Crossing Agreement with Kosovo sanctioned. Further arrangement with the line acquis is still vital.

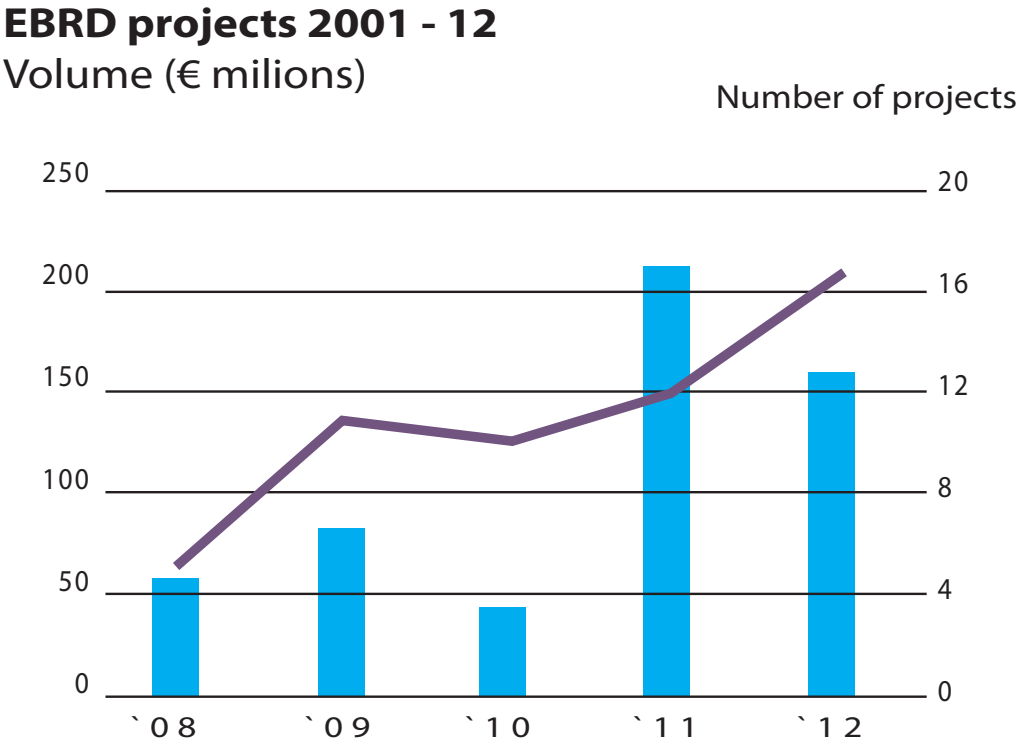


Figure 11: The european bank for Reconstruction and Development

Sourse : http://www.ebrd.com/pages/country/croatia.shtlm (september 2013)

Because of inland conduits transport, the transport sector recorded a few advancements. Security examinations and authorizing are underway. These propelled arrangements around the nations under study. Territory of transport also showed some small advancement. Arrangement of a vital study for multi-modal junctions began in April 2012. The arrangements here are in advancement. Air transport indicated a few advancements. The Law on Aviation corrected to present national subsidies for drivers with the point of stretching tourism and air transport.

In any case, the similarity of the aforementioned changes to the procurements of the European Common Aviation zone are being examined dependent upon information gathered at the 2012 evaluation visit.

From the study, there is need to perform Advance noticing the first stage of the Ecaa assention on the support of the aforementioned information. Administration department indicated a Great advancement in the transport sector. The air navigation administrations supplier is still understaffed. The Civil Aviation Agency, in its ability as the free administrative form, preceded its exercises yet human assets for assessments still need reinforcement. Three parts designated as free agents to research mishaps and genuine occurrences. The autonomy of the mischance examination form still needs affirmation. The territories of air transport arrangements propelled.

SECTOR BREAKDOWN OF CURRENT PROJECTS IN CROATIA

Table 6 European Bank reconstruction and development - Croatia

Source http://www.ebrd.com/pages/country/croatia.shtml

1	Industry, Commerce & Agribusiness	26%
2	Energy	20%
3	Financial institutions	24%
4	Infrastructure	30%

1	Corporate comprises agribusiness, manufacturing and services, property and tourism and telecommunications.
2	Energy comprises natural resources and the power sector.
3	Financial sector includes investments in micro, small and medium-sized enterprises via financial intermediaries.
4	Infrastructure comprises municipal environmental infrastructure and transport.

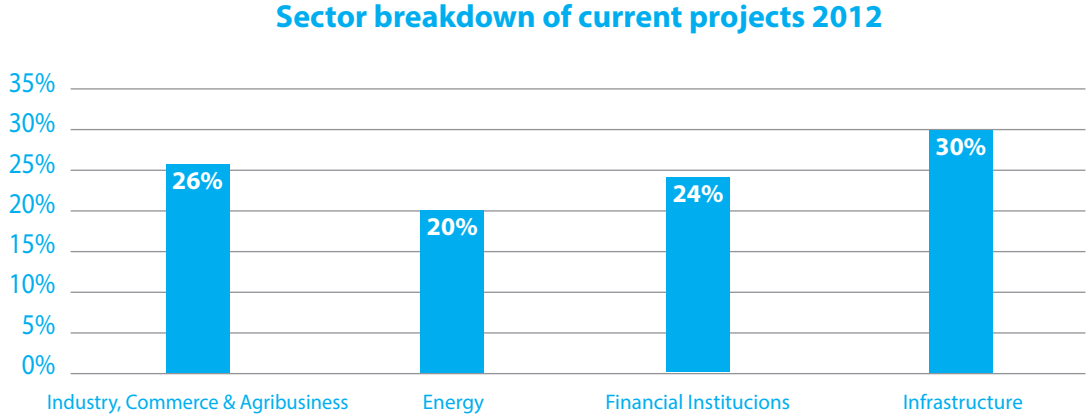


Figure 12: Europeanepered reconstructionian bank rekonstruction and developments

Source : http://www.ebrd.com/pages/country/croatia.shtml

4.5.1 Conclusion

There was a small new advancement in transport arrangement. In way transport, there was a few advancement on acquis arrangement, however street well-being requirements further change. The route enactment needs further arrangement with the acquis. A lawful change to shut the line market for rivalry until EU promotion switched as of recently accomplished arrangement with acquis. The managerial limit of the Rail Safety Authority still ought to be reinforced. The Accident Investigation Committee for rail transport ought to get operational to function as an autonomous form. For the most part, arrangements around there are decently progressed.

4.5.2 Economic Trends

In the global perspective, evidences show the mechanisms of transforming poor economie interrupted by their financial mechanisms (Chinn and Ito, 2007) which highlighted the imbalances of the accounting systems and procedural moderations of accounting policies. This derivative considerably explained why the Croatian financial systems could not ultimately sustain themselves far beyond the global financial crisis. T

he buyback of assets and reimbursement of funds from the EU banks raised interpretational component within the liquidity balance ratio and offers strong financial backup further changed the expansionary view of the country's banks performances. Additionally, Claessens, Kose and Terrones (2008) explained the factors that aid recession noting the strong ties between inflation and imbalanced liquidity ratios. The responsibility of the accumulations of taxes and debts within the dynamics of currencies show the capital prevalence in the general currency aggregates at the bank. Clemens and Williamson (2002) explain the protection of capital flow where sources therein are fractioned and proportionally relayed far beyond the consumer-accepted scenario. The reflection of the national infusion of recovery policies explained the significant irrational failure by Croatia to assert a composite indexing of its debts.

The empirical subject specifically noted the overall impacts of monetary policies (Hua, 1998) and the distribution of high market prices over proportionate market equilibrium in the country. Therefore, the inflation within the country rose significantly from 7% in the 1st quarter of 2013.

The domestic demand dropped marginally by 11.2% while the export value equally dropped 14.2%. The analysis regarding the good-service relationship showed an overshot in the pricing policy and the auctioned price content defined in general principles as a core factor within the functional approach in the eventual allocation of subsidiary financial behaviour.

The process of currency volatility, the reference of market expectations, Mussa (1975) explains the linear adjustments of inelastic money shocks in goods theory. The upward trend displayed in most EU nations explains a supply chain policy of products in standardized ratio in all the countries sharing equal market. The demand perspective explains the increment performances in the aggregates of both demand and supply. Finally, in the share equity equilibrium, the overall credit worthiness expressed in the bailout denotes the 66% rise in GDP and the performance volume rises distinctly through a series of lending definitions (Drazen, 2004)

Croatia's financial crisis downturn reversed the gains made in more than 17 years, reflecting the huge impacts of the crisis on the economy of the country. The financial shocks (Cronin, 2007) explained the adjustments that followed and additional flexibilities against Croatia's strong price control policy as well as standard currency deviations in the larger period of the economic crisis. According to Dooley & Watson (2004), the stipulations of market equilibriums and indexed commodity prices mathematically constituted the increased financial situation. However, the stress factor conditioned the overall economic performance and trade deficit, which had reached a margin low (10%) let to inflation of virtually all commodity prices, submerged the country into total recession (European Commission, 2004).

Croatia is connected by the South_East Europe Transport Observatory connects several mainstream channels and this

includes an articulated connection between Croatia and other European countries.

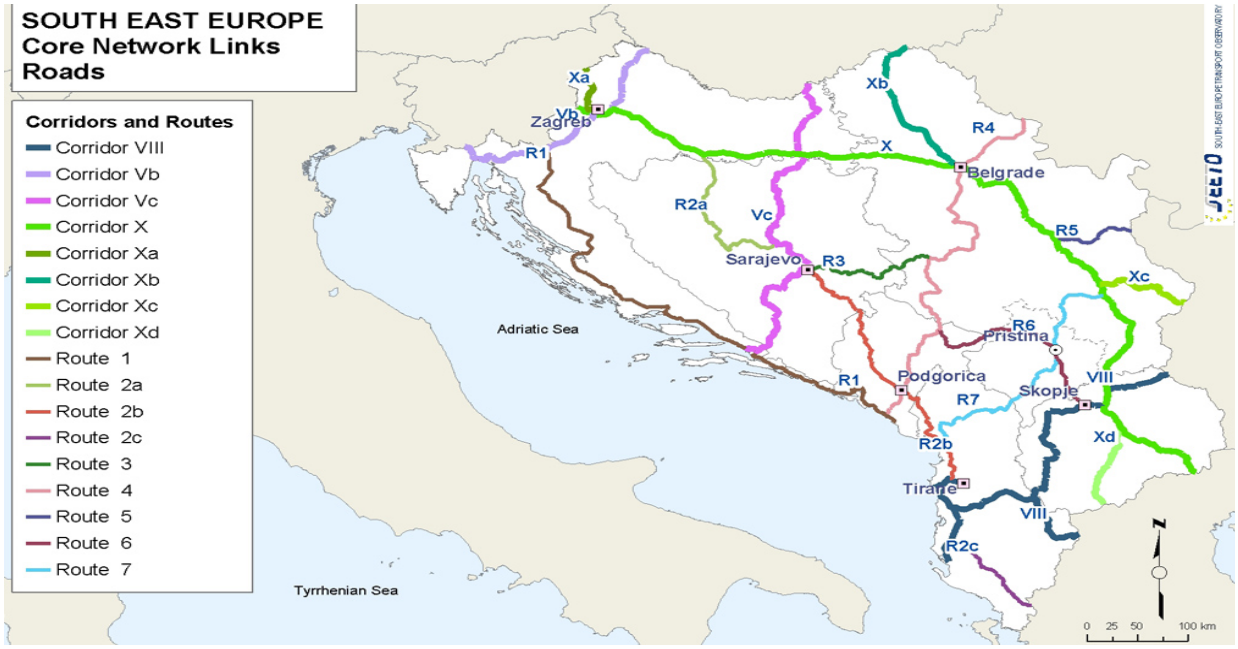


Figure 13 : South East Europe Core Network Links

4.6 Bulgaria

Turnovers in the IT business, voyage bureau and tour driver exercises, security and examination exercises and office management exercises enrolled twelve-month expands in the first three months of 2012, consistent with informative data of the National Statistical Institute (NSI).

As per NSI information about turnover records, in administrations in Q1, 2012, the transport segment enrolled a yearly reduction of over 10%. Turnover records in the publicizing and showcase research segment and in engineering and building exercises additionally posted twelve-month disintegrations. As per preparatory information for Q1 2012, the sum turnover list for the "Transportation, space and post" area, computed on the premise of seasonally balanced information, was 4.4% higher than the past quarter. The upward pattern enlisted because of the expansions in area transportation exercises and in housing and transportation upholds excises by 6.8% and 5.2% from the past quarter. In the meantime, the water transport portion enlisted a reduction of 7.3%, air transport declined by 1.4% and postal and messenger exercises fell by 6.7%. The sum of turnover record in the Information and conveyance" division diminished by 0.7 percent; in the qu**arter.**

Table 7: Road infrastructure in Bulgaria. Source: NSI, MTC

ROAD INFRASTRUCTURE IN BULGARIA		
Roads	Km	%
Motorways:	328	0.9
Category I roads:	3012	8.1
Category II roads:	3827	10.2
Category III roads:	11894	31.9
Category IV roads:	18235	38.9
Total:	37296	

In the part of "Other business benefits", the most noteworthy quarter on quarter builds were watched in "Travel channel and tour specialist exercises and other reservation benefits" (up by 61.5%) and in office government exercises

and different business underpin exercises (up by 12.0%). The working day balanced sum turnover record in the "Transportation, space and post" part fell by 10.5% contrasted with the final quarter of 2011.

The grandest decreases recorded in water transport (around 29.8%), arrival transport (around 14.4%) and air transport (around 10.3%). Warehousing and transportation help exercises expanded by 2.4%. In Q1, 2012, the sum working day balanced turnover file in "Information and conveyance" division expanded by 1.5% contrasted with Q1, 2011.

The increment was predominantly because of the expansions in the sections of "Computer customizing, consultancy and identified exercises" (15.3%) and "Publishing exercises" (10.7%). The hugest decline of 20.7%; enlisted in the section of "Information administration exercises".

In the division of "Other business benefits", the greatest year on year expands were recorded in "Travel channel and tour specialist exercises and other reservation benefits" (up by 14.8%) and security and examination administrations and office organization benefits (up by 11.8%).

A significant decline of 28.2% enrolled in "Another expert, deductive and specialized exercises". "Promoting and advertise investigate" declined by 19.7% and "Architectural and designing exercises" fell by 16.1%. It is essential to enhance outskirt travel by scaling down times for wilderness intersections, disposing of degenerate practices, and institutionalizing and streamlining methodology.

The utilization of electronic accommodation of traditions statements widened. Particular firms answerable for checking, enlisting and giving sound statistical information on cross-outskirt travel times made in all Western Balkans nations.

Enhanced between office, between ecclesiastical, and intergovernmental coordination is fundamental for modernizing outskirt intersection strategies. Such upgrades will improve trade between nations and help provincial monetary improving. Making licit fringe travel simpler (and holding tariffs down) additionally diminishes the extension for carrying and criminal systems to give elective wellsprings of imports.

Cutting down hindrances to honest exchange ought to be gone hand in hand with by the most advanced strategies for anticipating illegal travel exchange. Furthermore, lower exchange restraints and paperwork obstructions decrease the chance for the undermining of fringe work force.

4.6.1 Bulgaria Economic Trends

The theoretical composition of business developments in the Bulgarian financial situations explains the core implications and influences, which affect policy initiatives. Alternatively, the factor that aids the framework, which supports the organizational platform expresses the level at which Bulgaria is in consideration of its overall financial stability. At the same time, noting the modeled factors that ultimately explains the developmental formations that are business aligned.

The stability theory has been defined through the productivity levels among the Balkan countries and the studies point out that certain levels of financial implications are adequately required in order to enhance the usefulness of the currency.

A more cautious approach implies that systematic structural inclusion exponentially creates a meaningful business establishment. Decision bases with the EU markets and well-illustrated content establishment critically expressed according to the managerial point of view.

The structural establishment implies that the visualization of the basic predictions would definitely create

transformational characteristics in Bulgaria and substantial improvements in Croatia and Macedonia.

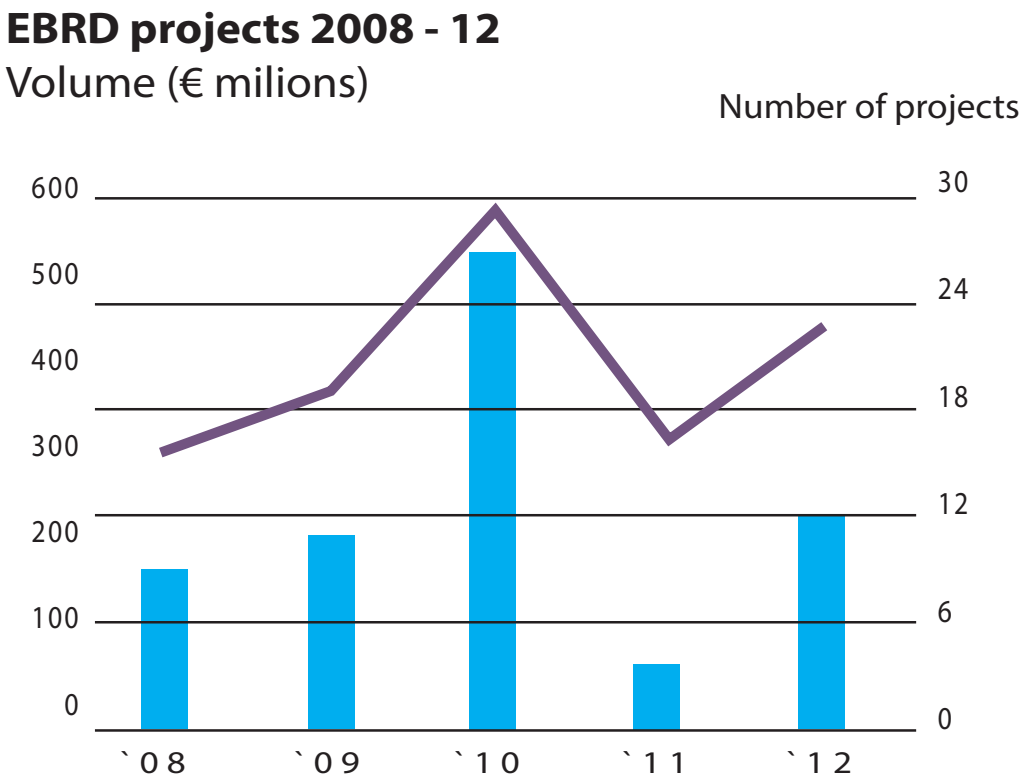


Figure 14: Source: The European bank for Reconstruction and Development
http://www.ebrd.com/pages/country/bulgaria.shtlm (September 2013)

SECTOR BREAKDOWN OF CURRENT PROJECTS IN BULGARIA

Table 8 European Bank reconstruction and development - Bulgaria
Source http://www.ebrd.com/pages/country/bulgaria.shtml

1	Industry, Commerce & Agribusiness	44%
2	Energy	24%
3	Financial institutions	24%
4	Infrastructure	8%

1	Corporate comprises agribusiness, manufacturing and services, property and tourism and telecommunications.
2	Energy comprises natural resources and the power sector.
3	Financial sector includes investments in micro, small and medium-sized enterprises via financial intermediaries.
4	Infrastructure comprises municipal environmental infrastructure and transport.

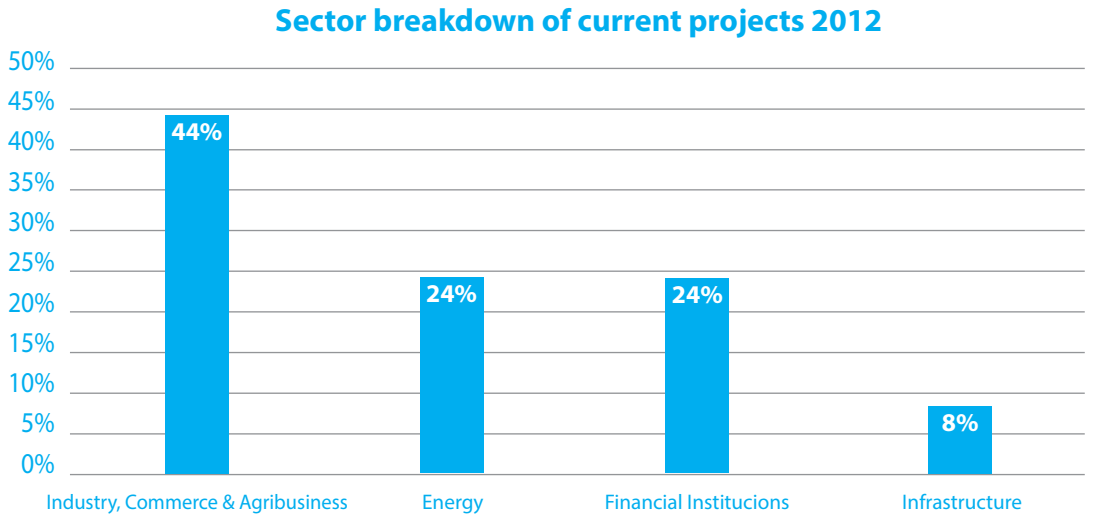


Figure 15: Source: The European bank for Reconstruction and Development
http://www.ebrd.com/pages/country/bulgaria.shtlm (September 2013)

The motivational aspects are areas, which policy networks satisfactorily managed through and in general, terms, the obvious indicators notably allowed through better-managed financial systems. Hence, the functions that appear hierarchically organized as per the ideal measures consequently based on particular business transformations. In general, the business capability of Bulgaria's financial situation is to have stronger members whose ability to manage their own financial positions would enhance their potential growth.

An analysis of severity of recession in Bulgaria expresses a procedural shift in the governance structures of the Balkan nations. Hard hit policy adjustments were pressed on to help recover from continued deterioration. Therefore, the relevance of improvement of the economy from the shrinking credit levels explained the analogues shift in the EU lending system in support of the fragile states such as Bulgaria.

4.6.2 Opportunity: The Benefits of Transport Integration

The basis obsolete of a combined transportation system is focused on cultivating closer exchange interfaces around the nations of the Western Balkans, supporting simpler development of merchandise, individuals and capital, coming about, eventually, in stronger ties around the nations themselves. A practical transportation arrangement, hence, seeks to make financial development and political security through a technique of intergovernmental collaboration.

4.6.3 Transport mix is useful for business:

1. It might encourage fare advanced development, given that local exchange volume is far from its potential; a 2003 World Bank study had discovered that the area was working at 77% of its potential. According to 2006 information, the locale's fares blanket just a quarter of the imports, bringing about towering exchange equalizes deficits.

2. It might lure a more terrific measure of Foreign Direct Investment, as the business size will build and the administration quality will move forward. This is especially paramount for the Western Balkans, given that Foreign Direct Investment as a rate of their Gross Domestic Product stays at around 5% and is especially level for move nations: in 2005, the total put resources into Romania was more excellent than aggregate FDI, Albania, Macedonia, Croatia, and Serbia-Montenegro.

In the meantime, transport coordination might guarantee tolerable, long run monetary development by pulling in private area engage; diminish exchange shortages and expanding FDI streams. This might have a straight impact on vocation, impelling development and making work positions. There is potential for huge political and security spill over:

1.Transport coordination requires intergovernmental coordination, which could likewise expedite closer political participation, straightforwardness transaction and usage of important understandings (given the modest number of members), and serve as an instrument for locking-in changes.

2. Transport coordination likewise needs a towering level of cross-fringe participation, which could bargain a slam on formed wrongdoing and debasement, and additionally wrongful migration, through outskirt administration instruments integration.

3. Progressing tension could additionally manoeuver by co-operation in a flat approach issue for example transportation. One should remember that Bosnia-Herzegovina is even now attempting to grapple with the intricate legacy of Dayton. Montenegro picked up freedom from Serbia just in 2006. The Croatia-Slovenia and Croatia-Montenegro outskirt questions have yet to be finished, while the Kosovo inquiry still poses a potential threat not just over Serbia (which has yet to distinguish it as a divide state and is as of now looking for a warning presumption on the legitimateness of its autonomy from the International Court of Justice), and yet versus Fyrom.

Lending uphold to the "majority rule peace" possibility, previous EU Commissioner for External Relations Chris Patten pronounced that "free public orders tend not to battle each one in turn or to be awful neighbours", a conviction that presses on to influence EU necessities right up 'til today. A fortifying of Western Balkan transport combination strategies, in blending with increase to Euro-Atlantic structures, may not accelerate the annihilation of clash in the short-run; it could, then guarantee that the aforementioned nations will not deteriorate into 21st century delicate states.

Economy: Fragmentation issues the investment part of the infrastructure of a Western Balkan transport system is a key part of the examination, as just the production of a joined, intense transport business sector will permit the pertinent segment to thrive.

The tests that counteract this business examined area by area. In any case, a regular issue that exists in all transport divisions tended to, together with its underlying reasons.

This is no other than the Western Balkans' heightened level of fragmentation. Another item an onlooker of the district's transport framework runs into. This extreme fragmentation may be a verifiable or geological inescapability given, on one hand, the disintegration of Yugoslavia and the formation of a few new nations, each with its particular fringe government framework and, furthermore, the area's minor estimate. This notwithstanding, this fragmentation has a noteworthy effect on the productivity of the transportation area, making various issues.

As per a later World Bank study: "[…] authoritative formality, degenerate rehearses, an incalculable number of fringe controls by diverse firms, and an absence of collaboration between powers on both sides of normal fringes. […] A cargo truck, for example, voyaging between Salzburg and Thessaloniki must cross four diverse outskirts -each with its particular controls. At the aforementioned outskirts, the truck is liable to traditions and other cargo identified controls, for example clean and phytho sanitary controls because of rural items. Also, the driver must introduce his or her visa and driving grant, and the truck may be checked for agreeability with the vehicle protection, norms, and so on."

Naturally, a nexus transportation point is the lessening and the lifelong end of cross-fringe obstructions to

exchange that represses South Eastern Europe exchange tracks. The requirement to diminish the issues, for example, the "holding up times", had distinguished at the 2004 MOU. At present, the aforementioned issues most frequently take the type of extensive outskirt intersection deferrals, a national predisposition towards particular merchandise and, overall, market-blending components that do not take into account the advancement of an aggressive transport showcase.

4.7 Economy: Obstacles Impeding - Transport Integration

The towering degree in fragmentation distinguished above focuses to a deeper test that hinders the growth of a working exchange and transportation organize in the locale. All through the 1990s, an arrangement of outfitted clashes assaulted the locale with a power that Europe had not encountered for a century. By the mid-2000s, with their transport ties as of now extremely undermined and uplifted hostility, a few new states started a procedure of country and state raising, character arrangement and self-attestation, a process that regularly accelerated a further weakening of their relations.

The being of an incomprehensible number of cross-fringe exchange hindrances implies the deeper issue of doubt and, now and then, unfriendliness that does not permit the reinforcing of financial connections and the advancement of transport framework projects. Any endeavour, accordingly, to make a reconciled Western Balkan transport organize keeping in mind the end goal to encourage territorial collaboration should manage the clashing goals of the Western Balkan nations themselves. The global neighbourhood has taken steps to enhance relations around the Western Balkan nations and to encourage an atmosphere of participation instead of threat:

• Membership to the World Trade Organization [WTO] recognized as a measure that might push exchange connects between the Western Balkans. Albania, Croatia (2000), and Fyrom (2003) are as of recently WTO parts. Serbia and Montenegro have begun the WTO increase process.

• In The World Bank "Trade & Transport 2006, the CEFTA, an instrument launched by the EU initially pointed at Central European nations, was extended to incorporate all Western Balkan nations, in an endeavour to push closer monetary connections inside the area. It traded a system of over 30 two-sided Free Trade Agreements [FTAs], along these lines supporting territorial participation under a disentangled umbrella of standards and regulations.

• The SAAS marked between the EU and the Western Balkans likewise pointed at encouraging regionalism, guaranteeing the "carrot" of inevitable EU-enrolment.

4.7.1 Models to Predict the Economic Development Impact of Transportation Projects

Methods used for assessing economic impacts of proposed transportation projects have continually evolved over time. Whereas they once focused largely on the economic benefit of time and cost savings for travellers, they may now encompass broader factors such as accessibility roles in supply chains, labour market expansion, global trade growth, and their economic development implications. (Gerald 2006).

This broader view can be particularly important when considering transportation projects affecting network connectivity and activities of logistics centers, inter-modal terminals, and and international gateway facilities. Using examples throughout history, a generalized description developed of the range of access, reliability, and quality and cost factors that can affect the nature of economic growth impacts of transportation projects. While the set of factors is consistent with both theory as well as research findings, there has been a significant shortfall in their coverage by applied computer analysis models used in transportation decision-making.

In this research the author critically examines the coverage of access impacts by various classes of predictive economic impact models, and then describes new directions in applied models to assess regional impacts of transportation projects on business productivity, growth and attraction. Finally, it outlines a new analysis framework that is designed to facilitate use of improved modelling methods for assessing regional-level economic impacts of multi-modal transportation investment. (Wornum 2005). As well as the range of computer analysis methods and tools used by government agencies and their consultants to estimate the regional economic impacts of proposed transportation projects. At the outset, it is important to note that there have always been gaps between reality, our theories to explain it, empirical research and tools used for policy decisions. A variety of computational, data observation and resource limitations also come into play to require simplifications in empirical research and analysis tools.

Yet while the presence of such gaps may be understandable, it is still important to identify their nature and the potential for error that they may introduce when predictive models are used in policy decision-making. There are differences in the objectives of scholarly research and applied models that are important to recognize as part of any evaluation of predictive models. For instance, there are lines of research that demonstrate a general relationship between transportation investment levels and economic growth rates (Nadiri and Mamuneas, 1998), and a relationship between highway presence and localized growth (Isserman and Rephan, 1995).

While such research, can be of great value, in demonstrating that transportation investment can make a difference in economic growth. They are not useful for transportation planning agencies that are considering alternative project proposals, regarding how to spend a given transportation improvement budget (Terry 2007).

For transportation planning agencies, there is a need to evaluate the economic development impacts (as well as the efficiency and environmental impacts) of individual highway, rail, airport and marine port project proposals.

It has long been recognized that regional economic impacts can vary greatly depending on the form and locations of the proposed facilities, and the types of changes they can have on travel times, costs, accessibility, reliability and connectivity of travel routes and services. For the last twenty-five years, transportation planning agencies have, in fact, already has been using various computer models and tools to predict the likely economic impacts of proposed projects (EIA 2008). The fundamental assumption underlying this article is that predictive economic impact models used for decision-making should be sensitive to causal factors and elements of access impact known to make a difference in the effect of transportation projects on regional economic growth and development.

The effect of transportation investment in economic development comes from the role of transportation facilities in enabling movement and interchange of activities between locations. The earliest works in regional science recognized that both growth and concentration of economic activity at any given location depends (at least in part) on access to markets and the location economies enabled by that access.

This reflected in works on central place development (Christaller, 1933), scale economies (Marshall, 1919) and agglomeration economies (Weber, 1929). Yet to more fully understand the economic development role of transportation improvements, it is also useful to take a business decision-making perspective and identify the mechanisms whereby transportation can affect supplier and buyer markets and costs, affecting the pattern and magnitude of economic growth among various industries and locations.

From business development viewpoint, transportation improvements can affect economic growth and development in at least four ways:

(1) By enabling new forms of trade among industries and locations,
(2) By reducing cargo loss and enhancing reliability of existing trade movements,
(3) By expanding the size of markets and enabling "economies of scale" in production and distribution, and
(4) By increasing productivity through access to more diverse and specialized labour, supply and buyer markets.

Each of these elements can be illustrated by historical examples which significantly pre-date the formalization of modern theories supporting them. Economic development refers to the growth and development of the economy of a nation or region, as most commonly measured by the increase in its income and job creation over time. In ancient times, the relationship between transportation and economic development was already clear as economic growth depended on producer and customer market access through transportation routes. Roughly two thousand years ago, ancient caravan routes such as the Silk Road, the Spice Route and the Gold and Salt Route were firmly established as the distribution backbone for bringing distant products to European markets. As these trade routes became firmly established, they became formalized as distribution networks that effectively expanded jobs and income for various producers, traders and merchants.

They also supported the economy of intermediate industries and locations that provided traveller services. Case Study, inter-industry trade led to development of a value-added supply chain along the Silk Road, with a set of silk, carpet, apparel ceramic and gem products being manufactured and traded between a string of trade countries in Europe, Persia, India and China. (Krumwiede 2002: 188) In Africa, intermediate trade and traveller service economies developed in places such as Timbuktu, which started as a camel stop along the Gold and Salt Route trade route between Africa and Europe.

A millennium later, inter-industry trade accounting was formalized in input-output analysis (Leontief, 1951) and later supply chain management (e.g., Bowersox and Closs, 1996). Over time, continued infrastructure investments improved travel times, reliability and capacity. The Romans built over 50,000 miles of paved roads to support a trade network of national defence and interstate commerce routes. Gaza and later Caesarea were developed as intermodal freight center connecting ship routes in the Mediterranean with land routes for goods coming from Arabia and Asia.

This intermodal transfer improved schedule reliability and reduced losses by allowing use of the land route from Arabia that avoided the dangers of uncharted rocks and piracy originally plaguing Red Sea travel, combined with a Mediterranean Sea route to Europe that avoided the difficult terrain and weight limitations associated with land travel across Europe. A millennium later, transportation loss rates were predicted using mathematical formulations of uncertainty risk analysis (Bedford and Cooke, 200).

Three decades later, the economic efficiency benefits of greater access to diverse inputs was formalized in work by Krugman (1991) and Fujita et al (2001). A final aspect of the relationship between transportation and economic developments is the "reverse impact" of congestion. By imposing an effective limit on throughput, raising travel times and costs, reducing reliability and diminishing access, congestion can potentially undercut or even reverse all four of the preceding types of economic development impacts enabled by transportation investments. Congestion delay has long had been a concern in urban areas. Over two-thousand years ago, Julius Caesar had banned chariot traffic from the city center of Rome during daytime to reduce traffic congestion.

Toll point's and gates were also put in to help control traffic flow. Today, as in the past, high levels of congestion during peak times can also lead to both recurring delay and higher likelihood of non-recurring incidents, which together can significantly reduce reliability and raise travel costs, thus reducing some of

the advantages of location associated with the affected areas and routes (Weisbrod ,2003).
Empirical research has been evolving to address more of the complex factors at play in the preceding historical examples. It is useful to summarize some of the types of transportation economic impact factors that have been shown to be important in empirical research studies, as that provides a basis for later evaluating their coverage in applied computer models.

While the functional forms that relate transportation factors to economic outcomes also remain important issues that remain to be addressed, the focus here is just for assessing models from the most basic viewpoint of their completeness in covering relevant factors affecting the economic impacts of transportation (Daniel , 2007).
Research to date suggests that the following types of factors can be important to consider when evaluating transportation project proposals: The earliest theories and historical examples showed that transportation improvements can reduce transport costs differently among various industries. Specifically, labour market size (and its associated travel time's and costs) can vary by industry since commuting distances and commuting mode choices showed to differ by occupation (Weisbrod, 2003).
Similarly, distances for material and product deliveries (and their associated travel times and costs) can vary by industry because various materials and products are transported and delivered via different combination of modes. As a result, bias arises in the estimation of market access and transport costs when the "the heterogeneous nature of the traded products, and the distance they cover" is missing from analysis (Lopes, 2003). Other than affecting the size of market it also attributes to the size of markets, expanded access can also affect the price and quality attributes of available labour and material supplier markets. These factors also affect economic growth insofar as they can affect the extent of a "match" in relevance between attributes of the available market and a given industry's specialized labour or material input requirements.
The importance of considering quality as well as price attributes is also expressed in economic development literature on workforce skill training (e.g., Blakely and Bradshaw, 2002), supply chain product specialization (e.g., Bowersox and Closs, 1996), and the productivity effect of improved access to differentiated inputs (e.g., Krugman, 1995; Weisbrod and Treyz, 1998).
The quality of highway has also been shown to affect economic development over time, with greater economic diversity occurring in areas served by higher speed highways (Horst and Moore, 2003). Impacts of transportation improvements on travel time and distance can diverge substantially, because variation in network density, route connectivity and congestion factors can together make the pattern of travel time changes among locations quite different from the patterns of straight air distance (Combes et al, 2005). To capture the variation in "ease of travel" between zones, transportation and economic analysts have sought to develop inter-regional "impedance" factors that are both mode and direction-specific (Lindall et al, 2005). The direction-specific nature of impedance factors is due to the uni-directionality of many product flows, resulting from supply chains and distribution channels in buyer-supplier relationships (Enright 1996). In addition, access and connectivity to intermodal terminals are shown to be important factors in the concentration of some industry sectors (Targa et al, 2005). Finally, some industries have threshold factors for maximum acceptable travel time's and schedule variability, which effectively limit their market areas. For instance, just-in-time scheduling process limits suppliers to those that can reliably provide same day delivery (VTPI 2008).
The historical cases and research findings, together lead to a generalized view of key factors, determining how a specific transportation improvement can lead to economic growth in a given area.

4.7.2 Approaches for Economic Impact

A panel of regional economic development experts' was then assembled and used to estimate the likely magnitude of highway project impacts on new industry attraction to the state and affected corridor. Later reviews of the Wisconsin study approach concluded that while there were indeed limitations with modelling just travel cost savings for existing travel patterns using the SPSS- model, the use of expert panels may not be the ideal solution for estimating additional business attraction since personal expectations can over-estimate actual results (Luskin, 1999). This approach was subsequently applied to other proposed Indiana highway projects (Kaliski et al, 1999). It later formed the foundation of Montana's. Highway Economic Analysis Tool (HEAT), a GIS-based system that added detailed commodity flow data and an improved version of the Business. Attraction Module to account for the economic consequences of highway projects changing access to airports, intermodal rail freight facilities, and and international crossings of the border as well as labor and truck delivery markets (Wornum et al, 2005).

The value of combining a regional economic model with detailed commodity flow and access patterns was further demonstrated in a broader multi-modal framework by the RUBMRIO (Random Utility Based Multi-Regional Input-Output) Model for Texas (Juri and Kockelman, 2006). It incorporated county-based input-output tables, and added CGE-type market equilibration features to calculate shifts in demand and prices for land and labor among counties. It also introduced a random utility approach to calculate the "disutility" (a composite measure of effective cost) for inter-zonal commodity purchases, calculated from models of mode and origin choices by industry.

This model is notable for its consideration of inter-zonal rail and highway commodity flows, travel times and costs, and its detailed estimation of how proposed rail and highway projects can lead to both economic growth and economic redistribution implications.

A different approach to modelling the regional economic consequences is illustrated by the CRIO (Cost-Response Input-Output) model. Following the concept of "Occam's Razor," CRIO is a reduced form regional model that adds a strong set of features for estimating the incremental effects of transportation improvements at the local and regional levels, but shaves off broader macroeconomic factors that do not normally come into play for these types of situations.

This tool, designed for assessing proposals that simultaneously affect multiple transportation modes, combines an I-O model and economic growth baseline forecasts with a series of econometrically derived functions relating transportation access and travel cost changes to shifts in local industry output and employment growth. It has been used as part of the broader TREDIS system (discussed later) to estimate the regional economic impacts of road and rail improvements intended to improve freight flow in congested regions (including Vancouver, BC, Portland, OR and Chicago, IL).

A strength of this model, which makes it particularly useful for such situations, is its industry-specific sensitivity to changes in delivery schedule reliability, market scale and intermodal terminal access, all of which utilize non-linear functions with thresholds before productivity benefits appear (TRB, 2006).

However, the model assumes no shifts in labor/capital substitution or labor costs within industries, based on the fact that those broader factors seldom change in any perceptible way in response to incremental transportation improvements made at a local scale in North America.

In general, the regional studies tend to utilize more detailed information on travel time and access changes affecting different modes and industries than the broad-brush cost measures generally used in national and sub-national macroeconomic models. The regional studies often also consider commodity flows, regional system reliability and interconnectivity factors among modes too a much greater degree than the land use

models. Some economists and proponents of various models tend to blur these spatial distinctions and attempt to apply the same macroeconomic principals to all levels of geography.
However, these examples of model applications show the complexity of cost and access considerations that can arise at a local or regional level, and the value of specialized tools that can address them (HDR , 2008).
There are also models that focus specifically on how transportation access changes can affect local business attraction and location decisions. Those findings can be used on their own, to help develop complementary economic development strategies. They can also be used together with other transportation and economic models in a broader analysis system.
The Transportation Business Attraction Model was originally developed for Indiana's Major Corridor Investment Benefit Analysis System. It used a two-step process to estimate the business attraction opportunities associated with a new or substantially upgraded highway link between rural and urban areas.

- First, it measured the gap in business mix and growth (by detailed industry) in the rural areas whose access would be improved, compared to patterns and trends in the major urban areas to which they would be connected by the highway.
- Second, it identified the extent to which those gaps could be explained by deficiencies in transportation connections, which reduced or eliminated by the proposed new highway (Kaliski et al, 1999).

Shortly thereafter, the ARC-Opps (Highway Opportunities) and later LEAP (Local Economic Assessment Package) spreadsheet tools developed for use by the Appalachian Regional Commission.
These stand-alone tools enabled regional economic development agencies within Appalachia to identify targets for economic development and business attraction in areas were served by the newly completed portions of the. While they used the same two-step logic as discussed above, they also covered an expanded list of accessibility effects.
That included effects of transportation improvements on expanding labor markets, truck delivery markets and shopping markets, as well as tourism markets and highway connections to air, rail and marine terminals.
Those models were accompanied by guidebooks on their use for economic development strategy (Economic Development Research Group, 2001 and 2004).
From this review, it should be clear that there are wide differences among both the definition of regional scale and the spatial granularity at which various classes of predictive models operate.
These lead to corresponding difference in the facets of transportation impacts of every mode to which they are most sensitive. It follows that an analyst wishing to select an economic impact models for the evaluation of transportation project proposals will have to hone in on the most relevant and important aspects to be analyzed for their particular situation.

That can also help to improve the validity of future predictive models. Altogether, the findings from this review suggest eight guidelines that should be considered by both researchers and policy analysts seeking to select among predictive models and impact measurement methods.
Consider economic impact factors beyond just the value of daily average travel time and travel cost savings, including the potential value of highway system connectivity and peak period reliability improvements for both commuting and goods movements.
Consider the importance of multimodal implications, such as how a highway project can affect access to jobs, recreation, airports, rail intermodal terminals and border crossings.

1. Consider the potential for changes in transportation conditions to hit certain industries that are particularly dependent on schedule reliability for time-sensitive deliveries.
2. Consider the need for analysis methods that can identify when transportation impacts are magnified or constrained by other local economic growth factors, such as utility infrastructure, financing, labor skills and capacity for growth.
3. Avoid confusion by using analysis methods that can separate economic (flow of dollar), impacts from value of benefits that do not directly affect the flow of dollars.
4. Distinguish areas of impact:
    a. Local,
    b. state,
    c. National and
    d. Global impacts, and show results for the level of study area that is most appropriate for those who will be using the analysis results.
5. Distinguish benefit and cost perspectives:
    a. Savings for travellers,
    b. Savings for all users including freight shippers and recipients,
    c. Generation of income in the economy, and
    d. The value of all benefits to society, and report results as appropriate for those who will be using the analysis results. (Carolyn , 2003).
6. Select modelling approaches that stress the particular types of causal factors and access elements of most relevance to the type of transportation project being considered and its location context, recognizing that various economic responses and market mechanisms can be of differing relevance depending on the size of the project and scale of the study area.

The framework described here has been used as a basis for organizing inputs, models and analysis results of studies of the economic impact of proposed or planned highway, public transport, and high-speed train and aviation projects. (Fred , 2009)
However, even with this basic framework as a starting point, there is a substantial remaining need to improve the structure, dynamics and interaction of factors within transportation economic impact models. For instance, integration of a static travel demand model with a dynamic economic model can lead to clear biases in impact forecasts.
This can occur because static travel demand model generally do not forecast time-of-day schedule shifts for commuters and truck deliveries in response to rising congestion, which can lead economic models to over-estimate business and household relocation responses.
On the other hand, travel demand models that use only daily average data can underestimate impacts associated with dramatically more severe peak period conditions.
The use of a general analysis framework that distinguishes critical benefit and cost elements is useful, as it can aid in addressing these problems. More importantly, it provides a starting basis for helping to organize modelling and-thinking about the nature economic impacts that can result as a consequence of transportation improvement projects (VTPI 2009).

4.7.3 Evaluating Transportation Economic Development Impacts

Transportation facility improvements can increase economic productivity and support economic development (TRB 2006). Seneca, et al. (2010) provide a detailed review of literature on this subject. Bhatta and Drennan (2003) find elasticity of production costs as a function of transport infrastructure investment ranges from -0.05 to -0.21, meaning that a 1% increase in transport infrastructure investment increases economic productivity 0.05% to 0.21%.

Building the first highway to a region tends to significantly increase local economic productivity, but once a basic paved road system exists, expanding it provides declining marginal benefit (SACTRA 1999; Kopp 2006).

Since traffic congestion imposes economic costs, highway expansion (more traffic lanes) is sometime promoted to increase productivity (Hartgen and Fields 2006: 205; ATA 2008: 74), but alternative congestion reduction strategies tend to be more cost effective and efficient overall (Hodge, Weisbrod and Hart 2003; at 2004; Litman 2007a).

A significant portion of the perceived economic benefits of incremental highway improvements are economic transfers. (some businesses and property owners gain at others' expense), rather than net increases in productivity (SACTRA 1999). After analyzing Washington State highway investment economic impacts, Peterson and Jessup (2007) concludes that "some transportation infrastructure investments have some effect on some economic indicators in some locations" but dismiss the idea that such investments are always worthwhile.

Weiss (1999) and Horst and Moore (2003) show that rural areas with good highway access experienced more employment growth, poverty alleviation and industrial diversity than areas that lack such access, but these are largely economic transfers from one location to another without overall gain in economic activity (Baird 2005; CBP 2002; Chalermpong 2004). Shirley and Winston (2004) found that infrastructure spending increased productivity but returns declined from more than 15% annually in the 1970s to less than 5% in the 1980s and 1990s. They conclude, "During the past two decades, the primary objective of highway spending has shifted from expanding the nation's capital stock to maintaining it. (Kaan 2007).

Undoubtedly, the improvement in costs and service from such investments and the concomitant reduction in plants' inventories cannot compare with those produced by the construction of thousands of miles of new roads." Smith, et al (2002) found that new highways significantly affected land development patterns in the Twin Cities region during the 1970s, but once the basic system was completed adding roadway capacity provides less additional residential, commercial or industrial development.

Regions that invest heavily in road capacity expansion fared little better in reducing traffic congestion than those that invested much less (STPP 1998). Other transportation improvements, such as public transit investments and mobility management strategies such as congestion pricing and HOV facilities often provide greater economic benefits (Boarnet and Haughwout 2000; Cambridge Systematics 1999) Jiwattanakulpaisarn, et al. (2009) analyzed the relationship between U.S. highway supply and employment, using time-series cross-sectional data on roadway lane miles and private sector employment for the 48 contiguous states over the period 1984-1997.

The analysis found that employment growth is temporally influenced by annual growth in major highways within the same state and all other states, but the existential and direction of these effects depends on highway type as well as time lags considered. Jiwattanakulpaisarn, Noland and Graham (2009) found similar results.

Their analysis suggests that further highway improvements provide small economic returns: a dollar spent

to increase interstate highway capacity could increases private sector output just $0.15 in the long run (more than a decade), with even smaller productivity gains from expansion of lower functional road categories. Hymel (2009), examined the impact of traffic congestion on employment adn economic growth in large U.S. and other metropolitan areas.The study found that congestion reduces employment growth, particularly over the long run in highly congested places (TTI 2007).

The analysis suggests that in a large congested city such as Los Angeles a 10% increase in congestion would reduce subsequent long-run employment growth by 4%. Some studies suggest that highway investments that stimulate sprawl are economically harmful. In a study of 44 US metropolitan regions Nelson and Moody (2000) found that, controlling for other factors, per capita economic retail and service activity declined as the number of urban beltways increases.

They concluded that beltways deconcentrate peoples' and businesses to levels that reduce for industrial agglomeration efficiencies.

An expert review of economic impact research (SACTRA 1999) concludes:

◆ "The available evidence does not support arguments that new transport investment in general has a major impact on economic growth in a country with an already well developed infrastructure. At the regional and local level, in particular, the issue of impact is made more complex by either the possibility that changes in quality of access can benefit or harm the area in question. We do not accept the results of macroeconomic studies which purport to identify very large returns from infrastructure investment." (David 2006)

◆ Transport investments may have broad economic impacts, but these can be either positive or negative. Case Study, road improvements can lead to resident's travelling elsewhere for shopping and services, reducing business in that community.

◆ Traffic reduction strategies can provide economic benefits by encouraging more efficient use of existing capacity. Travel demand management (including road pricing or improvements in alternative travel modes) should be considered as alternatives to capacity expansion." O'Fallon (2003) provides the following guidance for maximizing productivity gains from infrastructure investments:

◆ Improve the efficient use of existing infrastructure through demand management and efficient pricing. Additional infrastructure capacity may fail to increase productivity if existing infrastructure ineffectively utilized, efficient management has the possibility of greatly affecting economic productivity.

◆ Recognise that the reliability of infrastructure is particularly important vis-à-vis its impact on international trade and production costs for small enterprises. Poor quality or unreliable infrastructure service provision may mean that firms are reluctant to invest productive capital, or have to reduce such investment in favour of "complementary" capital to compensate for the lack of infrastructure

◆ Care should be taken not to get into a situation of oversupply of infrastructure, which can have a negative impact on the economy as it draws scarce resources away from maintenance and operation of existing stocks.

◆ Infrastructure investments should be carefully evaluated based on national benefits. This implies the use of benefit-cost analysis. Some authors have suggested trade-offs should include those between different kinds of infrastructure investment.

◆ Avoid making infrastructure decisions based on political influence (i.e. through pork barrelling or lobbying and coalition agreements) as such decisions may lead to distortion in infrastructure provision, particularly in the longer term. This indicates that highway expansion tends to support economic development under certain circumstances: when economic development is constrained by inadequate access and highway

improvements are cost effective or are subsidized by others. Alternative approaches, such as more efficient road pricing, may be most beneficial overall.

4.8 Technology in Transport and Logistics

The road freight industry is essential to the economic development of the European region. The growth in volumes may be directly related to the strength of manufacturing production and retail sales but it is also true that an efficient industry lowers costs and enables best practice in supply chain management.

It is also true that the industry is not homogeneous across the region despite efforts by the European Commission to standardise operating practices and regulations.

Each country has its own specific characteristics, driven sometimes by the structure of demand and sometimes by geography and often by culture.The industry also has to face a range of external threats from increasing fuel costs; congestion; interest rate rises and the ever increasing level of social costs. On top of this, in recent years the influx of competition from Eastern Europe, has become a major issue – one country's industry association described the impact of low cost, 'low quality' hauliers from Poland, Hungary etc as a 'catastrophe'.

Administrators as a problem rather than as a driver of economic prosperity, especially given their environmental policies, often perceives this hyper-competitive, complex and over-regulated industry. However, with economic growth firmly at the top of politicians' agendas, it is now a good time to highlight the benefits which a strong and vibrant industry can deliver.

The advent of the European Union is dramatically changing logistics and supply chain management in the Old World.From national to regional to pan-European—and now once again moving closer to the customer—many companies'. European logistics networks have evolved in response to the advent of the Common Market.Companies, they are rethinking their distribution strategies in Europe," and revisiting their distribution networks, observes Jon Bumstead. Based in London, Bumstead is the partner responsible for Accenture's fulfillment practice in the supply chain. He sees "a greater move to internationalization, with companies sourcing products from farther afield and supplying products more centrally." The evolution of European supply chains occurr for decades. In fact, many companies are in the third phase of a multi-phase model, according to Martin Gouda, senior consultant of Buck Consultants International, Nijmegen, the Netherlands.

The phases are:

Pre-1993, before the European Union was established, "many companies had a national setup, with a distribution center in all the major countries in which they played," Gouda explains. Sourcing was done mainly from manufacturing plants in Europe, and logistics strategy was developed on a country-by-country basis. "Logistics responsibility was national, thereby there was often no real European strategy", Gouda explains. Supply chain service offerings were often one-size-fits-all. Transportation was performed by domestic carriers; third-party logistics providers were often local or regional in nature Mid- to late-1990s. When the European Union started to open its internal borders, "global sourcing became more and more important, factories more globally focused," according to Gouda.The responsibility for logistics became more European focused, and companies developed strategies for European supply chain management. Pan-European distribution centers began serving all the major countries of Europe. These DCs expanded their roles, postponing manufacturing and adding value-added activities to the traditional activities of receiving, pick and ship.

Pan-European surface carriers came on the scene, in addition, companies increasingly turned their transportation needs over to integrators who could ship directly from a central location. The situation today, using centralized, pan-European distribution networks requires shipping products greater distances to customers, which can be costly in terms of money and time. As a result, supply chains in Europe are evolving again to become more productive- and channel-specific, according to Gouda.

Companies today are using a hybrid of centralized and decentralized distribution facilities—Case Study, utilizing a centralized DC for medium and slow-moving products and shipping fast-moving products from a regional DC or what Gouda calls a rapid fulfillment center (RFC) that's based closer to customers. With this model, some products may bypass the DC altogether and be drop-shipped directly to the customer. The regional DC that's part of the hybrid network is a different breed than the national facility of yesteryear, Gouda remarks. Today, a fulfillment center, which might be as small as a cupboard in Madrid holding 80 key components, could carry A-type spare parts and products from a certain product family that are sold on a next-day or same-day delivery basis. B and C products shipped from a distribution store.

Traditional distribution center sites are also evolving. Perhaps two-thirds of European Distribution Centers (EDCs) were historically sited in the southeastern part of England and the Benelux area (Belgium, the Netherlands, and Luxembourg), according to Bumstead.

Today, EDCs are increasingly located in northern France and the western part of Germany, and, to provide the fast service that's required today, regional distribution centers are being opened in a variety of locations. Case Study, an RDC in Lyon, France, might serve customers in southern France, Italy and Spain. Whatever shape a company's European distribution model takes, one thing is for sure: "it is not a one-size-fits-all anymore," Gouda says. Supply chains across the continent designed to respond to varying customer as well as product service requirements.

Moving East- The manufacturing center of gravity has is moving southwards in Europe to Spain and Italy, and "is now moving east as companies chase lower labor costs," Bumstead notes "A lot of manufacturing formerly located in the U.K. and in established European countries has shifted into Eastern Europe," Gouda says. As a result, "Eastern Europe is becoming significant for inbound transportation," and logistics platforms to support the manufacturing facilities are beginning to open up. The shift east is likely to continue, according to Bumstead, who predicts that "it's just a matter of time before the Eastern European countries are admitted into the European Union."

Countries such as Slovenia, Hungary, and the Czech Republic are well positioned for the future. "If the traditional power base—Germany, France, and the U.K.—want to stay ahead of the logistics game, they"ll have to continue to innovate," Bumstead observes. "Otherwise, the game will go to the mid-east" countries of Europe.

Companies operating in Europe have to weigh their tradeoffs before engaging, Eastern Europe's lower labor costs may be offset by such things as less-developed transportation and telecommunications infrastructures. Other major changes are underway as the European logistics and landscape changes

Case Study: A changing workforce, "Western Europe is becoming increasingly more prosperous, as it has been for the past 20 years," Bumstead observes. In addition, the working population in Western Europe is aging, and young professionals are delaying having children, Bumstead says. "The crunch comes in pensions, with an increasing number of older people who want younger people to pay for them," he explains—but there are fewer younger people to shoulder the burden. As a result, migrants from Eastern Europe, Africa, and various war zones—who will have much lower expectations of wages—will play an increasingly important role, resulting in a more diverse workforce in Western Europe.

Transportation, "Transportation is a big issue in Europe," Bumstead says, noting that "road congestion, rail infrastructure, and safety have become political issues" in the U.K. Traffic congestion is an increasing challenge in heavily populated areas, such as Amsterdam, Brussels, London and Paris.

"There has been a major swing in vehicle movements from rail transportation to road," he says. In addition, companies have increased delivery frequency, multiplying vehicle trips, "and there are more cars owned per family, and more people drive farther distances to work." Government's are moving to address congestion with solutions ranging from charging road tolls to investing in the rail infrastructure. Germany, Case Study, "is putting big investments in rail lines that run parallel to major highways," Bumstead says.

Other organizations are tackling transportation issues as well. Accenture, Case Study, is working on a venture that will provide a community of shippers with visibility of loads moving north and south, providing the opportunity to fill empty backhauls and thus help reduce congestion.

The advent of a common currency "has created pricing transparency across Europe," Bumstead observes. Before the introduction of the Euro, "a lot of people hid behind the fact that they were selling products for different prices in different markets." Use of the Euro changes all that; "It has launched a completely new wave of procurement," he explains.

Take the consumer products industry, which typically was a very decentralized, country-based operation. The advent of the Euro has given these different operations the ability to recognize that they are being charged different prices for common supplies—such as packaging and raw materials—procured from common vendors.

This opportunity to reexamine pricing, and the advent of electronic auctions, together have created a deflationary effect, according to Bumstead.In addition to increasing competition, the change has resulted in "a lot of local relationships that are now not sustainable," he says. Another impact of the euro will be a lot more cross-border trade over the next two to five years, Bumstead predicts.

Harmonization does not mean standardization. Despite significant advances in establishing a common market, understanding and respecting regional differences remains an important part of doing business in Europe. "Yes, we are trying to standardize in Europe, but we still have a lot of different countries," Gouda says.While standardization is definitely well underway, change is occurring slowly. Significant differences remain in areas such as regulations, taxes, and duties.

"Europe is still struggling with an identity crisis from customs and regulatory standpoints," observes Stephen Gould. "A score of countries in the EU all have their own governments and trade authority, duty and tariff schemes. An independent international businessman based in Beachwood, Ohio, Gould is an adjunct professor at Case Western University.

Do not expect to be able to replicate the U.S. way of doing business in Europe, Gouda warns. "Europeans are still Europeans. Italian people are different from the Dutch, who are different from the English and the Germans,".Companies that are successfully in Europe combine Europeanization strategies with taking into account national and regional differences.Supply chain professionals need to be as vigilant with Europe as an integrated community as they were before, according to Gould. "The continuing integration doesn't mean everything is easier.

Just as occurred with NAFTA, the body of regulations, documentation, paperwork and recordkeeping associated with the integration "is changing, and it's monumental," Gould says. Transport and logistics are key components of a successful economy: they play a major role in national economies and are significant contributors at both the national and local level.Transport and logistics underpin the economy, enabling the movement of goods, services and people as efficiently as possible.

The fast growth of freight transport - driven to a large extent by economic decisions - contributes to growth and employment but also causes congestion, accidents, noise, pollution, increased reliance on imported fossil fuels, and energy loss. Information and communication technology (ICT) can have a significant influence on the mobility of people and goods.ICT is also a potentially important enabler of change in social and organisational practices, thus affecting the demand for transport in spatial and temporal terms. Technological trends will meet the demand for comfort, safety and speed through advances in ICT in the field of telematics. This covers systems for traffic and transport management, travel information and reservations, vehicle guidance, and and mobility cards.

Over the last few years firms operating in the transport and logistics sector have made significant progress in their adoption of new technologies, particularly those linked to the internet and e-business. Nearly all companies which use computers in the TLS sector said in 2007 that they were connected to the internet (97%).

There are a clear trend towards broadband connections: except for micro-firms, more than 40% of all companies are connected by broadband, i.e. with a bandwidth of more than 2 Mbit/s. Only 8% of all enterprises actually employ ICT practitioners (most of the small companies cannot do so).

The percentage is higher among medium (33%) and large companies (66%). 45% of companies said in the survey that they had outsourced ICT services to external service providers in the past 12 months prior to the interview. Nevertheless, survey results also indicate a certain lack of awareness regarding the importance of ICT skills and resources which are needed to exploit technological innovation and to support the reorganisation of work processes. It appears that the availability of qualified personnel with specialised skills is quite limited in the transport and logistics sector.This could be a critical issue for the sector in the future, as it might be a barriers for innovation.

The continuous improvement of the basic ICT infrastructure, in the TLS sector has allowed companies to embrace opportunities to substitute paper-based data. Manual processes by electronic exchanges, thus optimizing the flow of information and documents in and between companies, taking advantages of the increased diffusion of advanced e-business software systems.ERP (Enterprise Resource Planning) systems are one of the main platforms to enable this goal. If a customer or supplier has an ERP system, data related to orders (received or placed) is typically exchanged in a paper-less way between the ERP systems of the two companies trading with each other. However, there is still a considerable gap in the diffusion of ERP systems between micro and small firms on the one hand and the medium-sized and large firms on the other (see following Exhibit). The relatively high implementation costs for ERP systems remain a critical challenge for SMEs.

Specific software solutions for the TLS sector, such as Cargo Handling Technology, Fleet Control System and ITMS (Intermodal Transportation Management Systems) are also mostly used by large transport and logistics companies.

4.9 Technology Trends in Transport

Several technologies are used to support the current transport infrastructure. Some use integrated systems that combine intelligent route planning, driver assistance systems, intelligent vehicles and interaction with infrastructures. To obtain better quality solutions needed in the organisation and operation of the European transport system, the use of interoperable ICT and Intelligent Transport Systems (ITS) in the transport logistics chain has been encouraged and used more often as a matter of priority.

However, presently, several technologies are being tested and/or deployed. This include lighter, more

comfortable, less polluting, safer, and more durable cars being produced; faster sea freighters; and safer and faster trains. In all these, the current trends are that there is greater utilisation of intelligent transportation systems technoloties whose backbone is advanced computing technologies and supporting ICTs. The purpose for using ICTs and advanced computing in transportation is to improve productivity, mobility, air quality, and safety in all modes of transport. For this reason, governments have a significant role to play in encouraging the use of seamless, integreated systems that embrace multi-modal transport services for both passengers and cargo (Sathe et al., 2011).

Technology has made it possible to utilise non-decaying construction materials such as scrap tyres, Marble dust, Blast furnace slag, and Plastic to build sustainable roads economically while also ensuring the roads are environmentally friendly. Better road construction technology makes it possible to build stronger roads even when recycled materials are used instead of the conventional bitumen (Sathe et al., 2011). Of late, there are driverless cars that are being advanced to autodrive themselves in busy streets and this may change the way the transport sector operates and how they do their logistics.

A specific role for interoperability in the exchange of information between businesses and administrations is rising. However, the interconnectivity in business-to-business and business-to-consumer logistics is also vitally important. The proper functioning of the logistics chain requires well performing information and communication systems. Thus, means of transport synchronize their activities and the transported goods reach their destination on time and in full transparency of information.

Smart technologies should be introduced to avoid delays in the supply chain for security and other reasons. One such technology is Radio Frequency Identification (RFID,) which is a growing market but requires further research and work on radio spectrum management, interoperability and standardisation. Its role in providing improved automation for tracking and counting proceses leads to the creation of more accurate and faster supply chain logistics.

This is why, numerous transportation and logistics firms have RFID technologied deployed to ensure an almost 100% order precision, receiving and shipping, 99.5% inventory precision, 30% decrease in labour costs, and 30% quicker processing of orders. This is made possible by an RFI Reader that recognises and locates all items the company is interested in tracking such as containers and trucks. Thus, the firm can read numerous tags at the same time irrespective of their distance from the reader (Motorola, 2011).

RFID readers can be fixed readers, handheld readers, or mobile readers. These serve different purposes. For instance, handhled readers requiren an external antenna to be able to read different tags while mobile readers use wireless technologies are are much more suitable where the tracking system is mobile. An RFID refresher is another component of the RFID technology whose purpose is to keep refreshing the reader to keep reading new or more tags. This generally improves the company's bottom line by increasing a firm's visibility (Motorola, 2011).

RFID is expected to contribute to improved efficiency and security, and provide new quality services for mobility of people and goods. For instance, the railroads, have fortified RFID with even more advanced technologies, including GPS, real-time engine-health monitoring and wireless data.

Thus, the development of ICT supporting planning, optimisation, and monitoring of freight haulage for terminals as well as for all other service providers of intermodal transport chains is one of the most challenging application domains for computer and business sciences in the transportation sector. Such an approach is circumscribed, Case Study, by the concept of "e-freight", which denotes the vision of a paper-free, electronic exchange of freight transport-related documentation. Possible initiatives to accelerate the

application of ITS/ICT to freight logistics could encourage the emergence of an open architecture that is based on interoperable components and supported by common messaging.

This would require standardisation efforts towards a single platform for applications, data and interconnectivity.

In the one hand, the EU is investing considerable public funds in these systems and accompanies their roll-out with the necessary regulatory framework, and in the other hand the International Organisation for Standardisation (ISO) recently released the ISO 24014-1:2007 - Public transport - Interoperable fare management system. Part 1: Architecture, 51 that provides the basis for the development of multi-operator/ Multiservice interoperable public surface (including subways) transport fare management systems (IFMS) on a national and international level

The standard was developed by ISO/TC 204 - Intelligent transport systems (ITS), which covers standardisation of information, communication and control systems in the field of urban and rural surface transportation, including intermodal and multimodal aspects of traveller information, traffic management, public transport, commercial transport, emergency services and commercial services in the ITS field. ICT are major potential influences on the mobility of people and goods.ICT are also potentially important enablers of changes in social and organisational practices, thus affecting the demand for transport in spatial and temporal terms.

Technological trends will meet the demand for comfort, safety and speed through advances in ICT and telematics (traffic and transport management systems, travel information and reservation systems, vehicle guidance systems, and mobility cards).

Overall business growth is likely to cause an increase in road traffic and hence, an increase in CO2 emissions. Presently, transport is responsible for about 28% of total CO2 emissions. Road transport alone represents about 84% of all transport related CO2 emissions. With 98% dependency on oil, the transport industry not only has a big impact on air quality and greenhouse gas emissions, but high oil prices also have a significant influence of the transport sector and the economy as a whole.

A new e-Safety Forum Working Group on “ICT for Clean and Efficient Mobility” and established to investigate the ICT-related technologies impact on transport safety, clean a energy efficient mobility of people and goods. There are many practical examples that would help the Working Group to collect data as is the case of the FRIDA solution developed and implemented by the Nordic Port in Sweden (see Section 5.12.2).

The deployment of the FRIDA system allows the Sweden authority today not only to measure the pollution generated by the public transport all over Sweden but also to set up concrete and achievable goals for the environment for the different regional authorities. Road safety remains a major concern.Each year in the EU around 40.000 people are killed and more than 1.2 million injured in road accidents.

Information and communication technologies can contribute significantly to improving road safety, enabling the development of sophisticated safety systems that improve road users’ chances of avoiding and surviving accidents. ICT also provide new systems for enhanced traffic management e.g. receiving the latest information shortly before departure on the best way to reach a destination or being warned about congestion ahead, before the user get caught up in it. There is no doubt that the ICT is playing also an important enabling role in logistics. The ICT used by firms in order to improve their competitiveness may be classified into three categories:

1. Identification technologies,
2. Data communications technologies; and
3. Data acquisition technologies.

In what concerns the identification technologies, firm is may appeal to bar-coding or to RFID, both facilitate logistics information collection and exchange. As regards data communications technologies, firm's may appeal to the electronic data interchange (EDI), the Internet, the Value Added Network amongst others.
Nowadays, as regards the data acquisition technologies, firms usually deal with a large amount of goods and data emphasizing the need for data collection and exchange criticality for logistics information management and control. Good quality data acquisition can help firms deliver customers' goods more accurately and efficiently.
Firms need to be able to manage information effectively, and to integrate several logistics activities by including inbound and outbound transportation, distribution, warehousing, and fleet management, in order to streamline the physical product flows of their customer companies. Through the intensive use of ICT (acquisition, communication, and identification technologies) in logistics, the information flows, efficiently used by firms, will reinforce the existing competitive advantages, or alternatively, will create new competitive advantages.
The ICT are important to logistics, since they make available the right information, at the right time and at the right place.Current ICT technologies provide new possibilities for networks, the distribution of information and the design of business logic. The accessibility and the numerous opportunities to creatively use the Internet has brought many implications to the organisations core business processes to generate enormous benefits in terms of performance as well as provide greater value-added products and services. The use of ICT by European enterprises has grown steadily from 2003 to 2005 for several technologies.
Over the last few years firms operating in the transport and logistics sector have made significant progress in their adoption of new technologies, particularly those linked to the Internet and e-business. ICT and e-business activities deployment has thus become increasingly important for the industry. Low-cost access to the Web and the dissemination of e-business technologies provide firms with a tool to satisfy customer demand by using traditional services in conjunction with growing information-based services.
Firm's can automate existing processes and dramatically reduce cycle times throughout the supply chain. They can enhance communication, collaboration, and cooperation between knowledge teams (including virtual teams) using intranet technologies as well as between the organisation and members of its external constituent organisations using extranet technologies. Firm's may link their electronic systems to those of their suppliers, distributors, and dealers in powerful inter-organisational network to support effective supply chain management objectives, including integrated production life cycle planning.
In logistics, the new methods of distribution, such as just-in-time (JIT) manufacturing- where warehousing seems to be unnecessary because products are shipped directly to customers, led warehousing companies to strive to become more than simply storage facilities. They are transforming themselves into "third-party logistics providers" or "3PLs" that provide a wide array of services and functions. In addition to packing and staging pallets, contemporary warehousing facilities offer light manufacturing, call centers, labelling, and other non-storage options.
In the past, warehouse management coordination involved a multitude activites which was paper-intensive. The introduction of warehouse management system software has changed the situation. The software has assisted the managers in tracking products throughout the entire storage to the distribution process.

These systems span from simple computer automation systems to high-end, feature-rich management programs that improve order picking, facilitate better dock logistics, and monitor inventory management. Case studies about Geodis (Belgium) and AIT (France) represent the range of actual possibilities available to logistics companies - large or small-sized- to develop a WMS. The main issues or trends in warehousing include radio frequency identification (RFID), transportation management systems, pick-to-light technology, and and voice-activated receiving and packaging.

The use of computer networks internally in the enterprise believed to yield potential gains in efficiency and productivity. The adoption of internal computer networks is a first step towards the computer integration of business processes. Such integration potentially streamlines and boosts the efficiency of the enterprise.

The size and scalability of any computer network are determined both by the physical medium of communication and by the software controlling the communication (i.e., the protocols). An Intranet is a specific application of the internal computer network that serves as a communication tool within the enterprise, and an Extranet can be viewed as part of a company's Intranet that is extended to users outside the company. As such, both can be regarded as a next step in the use of the internal computer network as eBusiness.

Around one quarter of the TLS sector firm's use an Intranet and, again, it depends on the company size, ranging from a relative small 23% for micro-sized firms to a high 77% of large firms. Only a few firms in the industry use an Extranet (6%), mostly used by large-sized firms (42%). Remote access means that employees can access data from the company's computer system remotely, e.g. when working from home or travelling. In the TLS industry, 24% of firms (comprising about half of the sector's employment), enable remote access. This infrastructure indicator is quite common among large firms (74%) and medium-sized ones (57%); however, is not yet widely used by small firms (23%). Again, this fact strongly indicates the different stage of ICT architecture maturity levels of companies from different size-bands.

Voice over Internet Protocol, also called VoIP, IP Telephony, Internet telephony, Broadband telephony, Broadband Phone and Voice over Broadband is the routing of voice conversations over the Internet or through any other IP-based network. Some VoIP services offer features and services that are not available with a traditional phone, or are available but only for an additional fee.

The provision of VoIP; driven by increasing broadband penetration. Some cost savings are due to utilizing a single network to carry voice and data, especially where user's have existing underutilised network capacity that can carry VoIP at no additional cost. VoIP to VoIP phone calls are sometimes free, while VoIP to public switched telephone networks (PSTN), 59-may have a cost that's borne by the VoIP user.

As ICT, has become such an important element in the working lives of many European citizens, so has the demand for ICT-related skills. Improving e-business skills, especially among SMEs, and has was identified as a relevant concern for policy in several e-Business Watch sector studies. In particular in sectors where processes are increasingly supported and managed by ICT systems, Case Study in large logistics companies, the percentage of employee's that uses ICT in its daily work routines has increased.

The competitiveness of European industry is dependent on both the effective use of ICT for industrial and business processes and the knowledge, skills and competences of existing and new employees. The raising of ICT skills within the EU will form part of the means by which the challenging Lisbon objectives (for Europe to become "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, with more and better jobs and greater social cohesion").

The current business environment requires that companies cut inventory as well as operational costs, and optimise supply chain management (SCM). The resultant savings translate into innovative and cost-

effective solutions that attract customers.One such measure is the use of RFID. In transport and logistics, RFID expected to contribute to improved efficiency and security, and provide new quality services for mobility of people and goods.

Using RFID, companies can track and monitor goods without scanning them using bar code scanners. Thus, RFID Technology and Systems RFID can be viewed as a competitor to the barcode, or a more advanced technology than the barcode.This technology streamlines warehouse management systems, encouraging its adoption and that of other SCM solutions.

As the use of RFID touches a wide range of policy issues, including spectrum policy, privacy, food and drug safety, identity cards, biometric passports, e-payments, eprocurement, counterfeiting, homeland security, and environment, the European Commission has launched a wide-ranging public consultation on the policy issues and possible concerns raised by the deployment of RFID technology and its applications.

In practice, although the technology is not new, the applications are very much at an exploratory stage. Interest exists across many sectors, and trials are underway across Europe. It is an enormous step to move from the present market to one where RFID is ubiquitous, but there are clear signs that the market is moving. A more widespread RFID deployment could strengthen the role of ICT in driving innovation and promoting economic growth. In the transport industry, RFID systems have inherent capacity to assist in vehicle identification, tracking and tracing enhancing both the economic efficiency and security. RFID systems are playing a role in increasing load factors and hence reducing empty running.They have the potential to make better use of the infrastructure, help increase use of alternative modes, enhance enforcement and facilitate road charging.

In logistics applications, RFID enables service provider's and forwarders to better track and trace consignments on the different legs of transport processes. Intercontinental container shipping provides a good example for the value of reliable tracking and tracing: very often, more than 20 different companies need to cooperate in transport of one single container. Railway operators suffer from poor monitoring of their wagons, which are spread across the rail network. By tagging not only packages and consignments but also transport unit's and vehicles with RFID technology, the asset management of these transport operators can be improved.

The costs for ticketing in the public transport sector still has a high share of the ticket price due to the costs for ticket production, distribution, fee collection and money management. Using RFID technologies for ticketing in public transport will not only lower transaction handling costs and reduce fare dodging, but also open new service opportunities for public transport companies and strengthen their competitiveness in the transport market. Several large European enterprises, including technology companies as well as service providers, are at the forefront of bringing RFDI solutions to the market and many small- and medium-sized enterprises have successfully introduced this technology. Current trends and forecasts indicate that the RFID market will grow fast in the next 10 years.

Although RFID technology was proven and tested in the past 3 years under a huge variety of operational conditions, environments and applications, enterprises that commit to the RFID journey are and will still be facing some challenges that need to be overcome as to lower implementation risks and consequently maximize investment returns. As an example, while the European Commission, ETSI, industry associations and commercial entities such as EPC global and GS1, together with local governments, large enterprises and technology vendors, continue to drive progresses towards the attainment of a global standard, work still need to be done to achieve this end-goal. More and more the Internet is becoming a major part of the corporate environment and driving decisions.

The new capabilities to use the Internet to supply large amounts of relevant information from multiple internal and external sources give the possibility to move from isolated information systems toward an integrated environment in every business organisation. Current opinion holds that Internet-based supply chain integration with upstream supplier's and downstream customers -"e-integration"- is superior to traditional ways of doing business.

True process improvements can only be achieved through automation, which implies the integration of business applications and data with the Internet and with the systems of the company's trading partners. True end-to-end process integration can offer more efficiency in virtually any business process ranging from procurement, to logistics coordination, to customer service, to develop and engineering processes, and virtually any other aspect of business dialog between two entities. Improved efficiency in these core business processes leads to faster cycle times, reduced overhead, more competitive offerings, and increased visibility into business drivers.

When business process integration is ultimately achieved across an entire supply chain, or between a manufacturer and its distribution channels, the financial return dwarfs the gains realised by setting up a disjoint web front-end.The difference between the two approaches can mean taking a leadership position in the industry due to significant competitive advantage.

An effective e-business solution must address the fundamental technical challenges of interoperability, communication and process management while delivering a secure, scalable and reliable solution suitable for running a company's most critical core business processes.

Specific software applications for knowledge management are intended to help companies organising information that is relevant for employees in a way that they can easily retrieve and use it. A document management system (DMS) is a computer system (or set of computer programs) used to track and store electronic documents and/or images of paper documents.

A DMS system allows an enterprise and its users to create a document or capture a hard copy in electronic form, store, edit, print, process, and otherwise manage documents in image, video, and audio, as well as in text form, to fulfil an organisation purpose. DMS may be needed in enterprises that capture and store a large number of documents such as invoices, sales orders, photographs, phone interviews, or video news clips.

To add intelligence and automation to the business process, companies began deploying ERP applications that could handle customer information, material planning forecasts, pricing information, and so on. These systems could now automatically initialize a procurement process and relies on the EDI system for the message exchange. ERP systems integrate (or attempt to integrate) all data and processes of an organisation into a unified system. A typical ERP system will use multiple components of computer software and hardware to achieve the integration. A key ingredient of most ERP systems is the use of a-unified database to store data for the various system modules.

Although the term ERP originated in the manufacturing environment, today's use of the term ERP systems has much broader scope.ERP systems typically attempt to cover all basic functions of an organisation, regardless of the organisation's business or charter. ERPs are cross-functional and enterprise wide.All functional departments that are involved in operations or production are integrated in one system.In addition to manufacturing, warehousing, logistics, and information technology, this would include accounting, human resources, marketing, and and strategic management.

In the TLS sector the use of ERP systems is notably low (6%), compared, Case Study, to most other sectors (10) studied by e-Business Watch in 2006 (45%). Yet, there is still a considerable gap in ERP adoption between small firms on the one hand (14%) and the medium-sized (23%) and large firms (41%) on the other

(see Exhibit 3.4-1). The relatively high implementation costs for ERP systems remain a critical challenge for SMEs.

Outsourcing of ICT services could be a viable alternative to buying one's own system.Thus, this is then one of the main challenges for further expanding B2B e-business activity, because if a business partner does not have an ERP system, the exchange of data in standardised, electronic format is hardly possible. Integration of different supply chain actors and processes is one of the most important goal in any SCM project considering that the more integrated, the better the performance of the supply chain. Procurement is a support activity for the purchase of inputs (raw materials, office and production supplies and information systems) for all parts of the value chain.

Procurement activities aim at anticipating requirements, sourcing and obtaining supplies; moving supplies into the organisation, and monitoring the status of supplies as a current asset. Improvement of procurement processes in B2B markets can lower the costs incurred in the identification and subsequent selection of the best suppliers, increase the value of purchases in terms of their price-quality relationship, and lower transaction costs associated with greater process efficiency.

The most common business process that companies first automate is their procurement process. ICT permits the use of electronic technologies for procurement (e-procurement). Internet technology provides ways of drastically reducing different categories of transaction and communication costs. In that respect, the potential merit of various electronic procurement forms, such as electronic catalogue systems, electronic auctions, intelligent agent applications, electronic market places seems largely undisputed. However, in these supplier-buyer relations a hold-up problem arises because a number of applications requires involvement of both transaction sides (Case Study, who invest first). This is a problem dealing with inter-firm cooperation and usually depends on the pressure coming from suppliers or customers.

To measure the impact of those pressures the SeBW survey has asked firms in the TLS sector if they have experienced some pressure from customers/suppliers that their ICT solutions should be applied. Suppliers are not a main driving force to introduce new ICT solutions as only 8% of suppliers' firms have exercised some kind of pressure over their business partner in order to get new solutions. Rather, pressure is coming from customers (12%).

According to the results of the SeBW survey, only 9% and 6% of firms have demanded from suppliers and customers, respectively, that they implement new ICT solutions. When relationship investment are indispensable or specific assets are procured, firms will create networks in which supplier's and buyers form closed business relationships. This situation helps to overcome the hold-up problem and permits firms to create relations which are additionally strengthened by ICT.

There has been a great deal of enthusiasm around B2B procurement portals, designed to ease the way in which companies purchase materials. This can lead to faster, more efficient markets and reduced material costs, but it still does not address automation of the procurement process, which can lead to dramatically more efficient operations. By themselves, B2B portals do nothing to determine when materials should be ordered to optimize inventory and delivery, or how an entire supply-chain can be coordinated and optimized for maximum efficiency. Main advantages of e-procurement include getting the right product, from the right supplier, at the right time, for the right price and the right quantity.

E-procurement has the advantage of taking supply chain management to the next level, providing real time information to the vendor as to the status of a customer's needs. Procurement alters the traditional supply chain structure, bypassing the channels to deal direct with customers. It is in direct contact with suppliers, the benefits spill over to the back-end through feedbacks and customer-relationship management analysis

to improve core business processes. For these types of reasons, e-procurement has been seen to have the potential to play a pivotal role in a firm's endeavours to "create a competitive cost advantage that lasts for many years" 99, hence grounding sustainable competitive advantage.

The implementation of new ICT and complementary investments can lead to innovations, and innovations are positively associated with turnover growth.Innovative firms are more likely to grow. The empirical evidence presented in this study confirms the widespread that ICT and innovation are positively associated with turnover and productivity growth at the firm level. This holds for ICT- and for non-ICT-related innovations, for process and product innovations. There is no direct link, however, between ICT capital and economic variables such as productivity and employment dynamics. Instead, ICT has indirect effects that occur via innovations that are carried out and triggered by the adoption of new ICT.

4.10 Data Capture in Transportation and Logistics

Logistics automation is the application of computer software and/or automated machinery to improve the efficiency of logistics operations. Typically this refers to operations within a warehouse or distribution center, with broader tasks undertaken by supply chain management systems as well as enterprise resource systems. Logistics automation systems can powerfully complement the facilities provided by these higher-level computer systems. The focus on an individual node within a wider logistics network allows systems to be highly tailored to the requirements of that node.

Manufacturer supply chains are becoming longer and more complex and have real challenges getting timely and accurate information to the right place at the right time. These globally distributed supply chains present the largest challenge to the transportation and logistics organizations whose efforts to make operational and execution processes more efficient and effective are regularly hampered by late, inaccurate, and incomplete data caused in large part by the inefficient transfer of logistics data through the use of manual forms and input to capture that data. Although the use of digital capture devices appears slightly more mature in the transportation and logistics part of the supply chain, there is still the view that substantial improvements can be made in the business process. While nearly 80% of logistics functions still use paper forms and 52% of the data is input manually, more worrisome is that one-fifth of the data captured manually is not entered at all.

This leaves only 28% of the data entered either with a digital scanning process or with a digital pen. Certainly, this lack of automation is contributing significantly to the poor level of data accuracy and corresponding shipping errors within transportation and logistics. The benefits of moving to digital capture of transportation process data are significant. Respondents identified improvements in their ability to store/retrieve information, improved process efficiency and lower costs, improved data accuracy and timeliness, as well as a more robust form of signature capture for regulatory compliance.

This last point is significant as we are seeing a lot of interest in governance, risk, and compliance (GRC) in the supply chain in general and in logistics specifically. Management of trade and customs compliance, ant counterfeiting, and supply risk management are all increasingly dependent upon accurate transportation process data to function seamlessly.It is the view of Manufacturing Insights that automated, digital capture of logistics data is a critical foundational capability to effectively manage GRC and a distributed global supply network.

The opportunities for using modern digital technologies to better capture and store transportation- and logistics-related data are significant. Data capture remains an issue (with 20% of data not stored) along with rampant data accuracy problems.

Companies that understand both the accuracy levels of their data and its importance to cost and service levels are increasingly using automated data capture techniques or are requiring that capability from their logistics partners.

Current supply chain organizations manage a level of complexity in their business that is unparalleled. Cost and core competency pressures have resulted in distributed supply networks that can be five or six suppliers deep with both global trade and distributed control challenges.

Customer differentiation and consumer preferences have driven SKU numbers, product ranges, and configuration variants through the roof, while expectations about on-time delivery, delivery frequency, inventory levels/turns, and service performance (the perfect order) get tighter and tighter. At the same time, more and richer data is available to the supply chain, which is struggling to identify what data is useful, how to collect and analyze it, and what the resulting information can be used for in short-, medium-, and long-term supply chain operations. Complicating this situation are chronic data accuracy problems; primarily with foundational master data and transactional logistics data.

The modern supply chain must be prepared to handle the proliferation of data. Although most of the conversations around data have focused on the demand side, we believe the supply side is an equally important source of data as well, particularly with the growing complexity of supply and distribution networks and the corresponding control challenges. The expected focus in 2009 on the "execution suite" (warehouse and transportation management systems, manufacturing execution systems, and response and order management) intensifies the need for better, more timely information.

It is in the "acquire" phase of the data life cycle that we see data capture problems that lead, in part, to the chronic data accuracy issues incidentally, that most manufacturers discount as being far less problematic than they really are. One consequence of globally distributed supply networks is the growing complexity of the transportation as well as logistics process. While we would like to think these global networks are efficient, the reality is that efficiency has been largely defined by manufacturing costs, not by transportation as well as logistics costs. In our research on profitable proximity, we see manufacturers increasingly looking at "total landed cost" in their sourcing network decisions with an eye to simplified transportation. This will take some time to play out, however, and legacy transportation networks will predominate for some time.

Regardless of transportation as well as logistics network complexity, better data capture leading to improved data accuracy is a pressing challenge. Transportation and logistics remains hampered by manual forms processing, although the business process usage of paper forms does appear to be somewhat less than in either manufacturing or retail. This finding suggests that there has been a greater focus on data capture automation perhaps driven by the long history of capability outsourcing in transportation and logistics. That said, transportation providers still indicated in the survey that nearly 80% of functional areas persist in their use of paper forms and that 52% of the data is input manually. Particularly troubling is that one-fifth of all captured data not input into any kind of automated system ("storage" of data). The outbound shipment process (capturing of pallet, case, and unit data; packing list information; delivery priority; and consolidation instructions) is most notably highlighted by respondents as still having a significant level of manual forms usage and having a significant opportunity for improvement with the use of digital data capture technologies. Data errors here routinely result in shipment errors, over's/shorts, and corresponding receiving errors. Many of these errors can results in delayed or no payment, which then drives a time- and resource-consuming audit and dispute resolution process.Although arrival confirmation was a bit lower in terms of overall manual forms usage, it was identified by respondents as the process that would most benefit from the use of digital data capture technologies.

This finding is significant as the arrival confirmation (either at the front gate or at the warehouse dock door) for customer freight triggers a number of financial processes, including starting the clock on invoice payment terms as well as potential delay/demurrage charges. Potential benefits of modernizing forms processing and data capture are clearly indicated across multiple functions within transportation and logistics. Even where manual form usage is considered to be less of a factor, survey respondents still suggested there are significant areas for opportunity.

As we have observed in this document, these areas include outbound shipments, arrival confirmations, and communication of demurrage/delays three critical areas for transportation and inefficiency that can drive significant supply chain cost/waste.

Available technology options are fairly broad, with a mixture of different solutions most likely within transportation. Where people remain an integral part of the business process and/or an authorized signature is required, digital pen or scan-based capture is likely to be most useful. Where people are less of a factor (e.g., identifying a trailer within a warehouse drop lot), a more automated form of data capture such as RFID or GPS may be more appropriate.

Broadly, we see the following pros and cons for each technology:

Scan-based capture can be useful in a transportation and logistics environment, although it tends to be an "after-the-fact" approach that input forms that were manually completed during the particular business process.Form scanning is not, Case Study, easily or practically done at the dock door of a warehouse. This is a fairly mature technology, however, and appears to often be the choice when cost or technological sophistication considerations are important.

Digital pen/tablet technology is the most interesting technology for automating data capture in many transportation and logistics processes. It is portable and fits nicely with the level of personnel interaction that characterizes many transportation processes such as arrival confirmation, unloading completion, or dock departure.

Given the technology's relatively high penetration among global logistics providers such as UPS and FedEx, we continue to be surprised by its relatively low penetration among more traditional freight haulers. Automated data acquisition (barcodes, RFID, sensors) is certainly getting its fair share of press, but we see this technology as most appropriate for asset tracking applications rather than for transactional business process applications. Certainly, RFID tags applied to trucks/trailers could be used to confirm arrival at a destination point (front gate of a distribution center or the actual dock door) or to locate within a drop lot facility, but they are less useful when a confirmation signature is needed or when a business process has been completed. Most automated data acquisition technologies also have a fairly high infrastructure cost given the need for readers and data processing hubs and though costs have come down, the application of these technologies is still fairly low.

Integrated communication technologies; (EDI, GPS) are in heavy use by many third-party logistics providers to offer real-time asset tracking and arrival/departure verification. They are not as useful, however, where confirmation signatures are required or where a verification of exception is required. Increasingly, though, EDI capability, particularly considered "table stakes" in the transportation as well as logistics field.

4.31 Influence automation road transports economic developments Southern Europe (western Balkans countries) Safe and prosperous Western Balkans is one of the principal preoccupations of the foreign policy of the countries of Visegrad region. What is more, the cultural and geographical proximity and experience with successful transformation predetermine Visegrad countries to play a pivotal role in advocating the

European future for the countries of the region.

The EU's fundamental objective for the Western Balkans region (South East Europe) is to create a situation where military conflict is unthinkable – expanding to the region the area of peace, stability, prosperity and freedom established over the last 50 years by gradual European integration. Generally majority of the "new" member states are fond of southeastern enlargement.Part of the logic says it is inappropriate for Member States that have just entered the EU to deny accession to other states. Western Balkan countries are the first in the waiting room (as long as Island is not concerned) for EU membership, before controversial Turkey and countries covered by European partnership (see next Factsheet).

The Lisbon European Council of March 2000 stated that Stabilization and Association Agreements (SAAs) with Western Balkan countries, which involve the establishment of Free Trade Areas "should be preceded by asymmetrical trade liberalization".

As part of the Stabilization and Association process the Council decided to improve the existing autonomous trade preferences, and provides autonomous trade liberalization for 95% of all the affected countries' exports to the EU. The EU, also in its capacity as the main assistance donor in the region, recognizes progress by entering into formal contractual relationships with the qualifying states, which all have signed Stabilisation and Association Agreements (SAAs) with the EU.

The SAA considered a key step on the road to full membership. For Visegrad countries, clearly Western Balkan is a topic of shared interest, although there are variations in the intensity. From the historical point of view, the Czech Republic and the region of Western Balkans are closely tied together.

The Czech Republic has always supported the adhesion by Western Balkans countries to the Euro-Atlantic structures. Not long after the 2004 enlargement the Czech Republic started to contribute to the financial aid, which flows from the EU to this region. Since 2006, the Czech Republic has been a regular contributor to the Western Balkans Fund within the framework of the European Bank for the Reconstruction and Development. Until 2008, the amount of the Czech contribution counted 2 million Euro. All Visegrad group members are involved in this funding process Concerning the Lisbon Treaty; Czech Republic agues that delay in the ratification should not influence the enlargement of the Union.

When EU enlargement policy is tabled in Hungary, it is very often related to the question of ethnic Hungarians living behind the border. The conservative government between 1998 and 2002 tried several measures to enable the boarder crossing and naturalization of the Hungarian minority. Some of these work until today, Case Study the so called "Hungarian-pass" which is given on the basis of voluntary request to ethnic Hungarians in Croatia, Romania, Serbia, Slovakia, Slovenia and in Ukraine, but others, like the Government Office of Hungarian Minorities Abroad proved to be non-functional.

The public support for the accession of Croatia in the European Union is among the highest in the EU. Croatia for its part showed willingness to use the Slovak experience form the accession process.

Bilateral relations are very friendly.On the occasion of the visit of Croatian president Stipe Mesič to Bratislava Slovakian president Ivan Gasparovič said that it is unfair that Croatia is not yet a member of the EU, although it is better prepared that the last two members that joined the EU (Bulgaria and Rumania). Apart form the support in the accession process Slovakia is interested in deepening the cooperation in the field of the diversification of the energy recourses with the help of the Croatian energy infrastructure (integration of the Družba – Adria pipelines).

Besides Croatian, Serbia and Montenegro also enjoy the same vocal support in the accession process, Serbia being highlighted as a key player for the whole region. Serbia is the biggest recipient of the Slovak official development aid.

4.11 Summary

A few advancement might be accounted for in the zone of transport arrangement, especially in the street, inland conduits and air transport. Further fortifying of limit is required, specifically for authorization and review.

The new Law on Railways and the Railway Safety and Interoperability law embraced. Consideration ought to be paid to reasonable market access; EN 42 EN further enterprises need to be made in detachment of framework chief and route specialist, and also a legitimately characterized controller. Otter, J.D. (2009), Overall, Serbia is decently progressed in its arrangement with the acquis in the region of transport arrangement.

There is no advancement to write about joined together transport. There has been a few advancements in the region of air transport. Execution into national enactment has been advancing as respects monetary regulations and different fields needed at the first stage of the European Common Aviation Area Agreement (ECAA). As respects a portion of the enactment needed under stage two, national usage measures received, yet are liable to quality check.

The Flawless International Airport reclassified as being 'schedules facilitated' from July taking after a limit dissection.

Kosovo still ought to enable components of the EU Regulation on allotment of spaces. En 47 En the Kosovo Civil Aviation Authority (KCAA) is not a part of the framework institutionalization and security appraisal on outside airplanes, as an outcome of contradiction on status. Otter, J.D. (2009), the leading flying restorative focus was affirmed in January and it issued its first therapeutic declarations for air movement controllers in March. Laws building air route benefits and additionally mischance examination still received.

In Air Traffic Management Kosovo presses on to make exceptional advancement as respects administrative merging with the cohorted acquis, its Ecaa commitments, with the center now being on usage and guaranteeing a feasible structure for the National Supervisory Authority.

Kosovo's aeronautics area presses on to endure as a consequence of over flight limitations infringed by Serbia for flights coming well and done with Pristina, which has a money related effect for the air specialists and a natural effect for the district.

Arrangement with the EU transport acquis is progressing.

Kosovo presses on to make robust advances in flight, yet hampered by issues joined to status. The improvement of routes appears differently in relation to the level plans gave to this transport mode, a result of the oversized speculation in one-way activity. Further ventures to enhance way well-being and to improve Kosovo Railways are needed.

There has been a small advance on transport strategy, essentially concerning cabotage in the oceanic division. Further deliberations needed on arrangement with the transport acquis; and to enable enactment successfully. Regulatory and specialized limit remains feeble over the diverse modes of transport, especially because of flight and way wellbeing. Rail framework support is a concern and needs more assets. Overall, the arrangements are not progressing.

There was a small advancement in transport arrangement. In street transport, there was a few advancements on acquis arrangement, yet street security needs further change. The track enactment needs further

arrangement with the acquis. A legitimate change to shut the route market for rivalry until EU promotion turned around as of now realized arrangement with the acquis. The managerial limit of the Rail Safety Authority still ought to be reinforced.
The Accident Investigation Committee for rail transport should get operational to function as a free figure. For the most part, arrangements around reasonably propelled.
There was a small new advancement in transport arrangement. In way transport, there were a few advancements on acquis arrangement; however, street well-being requirements further change.

The route enactment needs further arrangement with the acquis. A lawful change to shut the line market for rivalry until EU promotion switched as of recently accomplished arrangement with the acquis.
The managerial limit of the Rail Safety Authority still reinforced.
The Accident Investigation Committee for rail transport ought to get operational to function as an autonomous form. For the most part, arrangements around there are decently progressed.

CHAPTER 5

5. DATA ANALYSIS METHODS AND RESULTS

5.1 Introduction

This chapter discusses the methods employed in presenting and interpreting statistical findings of this research. Emphasis will be given to the meaning of the statistical findings as it relates to the topic of study. The chapter provides some assumptions and information on the statistical means utilized in this investigation. It is structured as follows. First, it starts with a discussion regarding the choices of statistical software. The discussion is followed by an overview outlining the factors influencing the statistical techniques utilised in this study, data presentation, and distribution. The statistical techniques and procedures for the analysis of the data presented next.

5.2 Choice of the Statistical Software

Typical software used in statistical presentation and analysis include the Statistical Packages for the Social Science (SPSS) versions 21, the Statistical Analysis System (SAS) version 9.3, BMDP statistical software package and Minitab. In this investigation, SPSS 20 was applied in the data analysis part of this paper to come up with a careful conclusion.

he choice of SPSS for this study is mainly because the package is a popular statistical analysis software in social science studies such as sociology, anthropology, and management and used by many organizations and Universities. Secondly, apart from its popularity, SPSS has a rich feature set that make processing qualitative and quantitate data intuitive. Finally, its graphical tools make presentation of graphs, tables, and other graphical presentations of data easy and useful. The popularity of SPSS attributed to its highly sophistication, wide availability, and comprehensive statistical computer packages (Zikmund, 2000). That is why the researcher for data analysis has chosen it.

5.3 Factors Influencing the Statistical Techniques Choices

A number of factors influenced the choice of statistical tests that were carried out in this study. These factors included issues such as the analysis objectives and focus, type and size of the sample, type of tests (parametric or nonparametric) and variable measurement level. The reason for this analysis is that it guides and directs the analytical processes that form a key component in managing the credibility of a research. In this research, the main objective is to investigate the impact of transport in economic developments of the transition countries such as Albania, Bulgaria, Montenegro, Croatia, Kosovo, and Macedonia. This led to the selection of statistical techniques that would help the researcher to find out if such causal relationships exist and therefore confirm the achievement of the key objective of this study.

5.4 Representation of Descriptive Statistics on Final Consumption of Households for Transport (in million Euros)

This is the overall sum of the expenses of the average household in the given Balkan countries, averaged according to their regular usage of utilities for transportation such as expenses for gas, vehicle expenses for maintenance, and other transport-related expenses. This summed in million Euros per annum.

5.4.1 Energy Taxes (in percentage of GDP).

The tax imposed on the national resource using the countries' energy resources, whose majority contributed by the transport industry. The energy tax imposed on the industrial corporations was also included in the equation, as well as the transport expenses of these companies. The energy taxes measured as a percentage of the gross domestic product (GDP).

5.4.2 Environmental Taxes on Transport (in percentage of total taxes)

These are the taxes imposed on all corporations using most of the environmental resources of the Balkan countries. This tax also includes the costs that happen to the environment as the result of the businesses and commercial activities. The total environmental taxes computed in terms of its percentage in the total taxation imposed on the companies.

5.4.3 Relevance of the Variables

The variables specifically chosen because of the impacts that they might have on the total transport industry of the seven Balkan countries that are investigated in this study include virtually every aspect of each country as far as civil, commercial, and environmental factors are concerned. The following model shows the association of the variables discussed above and the way that they are related to the economic impact of transportation on the Balkan countries: These variables include virtually every aspect of each country as far as civil, commercial and environmental factors are concerned. The following model shows the association of these aspects in a mathematical equation:

The Equation:

$$ECON = \frac{(\Sigma T_{ene} + \Sigma T_{env})\,(\Sigma C_{final})}{\left(\frac{SD_{ave}}{n}\right)}$$

Ecuation 1 : Relevance of the Variables

Where:

Δ = change,

∑=summation of

ECON = level of economic impact of transport

Tene = Energy Taxes (in %)

Tenv = Environmental Taxes (in %)

Cfinal = Final Consumption of Households for Transport

SD = Standard Deviation

Ave (subscript) = average

n = number of test samples (years)

The variables that are included in this equation are based on the aforementioned factors, with respect to the statistical data that were made available by the government. These variables influence the transport infrastructure of the Balkan countries in such a way that it includes the civil and industrial economies of the countries. In essence, the impacts of transportation in economic situations in Balkan countries results from an interplay of several factors that form the equation above. These factors include:

1. Energy taxes
2. Environmental taxes
3. Final Consumption of Households for Transport

In using the equation, it is important to take note of the relationship between these variables. These three variables are related mathematically by addition and multiplication. That means the following scenarios:

1) If energy taxes, environmental taxes, and final consumption of households for transport values or figures are high, the level of economic impact of transportation is high

2) If energy taxes, environmental taxes, and final consumption of households for transport values or figures are low, the level of economic impact of transportation is low

3) A decrement or increment in value or quantity of any of these variables: energy taxes, environmental taxes, and final consumption of households for transport means a corresponding decrement or increment in the level of economic impact of transportation is high

The statistical data are true and correct as of the March 2013 and some adjustments have been made such as the assumptions of the possible values that are not present, which is required for this study. These assumptions and projections are based on the general theoretical knowledge that is currently available about the countries concerned. The data that have been analysed and simulated are properly tabulated and graphed in the following pages. In this research, the impact is studied using the C-values, ENE, and ENV. The existence of a significantly high correlation among these variables implies that growth of transportation facilities improve the economic development of the transition countries.

The study aims at studying the impact of transport in economic developments of the transition countries. The countries selected under this category are Albania, Bulgaria, Montenegro, Croatia, Kosovo, and Macedonia. Final consumption of households for transport for these countries from 2004 to 2013 is considered. In addition, the corresponding years', 'C-values', 'ENE' and 'ENV' are considered for the study. The data from these 10 years are projected using the 'linear trend' for the years 2014 to 2030.

The linear model assumes a relationship of the form:

Equation 2

$$y = b0 + b1x$$

Where the coefficient b0 represents the intercept term and the coefficient b1 denotes the slope of the curve. The projection uses the previous ten values for the projection of the next value in the series. Of the two methods, we have the regression method an edge over the trend, in that we can test the statistical significance of the slope coefficients at 5% or 1% levels. Such a thing is not available for the trend method with moving average form.

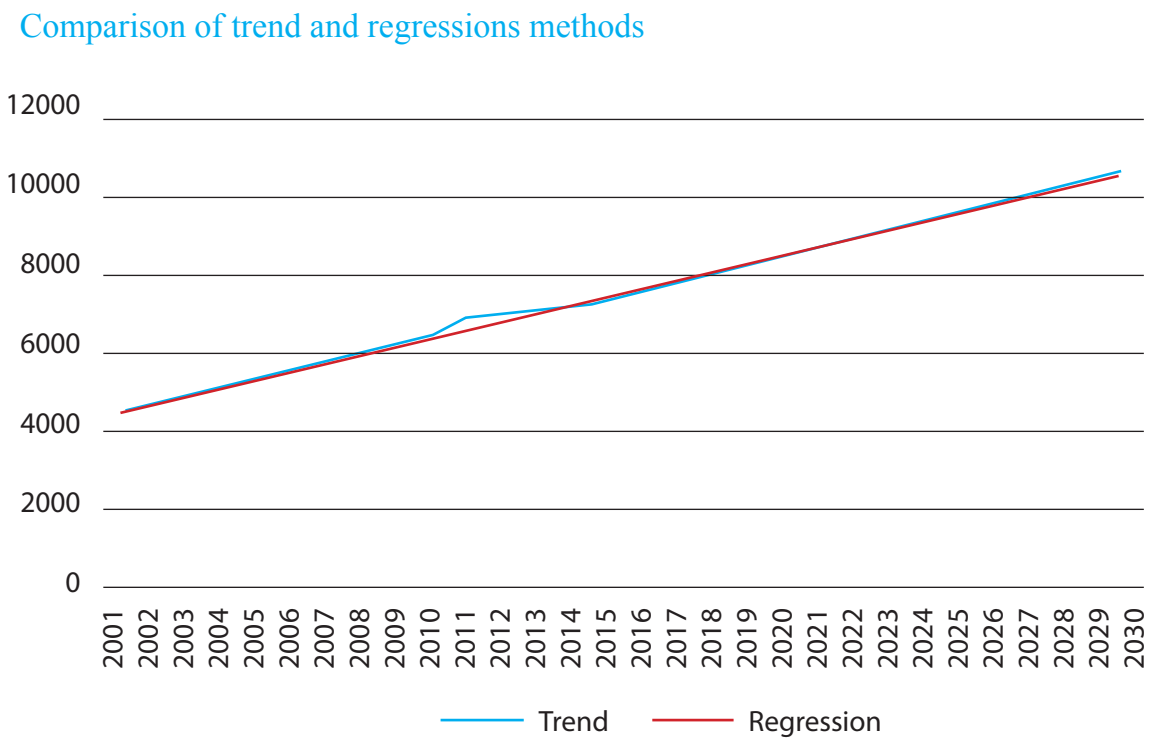


Figure 16: Comparison of trend and regressions methods

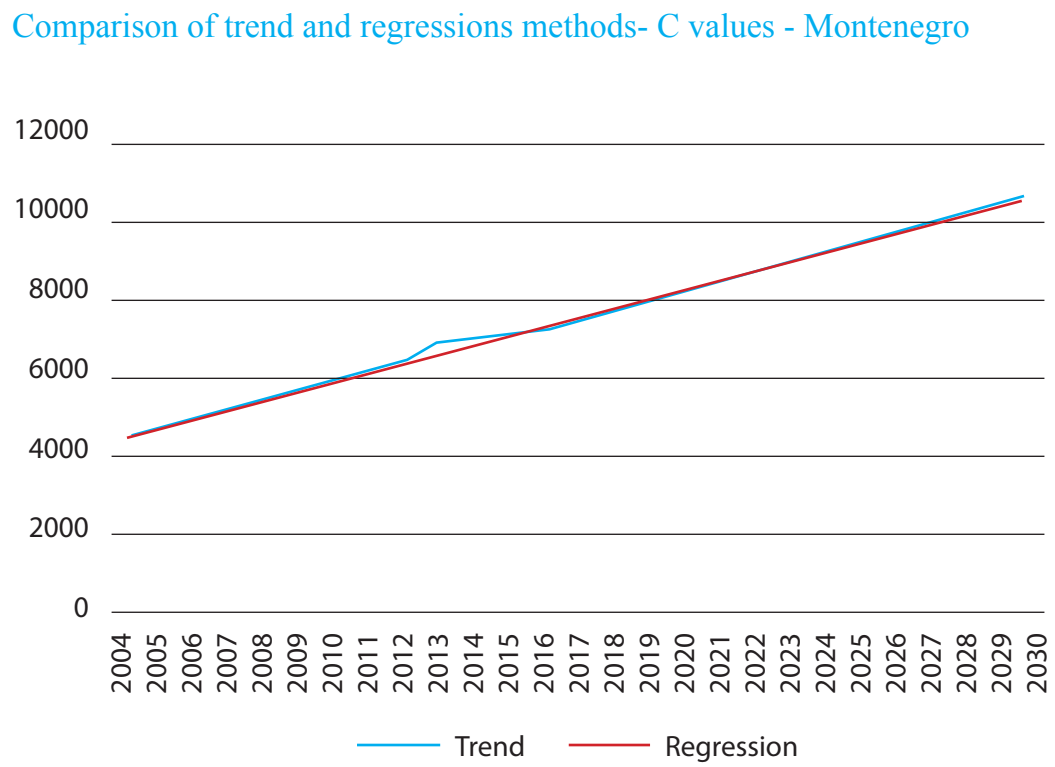
Final consumption of households for transport for these countries from 2004 to 2013 is considered. In addition, the corresponding years', 'C-values', 'ENE' and 'ENV' are considered for the study.

The data from these 10 years are projected using the 'linear trend' for the years 2014 to 2030. The linear model assumes a relationship of the form y = b0 + b1x, where the coefficient b0 represents the intercept term and the coefficient b1 denotes the slope of the curve.

The projection uses the previous ten values for the projection of the next value in the series. This is a moving average method giving priority in the recent past and ignores the distant past. One more linear regression method is also considered. In this case the first 10 years values are used to project for the next 17 years. Both the projections are compared by plotting the two projections on the same graph and studying their deviations.

- In the case of C values, for the country Montenegro, we have the projection given in table 10. Of the two methods, we have the regression method an edge over the trend, in that we can test the statistical significance of the slope coefficients at 5% or 1% levels. Such a thing is not available for the trend method with moving average form.

Figure 17 : A *line graph on Comparison of trend and regression methods- C values in Montenegro.*



From the above table 15, we see that, both the methods move very close to each other and the trend method has a mild deviation from the sequence around the year 2013.

This implies that one can use either trend or regression methods in the case of the C-values of Montenegro. Similar comparisons are given for other countries and for other parameters ('ENE' and 'ENV').

Figure 18 : A line graph on Comparison of trend and regression methods- C values in Serbia

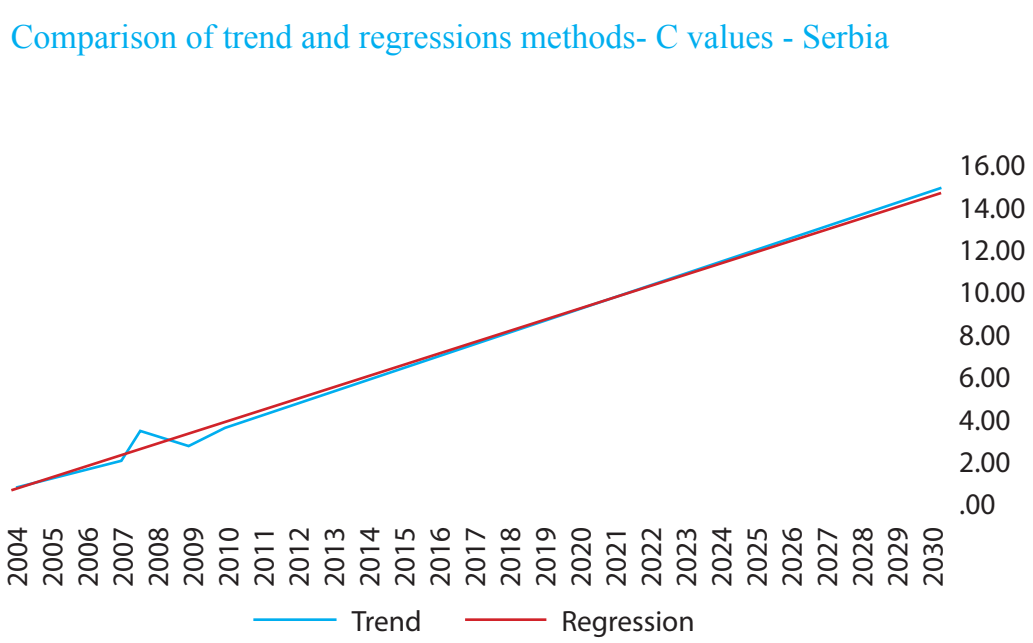


Figure 19 : A line graph on Comparison of trend and regression methods- C values in Kosovo

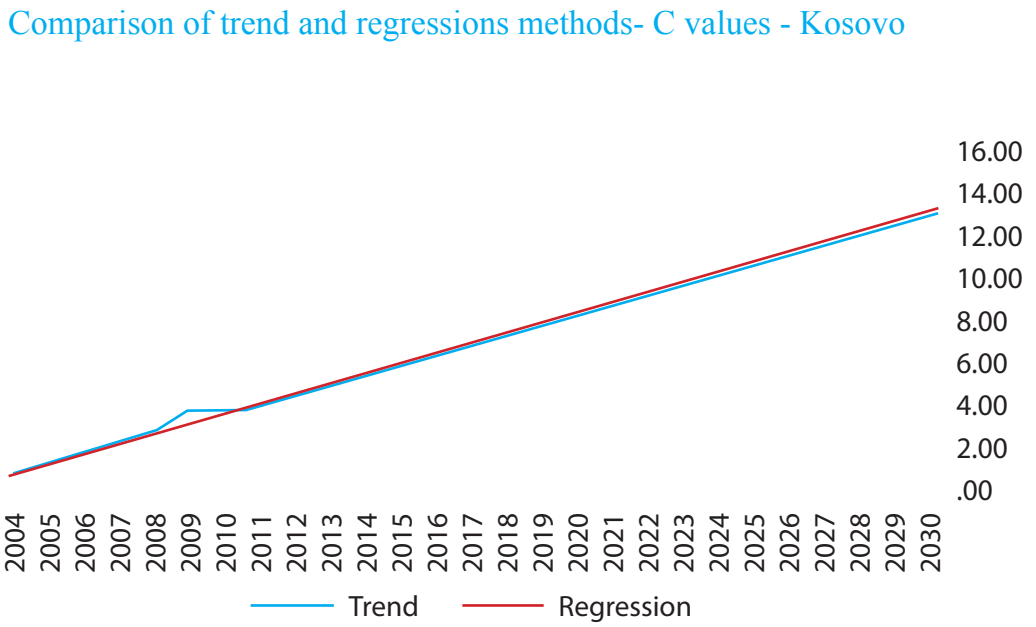


Figure 20 : A line graph on Comparison of trend and regression methods- C values in Albania

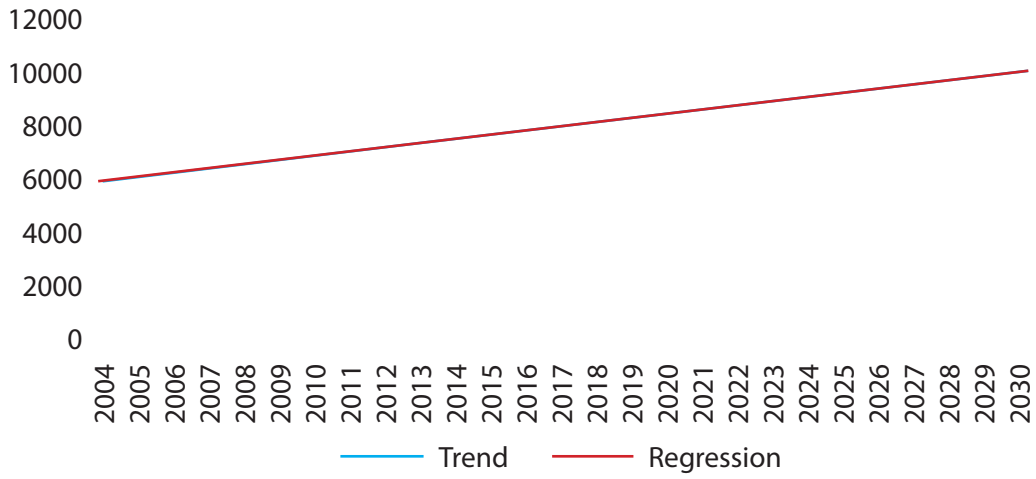


Figure 21 : *A line graph on Comparison of trend and regression methods- C values in Macedonia*

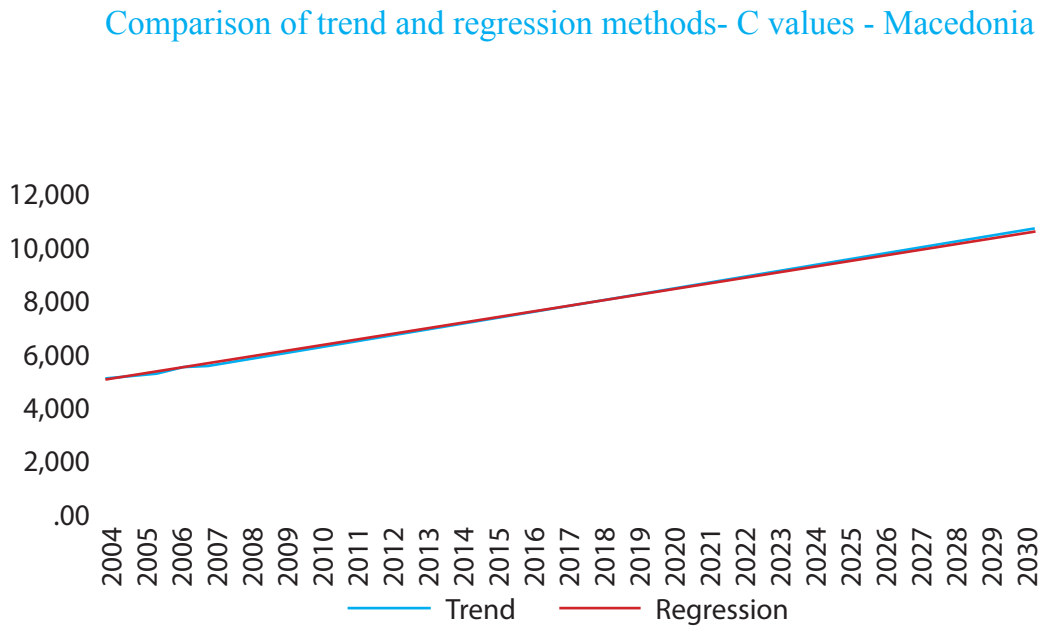


Figure 22 : A line graph on Comparison of trend and regression methods- C values in Croatia

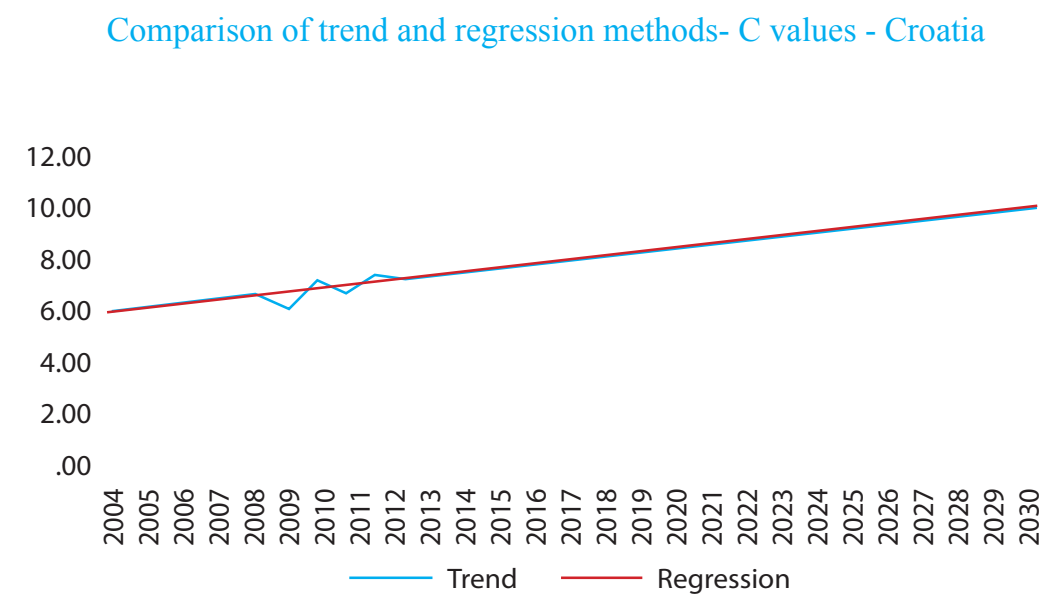
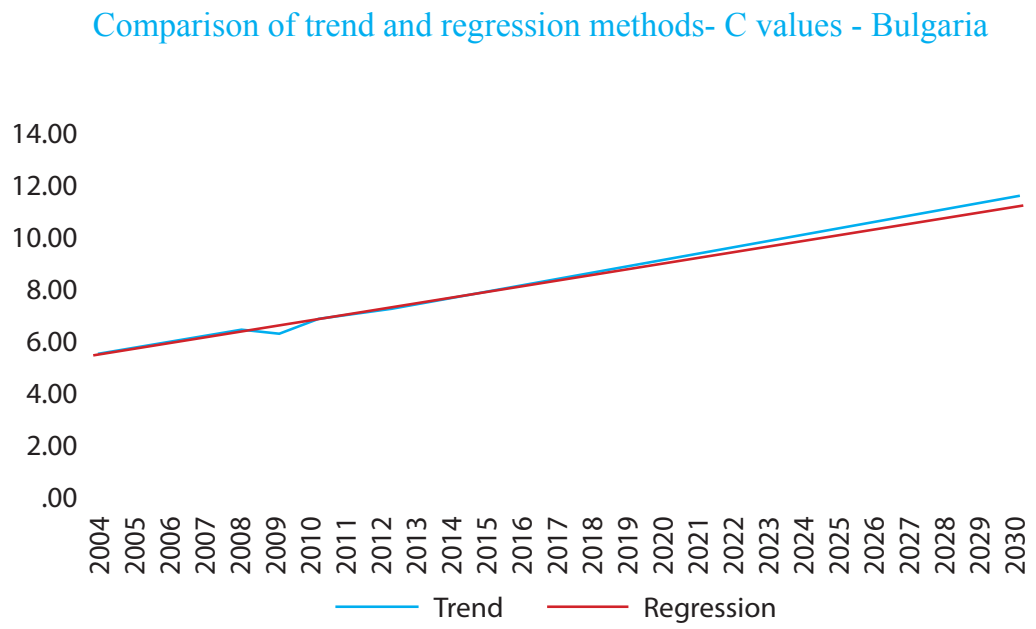


Figure 23 : A line graph on Comparison of trend and regression methods- C values in Bulgaria



Like many other economic activities that are intensive in infrastructures, the transport sector is an important component of the economy impacting on development and the welfare of countries and as well its populations in numerous ways and affecting almost every aspect of life: social, cultural, educational, political, health, and religious to just but mention a few common ones. This is more relevant when it comes to transition countries such as Albania, Serbia, Bulgaria, Montenegro, Croatia, Kosovo, and Macedonia. In fact, in this case, a common factor is that these are developing countries. In such a case, appropriate road networks need to be in place to boost economic development and the progress of livelihood in these countries.

When transport systems are efficient, they provide economic, social, and cultural opportunities and benefits that result in positive multiplier effects such as better accessibility to markets, employment, and additional or increased investments.

When transport systems are deficient in terms of capacity, availability, or reliability, they can have economic costs such as reduced or missed opportunities. Efficient transportation system reduces costs while inefficient transportation increases costs. The impacts of transportation are not always intended. Consequently, they can have unforeseen or unintended consequences such as congestion and wastage of time, a precious resource for development besides the worrying ones like the loss of lives through road accidents. Transport also carries an important social, economic, and environmental load, which cannot be neglected. The benefit and employment effects of transport services usually extend beyond employment and added value generated by that activity. For instance, transportation companies purchase a part of their inputs from other local suppliers.

The production of these inputs or components generates additional value and employment in the local economy.

The suppliers in turn purchase goods and services from other local firms that improve the local employment and money circulation. In this study, the impact is studied using the C-values, ENE, and ENV. In as far as this study is concerned, the existence of significantly high correlation among these variables implies that growth of transportation facilities improve the economic development of the transition countries.

5.4.4 The distribution of the final consumption of Households for Transport, Energy Taxes (in %) and Environmental Taxes (in% of total taxation):

The Tables below display the mean, standard deviation, skewness and kurtosis of Final consumption of Households for Transport. The distribution of Final consumption of Households for Transport for Albania in Table 20 below shows that this is negatively skewed at -0.051 and this means that the mass of the distribution is slightly concentrated on the right of the distribution curve. The data also shows a negative Kurtosis.

This implies that the distribution of Final consumption of Households for Transport for Albania is not perfectly normally distributed.

5.5 Montenegro

Table 9: Montenegro - Final consumption of Households for Transport

Statistics		
Montenegro - Final consumption of Households for Transport		
N	Valid	10
	Missing	0
Mean		6073.80
Median		6011.50
Std. Deviation		622.037
Skewness		0.059
Std. Error of Skewness		0.687
Kurtosis		-1.454
Std. Error of Kurtosis		1.334
Range		1687
Minimum		5214
Maximum		6901
Sum		60738
Percentiles	25	5489.00
	50	6011.50
	75	6769.00

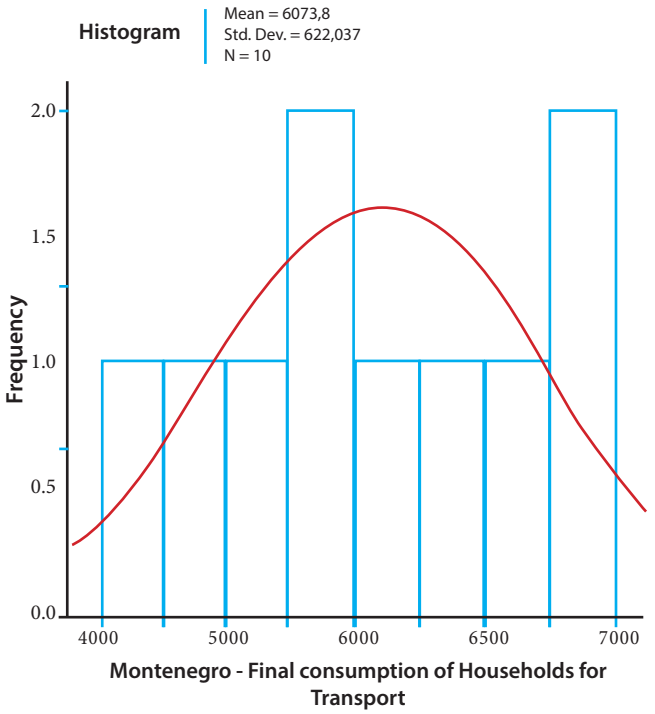


Figure 24 : Montenegro - Final consumption of Households for Transport

The consumption level for Montenegro changed persistently since 2004 with 5.2 million Euros in spending. According to the specifications indicated, the standard deviation demonstrated the optimum use of the financial capacity to finance the sector during the period 2004-2013.

The histogram below shows that the balance in spending between the years was synonymous with the existing transport procedures in the EU.

Based on the table above it can be concluded that the center of the distribution of Montenegro final consumption of households for transport can be approximated by the median 6011.5 and half of the final consumption falls between 5489 and 6769 (which is shown by the first and third quartiles). Minimum of final consumption in a given period was 5214 while the maximum stood at 6901.

The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small positive skewness 0,059, which indicates that there are no extreme values of final consumption in the tails of the distribution in a given period. In addition, asymmetry coefficient falls into the interval twice the value of the standard error of skewness (-1.374; +1.374), which means that the final consumption has approximately symmetric distribution.

Kurtosis of -1,454 falls into the interval twice the value of standard error so that it can be concluded that the final consumption has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of final consumption during this period is on the level of 622.037. Over the past 10 years, total final consumption of Montenegro was on the level of 60.736 million Euros per annum. Characteristics of final consumption in Montenegro listed above can be graphically verified by the following histogram.

5.6 Serbia

Table 10: Serbia - Final consumption of Households for Transport

Statistics		
Serbia - Final consumption of Households for Transport		
N	Valid	10
	Missing	0
Mean		5739.20
Median		5738.50
Std. Deviation		716.900
Skewness		0.182
Std. Error of Skewness		0.687
Kurtosis		1.125
Std. Error of Kurtosis		1.334
Range		2663
Minimum		4459
Maximum		7122
Sum		57392
Percentiles	25	5299.50
	50	5738.50
	75	6179.50

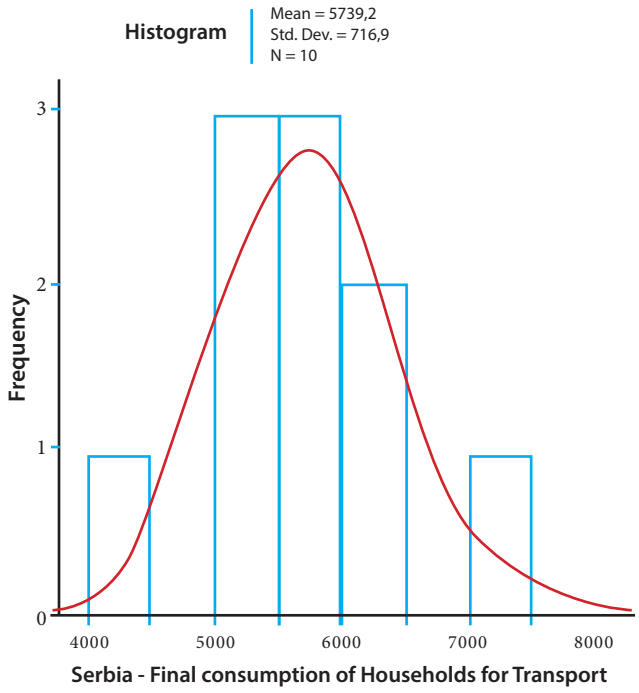


Figure 25 : Serbia - Final consumption of Households for Transport

The histogram above provides Serbia's transport consumption, with a standard deviation of 719.6.
The critical path of the country's transport infrastructure is exponentially merited through a multi-million spending as envisaged by its investment categorization. The cumulative spending in 2012 amounted to 7.2 million Euros.
The median 5738.5 and half of the final consumption fall between 5299.5 and 6179.5 can approximate the centre of the distribution of Serbia final consumption of households for transport.
The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small positive skewness 0.182, which indicates that there are no extreme values of final consumption in the tails of the distribution in a given period.
In addition, asymmetry coefficient falls into the interval twice the value of the standard error of skewness (-1.374; +1.374), which means that the final consumption has approximately symmetric distribution.

Kurtosis of 1.125 falls into the interval twice the value of standard error so that it can be concluded that the final consumption has approximately normal kurtosis and consequently normal distribution.
Minimum of final consumption in a given period was 4459 while the maximum stood at 7122. Average deviation from the mean of final consumption during this period is on the level of 716.9. Over the past 10 years, total final consumption of Montenegro was on the level of 57392 million Euros per annum.

5.7 Kosovo

Table 11: Kosovo - Final consumption of Households for Transport

Statistics		
Kosovo - Final consumption of Households for Transport		
N	Valid	10
	Missing	0
Mean		5223.50
Median		5090.50
Std. Deviation		715.096
Skewness		0.302
Std. Error of Skewness		0.687
Kurtosis		-1.038
Std. Error of Kurtosis		1.334
Range		2098
Minimum		4216
Maximum		6314
Sum		52235
Percentiles	25	4646.75
	50	5090.50
	75	5895.25

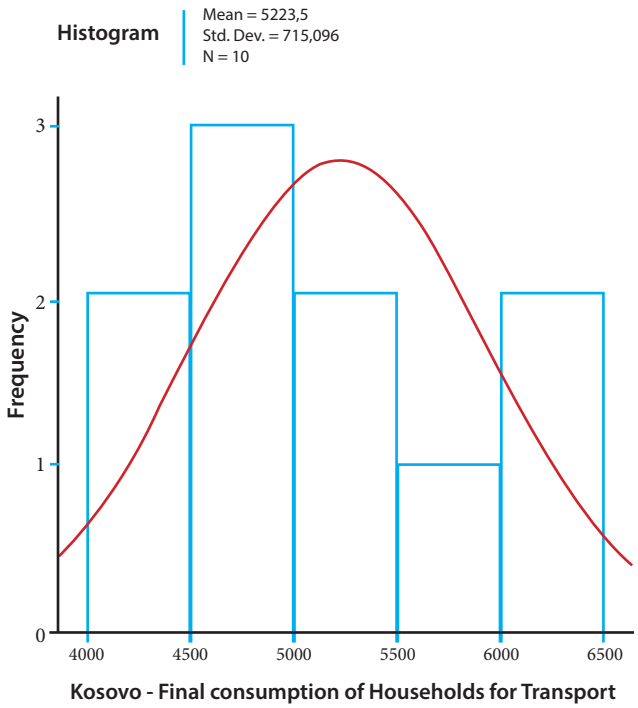


Figure 26 : Kosovo - Final consumption of Households for Transport

Kosovo's infrastructural investment signified by the variant dynamics (715.096) and that the critical positioning of the EU development sector provides a positive position of its regulatory and developmental framework.

From the spending ratio underlined (according to the EU financing policy) the overall trend from 2004-2012 provide an important economic variance for its internal infrastructural growth.

The median 5090.5 and half of the final consumption fall between 4676.75 and 5895.25 can approximate center of the distribution of Kosovo final consumption of households for transport. Minimum of final consumption in a given period was 4216 while the maximum stood at 6314.

The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small positive skewness 0.302, which indicates that there are no extreme values of final consumption in the tails of the distribution in a given period.

In addition, asymmetry coefficient falls into the interval twice the value of the standard error of skewness (-1.374; +1.374), which means that the final consumption has approximately symmetric distribution.

Kurtosis of -1.038 falls into the interval twice the value of standard error so that it can be concluded that the final consumption has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of final consumption during this period is on the level of 715.096.

Over the past 10 years, total final consumption of Kosovo was on the level of 52235 million Euros per annum.

5.8 Albania

Table 12: Albania - Final consumption of Households for Transport

Statistics		
Albania - Final consumption of Households for Transport		
N	Valid	10
	Missing	0
Mean		6928.40
Median		6906.00
Std. Deviation		472.146
Skewness		-0.051
Std. Error of Skewness		0.687
Kurtosis		-1.096
Std. Error of Kurtosis		1.334
Range		1397
Minimum		6214
Maximum		7611
Sum		69284
Percentiles	25	6498.75
	50	6906.00
	75	7381.00

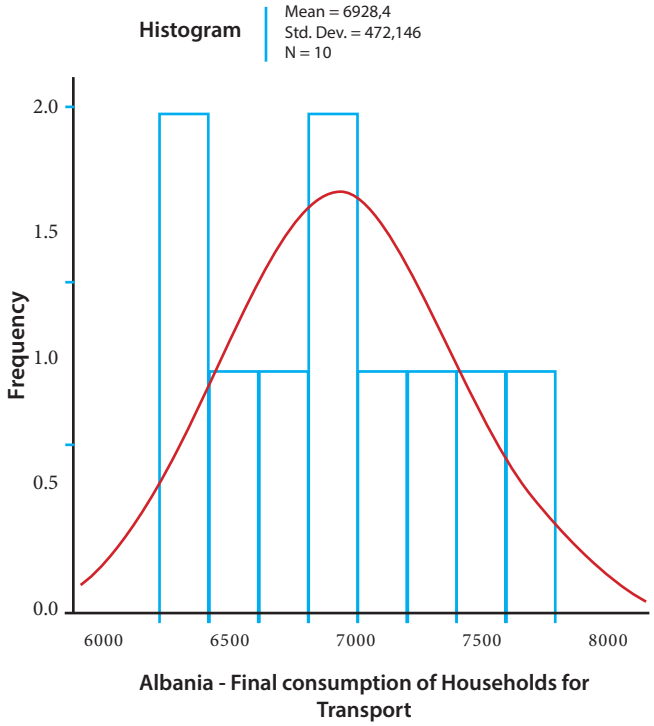


Figure 27 : Albania - Final consumption of Households for Transport

Albania's transport infrastructure according to the histogram represents a boom in the construction sector and this is equally represented by the total spending between 2004 and 2012.
The estimated cumulative variance was 417.15, signifying a considerable strength in its overall transport infrastructure development.
Minimum of final consumption in a given period was 6214 while the maximum stood at 7611.
Center of the distribution of Albania final consumption of households for transport can be approximated by the median 6906 and half of the final consumption fall between 6498.75 and 7381.
The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small negative skewness -0.051, which indicates that there are no extreme values of final consumption in the tails of the distribution in a given period.

In addition, asymmetry coefficient falls into the interval twice the value of the standard error of skewness (-1.374; +1.374), which means that the final consumption has approximately symmetric distribution.

Kurtosis of 1.125 falls into the interval twice the value of standard error so that it can be concluded that the final consumption has approximately normal kurtosis and consequently normal distribution. Average deviation from the mean of final consumption during this period is on the level of 472.146.
Over the past 10 years, total final consumption of Albania was on the level of 69284 million Euros per annum.

5.9 Macedonia

Table 13: Macedonia - Final consumption of Households for Transport

Statistics		
Macedonia - Final consumption of Households for Transport		
N	Valid	10
	Missing	0
Mean		6452.80
Median		6328.50
Std. Deviation		565.096
Skewness		0.459
Std. Error of Skewness		0.687
Kurtosis		-1.295
Std. Error of Kurtosis		1.334
Range		1550
Minimum		5789
Maximum		7339
Sum		64528
Percentiles	25	5903.00
	50	6328.50
	75	7031.00

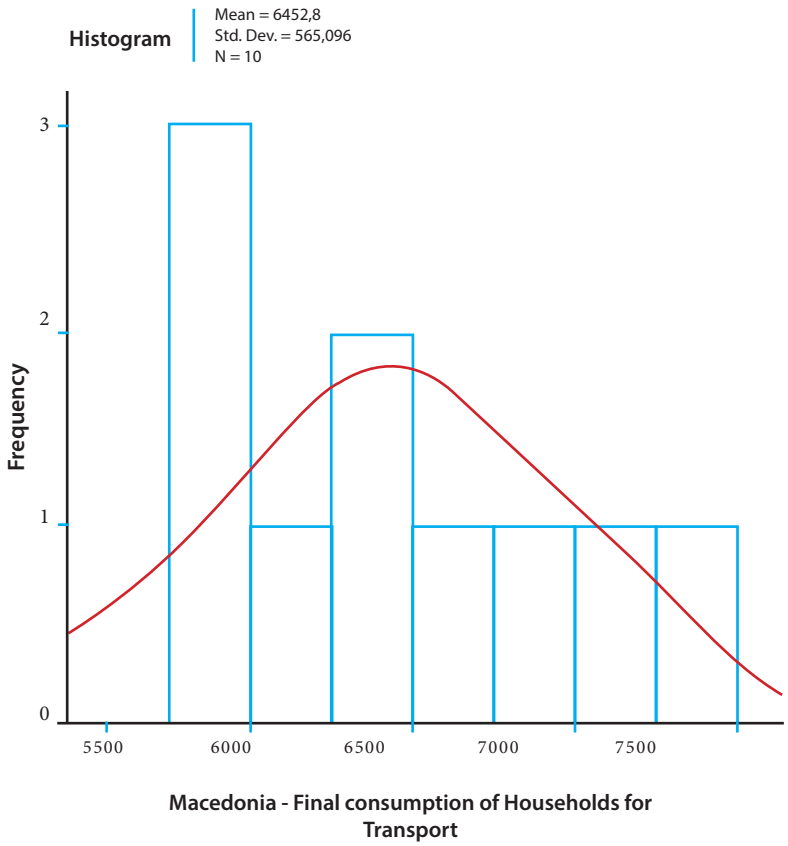


Figure 28 : Macedonia - Final consumption of Households for Transport

The transport corridor in Macedonia explains the single most important point of reference for the country and the financial viability has substantially been uniquely vested in its infrastructural development. Further, the variance level exploits the deviational value which is within the metric of the monetary spending on the relevant transport considerations.

The cumulative range is 1550 and the mean is 6452.80 which hence imply that the trend is universally positive.

Centre of the distribution of Macedonia final the median 6328.5 and half of the final consumption fall between 5903 and 7031 can approximate consumption of households for transport. Minimum of final consumption in given period was 5789 while the maximum stood at 7339. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.459, which indicates that there are no extreme values of final consumption in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of the standard error of skewness (-1.374; +1.374), which means that the final consumption has approximately symmetric distribution.

Kurtosis of -1.295 falls into the interval twice the value of standard error so that it can be concluded that the final consumption has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of final consumption during this period is on the level of 565.096. Over the past 10 years, total final consumption of Macedonia was on the level of 64528 million Euros per annum.

5.10 Croatia

Table 14: Croatia - Final consumption of Households for Transport

Statistics		
Croatia - Final consumption of Households for Transport		
N	Valid	10
	Missing	0
Mean		5367.70
Median		5381.50
Std. Deviation		491.931
Skewness		0.197
Std. Error of Skewness		0.687
Kurtosis		-0.940
Std. Error of Kurtosis		1.334
Range		1495
Minimum		4678
Maximum		6173
Sum		53677
Percentiles	25	4930.00
	50	5381.50
	75	5822.00

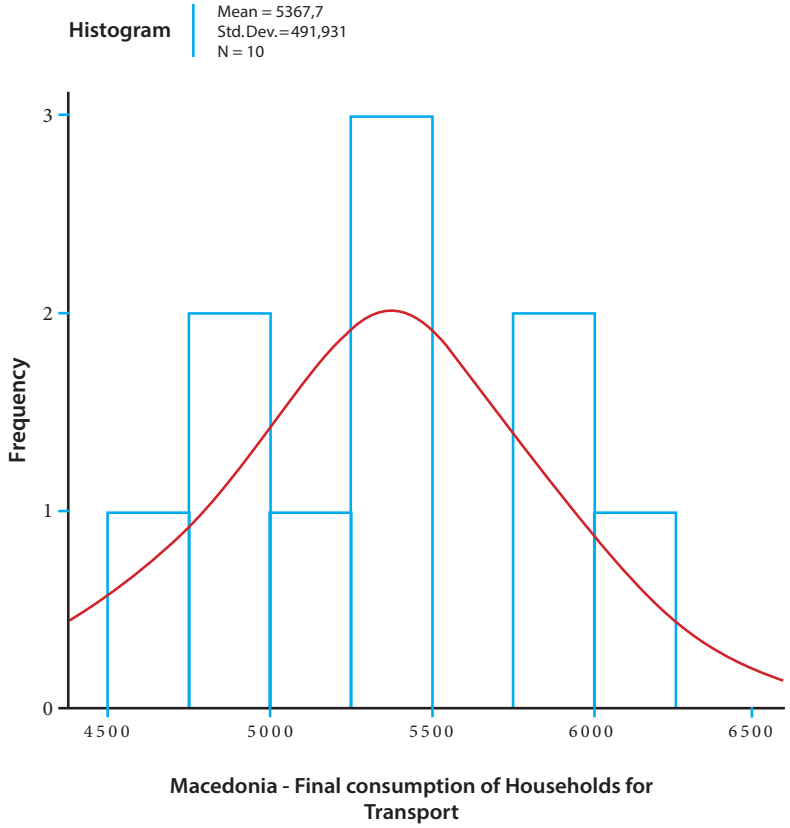


Figure 29 : Croatia - Final consumption of Households for Transport

The scope of spending in Croatia evidenced by the study provides an important platform for the modernization of its transport network infrastructure. The distribution in the histogram represents a higher range of spending and this also includes the physical planning process as well as the cumulative project management portal. The implementation capacity for its transport network is remarkably explained by the development strategy streamlined through the EU infrastructural development.

Centre of the distribution of Croatia final the median 5381.5 and half of the final consumption fall between 4930 and 5822 can approximate consumption of households for transport. Minimum of final consumption in a given period was 4678 while the maximum stood at 6173. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.197, which indicates that there are no extreme values of final consumption in the tails of the distribution in a given period. In addition, asymmetry coefficient falls into the interval twice the value of the standard error of skewness (-1.374; +1.374), which means that the final consumption has approximately symmetric distribution.

Kurtosis of -0.94 falls into the interval twice the value of standard error so that it can be concluded that the final consumption has approximately normal kurtosis and consequently normal distribution. Average deviation from the mean of final consumption during this period is on the level of 491.931. Over the past 10 years, total final consumption of Croatia was on the level of 53677 million Euros per annum.

5.11 Bulgaria

Table 15: Bulgaria - Final consumption of Households for Transport

Statistics		
Bulgaria - Final consumption of Households for Transport		
N	Valid	10
	Missing	0
Mean		7040.90
Median		6969.00
Std. Deviation		681.840
Skewness		0.494
Std. Error of Skewness		0.687
Kurtosis		-0.588
Std. Error of Kurtosis		1.334
Range		2123
Minimum		6124
Maximum		8247
Sum		70409
Percentiles	25	6469.25
	50	6969.00
	75	7568.50

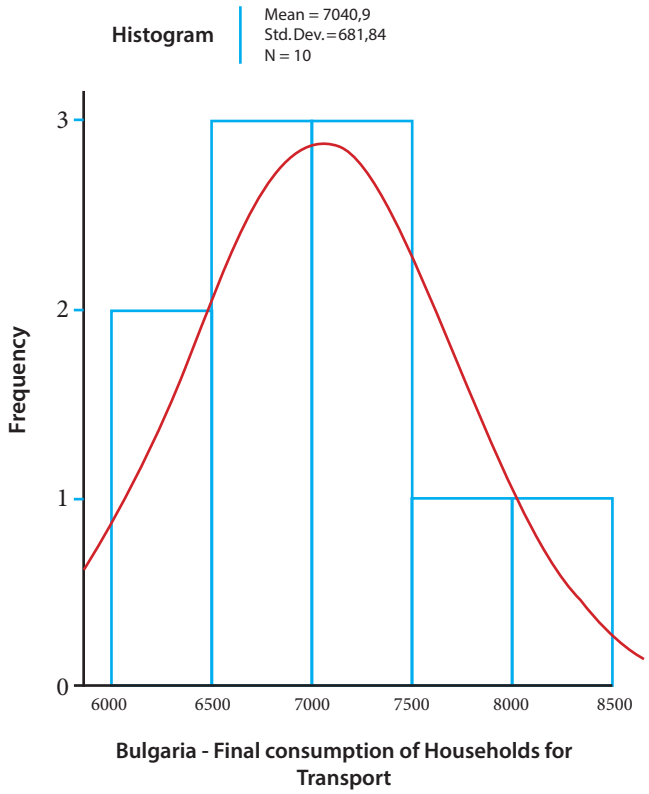


Figure 30 : Bulgaria - Final consumption of Households for Transport

The road network for Bulgaria shows a conduit for enhanced infrastructural model that is evolutionarily positioned towards enhancing the overall impact of the country's transport sector.
The spending in 2013 amounted to 8.3 Euros and this was significantly huge as compared with its major Balkan States.
Center of the distribution of Croatia final consumption of households for transport can be approximated by the median 6969 and half of the final consumption fall between 6469 and 7568.5.

Minimum of final consumption in a given period was 6124 while the maximum stood at 7568.5. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.494, which indicates that there are no extreme values of final consumption in the tails of the distribution in a given period.

In addition, asymmetry coefficient falls into the interval twice the value of the standard error of skewness (-1.374; +1.374), which means that the final consumption has approximately symmetric distribution. Kurtosis of -0.588 falls into the interval twice the value of standard error so that it can be concluded that the final consumption has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of final consumption during this period is on the level of 681.84. Over the past 10 years, total final consumption of Croatia was on the level of 70409 million Euros per annum.

5.12 Energy Taxes (in %)

5.12.1 Montenegro

Table 16: Montenegro - Energy Taxes (in%)

Statistics		
Bulgaria - Energy Taxes (in %)		
N	Valid	10
	Missing	0
Mean		2.0800
Median		2.1500
Std. Deviation		0.20976
Skewness		-0.845
Std. Error of Skewness		0.687
Kurtosis		-0.579
Std. Error of Kurtosis		1.334
Range		0.60
Minimum		1.70
Maximum		2.30
Sum		20.80
Percentiles	25	1.8750
	50	2.1500
	75	2.2250

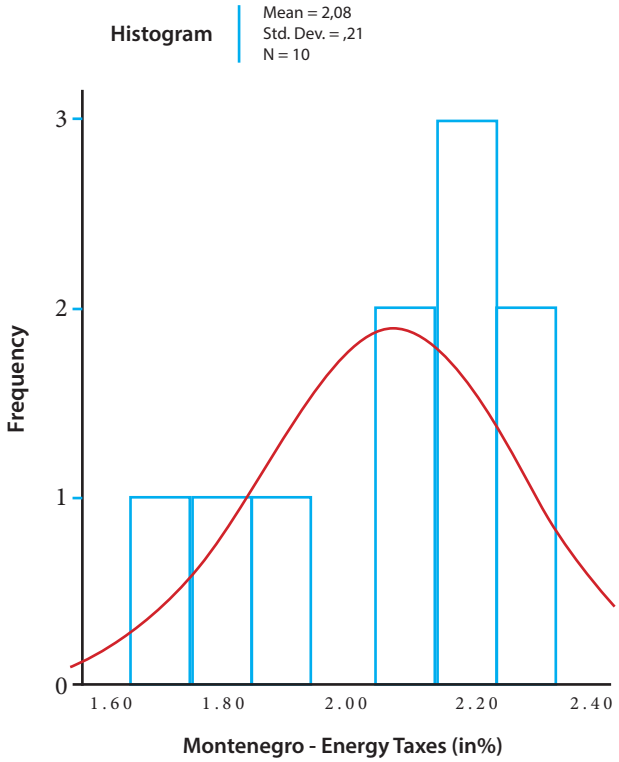


Figure 31 : Montenegro - Energy Taxes (in%)

The tax factors provided a mean of 2.08 implying that the initial burden was subsequently classified in terms of its GDP. The trend drops steadily within its ranges and thus it also incorporates an array of infrastructural factors which are measured through the 10-year development plan.

The median 2.15 and half of the data range fall between 1.875 and 2.225 can approximate centre of the distribution of Montenegro energy taxes as a percentage of GDP. The lowest percentage in given period was 1.7 while the highest stood at 2.3.

The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small negative skewness -0.845, which indicates that there are no extreme values in the tails of the distribution in given period.

In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1,374; +1,374), which means that the variable energy taxes has approximately symmetric distribution.

Kurtosis of -0.579 falls into the interval twice the value of standard error so that it can be concluded that the energy taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of energy taxes during this period is on the level of 0.20976.

5.12.2 Serbia

Table 17: Serbia - Energy Taxes (in%)

Statistics		
Serbia - Energy Taxes (in %)		
N	Valid	10
	Missing	0
Mean		1.6800
Median		1.7000
Std. Deviation		0.07888
Skewness		0.407
Std. Error of Skewness		0.687
Kurtosis		-1.074
Std. Error of Kurtosis		1.334
Range		0.20
Minimum		1.60
Maximum		1.80
Sum		16.80
Percentiles	25	1.6000
	50	1.7000
	75	1.7250

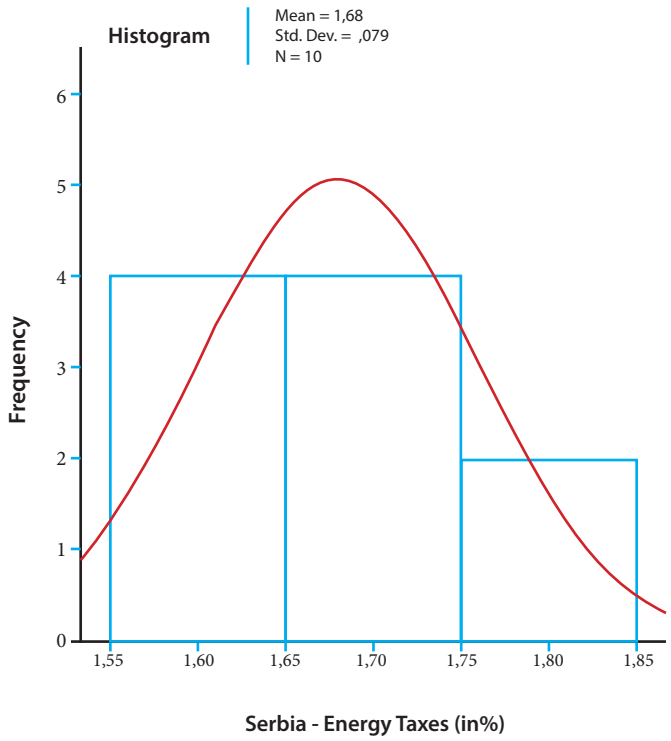


Figure 32 : Serbia - Energy Taxes (in%)

From the histogram outlined above, the significant tax (energy taxes) is dropping steadily. While the EU policy establishment is based on a common front, the overall impact of infrastructural development defines the probable impact of tax management process. Ideally, the strength of Croatia's energy tax classification offers a positive economic instrument that is highlighted within the financial and developmental schemes.

Center of the distribution of Serbia energy taxes as a percentage of GDP can be approximated by the median 1.7 and half of the data range fall between 1.6 and 1.725.

The median 1.7 and half of the data range fall between 1.6 and 1.725 can approximate centre of the distribution of Serbia energy taxes as a percentage of GDP.

The lowest percentage in given period was 1.6 while the highest stood at 1.8. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small positive skewness 0.407, which indicates that there are no extreme values in the tails of the distribution in given period.

In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable energy taxes has approximately symmetric distribution.

Kurtosis of -1.074 falls into the interval twice the value of standard error so that it can be concluded that the energy taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of energy taxes during this period is on the level of 0.07888.

5.12.3 Kosovo

Table 18: Kosovo - Energy Taxes (in%)

Statistics		
Kosovo - Energy Taxes (in %)		
N	Valid	10
	Missing	0
Mean		1.5100
Median		1.5000
Std. Deviation		0.07379
Skewness		-0.166
Std. Error of Skewness		0.687
Kurtosis		-0.734
Std. Error of Kurtosis		1.334
Range		0.20
Minimum		1.40
Maximum		1.60
Sum		15.10
Percentiles	25	1.4750
	50	1.5000
	75	1.6000

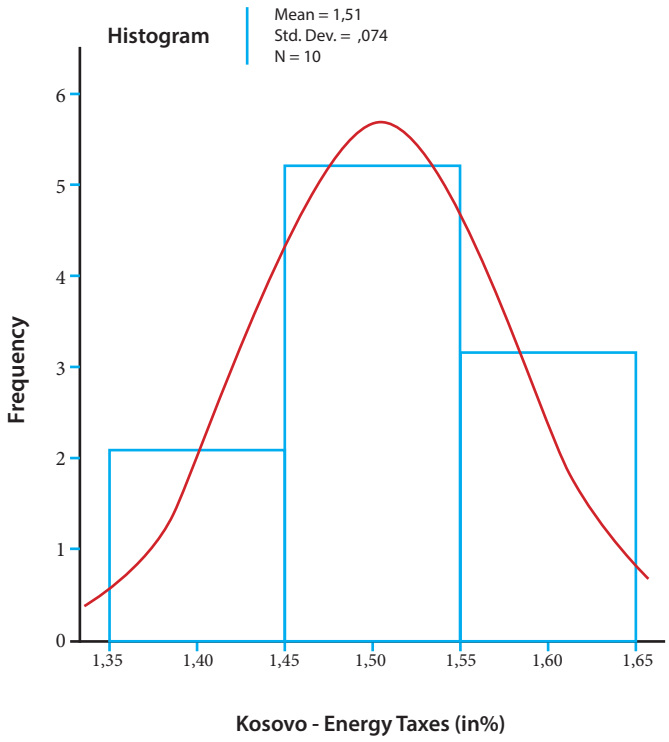


Figure 33 : Kosovo - Energy Taxes (in%)

The overall trend in Kosovo's energy system indicates that the strategy is compliant with the existing EU taxation policy framework. The energy system is equally aided by conventions and protocols which are mandatorily geared towards enhancing the harmonized standards of its transport infrastructure. The lowered tax ratio provides an important preposition for better structural development network.

Center of the distribution of Kosovo energy taxes as a percentage of GDP can be approximated by the median 1.5 and half of the data range fall between 1.475 and 1.6. The lowest percentage in given period was 1.4 while the highest stood at 1.6. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

The median 1.5 and half of the data range fall between 1.475 and 1.6 can approximate centre of the distribution of Kosovo energy taxes as a percentage of GDP. This suspicion is confirmed by the very small negative skewness -0.166 that indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable energy taxes has approximately symmetric distribution.

Kurtosis of -0.734 falls into the interval twice the value of standard error so that it can be concluded that the energy taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of energy taxes during this period is on the level of 0.07379.

5.12.4 Albania

Table 19: Albania - Energy Taxes (in%)

Statistics		
Albania - Energy Taxes (in %)		
N	Valid	10
	Missing	0
Mean		1.9700
Median		1.9500
Std. Deviation		0.08233
Skewness		0.687
Std. Error of Skewness		0.687
Kurtosis		-1.043
Std. Error of Kurtosis		1.334
Range		0.20
Minimum		1.90
Maximum		2.10
Sum		19.70
Percentiles	25	1.9000
	50	1.9500
	75	2.0250

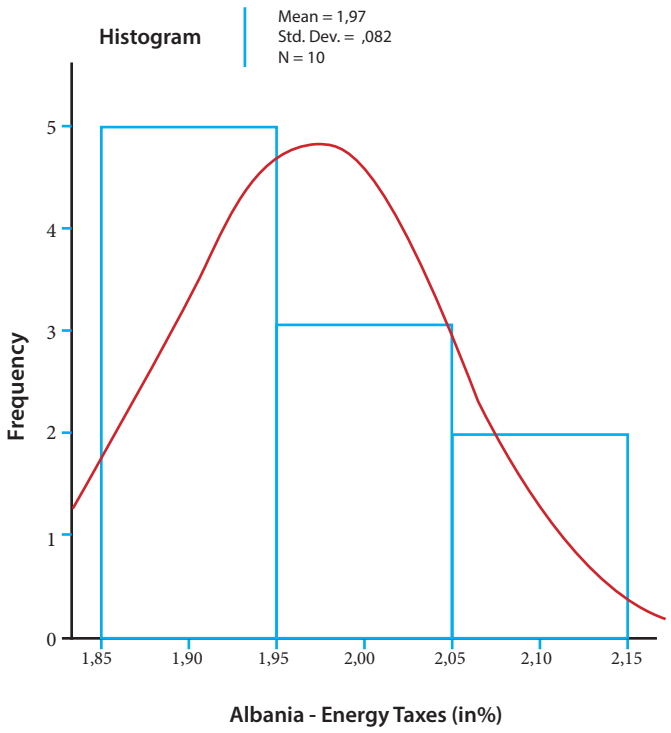


Figure 34 : Albania - Energy Taxes (in%)

The investment scenario in Albania provides a critical path for illustrating its capability to manage vast energy resources. However, the tax factor according to the histogram above represents an important reference point for its energy dynamics. This, according to the histogram indicates that the country has been successful in managing its infrastructural development process through better economic and political policies.

The investment scenario in Albania provides a critical path for illustrating its capability to manage vast energy resources. However, the tax factor according to the histogram above represents an important reference point for its energy dynamics. This, according to the histogram indicates that the country has been successful in managing its infrastructural development process through better economic and political policies. Center of the distribution of Albania energy taxes as a percentage of GDP can be approximated by the median 1.95 and half of the data range fall between 1.9 and 2.025. The median 1.95 and half of the data range fall between 1.9 and 2.025 can approximate centre of the distribution of Albania energy taxes as a percentage of GDP. The lowest percentage in given period was 1.9 while the highest stood at 2.1. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small positive skewness 0.687, which indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable energy taxes has approximately symmetric distribution.

Kurtosis of -1.034 falls into the interval twice the value of standard error so that it can be concluded that the energy taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of energy taxes during this period is on the level of 0.08233.

5.12.5 Macedonia

Table 20: Macedonia - Energy Taxes (in%)

Statistics		
Macedonia - Energy Taxes (in %)		
N	Valid	10
	Missing	0
Mean		1.9800
Median		2.0000
Std. Deviation		0.13166
Skewness		0.088
Std. Error of Skewness		0.687
Kurtosis		-0.751
Std. Error of Kurtosis		1.334
Range		0.40
Minimum		1.80
Maximum		2.20
Sum		19.80
Percentiles	25	1.8750
	50	2.0000
	75	2.1000

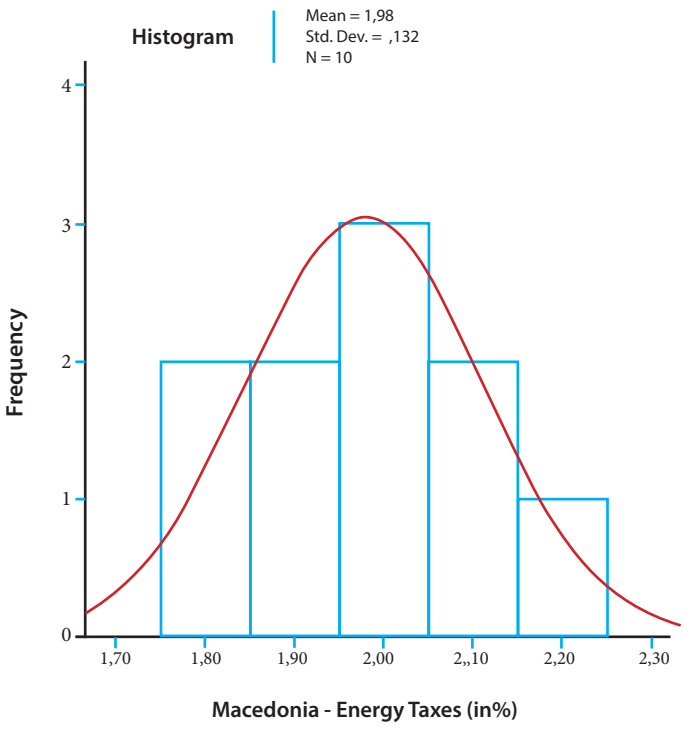


Figure 35 : Macedonia - Energy Taxes (in%)

Macedonia's economic experience brings forth a health growth phase that is classified within the changing domestic and international market variances. The tax policy program in Macedonia is according to the histogram above relatively balanced, though the economic crisis and the country's political challenges would have hugely affected its general economic growth. The consumption levels between 2004 and 2013 show a strong investment level and accelerated performance index in the country.

Center of the distribution of Macedonia energy taxes as a percentage of GDP can be approximated by the median two and half of the data range fall between 1.875 and 2.1.

The median two and half of the data range fall between 1.875 and 2.1 can approximate centre of the distribution of Macedonia energy taxes as a percentage of GDP. The lowest percentage in given period was 1.8 while the highest stood at 2.2. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.088, which indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable energy taxes has approximately symmetric distribution.

Kurtosis of -0.751 falls into the interval twice the value of standard error so that it can be concluded that the energy taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of energy taxes during this period is on the level of 0.13166.

5.12.6 Croatia

Table 21: Croatia - Energy Taxes (in%)

Statistics		
Croatia - Energy Taxes (in %)		
N	Valid	10
	Missing	0
Mean		1.4400
Median		1.4500
Std. Deviation		0.09661
Skewness		-0.111
Std. Error of Skewness		0.687
Kurtosis		-0.623
Std. Error of Kurtosis		1.334
Range		0.30
Minimum		1.30
Maximum		1.60
Sum		14.40
Percentiles	25	1.3750
	50	1.4500
	75	1.5000

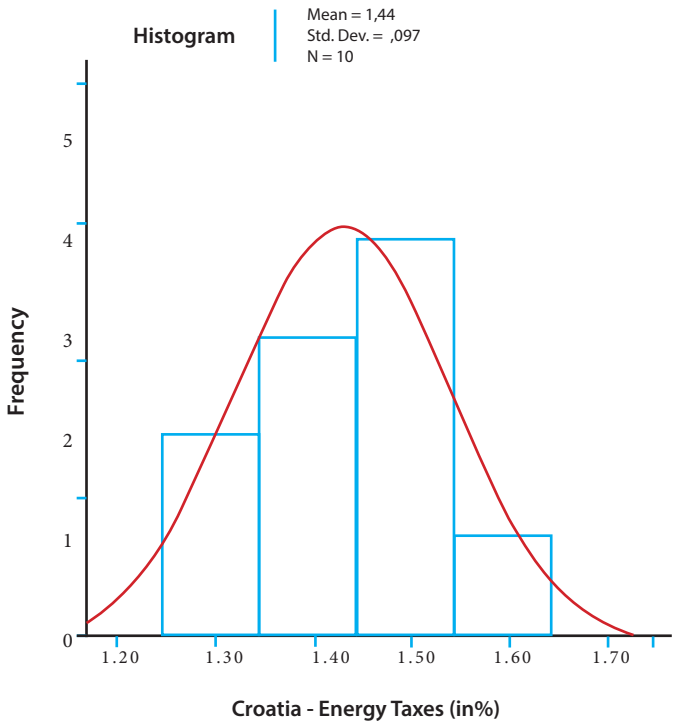


Figure 36 : Croatia - Energy Taxes (in%)

Center of the distribution of Croatia energy taxes as a percentage of GDP can be approximated by the median 1.45 and half of the data range fall between 1.375 and 1.5.

The median 1.45 and half of the data range fall between 1.375 and 1.5 can approximate centre of the distribution of Croatia energy taxes as a percentage of GDP.

The tax component in Croatia defines a meaningfully changing trend which is defined by increased competitiveness and the burden itself foreseen in the histogram determines the significant state of the country's tax system.

The essential impact of specific tax considerations is reflected by the intensity of the cumulative burden as a function of the country's economic framework.

The lowest percentage in given period was 1.3 while the highest stood at 1.6. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.
This suspicion is confirmed by the very small negative skewness -0.111 that indicates that there are no extreme values in the tails of the distribution in given period. More so, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable energy taxes has approximately symmetric distribution.
Kurtosis of -0.623 falls into the interval twice the value of standard error so that it can be concluded that the energy taxes has approximately normal kurtosis and consequently normal distribution.
Average deviation from the mean of energy taxes during this period is on the level of 0.09661.

5.12.7 Bulgaria

Table 22: Bulgaria - Energy Taxes (in%)

Statistics		
Bulgaria - Energy Taxes (in %)		
N	Valid	10
	Missing	0
Mean		2.0100
Median		1.9500
Std. Deviation		0.15951
Skewness		0.620
Std. Error of Skewness		0.687
Kurtosis		-0.618
Std. Error of Kurtosis		1.334
Range		0.50
Minimum		1.80
Maximum		2.30
Sum		20.10
Percentiles	25	1.9000
	50	1.9500
	75	2.1250

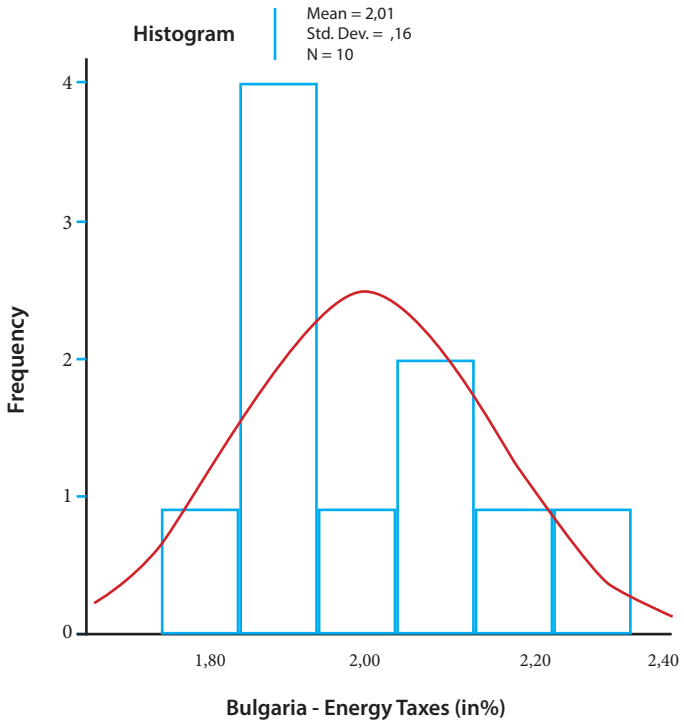


Figure 37 : Bulgaria - Energy Taxes (in%)

The tax factor in Bulgaria is explained through a critical path which according to the above histogram has been fully attained through a guided economic and social factor.

However, the universal application of the tax factor implies that reliant concepts such as interconnection between the relevant economic metrics and the core tax compliance are fully examined.

Center of the distribution of Bulgaria energy taxes as a percentage of GDP can be approximated by the median 1.95 and half of the data range fall between 1.9 and 2.125. The lowest percentage in given period was 1.8 while the highest stood at 2.3.

The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small positive skewness 0.620, which indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable energy taxes has approximately symmetric distribution.

Kurtosis of -0.618 falls into the interval twice the value of standard error so that it can be concluded that the energy taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of energy taxes during this period is on the level of 0.15951.

5.13 Environmental Taxes (in % of total taxation)

5.13.1 Montenegro

Table 23: Montenegro - Environmental Taxes (in% of total taxation)

Statistics		
Montenegro - Environmental Taxes (in % total taxation)		
N	Valid	10
	Missing	0
Mean		6.1300
Median		5.9500
Std. Deviation		0.82469
Skewness		0.580
Std. Error of Skewness		0.687
Kurtosis		-0.903
Std. Error of Kurtosis		1.334
Range		2.40
Minimum		5.10
Maximum		7.50
Sum		61.30
Percentiles	25	5.4000
	50	5.9500
	75	6.8500

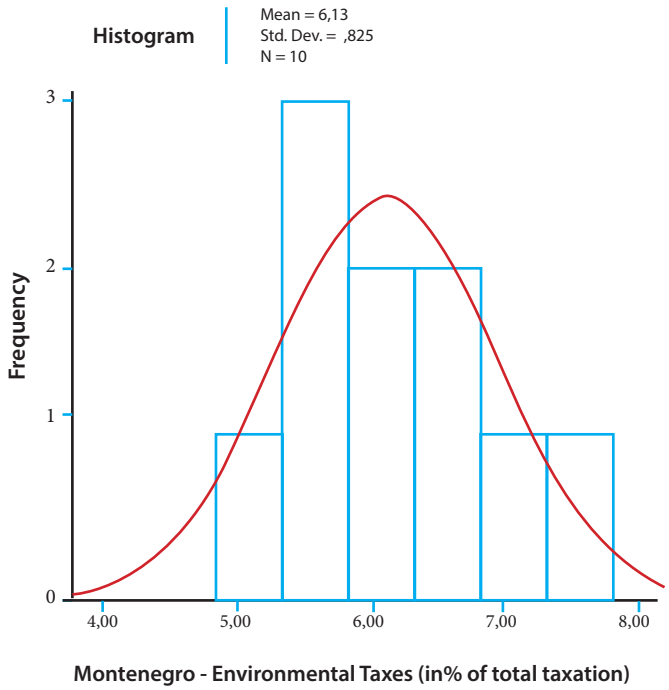


Figure 38 : .Montenegro - Environmental Taxes (in% of total taxation)

The total taxation in South Eastern Europe according to the above indicators imply that a certain level of review would be accomplished essentially through a conclusively guided scenario as well as projected sectoral policy integration.

This is considerably reflected by the rapid increase in the environmental taxation values (which rose significantly from 2004-2013) with a mean of 6.130 critically showing a positive tax environment as per the histogram.

The median 5.95 and half of the data range fall between 5.4 and 6.85 can approximate center of the distribution of Montenegro environmental taxes as a percentage of total taxation.

The lowest percentage in given period was 5.1 while the highest stood at 7.5. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.580, which indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable environmental taxes has approximately symmetric distribution.

Kurtosis of -0.903 falls into the interval twice the value of standard error so that it can be concluded that the environmental taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of environmental taxes during this period is on the level of 0.82469.

5.13.2 Serbia

Table 24: Serbia - Environmental Taxes (in% of total taxation)

Statistics		
Serbia - Environmental Taxes (in % total taxation)		
N	Valid	10
	Missing	0
Mean		5.7300
Median		5.5500
Std. Deviation		1.18795
Skewness		0.207
Std. Error of Skewness		0.687
Kurtosis		-1.519
Std. Error of Kurtosis		1.334
Range		3.40
Minimum		4.10
Maximum		7.50
Sum		57.30
Percentiles	25	4.6750
	50	5.5500
	75	6.9500

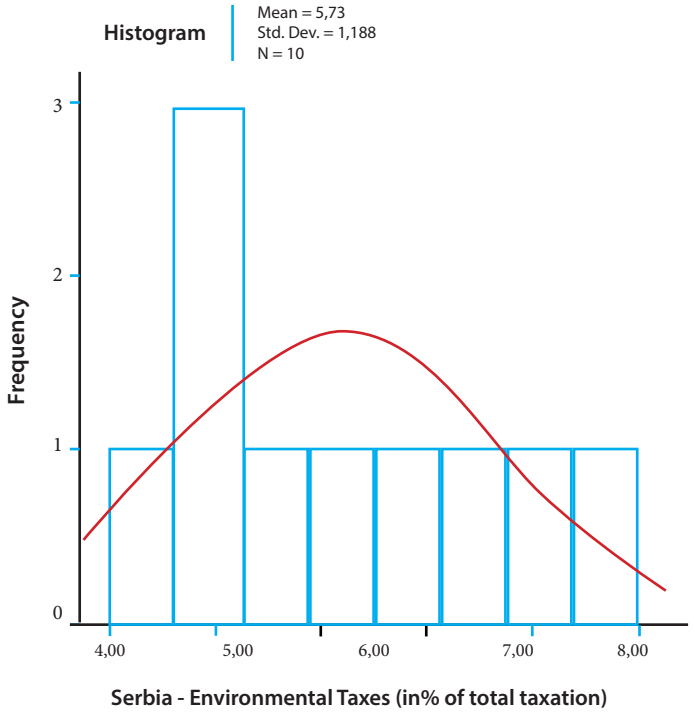


Figure 39 : Serbia - Environmental Taxes (in% of total taxation)

The examination of an essential attribute reflects the overtones in Serbia's tax environment.

Its cumulative effect adduced in the overall sectoral integration showed that the mean was 5.73 and it included a variance of 1.188 which hence provides a comprehensive policy enactment and taxation policy attainment.

Center of the distribution of Serbia environmental taxes as a percentage of total taxation can be approximated by the median 5.555 and half of the data range fall between 4.675 and 6.95.

The lowest percentage in given period was 4.1 while the highest stood at 7.5. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.207, which indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable environmental taxes has approximately symmetric distribution.

Kurtosis of -1.519 falls into the interval twice the value of standard error so that it can be concluded that the environmental taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of environmental taxes during this period is on the level of 1.18795.

5.13.3 Kosovo

Table 25: Kosovo - Environmental Taxes (in% of total taxation)

Statistics		
Kosovo - Environmental Taxes (in % total taxation)		
N	Valid	10
	Missing	0
Mean		5.3100
Median		5.5000
Std. Deviation		1.17421
Skewness		-0.202
Std. Error of Skewness		0.687
Kurtosis		-0.822
Std. Error of Kurtosis		1.334
Range		3.70
Minimum		3.40
Maximum		7.10
Sum		53.10
Percentiles	25	4.3500
	50	5.5000
	75	6.2000

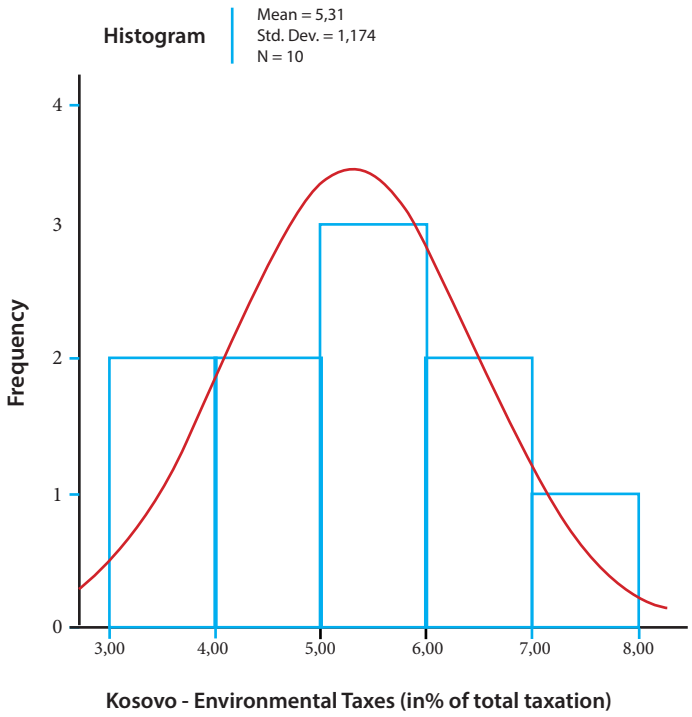


Figure 40 : Kosovo - Environmental Taxes (in% of total taxation)

The taxation aspect in Kosovo according to the histogram indicates that it has a comparatively lower tax environment (mean 5.3). The country's stimulating growth and the endowed infrastructure establishes an important platform that is fashioned through a well-guided procedural technique. The registry data 2004-2013 provide a stable investment and business environment in Kosovo, implying that its opportunities are universally diverse and the transport sector upgrades were equivalently determined as per the growth spectra.

The median 5.5 and half of the data range fall between 4.35 and 6.2 can approximate centre of the distribution of Kosovo environmental taxes as a percentage of total taxation.

The lowest percentage in given period was 3.4 while the highest stood at 7.1. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small negative skewness -0.202 that indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable environmental taxes has approximately symmetric distribution.

Kurtosis of -0.822 falls into the interval twice the value of standard error so that it can be concluded that the environmental taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of environmental taxes during this period is on the level of 1.17421.

5.13.4 Albania

Table 26: Albania - Environmental Taxes (in% of total taxation)

Statistics		
Albania - Environmental Taxes (in % total taxation)		
N	Valid	10
	Missing	0
Mean		6.4500
Median		6.5000
Std. Deviation		0.86699
Skewness		-0.105
Std. Error of Skewness		0.687
Kurtosis		-1.023
Std. Error of Kurtosis		1.334
Range		2.60
Minimum		5.10
Maximum		7.70
Sum		64.50
Percentiles	25	5.7000
	50	6.5000
	75	7.2000

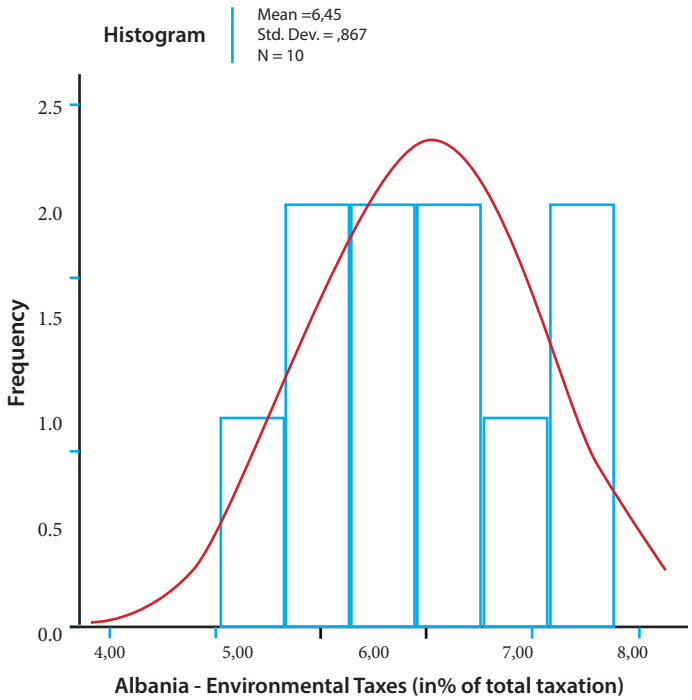


Figure 41 : Albania - Environmental Taxes (in% of total taxation)

According to the above indicators, the improvement of the tax environment has been guided by a reasonable scope, which is evidently developed in the country by reflecting the essential components of pollutions and other major control mechanisms.

The histogram above establishes a moderately standard environmental action plans. From the GDP, the overall scope has been achieved through a more essentially positive Albanian attributes. The median 6.5 and half of the data range fall between 5.7 and 7.2 can approximate the centre of the distribution of Albania environmental taxes as a percentage of total taxation. The lowest percentage in given period was 5.1 while the highest stood at 7.7.

The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry. This suspicion is confirmed by the very small negative skewness -0.105 that indicates that there are no extreme values in the tails of the distribution in given period.

In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable environmental taxes has approximately symmetric distribution. Kurtosis of -1,023 falls into the interval twice the value of standard error so that it can be concluded that the environmental taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of environmental taxes during this period is on the level of 0.86699.

5.13.5 Macedonia

Table 27: Macedonia - Environmental Taxes (in% of total taxation)

Statistics		
Macedonia - Environmental Taxes (in % total taxation)		
N	Valid	10
	Missing	0
Mean		5.6900
Median		5.5000
Std. Deviation		1.08264
Skewness		0.124
Std. Error of Skewness		0.687
Kurtosis		-1.385
Std. Error of Kurtosis		1.334
Range		3.20
Minimum		4.10
Maximum		7.30
Sum		56.90
Percentiles	25	4.8250
	50	5.5000
	75	6.7500

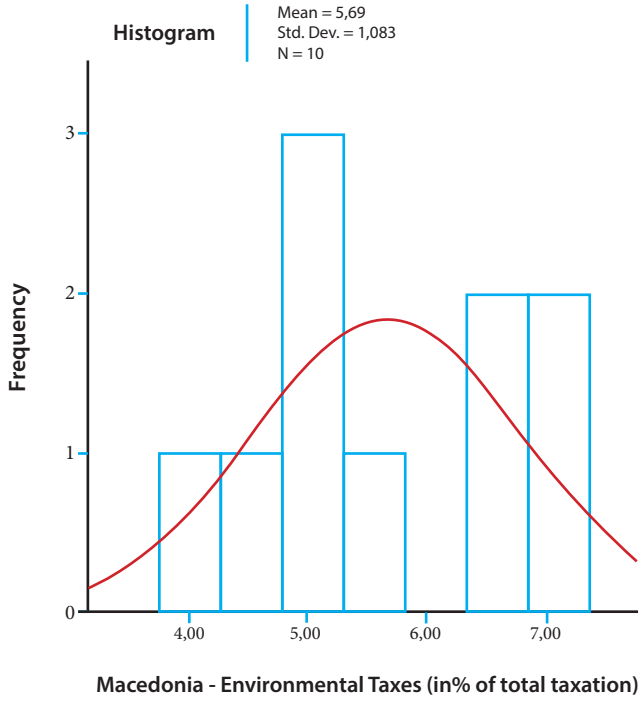


Figure 42 : Macedonia - Environmental Taxes (in% of total taxation)

From the statistics identified in the survey, the significant factor compelling the country to attain relevant tax environment is attributed to its financial strength.

Ideally, the dealings in various sectors as well as the practical framework, which is considerably managed, explain a reflective overview of the comparative process, including Macedonia's valid engagement with other Balkan States.

The median 5.5 and half of the data range fall between 4.825 and 6.75 can approximate centre of the distribution of Macedonia environmental taxes as a percentage of total taxation.

The lowest percentage in given period was 4.1 while the highest stood at 7.3. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.124, which indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable environmental taxes has approximately symmetric distribution.

Kurtosis of -1.385 falls into the interval twice the value of standard error so that it can be concluded that the environmental taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of environmental taxes during this period is on the level of 1.08264.

5.13.6 Croatia

Table 27: Croatia - Environmental Taxes (in% of total taxation)

Statistics		
Croatia - Environmental Taxes (in % total taxation)		
N	Valid	10
	Missing	0
Mean		7.1400
Median		7.0500
Std. Deviation		0.49261
Skewness		0.173
Std. Error of Skewness		0.687
Kurtosis		-1.249
Std. Error of Kurtosis		1.334
Range		1.40
Minimum		6.50
Maximum		7.90
Sum		71.40
Percentiles	25	6.7250
	50	7.0500
	75	7.6250

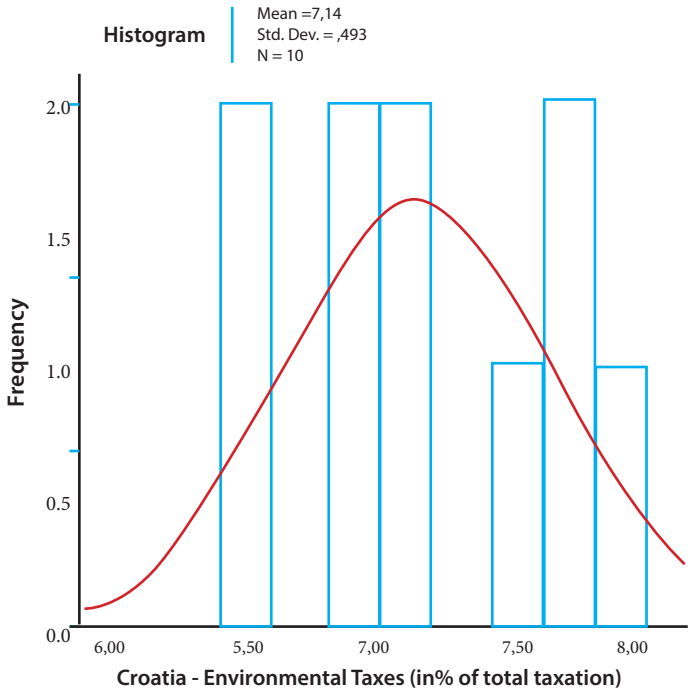


Figure 43 : Croatia - Environmental Taxes (in% of total taxation).

The histogram explains the experimented tax environment range of 0.493 in Croatia and this arbitrarily indicate that the country experienced a healthy growth over the period 2004 to 2013. The research analysis of the situational characteristic of Croatia demarcates a sampled experience in its hardened economic times.The Croatian financial system reflects a conservative capitalization strategy that involves diversified banking unification systems.The median 7.05 and half of the data range fall between 6.725 and 7.625 can approximate centre of the distribution of Croatia environmental taxes as a percentage of total taxation. The lowest percentage in given period was 6.5 while the highest stood at 7.9. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.173, which indicates that there are no extreme values in the tails of the distribution in given period. In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable environmental taxes has approximately symmetric distribution.

Kurtosis of -1.249 falls into the interval twice the value of standard error so that it can be concluded that the environmental taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of environmental taxes during this period is on the level of 0.49261.

5.13.7 Bulgaria

Table 29: Bulgaria - Environmental Taxes (in% of total taxation)

Statistics		
Bulgaria - Environmental Taxes (in % total taxation)		
N	Valid	10
	Missing	0
Mean		6.5400
Median		6.4000
Std. Deviation		0.73515
Skewness		0.441
Std. Error of Skewness		0.687
Kurtosis		-0.998
Std. Error of Kurtosis		1.334
Range		2.20
Minimum		5.60
Maximum		7.80
Sum		65.40
Percentiles	25	5.8750
	50	6.4000
	75	7.1750

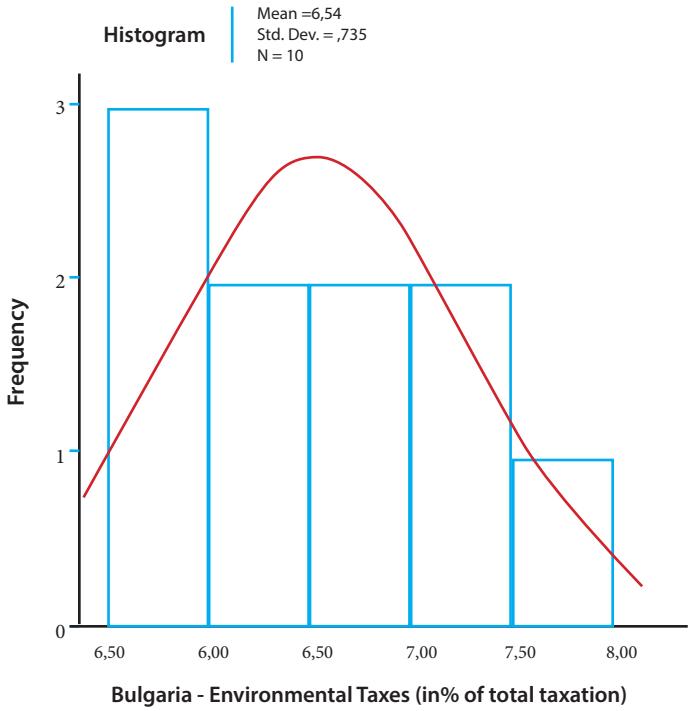


Figure 44 : Bulgaria - Environmental Taxes (in% of total taxation)

The research statistics featured the individual trends in Bulgaria stressed banking assets and direct inflows, factors that amounted to changes in its tax environment.

The expert interpretation of monetary value recovery platform over the period of financial boom expressed a marginal height of liquidity crisis. It was observed that specific securities and industrially active asset bases were functional and thereby causing a perfect change in the country's financial system.

The median 6.4 and half of the data range fall between 5.875 and 7.175 can approximate centre of the distribution of Bulgaria environmental taxes as a percentage of total taxation.

The lowest percentage in given period was 5.6 while the highest stood at 7.8. The mean is not quite different from the median, suggesting that the distribution have not distinct asymmetry.

This suspicion is confirmed by the very small positive skewness 0.441, which indicates that there are no extreme values in the tails of the distribution in given period.

In addition, asymmetry coefficient falls into the interval twice the value of standard error of skewness (-1.374; +1.374), which means that the variable environmental taxes has approximately symmetric distribution.

Kurtosis of -0.998 falls into the interval twice the value of standard error so that it can be concluded that the environmental taxes has approximately normal kurtosis and consequently normal distribution.

Average deviation from the mean of environmental taxes during this period is on the level of 0.73515.

5.14 Final consumption of Households for Transport:

Table 30: Descriptive statistics of variable Final consumption of Households for Transport by country

Descriptive statistics		Country						
		Montenegro	Serbia	Kosovo	Albania	Macedonia	Croatia	Bulgaria
N	Valid	10	10	10	10	10	10	10
	Missing	0	0	0	0	0	0	0
Mean		6073,8	5739.20	**5223,5**	6928,4	6452,8	5367,7	**7040,9**
Median		6011,5	5738.50	5090,5	6906	6328,5	5381,5	6969
Std. Deviation		622,037	**716.900**	715,1	**472,15**	565,096	**491,93**	681,84
Skewness		0,059	.182	0,302	-0,051	0,459	0,197	0,494
Std. Error of Skewness		0,687	.687	0,687	0,687	0,687	0,687	0,687
Kurtosis		-1,454	1.125	-1,038	-1,096	-1,295	-0,94	-0,588
Std. Error of Kurtosis		1,334	1.334	1,334	1,334	1,334	1,334	1,334
Range		1687	2663	2098	1397	1550	1495	2123
Minimum		5214	4459	4216	6214	5789	4678	6124
Maximum		6901	7122	6314	7611	7339	6173	8247
Sum		60738	57392	52235	69284	64528	53677	70409
Percentiles	25	5489	5299.50	4646,8	6498,8	5903	4930	6469,3
	50	6011,5	5738.50	5090,5	6906	6328,5	5381,5	6969
	75	6769	6179.50	5895,3	7381	7031	5822	7568,5

In the period from 2004 to 2013 the highest Final Consumption of Households for Transport records Bulgaria on the average level of 7,040.9 million Euros while Kosovo records lowest level with the value of 5,223.50 million Euros.

It may also be noted that Albania has the most stable final consumption dynamics within this period (472,15 million Euros) while Serbia and Kosovo has shown as countries with the greatest variations of Final Consumption in mentioned period (716,9 and 715,10 million Euros respectively) .

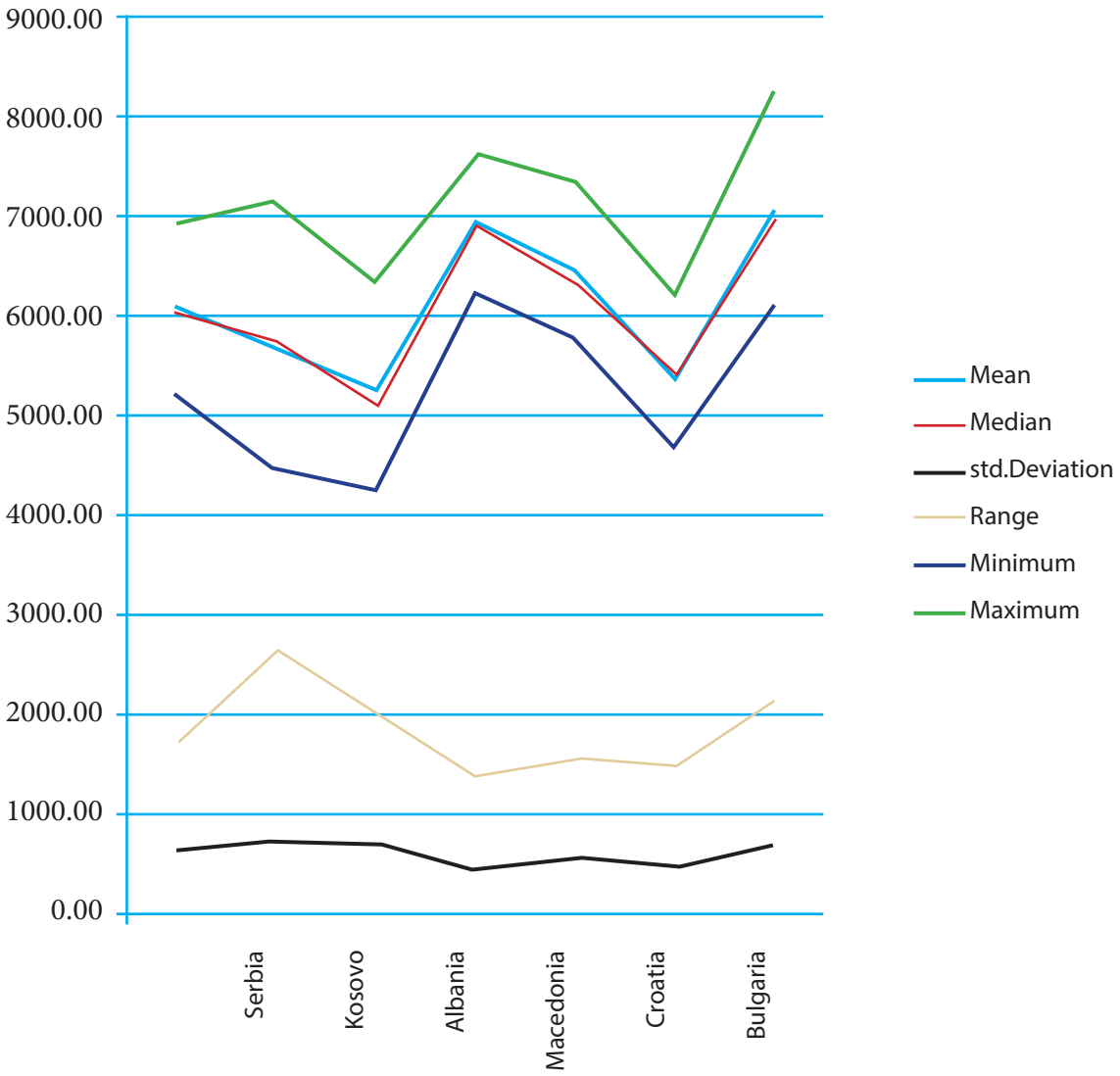


Figure 45 : Graphic display of variable Final consumption of Households for Transport by country

5.14.1 Energy Taxes (in %)

Table 31: Descriptive statistics of variable energy taxes by country

Descriptive statistics		Country						
		Montenegro	Serbia	Kosovo	Albania	Macedonia	Croatia	Bulgaria
N	Valid	10	10	10	10	10	10	10
	Missing	0	0	0	0	0	0	0
Mean		**2,08**	1,68	1,51	1,97	1,98	1,44	2,01
Median		2,15	1,7	1,5	1,95	2	1,45	1,95
Std. Deviation		**0,20976**	0,07888	**0,07379**	0,08233	0,13166	0,09661	0,15951
Skewness		-0,845	0,407	-0,166	0,687	0,088	-0,111	0,62
Std. Error of Skewness		0,687	0,687	0,687	0,687	0,687	0,687	0,687
Kurtosis		-0,579	-1,074	-0,734	-1,043	-0,751	-0,623	-0,618
Std. Error of Kurtosis		1,334	1,334	1,334	1,334	1,334	1,334	1,334
Range		0,6	0,2	0,2	0,2	0,4	0,3	0,5
Minimum		1,7	1,6	1,4	1,9	1,8	1,3	1,8
Maximum		2,3	1,8	1,6	2,1	2,2	1,6	2,3
Sum		20,8	16,8	15,1	19,7	19,8	14,4	20,1
Percentiles	25	1,875	1,6	1,475	1,9	1,875	1,375	1,9
	50	2,15	1,7	1,5	1,95	2	1,45	1,95
	75	2,225	1,725	1,6	2,025	2,1	1,5	2,125

When it comes to Energy taxes on the basis of table above it can be seen that Montenegro records the highest percentage level (mean 2,08 %) while Croatia has shown as the country with the lowest percentage of this type of taxes (mean 1,44%).

It may also be noted that Serbia and Kosovo has the most stable energy taxes dynamics within period from 2004 to 2013 (stdev. 0,07888 and 0,07379 respectively) while Montenegro has shown as country with the greatest variations of Final Consumption in mentioned period (stdev. 0,20976).

5.14.2 Environmental Taxes (in % of total taxation)

Table 32: Descriptive statistics of variable environmental taxes by country

Descriptive statistics		Country						
		Montenegro	Serbia	Kosovo	Albania	Macedonia	Croatia	Bulgaria
N	Valid	10	10	10	10	10	10	10
	Missing	0	0	0	0	0	0	0
Mean		6,13	5,73	**5,31**	6,45	5,69	**7,14**	6,54
Median		5,95	5,55	5,5	6,5	5,5	7,05	6,4
Std. Deviation		0,82469	1,18795	**1,17421**	0,86699	1,08264	**0,49261**	0,73515
Skewness		0,58	0,207	-0,202	-0,105	0,124	0,173	0,441
Std. Error of Skewness		0,687	0,687	0,687	0,687	0,687	0,687	0,687
Kurtosis		-0,903	-1,519	-0,822	-1,023	-1,385	-1,249	-0,998
Std. Error of Kurtosis		1,334	1,334	1,334	1,334	1,334	1,334	1,334
Range		2,4	3,4	3,7	2,6	3,2	1,4	2,2
Minimum		5,1	4,1	3,4	5,1	4,1	6,5	5,6
Maximum		7,5	7,5	7,1	7,7	7,3	7,9	7,8
Sum		61,3	57,3	53,1	64,5	56,9	71,4	65,4
Percentiles	25	5,4	4,675	4,35	5,7	4,825	6,725	5,875
	50	5,95	5,55	5,5	6,5	5,5	7,05	6,4
	75	6,85	6,95	6,2	7,2	6,75	7,625	7,175

Environmental taxes records different dynamics compared to Energy Taxes. It can be seen that Croatia has the highest percentage level (mean 7,14 %) with the most stable dynamics (stdev 0,49) while Kosovo stands at the lowest level (mean 5,31%).

5.14.3 Analyses of the impact of the transport in economic developments: C-values – Montenegro

C-values – Montenegro

As the years increase, we see that the C-values also increase. In order to test whether this increase is statistically significant, we make use of the regression analysis and its corresponding ANOVA table. The reason for using ANOVA, apart from its availability is SPSS is that it is embedded it its power to analyse both parametric and non-parametric data. Regardless of the kind of data to be analysed, ANOVA is a good technique of showing a relationship between two groups of data based on a certain variable.

In the context of this study, the research aims at finding out if there is a relationship between years (as they progress) and C-values as they increase as well in an attempt to establish if transportation has an impact in economic development ultimately.

Regression analysis, just like ANOVA, is used to show relationships between variables. The combination of the two techniques is useful in checking reliability and validity of the model in use. For the data of C-values, the regression table and its ANOVA are given below:

Table 33: Coefficient for C-values for Montenegro

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-403417	18021.05	-22.3859	1.68E-08	-444973	-361860	-444973	-361860
Year	203.8788	8.972381	22.72293	1.49E-08	183.1884	224.5691	183.1884	224.5691

Table 34: ANOVA for C-values for Montenegro

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	3429241	3429241	516.3316	1.49E-08
Residual	8	53132.39	6641.548		
Total	9	3482374			

Table 35: Summary output

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.992342
R Square	0.984742
Adjusted R Square	0.982835
Standard Error	81.4957
Observations	10

From the p-value (1.49E-08 < 0.05) of the F-statistic of the ANOVA table, we see that the regression model is significant at 5% level and can be used for the projecting the data for the next 17 years.

From the coefficient table 33 , we see that the model is given by

C-value = -403417 + 203.8788* year

From the coefficient table and the above regression equation, we see that for every year the C-values increase by 203.879 units approximately.

In addition, this increase is found to be statistically significant at 5% level. In addition, the R square value of the model is 98.473%, which is considerably high (maximum value is 100) and holds the validity of the regression model.

This implies that nearly 98.473% of the variation present in the model is explained by the 'year' and the rest is random in nature.

Table 36: Correlations - Montenegro

Correlations				
		C Montenegro	ENE Montenegro	ENV Montenegro
C Montenegro	Pearson Correlation	1	-.948**	.777**
	Sig. (2-tailed)		.000	.008
	N	10	10	10
ENE Montenegro	Pearson Correlation	-.948**	1	-.716*
	Sig. (2-tailed)	.000		.020
	N	10	10	10
ENV Montenegro	Pearson Correlation	.777**	-.716*	1
	Sig. (2-tailed)	.008	.020	
	N	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table 36, from the SPSSv21 output, we see that, the correlation values are statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.948 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.777 is a high positive correlation, with p-value < 0.05). This indicates that the impact of transport in economic developments of the transition country of Montenegro.

Table 37: Correlations - Montenegro

Correlations				
		C Montenegro	ENE Montenegro	ENV Montenegro
C Montenegro	Pearson Correlation	1	-.997**	.985**
	Sig. (2-tailed)		.000	.000
	N	27	27	27
ENE Montenegro	Pearson Correlation	-.997**	1	-.981**
	Sig. (2-tailed)	.000		.000
	N	27	27	27
ENV Montenegro	Pearson Correlation	.985**	-.981**	1
	Sig. (2-tailed)	.000	.000	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

When the data for Montenegro from 2004 to 2030 (27 observations) is considered, we see that the correlation values are still statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.997 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.985 is a high positive correlation, with p-value < 0.05). This indicates that the impact of transport in economic developments of the transition country of Montenegro.

5.14.4 Analyses of the impact of the transport in economic developments: C-values – Kosovo

As, the year increases, we see that the C-values also increases. In order to test whether this increase in statistically significant, we make use of the regression analysis and its corresponding ANOVA table. For the data of C-values, the regression table and its ANOVA are given below:

Table 38: Coefficient for C-values for Kosovo

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-464705	22934.91	-20.2619	3.68E-08	-517593	-411817	-517593	-411817
Year	233.9697	11.41891	20.48967	3.37E-08	207.6376	260.3018	207.6376	260.3018

Table 39: ANOVA for C-values for Kosovo

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	4516200	4516200	419.8264	3.37E-08
Residual	8	86058.42	10757.3		
Total	9	4602259			

Table 40: Summary output

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.990606
R Square	0.981301
Adjusted R Square	0.978963
Standard Error	103.7174
Observations	10

From the p-value (1.86E-07 < 0.05) of the F-statistic of the ANOVA table, we see that the regression model is significant at 5% level and can be used for the projecting the data for the next 17 years.

From the coefficient table 38 , we see that the model is given by

C-value = -464705 + 233.9697* year

From the coefficient table and the above regression equation, we see that for every year the C-values increase by **233.9697** units approximately.

Moreover, this increase is found to be statistically significant at 5% level. In addition, the R square value of the model is 98.13%, which is considerably high (maximum value is 100) and holds the validity of the regression model.

This implies that nearly 98.13% of the variation present in the model is explained by the 'year' and the rest is random in nature.

Table 41: Correlations - Kosovo

Correlations				
		C Kosovo	ENE Kosovo	ENV Kosovo
C Kosovo	Pearson Correlation	1	-.921**	.966**
	Sig. (2-tailed)		.000	.000
	N	10	10	10
ENE Kosovo	Pearson Correlation	-.921**	1	-.912**
	Sig. (2-tailed)	.000		.000
	N	10	10	10
ENV Kosovo	Pearson Correlation	.966**	-.912**	1
	Sig. (2-tailed)	.000	.000	
	N	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table 41, from the SPSS v21 output, we see that, the correlation values are statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.921 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.966 is a high positive correlation, with p-value < 0.05).
This indicates that the impact of transport in economic developments of the transition country of Kosovo.

Table 42: Correlations - Kosovo

Correlations				
		C Kosovo	ENE Kosovo	ENV Kosovo
C Kosovo	Pearson Correlation	1	-.996**	.998**
	Sig. (2-tailed)		.000	.000
	N	27	27	27
ENE Kosovo	Pearson Correlation	-.996**	1	-.995**
	Sig. (2-tailed)	.000		.000
	N	27	27	27
ENV Kosovo	Pearson Correlation	.998**	-.995**	1
	Sig. (2-tailed)	.000	.000	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

When the data for Kosovo from 2004 to 2030 (27 observations) is considered, we see that the correlation values are still statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.996 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.998 is a high positive correlation, with p-value < 0.05).

This indicates that the impact of transport in economic developments of the transition country of Kosovo.

5.14.5 Analyses of the impact of the transport in economic developments: C-values – Croatia

Table 43: Coefficient for C-values for Croatia

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-277343.891	57632.310	-4.812	.001	-410244.235	-144443.547	-517593	-411817
Year	140.758	28.694	4.905	.001	74.589	206.926	207.6376	260.3018

Table 44: ANOVA for C-values for Croatia

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	4516200	4516200	419.8264	3.37E-08
Residual	8	86058.42	10757.3		
Total	9	4602259			

Table 45: Summary output

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.866[a]
R Square	0.750
Adjusted R Square	0.719
Standard Error	260.628
Observations	10

*. Correlation is significant at the 0.05 level (2-tailed).

As, the year increases, we see that the C-values also increases. In order to test whether this increase in statistically significant, we make use of the regression analysis and its corresponding ANOVA table.

For the data of C-values, the regression table and its ANOVA are given below:

From the p-value (0.001< 0.05) of the F-statistic of the ANOVA table, we see that the regression model is significant at 5% level and can be used for the projecting the data for the next 17 years.

From the coefficient table 43 , we see that the model is given by:

C-value = -277343.891+ 140.758* year

From the coefficient table and the above regression equation, we see that for every year the C-values increase by 140.758 units approximately.

Moreover, this increase is found to be statistically significant at 5% level.

In addition, the R square value of the model is 75.0 %, which is considerably high (maximum value is 100) and holds the validity of the regression model.

This implies that nearly 75.0 % of the variation present in the model is explained by the 'year' and the rest is random in nature.

Table 46: Correlation - Croatia

Correlations				
		C Croatia	ENE Croatia	ENV Croatia
C Croatia	Pearson Correlation	1	-.306	.678*
	Sig. (2-tailed)		.390	.031
	N	10	10	10
ENE Croatia	Pearson Correlation	-.306	1	-.668*
	Sig. (2-tailed)	.390		.035
	N	10	10	10
ENV Croatia	Pearson Correlation	.678*	-.668*	1
	Sig. (2-tailed)	.031	.035	
	N	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table from the SPSS v21 output, we see that, the correlation values are not significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.306 is a negative correlation, with p-value > 0.05) and considerable increase in ENV (0.678 is a high positive correlation, with p-value < 0.05).
This indicates that the impact of transport in economic developments of the transition country of **Croatia**.

Table 47: Correlation - Croatia

Correlations				
		C Croatia	ENE Croatia	ENV Croatia
C Croatia	Pearson Correlation	1	.903**	-.676**
	Sig. (2-tailed)		.000	.000
	N	27	27	27
ENE Croatia	Pearson Correlation	.903**	1	-.888**
	Sig. (2-tailed)	.000		.000
	N	27	27	27
ENV Croatia	Pearson Correlation	-.676**	-.888**	1
	Sig. (2-tailed)	.000	.000	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

When the data for Croatia from 2004 to 2030 (27 observations) is considered, we see that the correlation values are still statistically significant at 5% level and that increase in C-value results in considerable increase in ENE (0.903 is a high positive correlation, with p-value < 0.05) and considerable decrease in ENV (-0.676 is a high negative correlation, with p-value < 0.05).
This indicates that the impact of transport in economic developments of the transition country of Croatia.

5.14.6 Analyses of the impact of the transport in economic developments: C-values – Serbia

As, the year increases, we see that the C-values also increases. In order to test whether this increase in statistically significant, we make use of the regression analysis and its corresponding ANOVA table.
For the data of C-values, the regression table and its ANOVA are given below:

Table 48: Coefficient for C-values for Serbia

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-449107	49108.03	-9.14529	1.65E-05	-562350	-335864	-562350	-335864
Year	226.4606	24.45008	9.262164	1.5E-05	170.0786	282.8426	170.0786	282.8426

Table 49: ANOVA for C-values for Serbia

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	4230964	4230964	85.78768	.000[a]
Residual	8	394552.1	49319.01		
Total	9	4625516			

Table 50: Summary output

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.9564
R Square	0.914701
Adjusted R Square	0.904039
Standard Error	222.0788
Observations	10

*. Correlation is significant at the 0.05 level (2-tailed).

From the p-value (.000[a] < 0.05) of the F-statistic of the ANOVA table, we see that the regression model is significant at 5% level and can be used for the projecting the data for the next 17 years.

From the coefficient table 48 , we see that the model is given by :

C-value = -449107 + 226.4606* year

C-value = -From the coefficient table and the above regression equation, we see that for every year the C-values increase by 226.4606 units approximately.
In addition, this increase is found to be statistically significant at 5% level. In addition, the R square value of the model is 91.47%, which is considerably high (maximum value is 100) and holds the validity of the regression model.
This implies that nearly 91.47% of the variation present in the model is explained by the 'year' and the rest is random in nature.

Table 51: Correlation for Serbia

Correlations				
		C Serbia	ENE Serbia	ENV Serbia
C Serbia	Pearson Correlation	1	-.865**	.931**
	Sig. (2-tailed)		.001	.000
	N	10	10	10
ENE Serbia	Pearson Correlation	-.865**	1	-.918**
	Sig. (2-tailed)	.001		.000
	N	10	10	10
ENV Serbia	Pearson Correlation	.931**	-.918**	1
	Sig. (2-tailed)	.000	.000	
	N	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table from the SPSS v21 output, we see that, the correlation values are statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.992 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.996 is a high positive correlation, with p-value < 0.05).
This indicates that the impact of transport in economic developments of the transition country of Serbia.

Table 52: Correlation for Serbia

Correlations				
		C Serbia	ENE Serbia	ENV Serbia
C Serbia	Pearson Correlation	1	-.992**	.996**
	Sig. (2-tailed)		.000	.000
	N	27	27	27
ENE Serbia	Pearson Correlation	-.992**	1	-.995**
	Sig. (2-tailed)	.000		.000
	N	27	27	27
ENV Serbia	Pearson Correlation	.996**	-.995**	1
	Sig. (2-tailed)	.000	.000	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

When the data for Serbia from 2004 to 2030 (27 observations) is considered, we see that the correlation values are still statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.992 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.996 is a high positive correlation, with p-value < 0.05).
This indicates that the impact of transport in economic developments of the transition country of Serbia.

5.14.7 Analyses of the impact of the transport in economic developments: C-values - Albania

As, the year increases, we see that the C-values also increases. In order to test whether this increase in statistically significant, we make use of the regression analysis and its corresponding ANOVA table. For the data of C-values, the regression table and its ANOVA are given below:

Table 53: Coefficient for C-values for Albania

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-305180	9297.965	-32.8223	8.1E-10	-326621	-283739	-326621	-283739.181
Year	155.3939	4.629303	33.56746	6.77E-10	144.7187	166.0691	144.7187	166.069132

Table 54: ANOVA for C-values for Albania

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	1992150	1992150	1126.774	6.77E-10
Residual	8	14144.1	1768.012		
Total	9	2006294			

Table 55: Summary output

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.996469
R Square	0.99295
Adjusted R Square	0.992069
Standard Error	42.04774
Observations	10

*. Correlation is significant at the 0.05 level (2-tailed).

From the p-value (6.77E-10 < 0.05) of the F-statistic of the ANOVA table, we see that the regression model is significant at 5% level and can be used for the projecting the data for the next 17 years.

From the coefficient table 53,, we see that the model is given by:

C-value = -305180 +155.3939* year

From the coefficient table and the above regression equation, we see that for every year the C-values increase by 155.3939 units approximately.

In addition, this increase is found to be statistically significant at 5% level. In addition, the R square value of the model is 99.29%, which is considerably high (maximum value is 100) and holds the validity of the regression model.

This implies that nearly 99.29% of the variation present in the model is explained by the 'year' and the rest is random in nature.

The assumption of the regression models are tested with the residual and normal plots.

Table 56: Correlation for Albania

Correlations				
		C Albania	ENE Albania	ENV Albania
C Albania	Pearson Correlation	1	-.911**	.982**
	Sig. (2-tailed)		.000	.000
	N	10	10	10
ENE Albania	Pearson Correlation	-.911**	1	-.864**
	Sig. (2-tailed)	.000		.001
	N	10	10	10
ENV Albania	Pearson Correlation	.982**	-.864**	1
	Sig. (2-tailed)	.000	.001	
	N	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table from the SPSS v21 output, we see that, the correlation values are statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.911 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.982 is a high positive correlation, with p-value < 0.05). This indicates that the impact of transport in economic developments of the transition country of Albania.

Table 57: Correlation for Albania

Correlations				
		C Albania	ENE Albania	ENV Albania
C Albania	Pearson Correlation	1	-.995**	.999**
	Sig. (2-tailed)		.000	.000
	N	27	27	27
ENE Albania	Pearson Correlation	-.995**	1	-.992**
	Sig. (2-tailed)	.000		.000
	N	27	27	27
ENV Albania	Pearson Correlation	.999**	-.992**	1
	Sig. (2-tailed)	.000	.000	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

When the data for Albania from 2004 to 2030 (27 observations) is considered, we see that the correlation values are still statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.995 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.999 is a high positive correlation, with p-value < 0.05). This indicates that the impact of transport in economic developments of the transition country of Albania.

5.14.8 Analyses of the impact of the transport in economic developments: C-values – Macedonia

As, the year increases, we see that the C-values also increases. In order to test whether this increase in statistically significant, we make use of the regression analysis and its corresponding ANOVA table. For the data of C-values, the regression table and its ANOVA are given below:

Table 58: Coefficient for C-values for Macedonia

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-361699	24991.08	-14.4731	5.08E-07	-419329	-304070	-419328.696	-304069.63
Year	183.297	12.44265	14.73135	4.43E-07	154.6042	211.9898	154.604177	211.989762

Table 59: ANOVA for C-values for Macedonia

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	2771817	2771817	217.0127	4.43E-07
Residual	8	102180.8	12772.6		
Total	9	2873998			

Table 60: Summary output

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.982062
R Square	0.964446
Adjusted R Square	0.960002
Standard Error	113.0159
Observations	10

*. Correlation is significant at the 0.05 level (2-tailed).

From the p-value (4.43E-07< 0.05) of the F-statistic of the ANOVA table, we see that the regression model is significant at 5% level and can be used for the projecting the data for the next 17 years.

From the coefficient table 58, , we see that the model is given by :

C-value = -361699 + 183.297* year

From the coefficient table and the above regression equation, we see that for every year the C-values increase by 203.879 units approximately. Moreover, this increase is found to be statistically significant at 5% level.

In addition, the R square value of the model is 96.44%, which is considerably high (maximum value is 100) and holds the validity of the regression model.

This implies that nearly 96.44 % of the variation present in the model is explained by the 'year' and the rest is random in nature.

Table 61: Correlation for Macedonia.

Correlations				
		C Macedonia	ENE Macedonia	ENV Macedonia
C Macedonia	Pearson Correlation	1	-.048	.975**
	Sig. (2-tailed)		.896	.000
	N	10	10	10
ENE Macedonia	Pearson Correlation	-.048	1	.030
	Sig. (2-tailed)	.896		.935
	N	10	10	10
ENV Macedonia	Pearson Correlation	.975**	.030	1
	Sig. (2-tailed)	.000	.935	
	N	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table 61, from the SPSS v21 output, we see that, the correlation values are not significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.048 is a high negative correlation, with p-value > 0.05) and considerable increase in ENV (0.975 is a high positive correlation, with p-value < 0.05).

This indicates that the impact of transport in economic developments of the transition country of Macedonia.

Table 62: Correlation for Macedonia.

Correlations				
		C Macedonia	ENE Macedonia	ENV Macedonia
C Macedonia	Pearson Correlation	1	-.128	.999**
	Sig. (2-tailed)		.525	.000
	N	27	27	27
ENE Macedonia	Pearson Correlation	-.128	1	-.110
	Sig. (2-tailed)	.525		.584
	N	27	27	27
ENV Macedonia	Pearson Correlation	.999**	-.110	1
	Sig. (2-tailed)	.000	.584	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

When the data for Macedonia from 2004 to 2030 (27 observations) is considered, we see that the correlation values are still not significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.128 is a high negative correlation, with p-value > 0.05) and considerable increase in ENV (0.999 is a high positive correlation, with p-value < 0.05).

This indicates that the impact of transport in economic developments of the transition country of Macedonia.

5.14.9 Analyses of the impact of the transport in economic developments: C-values – Bulgaria

As, the year increases, we see that the C-values also increases. In order to test whether this increase in statistically significant, we make use of the regression analysis and its corresponding ANOVA table.

For the data of C-values, the regression table and its ANOVA are given below:

Table 63: Coefficient for C-values for Bulgaria

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-438761	27057.43	-16.2159	2.1E-07	-501155	-376366	-501155.441	-376366.34
Year	221.9576	13.47145	16.47615	1.86E-07	190.8924	253.0228	190.89236	253.022792

Table 64: ANOVA for C-values for Bulgaria

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	4064376	4064376	271.4634	1.86E-07
Residual	8	119776.8	14972.09		
Total	9	4184153			

Table 65: Summary output

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.985583
R Square	0.971374
Adjusted R Square	0.967795
Standard Error	122.3605
Observations	10

*. Correlation is significant at the 0.05 level (2-tailed).

From the p-value (1.86E-07< 0.05) of the F-statistic of the ANOVA table 64, we see that the regression model is significant at 5% level and can be used for the projecting the data for the next 17 years.

From the coefficient table 63, we see that the model is given by:

$$\text{C-value} = -438761 + 221.9576^{*} \text{ year}$$

From the coefficient table and the above regression equation, we see that for every year the C-values increase by 221.9576 units approximately. In addition, this increase is found to be statistically significant at 5% level. In addition, the R square value of the model is 97.13%, which is considerably high (maximum value is 100) and holds the validity of the regression model.

This implies that nearly 97.13% of the variation present in the model is explained by the 'year' and the rest is random in nature.

The assumption of the regression models are tested with the residual and normal plots.

Table 66: Correlation for Bulgaria

Correlations				
		C Bulgaria	ENE Bulgaria	ENV Bulgaria
C Bulgaria	Pearson Correlation	1	-.435	.979**
	Sig. (2-tailed)		.209	.000
	N	10	10	10
ENE Bulgaria	Pearson Correlation	-.435	1	-.449
	Sig. (2-tailed)	.209		.193
	N	10	10	10
ENV Bulgaria	Pearson Correlation	.979**	-.449	1
	Sig. (2-tailed)	.000	.193	
	N	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table 66, from the SPSS v21 output, we see that, the correlation values are not significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.435 is a high negative correlation, with p-value > 0.05) and considerable increase in ENV (0.979 is a high positive correlation, with p-value < 0.05).
This indicates that the impact of transport in economic developments of the transition country of Bulgaria.

Table 67: Correlation for Bulgaria

Correlations				
		C Bulgaria	ENE Bulgaria	ENV Bulgaria
C Bulgaria	Pearson Correlation	1	-.930**	.999**
	Sig. (2-tailed)		.000	.000
	N	27	27	27
ENE Bulgaria	Pearson Correlation	-.930**	1	-.931**
	Sig. (2-tailed)	.000		.000
	N	27	27	27
ENV Bulgaria	Pearson Correlation	.999**	-.931**	1
	Sig. (2-tailed)	.000	.000	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

When the data for Bulgaria from 2004 to 2030 (27 observations) is considered, we see that the correlation values are still not significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.128 is a high negative correlation, with p-value > 0.05) and considerable increase in ENV (0.999 is a high positive correlation, with p-value < 0.05).
This indicates that the impact of transport in economic developments of the transition country of Bulgaria.

C- Values

Similar is the case with other transition countries such as Albania, Bulgaria, Croatia, Kosovo, and Macedonia as shown in the tables presented in the appendix. As regression model is proved to behave well, the same approach is used to project the values for the years 2014 to 2030 in case of the variables 'ENE' and 'ENV'.

5.15 Impact of transport in economic developments of the transition country - Summary of the correlations involved

The impact of transport in economic developments of the transition countries involves studying the correlation between the 'C-values' and the variables 'ENE' and 'ENV'. In the case of Montenegro, the pair-wise correlation table is given in the table 68.

Table 68: Correlation for Montenegro

Correlations				
		C Montenegro	ENE Montenegro	ENV Montenegro
C Montenegro	Pearson Correlation	1	-.997**	.985**
	Sig. (2-tailed)		.000	.000
	N	27	27	27
ENE Montenegro	Pearson Correlation	-.997**	1	-.981**
	Sig. (2-tailed)	.000		.000
	N	27	27	27
ENV Montenegro	Pearson Correlation	.985**	-.981**	1
	Sig. (2-tailed)	.000	.000	
	N	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

From the above correlation table 68 , from the SPSS v21 output, we see that, the correlation values are statistically significant at 5% level and that increase in C-value results in considerable decrease in ENE (-0.997 is a high negative correlation, with p-value < 0.05) and considerable increase in ENV (0.985 is a high positive correlation, with p-value < 0.05).

This indicates that the impact of transport in economic developments of the transition country of Montenegro.

Similar is the case with the other transition countries such as Albania, Bulgaria, Croatia, Kosovo, and Macedonia as shown in the tables presented in the appendix.

5.16 Impact of Final consumption of Households for transport and taxes (Transport, Energy and Environmental) on ECON (level of economic impact of transport)

In this chapter, we will explore if there is a statistically significant effect of independent variables:

- Final consumption of Households for Transport and
- Energy Taxes and
- Environmental Taxes

on dependent variable "level of economic impact of transport (ECON)".

First, we present a table summarizing the multiple regression models in the countries studied.

Table 69: Multiple regression - Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
Model Summary - **Albania**	.952[a]	.906	.894	152.703.117	.906	73.751	3	23	.000
Model Summary - **Bulgaria**	.794[a]	.630	.582	302.689.552	.630	13.055	3	23	.000
Model Summary - **Croatia**	.555[a]	.308	.218	414.015.598	.308	3.409	3	23	.035
Model Summary - **Kosovo**	.860[a]	.740	.706	253.800.904	.740	21.807	3	23	.000
Model Summary - **Macedonia**	.880[a]	.774	.745	236.446.034	.774	26.292	3	23	.000
Model Summary - **Macedonia**	.880[a]	.774	.745	236.446.034	.774	26.292	3	23	.000
Model Summary – **Serbia**	.874[a]	.763	.732	242.251.399	.763	24.684	3	23	.000

Table Model Summery is the most important interpretation of R Square, which tells how many percent of the variability of the dependent variable is explained by the predicted variables.

The higher the R square the better the model.
In the social sciences, we expect that this value is at least 30%. In our case, between all the countries of the lowest value of R Square Croatia, which is 0.308, which is still acceptable value. In other countries, the value of R Square considerably higher.

The maximum value of R Square of reach in Albania, which is 0,952, which means that The regression describes 95.2% of the variance and the level of Economic Impact (ECON).
The following table shows the statistical significance of the estimated regression model.

Table 70: Statistical significance of the estimated regression model for the countries studied ANOVA

Model			Sum of Squares	df	Mean Square	F	Sig.
ANOVA - **Bulgaria**	1	Regression	3,59E+11	3	1,20E+11	13.055	.000[a]
		Residual	2,11E+11	23	9.162.096.472		
		Total	5,70E+11	26			
ANOVA - **Serbia**	1	Regression	4,35E+11	3	1,45E+11	24.684	.000[a]
		Residual	1,35E+11	23	5.868.574.021		
		Total	5,70E+11	26			
ANOVA - **Kosovo**	1	Regression	4,21E+11	3	1,41E+11	21.807	.000[a]
		Residual	1,48E+11	23	6.441.489.894		
		Total	5,70E+11	26			
ANOVA - **Albania**	1	Regression	5,16E+11	3	1,72E+11	73.751	.000[a]
		Residual	5,36E+11	23	2.331.824.206		
		Total	5,70E+11	26			
ANOVA - **Macedonia**	1	Regression	4,41E+11	3	1,47E+11	26.292	.000[a]
		Residual	1,29E+11	23	5.590.672.719		
		Total	5,70E+11	26			
ANOVA - **Croatia**	1	Regression	1,75E+11	3	58.437.689.795	3.409	.035[a]
		Residual	3,94E+11	23	17.140.891.540		
		Total	5,70E+11	26			
ANOVA - **Bulgaria**	1	Regression	3,59E+11	3	1,20E+11	13.055	.000[a]
		Residual	2,11E+11	23	9.162.096.472		
		Total	5,70E+11	26			
ANOVA - **Montenegro**	1	Regression	4,01E+11	3	1,34E+11	18.257	.000[a]
		Residual	1,68E+11	23	7.323.482.859		
		Total	5,70E+11	26			

Table 68 shows that the value of Sig. <0.05 for the estimated regression models for all the countries studied.

The following is a table showing the estimated regression coefficients and their statistical significance on the model and Predicted variables, where the value of Sig. <0.05 statistically significant impact on the dependent variable ECON.

Table 71: Estimate of regression coefficients and their statistical significance (Serbia)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-48.846.830	18.947.424		-2.578	.017
	Serbia - Final consumption of Households for Transport	-2.924	.789	-1.032	-3.706	.001
	Serbia - Energy Taxes (in%)	26.043.355	10.211.488	.564	2.550	.018
	Serbia - Environmental Taxes (in% of total taxation)	8.362.747	1.179.689	1.398	7.089	.000

Table 71 ,estimated regression coefficients below shows that all the three regression coefficients are statistically significant with Serbia Final consumption of households for transport having the lowest significance. The regression equation has this form:

$$Y_{Serbia} = - 48.846.830 - 2.924X_1 + 26.043.355X_2 + 8.362.747\ X_3$$

Where:

X_1 = Serbia - Final consumption of Households for Transport,

X_2 = Serbia - Energy Taxes (in%),

X_3 = Serbia - Environmental Taxes (in% of total taxation).

From the research shows that for Serbia is that the regression coefficient of Energy Taxes and Taxes einvironmental positive, this means that if Energy taxes and Environmental increase, the level of Economic Impact of transportation also increases. Regression coefficient Final Consumption of Households for Transport is negative, which means that if the final consumption of Households for Transport increases, leads to a reduced level of Economic Impact of transportation.

Followed by a table showing the estimated regression coefficients for Kosovo

Table 72: Estimate of regression coefficients and their statistical significance (Kosovo)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-57.360.445	22.177.930		-2.586	.017
	Kosovo - Final consumption of Households for Transport	-3.611	.860	-1.123	-4.198	.000
	Kosovo - Energy Taxes (in%)	36.003.285	13.204.206	.496	2.727	.012
	Kosovo - Environmental Taxes (in% of total taxation)	8.968.928	1.330.972	1.607	6.739	.000

Table 72 , of estimated regression coefficients for Kosovo shows us that all three regression coefficients are statistically significant. The regression equation has this form:

$$Y_{Kosovo} = -57.360.445 - 3{,}611X_1 + 36.003.285X_2 + 8.968.928X_3$$

Where:
$\mathbf{X_1}$ = Kosovo - Final consumption of Households for Transport,
$\mathbf{X_2}$ = Kosovo - Energy Taxes (in%),
$\mathbf{X_3}$ = Kosovo - Environmental Taxes (in% of total taxation).

From the research that also applies to Kosovo, that the regression coefficient of Energy Taxes is positive, which means that if the Energy and Environmental Taxes Taxes are are increased the level of Economic Impact of transportation also increases.

Regression coefficient Final Consumption of Households for Transport is negative, which means that if the final consumption of Households for Transport increases, there is a reduced the level of Economic Impact of transportation.

Followed by a table showing the estimated regression coefficients for Albania .

Table 73: Estimate of regression coefficients and their statistical significance (Albania)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	104.461.375	10.146.800		10.295	.000
	Albania - Final consumption of Households for Transport	-7.627	.854	-1.447	-8.931	.000
	Albania - Energy Taxes (in%)	-38.065.030	3.108.543	-2.116	-12.245	.000
	Albania - Environmental Taxes (in% of total taxation)	7.558.065	599.761	.992	12.602	.000

Table 73 , of estimated regression coefficients for Albania shows us that all three regression coefficients are statistically significant. The regression equation has this form:

$$\mathbf{Y_{Albania} = 104.461.375\text{-}7{,}627X_1 - 38.065{,}030X_2 + 7.558.065\ X_3}$$

ECON = 104461.375 - 7.627 (Albania - Final consumption of Households for Transport) - 38065.030 (Albania - Energy Taxes) + 7558.065 (Albania - Environmental Taxes)

Where:
X1 = Albania - Final consumption of Households for Transport,
X2 = Albania - Energy Taxes (in%),
X3 = Albania - Environmental Taxes (in% of total taxation).
From the research that Albania is considered as a regression coefficient of Final Consumption of Households for Transport and Energy Taxes and negative, which means that as the Final Consumption of Households for Transport and Energy Taxes increases there is a reducd impact on the level of Economic Impact of transport. Environmental Taxes regression coefficient is positive, which means that if Environmental Taxe are increased, there is an increased level of Economic Impact of transportation.

Followed by a table showing the estimated regression coefficients for Croatia.

Table 74: Estimate of regression coefficients and their statistical significance (Croatia)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-86.387.323	41.151.285		-2.099	.047
	Croatia - Final consumption of Households for Transport	-1.510	1.504	-.523	-1.004	.326
	Croatia - Energy Taxes (in%)	32.114.880	14.184.418	1.892	2.264	.033
	Croatia - Environmental Taxes (in% of total taxation)	10.361.244	3.916.381	1.292	2.646	.014

Table 74 , estimated regression coefficients for Croatia shows us that the statistically significant two of the three regression coefficients. The regression equation has this form:

$$Y_{Croatia} = -86.387{,}323 - 1.520X_1 + 32.114{,}880X_2 + 10.361{,}244X_3$$

Where:
X1 = Croatia - Final consumption of Households for Transport,
X2 = Croatia - Energy Taxes (in%),
X3 = Croatia - Environmental Taxes (in% of total taxation).

From the research that Croatia is considered as a regression coefficient of Energy Taxes and Taxes einvironmental positive, which means that if Energy and Environmental Taxes is increased, the level of Economic Impact of transportation also increases.

Followed by a table showing the estimated regression coefficients for Bulgaria .

Table 75: Estimate of regression coefficients and their statistical significance (Bulgaria)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-46.701.568	16.370.074		-2.853	.009
	Bulgaria - Final consumption of Households for Transport	-4.739	2.078	-.537	-2.280	.032
	Bulgaria - Energy Taxes (in%)	13.126.747	5.127.148	.852	2.560	.017
	Bulgaria - Environmental Taxes (in% of total taxation)	12.009.731	2.593.605	1.477	4.631	.000

Table 75 , of estimated regression coefficients for Bulgaria shows us that all three regression coefficients are statistically significant. The regression equation has this form:

$$Y_{Bulgaria} = -46.701{,}568 - 4.739\ X_1 + 13.126{,}747X_2 + 12.009{,}731X_3$$

Where:
X1 = Bulgaria - Final consumption of Households for Transport,
X2 = Bulgaria - Energy Taxes (in%),
X3 = Bulgaria - Environmental Taxes (in% of total taxation).

From the research that the Bulgario true that the regression coefficient of Energy and Environmental Taxes Taxes positive, which means that if you increase the Energy and Environmental Taxes, increasing the level of Economic Impact of transportation.

Regression coefficient Final Consumption of Households for Transport is negative, that if the increase Final consumption of Households for Transport, to reduce the level of Economic Impact of transportation.

Followed by a table showing the estimated regression coefficients for Montenegro.

Table 76: Estimate of regression coefficients and their statistical significance (Montenegro)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	97.003.432	11.437.028		8.482	.000
	Montenegro - Final consumption of Households for Transport	-1.449	.581	-.504	-2.493	.020
	Montenegro - Energy Taxes (in%)	-29.928.616	4.187.541	-1.069	-7.147	.000
	Montenegro - Environmental Taxes (in% of total taxation)	-63.030	399.495	-.028	-.158	.876

Table estimated regression coefficients for Kosovo shows us that the statistically significant two of the three regression coefficients. The regression equation has this form:

$$Y_{Montenegro} = 97.003,432 - 1,449X_1 - 29.928,616X_2 - 63.030X_3$$

Where:
X1 = Montenegro - Final consumption of Households for Transport,
X2 = Montenegro - Energy Taxes (in%),
X3 = Montenegro - Environmental Taxes (in% of total taxation).

From the research shows that for Montenegro is considered as a regression coefficient of Energy Taxes and Taxes einvironmental negative, which means that Energy and Environmental Taxes are increased, there will be a reduced level of Economic Impact of transportation.
We can also make inferences from the table that as the households increase their consumption on transport, ther is a reduced impact on the level of the economy.
This ifrom the negative coefficient of Final consumption of households for transport.

5.17 Interaction between the year and country and c-Value, ENE and ENV

Interaction between the year and country and "final consumption of Households for Transport (C-value)"

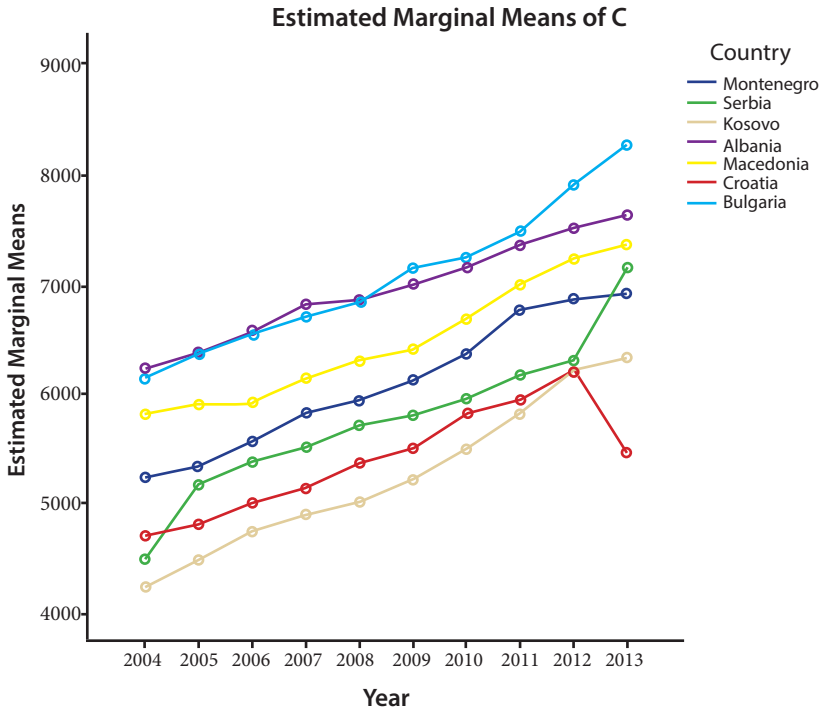


Figure 46 : Estimated Marginal Means for Interaction between the year and country on the dependent varible "final consumption of Households for Transport (C-value)"

Graphic illustration below shows that there are differences between countries in the period from 2004 to 2013, the size of household consumption for transportation.

However, on the basis of the calculation of two-way ANOVA e can not say if the differences characterized as statistically significant differences could not be calculated.

Interaction between the year and country on the dependent varible " Energy Taxes (ENE)"

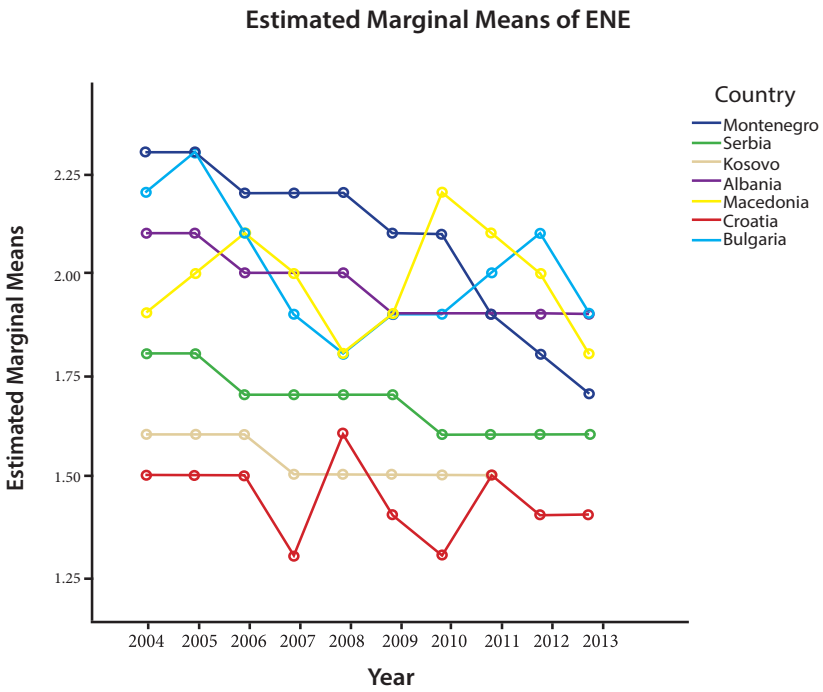


Figure 47 : Estimated Marginal Means for Interaction between the year and country on the dependent varible "Energy taxes (ENE)"

Interaction between the year and country on the dependent varible "Environmental Taxes (ENV)"

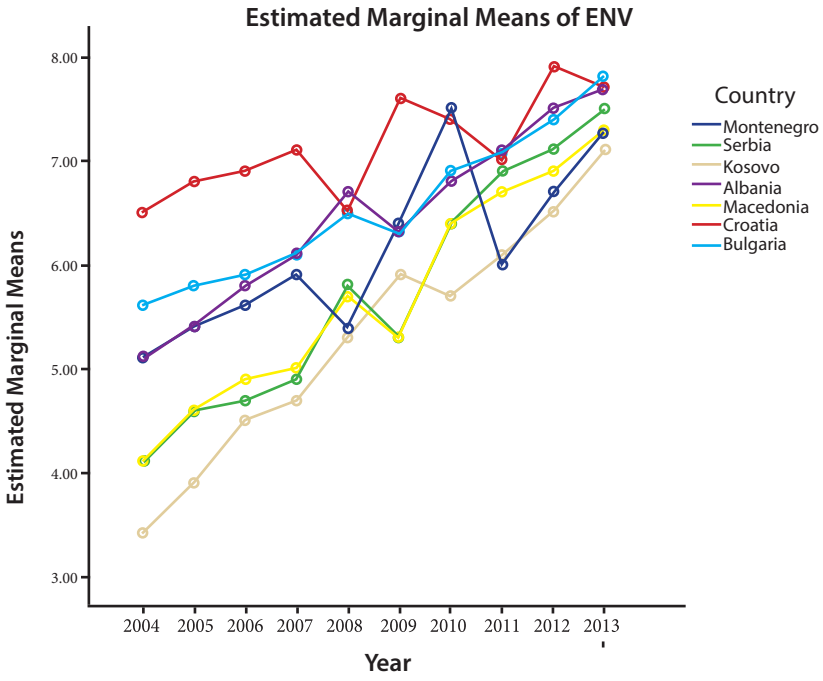


Figure 48 : Estimated Marginal Means for Interaction between the year and country on the dependent varible "Environmental taxes (ENE)"

5.18 Regression Analysis to Determine the Overall Impact of Taxation on Environment, Energy and Household Consumption on Transport on the Economic Developments of selected Balkan States from 2004 to 2030.

5.18.1 Serbia

Table 77: Descriptive Statistics for Serbia

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Final consumption of Households for Transport	7507.48	1652.776	27
Energy Taxes (in%)	1.7911	.10143	27
Environmental Taxes (in% of total taxation)	6.1659	.78215	27

The ANOVA table 79 below tests the overall significance of the regression equation relating the overall effect of taxes imposed on energy and environment, and the level of household consumption on the economic developments of Serbia.

The regression describes 76.3% of the variance in level of economic impact (ECON), but the overall relationship was statistically significant ($F_{3,23}$= 24.684, $p<0.05$) giving a significant relationship between the variables in tested.

Thus, it can be assumed that there is a linear relationship between the variables in the regression model. In conclusion, there is a direct relationship in the changes in taxation on energy, environment and final household expenditure on the economic development in the Balkan country of Serbia from 2004 to 2030.

Table 78: Summary of regression coefficients and standard error of the model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.874[a]	.763	.732	2422.51399

Table 79: ANOVA for the overall relationship in the Regression equation

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.763	24.684	3	23	.000

Beta expresses the relative importance, impact or contribution of each independent variables in standardized terms while the B coefficients are un-standardized coefficient that express the importance, impact or contribution of each independent variable.

From table 80 ,below, its shown that Final consumption of Households for Transport, Energy Taxes, and Environmental Taxes are significant predictors, secondly Environmental Taxes in Serbia has a higher impact than Energy Taxes in Serbia, while Final consumption of Households for Transport in Serbia had the least impact (beta =1.398, beta =0 .564 and beta = -1.032).

There is positive impact of Energy Taxes in Serbia and Environmental Taxes in Serbia, but there is negative impact of Final consumption of Households for Transport in Serbia (B=-2.924, B=26043.355 and B=8362.747).

Table 80: Beta Coefficients for preditor variables

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-48846.830	18947.424
	Final consumption of Households for Transport	-2.924	.789
	Energy Taxes (in%)	26043.355	10211.488
	Environmental Taxes (in% of total taxation)	8362.747	1179.689

Coefficients[a]					
Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
		Beta			Lower Bound
1	(Constant)		-2.578	.017	-88042.562
	Serbia - Final consumption of Households for Transport	-1.032	-3.706	.001	-4.555
	Serbia - Energy Taxes (in%)	.564	2.550	.018	4919.283
	Serbia - Enviromental Taxes (in% of total taxation)	1.398	7.089	.000	5922.374

5.18.2 Kosovo

Table 81: Descriptive Statistics for Kosovo

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Final consumption of Households for Transport	6807.26	1455.255	27
Energy Taxes (in%)	1.5707	.06445	27
Environmental Taxes (in% of total taxation)	5.8878	.83839	27

There is a strong relationship between environmental taxes, energy taxes, household consumption and the level of economic impact considering the high R2-value (0.74) (Table 82). The ANOVA (table 83) below tests the overall significance of the model.

The regression describes 74.0% of the variance in level of economic impact (ECON). The overall relationship was statistically significant ($F_{3,23}= 21.807$, $p<0.05$). Thus, it can be assumed that there is a linear relationship between the variables in the regression model.

Table 82: Model regression coefficients and standard error for Kosovo

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.860[a]	.740	.706	2538.00904

Table 83: ANOVA Summary for the Kosovo model

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.740	21.807	3	23	.000

Beta expresses the relative importance, impact or contribution of each independent variables in standardized terms while the B coefficients are un-standardized coefficient that express the importance, impact or contribution of each independent variable.

From table 84 , its shown that Final consumption of Households for Transport, Energy Taxes, and Environmental Taxes are significant predictors, secondly Environmental Taxes in Kosovo has a higher impact than Energy Taxes in Kosovo, while Final consumption of Households for Transport in Kosovo had the least impact (beta =1.607, beta =0 .496 and beta = -1.123).

There is positive impact of Energy Taxes in Kosovo and Environmental Taxes in Kosovo, but there is negative impact of Final consumption of Households for Transport in Kosovo (B=-3.611, B=36003.285 and B=8968.928).

Table 84: Beta coefficients for predictor varibles for economic development in Kosovo

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-57360.445	22177.930
	Final consumption of Households for Transport	-3.611	.860
	Energy Taxes (in%)	36003.285	13204.206
	Environmental Taxes (in% of total taxation)	8968.928	1330.972

Coefficients[a]					
Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
		Beta			Lower Bound
1	(Constant)		-2.586	.017	-103238.988
	Kosovo - Final consumption of Households for Transport	-1.123	-4.198	.000	-5.391
	Kosovo- Energy Taxes (in%)	.496	2.727	.012	8688.305
	Kosovo - Enviromental Taxes (in% of total taxation)	1.607	6.739	.000	6215.603

5.18.3 Albania

Table 85: Descriptive Statistics for Albania

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Final consumption of Households for Transport	7896.89	887.851	27
Energy Taxes (in%)	1.6430	.26016	27
Environmental Taxes (in% of total taxation)	6.0493	.61411	27

The ANOVA table 87 , below tests the overall significance of the model (the regression equation).

The regression describes 90.6% of the variance in level of economic impact (ECON), but the overall relationship was statistically significant ($F_{3,23}= 73.751$, $p<0.05$).

So the REGRESSION model is significant. Thus it can be assumed that there is a linear relationship between the variables in the regression model.

Table 86: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952	.906	.894	1527.03117

Table 87: ANOVA Model Summary for Albania

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.906	73.751	3	23	.000

Beta expresses the relative importance, impact or contribution of each independent variables in standardized terms while the B coefficients are un-standardized coefficient that express the importance, impact or contribution of each independent variable.

From 88, the table below, its shown that Final consumption of Households for Transport, Energy Taxes, and Environmental Taxes are significant predictors, secondly Environmental Taxes in Albania has a higher impact than Energy Taxes in Albania, while Final consumption of Households for Transport in Albania had the least impact (beta =0.992, beta =-1 .447 and beta = -2.116).

There is positive impact of Environmental Taxes in Albania, but there are negative impacts of Energy Taxes in Albania and Final consumption of Households for Transport in Albania (B=-7.627, B=-38065.030 and B=7558.065).

Table 88: Beta Coefficients for independent variables

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	104461.375	10146.800
	Final consumption of Households for Transport	-7.627	.854
	Energy Taxes (in%)	-38065.030	3108.543
	Environmental Taxes (in% of total taxation)	7558.065	599.761

Coefficients[a]					
Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
		Beta			Lower Bound
1	(Constant)		10.295	.000	83471.119
	Albania - Final consumption of Households for Transport	-1.447	-8.931	.000	-9.393
	Albania- Energy Taxes (in%)	-2.116	-12.245	.000	-44495.541
	Albania - Enviromental Taxes (in% of total taxation)	.992	12.602	.000	6317.365

5.18.4 Macedonia

Table 89: Descriptive Statistics for Macedonia

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Final consumption of Households for Transport	7720.74	1109.390	27
Energy Taxes (in%)	1.9415	.08319	27
Environmental Taxes (in% of total taxation)	6.4007	.85132	27

The ANOVA (table 91) tests the overall significance of the model. The regression describes 77.4% of the variance in level of economic impact (ECON) in table 91, but the overall relationship was statistically significant (F3,23= 26.292, p<0.05) making the regression model significant in explaining the variablitiy in economic development as influenced by taxes on environment and energy, and household expenses on transport. it can therefore be assumed that there is a linear relationship between the variables in the regression model.

Table 90: Regression coefficient for the Macedonia model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.880[a]	.774	.745	2364.46034

Table 91: Macedonia Regression model ANOVA

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.774	26.292	3	23	.000

Beta expresses the relative importance, impact or contribution of each independent variables in standardized terms while the B coefficients are un-standardized coefficient that express the importance, impact or contribution of each independent variable.

From the table 92, below, its shown that only Final consumption of Households for Transport in Macedonia and Environmental Taxes in Macedonia are significant predictors, secondly Environmental Taxes in Macedonia has a higher impact than Final consumption of Households for Transport in Macedonia (beta =1.391, beta =0.126 and beta = -0.751).

There is positive impact of Energy Taxes in Macedonia and Environmental Taxes in Macedonia, but there is negative impact of Final consumption of Households for Transport in Macedonia (B=-3.170, B=7098.459 and B=7646.740).

Table 92: Beta Coefficients for predictor variables in Macedonia model

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-10833.922	13068.977
	Final consumption of Households for Transport	-3.170	.775
	Energy Taxes (in%)	7098.459	5960.627
	Environmental Taxes (in% of total taxation)	7646.740	974.292

Coefficients[a]					
Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
		Beta			Lower Bound
1	(Constant)		-.829	.416	-37869.161
	Macedonia - Final consumption of Households for Transport	-.751	-4.091	.000	-4.774
	Macedonia- Energy Taxes (in%)	.126	1.191	.246	-5232.037
	Macedonia - Enviromental Taxes (in% of total taxation)	1.391	7.849	.000	5631.263

5.18.5 Croatia

Table 93: Descriptive Statistics

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Final consumption of Households for Transport	7304.78	1622.406	27
Energy Taxes (in%)	1.7852	.27574	27
Environmental Taxes (in% of total taxation)	6.5148	.58343	27

The ANOVA table 95, below tests the overall significance of the model (the regression equation). The regression describes only 30.8% of the variance in level of economic impact (ECON) but the overall relationship was statistically significant ($F_{3,23}= 3.409$, $p<0.05$).

Therefore, the regression model is significant and it can be assumed that there is a linear relationship between the variables in the regression model.

Table 94: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555[a]	.308	.218	4140.15598

Table 95: Model ANOVA Summary

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.308	3.409	3	23	.035

Beta expresses the relative importance, impact or contribution of each independent variables in standardized terms while the B coefficients are un-standardized coefficient that express the importance, impact or contribution of each independent variable.

From the table 96, below, its shown that Energy Taxes and Environmental Taxes in Croatia are significant predictors, secondly Energy Taxes in Croatia has a higher impact than Environmental Taxes in Croatia (beta =1.892 , beta = 1.292 and beta =- 0.523).

There is positive impact of Energy Taxes in Croatia and Environmental Taxes in Croatia, but there is negative impact of Final consumption of Households for Transport in Croatia (B=-1.510, B=32114.880 and B=10361.244).

Table 96: Beta Coefficients for predictors in Croatia model

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-86387.323	41151.285
	Final consumption of Households for Transport	-1.510	1.504
	Energy Taxes (in%)	32114.880	14184.418
	Environmental Taxes (in% of total taxation)	10361.244	3916.381

Coefficients[a]				
Model	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
	Beta			Lower Bound

1	(Constant)		-2.099	.047	-171515.242
	Croatia - Final consumption of Households for Transport	-.523	-1.004	.326	-4.621
	Croatia- Energy Taxes (in%)	1.892	2.264	.033	2772.175
	Croatia - Enviromental Taxes (in% of total taxation)	1.292	2.646	.014	2259.592

5.18.6 Bulgaria

Table 97: Descriptive Statistics

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Final consumption of Households for Transport	6699.74	530.824	27
Energy Taxes (in%)	1.6404	.30380	27
Environmental Taxes (in% of total taxation)	7.0219	.57559	27

The ANOVA table 99,below tests the overall significance of the regression equation.
The regression describes only 63.0% of the variance in level of economic impact (ECON), but the overall relationship was statistically significant ($F_{3,23}= 13.055$, $p<0.05$).
So the model is significant and it can be assumed that there is a linear relationship between the variables in the regression model.

Table 98: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794	.630	.582	3026.89552

Table 99: Regression Model ANOVA results

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.630	13.055	3	23	.000

Beta expresses the relative importance, impact or contribution of each independent variables in standardized terms while the B coefficients are un-standardized coefficient that express the importance, impact or contribution of each independent variable.
From the table 100, below, its shown that Final consumption of Households for Transport, Energy Taxes, and Environmental Taxes are significant predictors, secondly Environmental Taxes in Bulgaria has a higher impact than Energy Taxes in Bulgaria, while Final consumption of Households for Transport in Bulgaria had the least impact (beta =1.477, beta =0 .852 and beta = -0.537).

There is positive impact of Energy Taxes in Bulgaria and Environmental Taxes in Bulgaria, but there is negative impact of Final consumption of Households for Transport in Bulgaria (B=-4.739, B=13126.747and B=12009.731).

Table 100: Beta Coefficients for predictors in Bulgaria model

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-46701.568	16370.074
	Final consumption of Households for Transport	-4.739	2.078
	Energy Taxes (in%)	13126.747	5127.148
	Environmental Taxes (in% of total taxation)	12009.731	2593.605

Coefficients[a]					
Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
		Beta			Lower Bound
1	(Constant)		-2.853	.009	-80565.647
	Bulgaria - Final consumption of Households for Transport	-.537	-2.280	.032	-9.037
	Bulgaria- Energy Taxes (in%)	.852	2.560	.017	2520.433
	Bulgaria - Enviromental Taxes (in% of total taxation)	1.477	4.631	.000	6644.450

5.18.7 Montenegro

Table 101: Descriptive Statistics

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Final consumption of Households for Transport	7818.44	1628.456	27
Energy Taxes (in%)	1.9393	.16710	27
Environmental Taxes (in% of total taxation)	3.5119	2.10305	27

The ANOVA table 103 , below tests the overall significance of the model (the regression equation). The regression describes only 70.4% of the variance in level of economic impact (ECON), but the overall relationship was statistically significant ($F_{3,23}= 18.257$, $p<0.05$).

Therefore, the regression model is significant and it can be assumed that there is a linear relationship between the variables in the regression model.

Table 102: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.839[a]	.704	.666	2706.19343

Table 103: ANOVA for the regression model

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.704	18.257	3	23	.000

Beta expresses the relative importance, impact or contribution of each independent variables in standardized terms while the B coefficients are un-standardized coefficient that express the importance, impact or contribution of each independent variable.

From the table 104, below, its shown that Energy Taxes in Montenegro and Final consumption of Households for Transport in Montenegro are significant predictors, secondly Final consumption of Households for

Transport in Montenegro has a higher impact than Energy Taxes in Montenegro (beta =-0.504 , beta = -1.069 and beta =-0.504).

There are negative impact of Energy Taxes in Montenegro, Environmental Taxes in Montenegro, and Final consumption of Households for Transport in Montenegro (B=-1.449, B=-29928.616 and B=-63.030).

Table 104 : Beta Coefficients for Montenegro model

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	97003.432	11437.028
	Final consumption of Households for Transport	-1.449	.581
	Energy Taxes (in%)	-29928.616	4187.541
	Environmental Taxes (in% of total taxation)	-63.030	399.495

Coefficients[a]					
Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
		Beta			Lower Bound
1	(Constant)		8.482	.000	73344.136
	Montenegro - Final consumption of Households for Transport	-.504	-2.493	.020	-2.651
	Montenegro- Energy Taxes (in%)	-1.069	-7.147	.000	-38591.204
	Montenegro - Enviromental Taxes (in% of total taxation)	-.028	-.158	.876	-889.448

5.19 The following is a regression and forecast for all countries Regression

Since every dataset normally may contain errors, we avoid drawing wrong conclusions by rooting the errors out. The above table is because of data clearning, a process where we decide waht to do with the errors in the data set. For instance, we are treating the missing values as missing

Table 105: Descriptive Statistics for all countries

	Mean	Std. Deviation	N
ECON	27414.8083	4680.37463	27
Montenegro - Final consumption of Households for Transport	7818.44	1628.456	27
Serbia - Final consumption of Households for Transport	7507.48	1652.776	27
Kosovo - Final consumption of Households for Transport	6807.26	1455.255	27
Albania - Final consumption of Households for Transport	7896.89	887.851	27
Macedonia - Final consumption of Households for Transport	7720.74	1109.390	27
Croatia - Final consumption of Households for Transport	7304.78	1622.406	27
Bulgaria - Final consumption of Households for Transport	6699.74	530.824	27
Montenegro - Energy Taxes (in%)	1.9393	.16710	27
Serbia - Energy Taxes (in%)	1.7911	.10143	27
Kosovo - Energy Taxes (in%)	1.5707	.06445	27
Albania - Energy Taxes (in%)	1.6430	.26016	27
Macedonia - Energy Taxes (in%)	1.9415	.08319	27
Croatia - Energy Taxes (in%)	1.7852	.27574	27
Bulgaria - Energy Taxes (in%)	1.6404	.30380	27
Montenegro - Enviromental Taxes (in% of total taxation)	3.5119	2.10305	27
Serbia - Enviromental Taxes (in% of total taxation)	6.1659	.78215	27
Kosovo - Enviromental Taxes (in% of total taxation)	5.8878	.83839	27
Albania - Enviromental Taxes (in% of total taxation)	6.0493	.61411	27
Macedonia - Enviromental Taxes (in% of total taxation)	6.4007	.85132	27
Croatia - Enviromental Taxes (in% of total taxation)	6.5148	.58343	27
Bulgaria - Enviromental Taxes (in% of total taxation)	7.0219	.57559	27

From the descriptive statistics table, it is clear that some variables under study have a very large standard deviation. The approximate expected value for the impact total taxation in different countries is almost equal. Also the household expenditure in the countries under study is similar, differing by a very small value.

Table 106: Model Summary[b] for all countries

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.999[a]	.997	.993	390.35262

The value of R-square indicates the nature of the total deviation of the responses from the fitted values of the responces.

Since the value for R-square for this model is 0.997 implies that it is close to 1 than to 0. Therefore, the model has a large random error and cannot be used for conclusive predictions.

Table 107: Model Summary[b] for all countries

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.997	232.990	16	10	.000

a. Predictors: (Constant), Bulgaria - Enviromental Taxes (in% of total taxation), Kosovo - Energy Taxes (in%), Macedonia - Energy Taxes (in%), Bulgaria - Final consumption of Households for Transport, Bulgaria - Energy Taxes (in%), Croatia - Enviromental Taxes (in% of total taxation), Serbia - Energy Taxes (in%), Montenegro - Energy Taxes (in%), Croatia - Final consumption of Households for Transport, Kosovo - Enviromental Taxes (in% of total taxation), Albania - Enviromental Taxes (in% of total taxation), Serbia - Final consumption of Households for Transport, Croatia - Energy Taxes (in%), Serbia - Enviromental Taxes (in% of total taxation), Montenegro - Enviromental Taxes (in% of total taxation), Macedonia - Enviromental Taxes (in% of total taxation)

b. Dependent Variable: ECON

Table 108: ANOVAb for all countries

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.680E8	16	35501863.943	232.990	.000[a]
	Residual	1523751.713	10	152375.171		
	Total	5.696E8	26			

The F-statistic of the new model is 232.990. This is a large value than F-statistic tabulated therefore, the model fits the data well and that this model can be used to make sound conclusions.

Table 109: Unstandardized Coefficients for all countries

Model B		Unstandardized Coefficients	
		Std. Error	B
1	(Constant)	-115984.928	47428.109
	Serbia - Final consumption of Households for Transport	-5.101	1.025
	Croatia - Final consumption of Households for Transport	-1.864	1.192
	Bulgaria - Final consumption of Households for Transport	13.177	3.801
	Montenegro - Energy Taxes (in%)	80846.120	17876.192
	Serbia - Energy Taxes (in%)	-109261.592	26018.595
	Kosovo - Energy Taxes (in%)	-40430.263	12002.314
	Macedonia - Energy Taxes (in%)	17392.795	4718.772
	Croatia - Energy Taxes (in%)	11262.740	6585.799
	Bulgaria - Energy Taxes (in%)	5742.068	7412.382
	Montenegro - Enviromental Taxes (in% of total taxation)	-10015.894	1963.884
	Serbia - Enviromental Taxes (in% of total taxation)	-2435.353	3803.613
	Kosovo - Enviromental Taxes (in% of total taxation)	7053.285	2913.315
	Albania - Enviromental Taxes (in% of total taxation)	-16421.220	3446.813
	Macedonia - Enviromental Taxes (in% of total taxation)	-2802.862	5580.357
	Croatia - Enviromental Taxes (in% of total taxation)	7909.097	2692.543
	Bulgaria - Enviromental Taxes (in% of total taxation)	31412.428	11242.088

Table 110: Standardized Coefficients for all countries

Model Beta		Standardized Coefficients	t	Sig. Lower Bound	95.0% Confidence Interval for B
1	(Constant)		-2.445	.035	-221661.340
	Serbia - Final consumption of Households for Transport	-1.801	-4.978	.001	-7.384
	Croatia - Final consumption of Households for Transport	-.646	-1.564	.149	-4.520
	Bulgaria - Final consumption of Households for Transport	1.494	3.467	.006	4.708
	Montenegro - Energy Taxes (in%)	2.886	4.523	.001	41015.481
	Serbia - Energy Taxes (in%)	-2.368	-4.199	.002	-167234.634
	Kosovo - Energy Taxes (in%)	-.557	-3.369	.007	-67173.084
	Macedonia - Energy Taxes (in%)	.309	3.686	.004	6878.715
	Croatia - Energy Taxes (in%)	.664	1.710	.118	-3411.334
	Bulgaria - Energy Taxes (in%)	.373	.775	.456	-10773.748
	Montenegro - Enviromental Taxes (in% of total taxation)	-4.500	-5.100	.000	-14391.701
	Serbia - Enviromental Taxes (in% of total taxation)	-.407	-.640	.536	-10910.330
	Kosovo - Enviromental Taxes (in% of total taxation)	1.263	2.421	.036	562.014
	Albania - Enviromental Taxes (in% of total taxation)	-2.155	-4.764	.001	-24101.197
	Macedonia - Enviromental Taxes (in% of total taxation)	-.510	-.502	.626	-15236.672
	Croatia - Enviromental Taxes (in% of total taxation)	.986	2.937	.015	1909.736
	Bulgaria - Enviromental Taxes (in% of total taxation)	3.863	2.794	.019	6363.495

Table 111: 95.0% Confidence Interval for B for all countries

Model Upper Bound		95.0% Confidence Interval for B	Correlations		
		Zero-order	Partial	Part	
1	(Constant)	-10308.516			
	Serbia - Final consumption of Households for Transport	-2.818	.215	-.844	-.081
	Croatia - Final consumption of Households for Transport	.792	.311	-.443	-.026
	Bulgaria - Final consumption of Households for Transport	21.646	.146	.739	.057
	Montenegro - Energy Taxes (in%)	120676.759	-.755	.820	.074
	Serbia - Energy Taxes (in%)	-51288.549	-.164	-.799	-.069
	Kosovo - Energy Taxes (in%)	-13687.441	-.199	-.729	-.055
	Macedonia - Energy Taxes (in%)	27906.874	.075	.759	.060
	Croatia - Energy Taxes (in%)	25936.815	.273	.476	.028
	Bulgaria - Energy Taxes (in%)	22257.885	-.422	.238	.013
	Montenegro - Enviromental Taxes (in% of total taxation)	-5640.088	-.192	-.850	-.083
	Serbia - Enviromental Taxes (in% of total taxation)	6039.624	.771	-.198	-.010
	Kosovo - Enviromental Taxes (in% of total taxation)	13544.557	.725	.608	.040
	Albania - Enviromental Taxes (in% of total taxation)	-8741.243	.393	-.833	-.078
	Macedonia - Enviromental Taxes (in% of total taxation)	9630.947	.742	-.157	-.008
	Croatia - Enviromental Taxes (in% of total taxation)	13908.457	-.035	.681	.048
	Bulgaria - Enviromental Taxes (in% of total taxation)	56461.362	.723	.662	.046

Table 112: Collinearity Statistics for all countries

Model		Collinearity Statistics	
	Tolerance	VIF	
1	(Constant)		
	Serbia - Final consumption of Households for Transport	.002	489.490
	Croatia - Final consumption of Households for Transport	.002	638.234
	Bulgaria - Final consumption of Households for Transport	.001	694.565
	Montenegro - Energy Taxes (in%)	.001	1522.522
	Serbia - Energy Taxes (in%)	.001	1188.292
	Kosovo - Energy Taxes (in%)	.010	102.089
	Macedonia - Energy Taxes (in%)	.038	26.295
	Croatia - Energy Taxes (in%)	.002	562.706
	Bulgaria - Energy Taxes (in%)	.001	865.282
	Montenegro - Enviromental Taxes (in% of total taxation)	.000	2910.638
	Serbia - Enviromental Taxes (in% of total taxation)	.001	1510.184
	Kosovo - Enviromental Taxes (in% of total taxation)	.001	1017.945
	Albania - Enviromental Taxes (in% of total taxation)	.001	764.515
	Macedonia - Enviromental Taxes (in% of total taxation)	.000	3850.998
	Croatia - Enviromental Taxes (in% of total taxation)	.002	421.074
	Bulgaria - Enviromental Taxes (in% of total taxation)	.000	7144.551

Table 113: Excluded Variables[b] for all countries

Model			Beta In	t	Sig.	Partial Correlation
1		Montenegro - Final consumption of Households for Transport	-3.680[a]	-7.297	.000	-.925
	Kosovo - Final consumption of Households for Transport	-2.745[a]	-.781	.455	-.252	
	Albania - Final consumption of Households for Transport	-4.788[a]	-2.266	.050	-.603	
	Macedonia - Final consumption of Households for Transport	-6.720[a]	-3.253	.010	-.735	
	Albania - Energy Taxes (in%)	-1.914[a]	-.578	.577	-.189	

The Montenegro- financial consumption of ousehold for transport has the greatest partial correlation of -0.925; hence, we may consider to do away with it.

Table 114: Excluded Variables[b] for all countries

Model		Collinearity Statistics		
Tolerance		VIF	Minimum Tolerance	
1	Montenegro - Final consumption of Households for Transport	.000	5918.377	7.027E-5
	Kosovo - Final consumption of Households for Transport	2.256E-5	44334.860	2.256E-5
	Albania - Final consumption of Households for Transport	4.240E-5	23584.978	4.240E-5
	Macedonia - Final consumption of Households for Transport	3.201E-5	31236.949	3.201E-5
	Albania - Energy Taxes (in%)	2.614E-5	38257.802	2.614E-5

We exlude all the variables that have a high VIF from our model because they are highly correlated with other predictor variables hence the table above caontains such variables.In the prediction from 2014-2030 using the data available we noted that some factors were not much significant to the prediction of the economic development. We considered the Variance Inflation Factor to do the elimination, and the variable that had large values of VIF were eliminated . Let us consider the effect on the factors using the VIF.Serbia recorded the best impact of Final Consumption over the economic development since it had the least VIF followed by Croatia and the last being Bulgaria.

Final Consumption had impacts on these three countries, however we did not include this factor on the other four countries to predict for the ECON since they had high VIF. They include Montenegro, Albania, Macedonia and Kosovo with VIF 5918.377, 23584.978, 31236.949 and 44334.86 respectively.Energy taxes were excluded in the prediction of the ECON since it had the highest VIF (38257.802). However it had significant impacts in the other 6 countries .The 1st being in Macedonia ,the 2nd in Kosovo , the 3rd Croatia, the 4th Bulgaria , the 5th Serbia and the 6th being Montenegro. This is the factor that had the greatest impact on the economic development.

The Variance Inflation Factor in all the countries was relatively low and therefore, this variable was the best predictor on ECON. From the analyses, Environmental Taxes were used in all the seven countries without being eliminated from any. However this factor had varying impacts on ECON in different countries .It had the greatest impact on Croatia since it had the lowest VIF , the 2nd being Albania, the 3rd being Kosovo , the 4th being , Serbia , the 5th being Montenegro ,the 6th Macedonia and environmental taxes had the least impact on ECON. From the overall analyses , environmental taxes showed the greatest impact on ECON followed by the Energy taxes and lastly Final Consumption of Household for Transport .Final Consumption of Household for Transport had the least impact as only three countries were included in the prediction of ECON with four being exclude

Table 115: Residuals Statistics[a] for all countries

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	15398.4307	35065.5547	27414.8083	4674.10964	27
Residual	-516.69696	422.38705	.00000	242.08642	27
Std. Predicted Value	-2.571	1.637	.000	1.000	27
Std. Residual	-1.324	1.082	.000	.620	27

The residual statistics indicate that the mean lies approximately midway between the maximaum and the

5.20 Chapter 5 - CONCLUSION

The impact of transportation on the economic development is studied for the seven transition countries, namely Albania, Bulgaria, Montenegro, Croatia, Kosovo and Macedonia Albania, Bulgaria, Montenegro, Croatia, Bosnia and Herzegovina, Kosovo and Macedonia. The variables used include 'C-values', 'ENE' and 'ENV'. The actual data is available from the year 2004 to 2013.

The data is projected for next 10 years from 2014 to 2030. The regression method is more suitable to this research when compared to the trend method such as the moving average concept because the parameters of the regression models can be tested for their statistical significance at appropriate level.

Using the projected values pair-wise correlation is measured between the 'C-values' and the variables 'ENE' and 'ENV'. Impacts of different factors on the economic development:

PART 1: The study was conducted on seven countries to investigate which factor had the largest impact on the economic development .The data was obtained from the year 2004 to 2013 from countries namely: Albania, Croatia, Serbia, Bulgaria, Macedonia, Montenegro and Kosovo.

The relationship between the economic developments is shown by the formula:

ECON =(∑Tene+∑Tenv)(∑Cfinal)/(SDave/n),

with ECON =level of economic impact of transport; Tene=Energy Taxes(in %) ;Tenv=Environment Taxes(in %); Cfinal=Final Consumption of Households for Transport ;SD=Standard Deviation ;ave=average and n=number of test samples(years).

We shall rank the contribution or rather the effects of the factors towards the economic development of the different countries.

Table 116:Total consumption of Households for Transport by country in increasing order.

Country	Bulgaria	Albania	Macedonia	Montenegro	Serbia	Croatia	Kosovo
Total (Euros million)	70409	69284	64528	60738	57392	53677	52235

The above data show that Final Consumption of Household for Transport had the greatest impact on economic development in Bulgaria recording a total of 70,409 million Euros while it had the least impact in Kosovo by recording a total of 52235million Euros.

Table 117: Energy Taxes on the economic development from the largest to lowest effect across the row.

Country	Montenegro	Bulgaria	Macedonia	Albania	Serbia	Kosovo	Croatia
Contribution to Eco. by %	2.08	2.01	1.98	1.97	1.68	1.51	1.44

Energy Taxes contributed the most in Montenegro which recorded 2.08% while it had the least impact in Croatia which recorded a percentage of 1.44%.

Table 118: Effect of Environmental Taxes to the Economic Development in increasing order.

Country	Croatia	Bulgaria	Albania	Montenegro	Serbia	Macedonia	Kosovo
Effect by %	7.14	6.54	6.45	6.13	5.73	5.69	5.31

In the case of impact of environment taxes on economic development, Croatia had the greatest impact by recording 7.14% while the same factor had the least impact in Kosovo by recording 5.31.

However to show the overall effect we conduct a regression analysis as below.

PART TWO: The data was used to predict for the next 17 (2014 - 2030) years, and to check the effect of various factors, a multiple linear regression was conducted with the economic development being the dependent variable. The following is the model that predicts the outcomes.

$$\mathbf{ECON = B_o + B_1 * X_1 + B_2 * X_2 + B_3 * X_3}$$

Where : X_1=Final Consumption of Household for Transport, X_2=Energy Taxes(in %) ,X_3= Environmental Taxes(in %).

To investigate the factor that made the greatest impact we shall consider the coefficients of these factors in the regression.

Table 119: Coefficients of these factors in the regression.

Country	X1	X2	X3
Albania	-7.627	-38065.03	7558.065
Bulgaria	-4.739	13126.747	12009.731
Kosovo	-3.611	36000.285	8968.928
Macedonia	-3.17	7098.459	7646.7
Serbia	-2.924	26043.355	8362.747
Montenegro	-1.449	-29928.616	-63.03
Croatia	-1.15	32114.88	10361.244

The coefficients of the various factors upon regression will give the relationship between those specific factors with the economic development.

Table 120: Consumption of Households in the different countries from the greatest to the least effect.

Country	Albania	Bulgaria	Kosovo	Macedonia	Serbia	Montenegro	Croatia
Highest to lowest	-7.627	-4.739	-3.611	-3.170	-2.924	-1.449	-1.150

The coefficients of Final Consumption are negative , their betas are also negative .This is a clear indication that there is inverse relationship between the Final Consumption and the economic development that is an increase in Final Consumption causes a decrease in the economic development.

Final Consumption had the greatest impact in Albania while it had the least impact in Croatia.

Table 121: Effect of Energy Taxes of the Economic development in ascending order.

Country	Kosovo	Croatia	Serbia	Bulgaria	Macedonia	Montenegro	Albania
Largest to smallest	36000.285	32114.880	26043.355	13126.747	7098.459	-29928.616	-38065.03

Some of the coefficient for energy taxes were positive with only two being negative .

The positive coefficients showed that an increase in energy taxes lead to an increase in the economic development, while the negative slope indicted a negative effect of energy taxes on economic development.

Kosovo had the greatest impact with a coefficient of **36000.285** while **Albania** had the least impact in fact an increase in the energy taxes causes a decrease in the economic development.

minimum value with a relatively small standard deviation. The mean of the error term is zero with a variance of one. Hence the error term is normally distributed with a mean 0 and variance 1.

Table 122: Effect of Environmental Taxes on the Economic development ascending order.

Country	Bulgaria	Croatia	Kosovo	Serbia	Macedonia	Albania	Montenegro
Largest to the smallest	12009.731	10361.244	8968.928	8362.747	7646.70	7558.065	-63.030

In the case of impacts made by the Environmental Taxes on the economic development, most of the coefficients were positive except one which was negative.

Environmental taxes made the largest effect on economic development with a coefficient of 12009.731 while having the least positive (in absolute value) effect in Montenegro

Overall the prediction showed Energy Taxes had the greatest impact on economic development, this is evident through the huge positive coefficients, the second is the Environmental Taxes and the least is the Final Consumption of Household for Transport.

In the case of C values, for Montenegro, we have the projection given in figure 1. The regression method can be tested statisticallly at 5% or 1% levels, which is not possible for the trend analysis with moving average approach.In the case of Montenegro, the Pearson correlation between C-values and ENE is -0.997. This is significant at 5% level.

The correlation is highly significant and this indicates that as the C-value increases the ENE value decreases. The Pearson correlation between C-values and ENV is 0.985. This is significant at 5% level. The correlation is highly significant and this indicates that as the C-value increases the ENE value also increases. The Pearson correlation between ENE and ENV is -0.981.

This is significant at 5% level. The correlation is highly significant and this indicates that as the ENE-value increases the ENV value decreases.For Serbia, the Pearson correlation between C-values and ENE is -0.992. This is significant at 5% level. The correlation is highly significant and this indicates that as the C-value increases the ENE value decreases. The Pearson correlation between C-values and ENV is 0.996. This is significant at 5% level.

The correlation is highly significant and this indicates that as the C-value increases the ENE value also increases.

The Pearson correlation between ENE and ENV is -0.995. This is significant at 5% level. The correlation is highly significant and this indicates that as the ENE-value increases the ENV value decreases. In the Kosovo situation, the Pearson correlation between C-values and ENE is -0.996. This is significant at 5% level. The correlation is highly significant and this indicates that as the C-value increases the ENE value decreases. The Pearson correlation between C-values and ENV is 0.998. This is significant at 5% level. The correlation is highly significant and this indicates that as the C-value increases the ENE values also increases.

The Pearson correlation between ENE and ENV is -0.995. This is significant at 5% level. The correlation is highly significant and this indicates that as the ENE-value increases the ENV value decreases.

In the case of Albania, the Pearson correlation between C-values and ENE is -0.995. This is significant at 5% level.

The correlation is highly significant and this indicates that as the C-value increases the ENE value decreases. The Pearson correlation between C-values and ENV is 0.999. This is significant at 5% level.

The correlation is highly significant and this indicates that as the C-value increases the ENE value also increases.
The Pearson correlation between ENE and ENV is -0.992.
This is significant at 5% level. The correlation is highly significant and this indicates that as the ENE-value increases the ENV value decreases.
The Pearson correlation between C-values and ENE is -0.128 in Macedonia, which however is not significant this indicates that as the C-value increases the ENE values also increases.

The Pearson correlation between ENE and ENV is -0.110. This is not significant at 5% level. This implies that the ENE and ENE values donot influence each other. The correlation is highly significant and this indicates that as the ENE-value increases the ENV value decreases.

Table 123: The overall impact can be checked using the correlation coefficient:

Co linearity	FACTOR	COUNTRY
0.038	Energy Taxes	Macedonia
0.010	Energy Taxes	Kosovo
0.002	Final Consumption	Serbia,Croatia
	Energy Taxes	Croatia
	Environmental Taxes	Croatia
0.001	Final Consumption	Bulgaria
	Energy Taxes	Montenegro, Serbia, Bulgaria
	Environmental Taxes	Serbia, Albania
0.000	Environmental Taxes	Montenegro, Macedonia ,Bulgaria

From the above table we notice that the factor with the most collinearity with the dependent variable was the Energy taxes in Macedonia despite it having the highest collinearity in statistics it will have the least effect .In collinearity we check the relationship that exists between two variables .
The variable with the least collinearity with other variables are considered in regression since it shows that it is independent and that its effects on the regression are independent. Environmental taxes which recorded a co linearity of 0.00 seem to be the best factor on impacts of economic development.

This means that the effects of environmental taxes are independent so their effect they cause on the economic development cannot be attributed to anything else .However Final Consumption of Households for Transport in Bulgaria , Energy Taxes in Montenegro , Serbia and Bulgaria and Environmental Taxes in Serbia and Albania showed collinearity of 0.01 .
This collinearity is not severe therefore these factors had impacts on the economic development in the specific countries.
The collinearity in Final Consumption (Serbia and Croatia), Energy (Croatia) and Environmental taxes (Croatia) increased to 0.02 which showed some correlation between these factors on other variables but despite of this their impacts were significant. Energy Taxes in Kosovo showed a collinearity of 0.01 which shows very little effect on the dependent variable as it is correlated with other variables.

The factor that showed the highest correlation with other variables was the Energy taxes in Macedonia which had the value 0.038.
This high correlation that that Energy taxes factor is correlated with other variable and therefore its effect on the economic development will not be such significant. In general Energy taxes will have the least impact in Macedonia among all other factors. least impact in Macedonia among all other factors.

The standard deviations also could show the significance of the specific factors to the impact of the economic development. Comparing the deviations of the three factors amongst their selves we can be able to evaluate the significance of each of them towards ECON.T
he standard deviations for the Energy Taxes were very low, in particular they ranged from 0.06 to 0.10. This low deviation showed that Energy Taxes were very stable in their contribution to the economic development.
This means Energy Taxes was the most reliable factor , it's the factor that would have the most significant impact on the economic development .For example Energy Taxes in Kosovo registered the lowest standard deviation of 0.06445.
This was the most stable and thus kind of the most significant to the ECON.
The second factor that contributed relatively significant was the Environmental Taxes; this is proved due to the fact that their standard deviations ranged from 0.5 to 2.1 .With the Final Consumption of Household for Transport which had the highest standard deviations that ranged from 530 to 1652.
This large standard deviation proved the instability of the Final Consumption in contribution to the economic development .
This instability may be viewed in the sense that it has the least impact to the economic development
.
For example Final Consumption of Households for Transport registered the highest standard deviation of 1652 which is a clear indication that it was the most unstable factor towards the impact of the economic development.
All these aspects add up the validity of the results and throw more light on the impact of transportations in economic developments..d up to the vore light on the impact of transportation of the impact of the economic development.

Table 124:Casewise Diagnosticsa

Case Number	Std. Residual	ECON	Predicted Value	Residual
2004	-.450	15222.61	15398.4311	-175.82099
2005	.428	18709.81	18542.6454	167.16773
2006	-.032	21261.29	21273.9094	-12.62081
2007	.047	22039.16	22020.8751	18.28138
2008	.137	24822.73	24769.0956	53.63553
2009	-.007	25505.06	25507.8706	-2.81496
2010	.023	31360.47	31351.5364	8.93561
2011	-.362	31988.02	32129.3480	-141.32796
2012	.183	35136.95	35065.5547	71.39063
2013	-.014	27966.30	27971.7293	-5.42979
2014	.663	29729.35	**29470.4474**	**258.89876**
2015	-1.324	31013.00	**31529.6938**	**-516.69696**
2016	-.098	31996.10	**32034.5135**	**-38.41624**
2017	-.280	32532.75	**32642.0113**	**-109.26292**
2018	1.082	32165.48	**31743.0898**	**422.38705**
2019	-.007	31615.93	**31618.6708**	**-2.74103**
2020	-.751	30664.34	**30957.3776**	**-293.04140**
2021	-.340	30049.98	**30182.6582**	**-132.67865**
2022	-.516	29364.80	**29566.1569**	**-201.35210**
2023	1.062	29284.09	**28869.4669**	**414.62172**
2024	.642	27496.88	**27246.3485**	**250.53446**
2025	.941	26720.39	**26353.0793**	**367.31213**
2026	.771	25993.86	**25692.8771**	**300.98194**
2027	.270	25334.30	**25229.0572**	**105.24395**
2028	-.141	24699.52	**24754.4671**	**-54.94940**
2029	-1.138	24079.15	**24523.3325**	**-444.18503**
2030	-.789	23447.53	**23755.5796**	**-308.05264**

Considering the regression and using the residuals we can be able to know the period that prediction was the best .We can also be able to get the overall view of which period had the best economic performance. The best prediction was for the year 2012 which predicted the value 35065.5547 from the original value being 35136.95. In this period it recorded the highest prediction value of the ECON value, this shows that this is the period which the ECON value was the best in terms of economic value.

However we had the worst period which had the least ECON value being the year 15222.61 which was predicted to the value 15398.4311 in the year 2004. From this we can get the overall view of the growth of the economic performance in the sense that the economic development grew substantially from year 2004 to the late years. The residuals were calculated which gave the year in which the difference between the predicted value and the original value .With this the year that recorded the least residual is 2.74 in absolute .This was the prediction for the year 2019 .The prediction that recorded the worst prediction was the year 2015 with the residual 516.70 .

Therefore we can in total conclude that the year 2012 recorded the best ECON value of 35136.95 while the year that recorded the poorest ECON value 2004 with the value 15222.61.

5.21 Contribution in Analysis

This research developed a formula that calculates different methods for the transportation impact on economic development.

This formula took into account all different attributes, which have never been taken into consideration in any research before.

This formula was used on the simulation using SPSS statistical software and the results presented in different forms.

This makes it available for the benefit of other researchers who may want to conduct this study on the same population or a different one. In fact, the fact that this paper modelled the relationship between transportation and economic development using variables no research has focused on before is a positive contribution to the research community while creating a quest for other researchers to establish other factors that may affect economic development based on transportation or other aspects.

This analysis tries to evaluate the relationship between the transport and the economic development through the Pearson correlation coefficient.

However, our data of first projected 30 years ahead and the variables compared. This type of comparison adds value to the argument and improves the validity of the results.

The analysis also included different transition countries and thereby improving the representative nature of the results.

The projected values are first tested for their 'goodness of fit' using SPSS before using the same in the correlation analysis. All these aspects add up to the validity of the results and throw more light on the impact of transportation on the economic development of the transition countries.

Besides benefitting researchers and academicians who may benefit from using the developed formula and the research design this paper utilises, the analysis on this paper has significant benefits to many other stakeholders.

First, this will benefit the ministry of transport in the countries used as case studies in a way that will make them look at transportation as a key determinant of economic development and therefore work towards improving transportation in their countries.

Secondly, the analysis will benefit the ministries or energy and environment in the respective countries. This is because energy and environment are key factors that contribute to how transportation impacts on the economic development of a country.

Finally, for governments, whether for reasons of funding or policy development, the research finding that there is a correlation between transportation and economic development is good enough to trigger reforms in the energy, transport, and environmental sectors.

This will ensure that economic development progresses positively as a result of positive improvements in transportation.

5.22 Summary

This chapter focused on the impact of transportation on the economic development and the study focused on seven transition countries, namely Albania, Bulgaria, Montenegro, Croatia, , Kosovo and Macedonia . The variables used in the study includes 'C-values', 'ENE' and 'ENV'. The actual data is available from the year 2012 to 2013.

The data is extended to next 10 years from 2014 to 2030. Of the two methods considered, the regression method is more suitable than the trend method using moving average concept, as the parameters of the regression models can be tested for their statistical significance at appropriate level.

Using the projected values pair-wise correlation is measured between the 'C-values' and the variables 'ENE' and 'ENV'. All the three variables are found to have significant correlation implying the impact of the transportation on such important economic parameters such as 'ENE' and 'ENV'.

This nature of relationship is holds good for all the transition countries Albania, Bulgaria, Montenegro, Croatia, Kosovo, and Macedonia.

Thu, the study brings out the significant impact of the transportation in the economic growth of the transition countries. The study aimed at studying the impact of transport in economic developments of the transition countries. .

Final consumption of households for transport for these countries from 2004 to 2013 is considered. In addition, the corresponding years', 'C-values', 'ENE' and 'ENV' are considered for the study.

The data from these 10 years are projected using the 'linear trend' for the years 2014 to 2030.

The linear model assumes a relationship of the form :

$$\mathbf{y = y = b0 + b1x1 + b2x2 + b3x3,}$$

where the coefficient b0 represents the intercept term and the coefficient b1 denotes the slope of the curve. The linear regression method was considered. In this case the first 10 years values are used to project for the next 17 years.

Both the projections are compared by plotting the two projections on the same graph and studying their deviations. For instance, in the case of Montenegro, the Pearson correlation between C-values and ENE is -0.997. This is significant at 5% level.

The correlation is highly significant and this indicates that as the C-value increases the ENE value decreases.

The Pearson correlation between C-values and ENV is 0.985. This is significant at 5% level.

The correlation is highly significant and this indicates that as the C-value increases the ENE value also increases.

The Pearson correlation between ENE and ENV is -0.981.

This is significant at 5% level. The correlation is highly significant and this indicates that as the ENE-value increases the ENV value decreases. In all these Western Balkans countries, there was the test in the Pearson correlation between C-values and ENE and ENV.

As a result, the study brings out the significant impact of the transportation in the economic growth of the transition countries.

CHAPTER 6

6.0 CONCLUSION

The developed method and formula for computing the economic impact of the transport sector to the Western Balkan countries was rather efficient. It included factors that take into account the most significant segments required to determine specific impacts. To arrive this method and formula, however, two major steps were considered. First, a wide review of the transportation sector in the Western Balkans, the challenges it faces and future anticipations.

This was meant to achieve a second objective that is to put forth a conceivable defence for elevated global consideration regarding the West Balkans, so that past mistakes are not repeated. Hence, the principle contention that penetrates this report is that the centre of the universal neighbourhood (territorial and global conglomerations, IFIS or third nations through respective understandings) is a *sine qua non* for the infrastructure of the Western Balkan transportation part and, hence, for the district's budgetary advancement.

In the challenges recognition, which the transportation sector faces, the report has concentrated on two all-encompassing components that hinder advancement; the large amount of fragmentation that torments the whole area, and the profound divisions that persevere right up till today (if the aforementioned are recorded, ethnic, religious, social or overall). It has been contended that a sincerely joined transport system is unattainable if remarkably divisive issues remain unaddressed, subsequently indicating the requirement for stronger underpin for territorial collaboration. In examining the transportation segments exclusively, the report received the breakdown utilized by the EU (air, way, rail, sea, and inland conduits transportation). This not just supported in the distinguishing proof of nexus tests in every part, and yet underlined the endless significance of the EU element in the growth of a sound transport organize over the Western Balkans.

The report additionally focuses on the essentialness of further contribution by the more extensive worldwide neighbourhood, as the advancement so far is far from tasteful. Around then of an unfavourable worldwide monetary atmosphere, the consideration of crux global performers is imperative for the best possible prioritization, financing and observing of local transport ventures. Speculative contemplations prescribe that the fundamental system by which updates in transport could have an impact on the economy is by a change in the expenses of development. These cost diminishments accumulate to diverse categories of movement, some obviously donating straight to monetary action than others, which in a few cases will be reflected in their higher valuation of reserve funds in voyage time. Nonetheless, we have not discovered it conceivable or accommodating to demarcate a categorical qualification between "beneficial" and "useless" classes of vehicles.

6.1 Key Impacts of transportation on the economic development of Balkan states identified in this work

1) Transportation and logistics infrastructure have a significant impact on social development. This is because infrastructure such as education centres, medical centres, recreational facilities, and others are usually built where good and working road networks are available

2) The basic infrastructure and the efficient provision of transportation and logistical service infrastructure integrate and reticulate the territory. This makes it accessible from the outside and allows people to connect with the environment. Moreover, the services are critical to the production and development of

conditions and quality of life of people.

3) Transporation and logistical infrastructure increase competitiveness and reduces production costs, thereby expanding the activity commercial, private investment and capital accumulation, but also facilitates social development most disadvantaged regions economically and socially

4) At the regional level, the development of a coordinated infrastructure, allows not only a development in the provision of infrastructure services, but also promotes political integration and social cooperation between countries, helping to meet some shortfall in the provisions of certain natural resources that some countries may register.

5) Moreover, adequate supply of works of infrastructure and the efficient provision of related services promote the development of competitive national and regional benefits as well as a greater degree of specialization.

6) The results of proper infrastructure development lead to economic growth and provide the conditions for economic and social development, by way of improvements in factor productivity and competitiveness of the economy

7) Allows the movement of people, raw materials and finished products through transport networks designed to comply with offices in a timely manner at the lowest cost at the local, national or international level. It did not happen to oil and subsequently returned to lower ranks; the onset of the crisis reaffirmed the importance of economic costs of transportation and logistics as a way to keep competitiveness of economies.

6.2 Suggestions and Recommendations

The trend towards globalisation and logistics is in the process of reshaping transport activities. New strategic uses of logistics will continually alter the nature and culture of operations in companies; governments will have to match these changes. The strategic advantage of logistics is likely to be most pronounced in terms of improvements in coordination and planning resulting in transport efficiency gains. However, it is important for governments to fully understand concepts of logistics and to stimulate economic competitiveness to achieve positive economic development. At the same time, governments need to reduce any negative impacts, so as to achieve a more balanced approach to economic growth, including sustainable development.

At present, the ability of governments to promote global logistics systems is limited by internal institutional and organisational constraints, as well as a lack of knowledge of logistics developments and of the effects of their policy actions. In many cases, freight transport policy reflects modal thinking without due regard being given to the need for integrated freight management as required by transport operators.

In order to increase competitiveness by promoting the opportunities afforded by logistics and also achieving sustainable development, governments need to develop an integrated policy framework to achieve broader socio-economic objectives. The range of policy issues affecting the efficiency and sustainability of global logistic systems are wide and extend beyond the jurisdiction of narrowly focused government agencies charged solely with improving the performance of the transport sector.

Also, since transport and logistics are interrelated with international trade, international finance, sustainable economic development, global climate change and regional and local concerns, the policy framework should be seen in a much broader context and be co-ordinated internationally, where appropriate.

Within this overall framework, a range of triggers and constraints need to be designed given the regional variations in "local" conditions. Countries different in their use of logistics since they are at different stages of development with diversified cultural backgrounds. Many governments of Balkan countries, including those in Asia, still have a very limited understanding of logistics.
Several countries suffer from insufficient specialised logistics knowledge as well as lack of more general awareness of the importance of logistics, and are therefore unable to formulate cohesive policies to manage logistics. In addition, modern logistics concepts such as intermodal transport and advancements in transport, have not penetrated to these countries. Nevertheless, all Ballkans regions should respond to the current developments in logistics and the need for efficient and environmentally friendly transport solutions.

The effectiveness and efficiency of policy actions could be analysed through comparative studies. An major difficulty encountered in this study was the lack of information available to compare and contrast different regions. Although assessments of performances of logistics systems and effectiveness of policies could be made possible by the use of appropriate performance indicators, at present indicators and data for monitoring developments in logistics are lacking. Therefore, there is a need for co-operative research to develop these indicators and identify policy relevant data requirements. It is also necessary to establish comparability of data collections through a co-ordinated statistical database in order to enable data sharing among all participants.

The strategic use of ICT is critical for realising advanced logistical systems. On the other hand, the high pace of change in this area poses a challenge. The increasing use of ICT in logistics resulting in fast, flexible development of transport on a global scale may pose a threat to achieving sustainability unless the policy requirement is rigorously defined. Many governments are lagging behind in the development of a policy framework that could promote the effective use of ICT to the benefit of transport efficiency and sustainability.Although there is little sense of urgency in the international arena for sustainable mobility, it is essential that the policy tools for achieving compatibility between logistics development and sustainability be formulated. Therefore, governments need to enhance the capacity for advanced transport logistics to contribute to sustainable transport development in the context of increasing globalisation of economic activity.

Logistics yields opportunities to expand intermodal freight transport by increasing the volume and length of flows and by taking advantage of the better planning and co-ordination possibilities offered through ICT. Thereby, logistics could contribute to the achievement of sustainability objectives by improving the level of service offered by intermodal transport to make it more attractive to shippers. However, this will require co-ordinated interventions by governments, including harmonised regulations, and standardisation of frameworks surrounding the use of technologies and infrastructures. Research on mechanisms, such as Performance Based Standards, to facilitate innovation and the introduction of new operational and infrastructure technologies through regulatory reform is required.

Integrated transport infrastructure networks are prerequisites for global logistics systems. In many ballkans countries, the development of freight transport infrastructure is a key issue. Developments in Ballkans ountries logistics have not kept pace with its rapid growth and lag far behind those of North America and Europe. There is an imbalance in the amount of transport infrastructure and institutional measures

between different countries in Asia, which leads to gaps and inefficiencies in the logistics system. In both developed and developing countries, financial instruments available to governments for the development of infrastructure are still not sufficiently flexible, prevalent, or transparent to cover and serve current needs. The potential for innovative financing arrangements, including Public-Private Sector Partnerships, should be explored. Logistics and ICT developments necessitate changes in the demand for skills. Improved training and qualification systems are needed to respond to these developments.

Human resource development in support of the freight industry should be considered both a public and a private sector responsibility. Since the level of skills differs across countries, developing countries may need assistance in establishing training courses. Since many technologies, especially those encompassed under Intelligent Transport Systems (ITS), are still in the research phase, R&D efforts are crucial for the development of advanced logistics systems. However, due to the uncertainty of its short-term profitability, R&D in the private sector needs support. Therefore, governments need to not only foster R&D efforts in the private sector, but, in order to maximise the opportunities of technological progress, also facilitate the demonstration of technological solutions and seek productivity benefits from diffusion of information

6.3 Limitations of the Research Study

Time constraint is the major limitation of this study. It limits the number of databases and libraries visited or accessed.

6.4 Future Research

Economic development and sustainable economic growth of ballkans countries are key goals and strategic priorities of the Ballkans countries. Attainment of this objective will be done through Government commitment to the objectives for creating conditions for the functioning of open market and increasing of competitiveness, strengthening private sector, supporting employment generation, improving the image of ballkans countries for investment, and creating a more secure and stable environment for business. In order to achieve macro-fiscal sustainability, in addition to reforms in fiscal policies, the Government is committed also to implement policies that have direct impact on improving the business environment. Through this, the governement aims to strengthen the private sector revitalize the agriculture sector; restructuring and privatization of public assets; continuation of infrastructure development by considering financing alternatives.

These policies will be focused especially through exploring possibilities to use the private capital; creating conditions for reduse the informal economy; developing financial markets; inclusion in the international financial institutions etc. Ballkans countries has a large potential of human resources, and therefore education and the development of this capital in all sectors contributes in the sustainable economic development. Commitments for reforms in specific sectors of economy are in concurrence with needs of these sectors and take into consideration economic, social, and institutional obligations that derive from the EU accession process. The Ballkans countries Economic

Development Plan describes the economic development planning framework and proactive commitment of the Government in the economic growth and development of the country. The plan is a document of objectives and concrete activities based on the achievements to date and is part of the planning framework within the key midterm strategic documents, including the Government Programme 2011-2014, Mid-Term Expenditure

6.5 Directions for future investigations for topic

With the aim of achieving economic growth and ensuring economic sustainability, the Government of Balkans countries will continuously work on improving efficiency in public spending and continuously increasing budget revenues.

Public infrastructure including roads, rail, energy supply, privatization of socially-owned enterprises in telecommunications and electricity distribution are among the key activities that expect to yield direct effects on economic development of the selected Balkans country as well as increase the private sector capital in the economy with a positive effect in reducing unemployment.

Development of public infrastructure is expected to have direct positive effect in employment; in empowerment of small and medium businesses; in rural development etc. In addition, it is estimated that the implementation of projects in this sector will enable infusion of fresh private capital in economy and will generate new jobs Determination of the most progressive options for shifting the freight logistics industry towards more sustainable goals will require careful planning and coordination between multiple parties. Both consumers and government will play roles in influencing industry to consider implementation of solutions, which will reduce environmental impacts.

The influence of consumer's can play a significant role in determining the demand for goods. Since they have the potential to incentivize the voluntary implementation of Green Logistics schemes in the transport sector. Such behaviors should be analyzed from both an economic and sociological viewpoints to determine their potential effects on logistics systems. In addition, government can guide the logistics industry with policies, which will induce sustainable practices.

Current regulations and policies applied to other industries can provide a menu of feasible options. Within this framework, various tools for analysis, including those of logistics systems analysis and supply chain management, should be applied towards analyzing the effects of policy options on the industry.

An interdisciplinary analysis would allow for the concepts of a variety of fields to be incorporated, including transportation engineering, economics, environmental science, operations research and urban planning. As a result, the feasibility and practicality of various policy options can be assessed to distinguish their suitability for specific context.

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