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Private Development of Road and Air Transport Market from Romania – Implications for the Economy

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Abstract

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Transport has an important role since the earliest periods of human history when certain routes were used for trade between different regions of the globe leading to the development of culture, spreading ideas and establishing strategic partnerships. The role of transport is extremely important for regional, national and world economic development because it stimulates the growth of other industries by creating the premises of a harmonious progress. Lately it can be noted an increase in air and road transport sector worldwide and this trend can be identified even in Romania. By 1990 the transport sector in Romania was totally controlled by the state, as otherwise the entire Romanian economy. Starting that year began appearing private initiatives to meet the needs of people who had to travel to other destinations. This paper aims to identify the effects of private air and road transports market growth in Romania.

Keywords: Air transportation; road transportation; private investments; economic development; consumer choice.

1 Introduction

Transport has an important role in the national economy. Land transport gross value added in 2011 was 23.6783 billion lei current prices, so the employment in the whole sector reached 433 thousand in 2012 and net investments in the same year were 5.5619 billion lei current prices. The effects of switching from 1990 until now from the planned economy to the market economy are meant to be analyzed in this paper. The role of the state in the transport sector need special consideration in the current economic context, which is characterized by the economic crisis consequences. We believe that capturing the effects of privatization on various transport markets has great importance in order to improve transport services with benefits that will be transmitted across national economy. These effects can lead to increased foreign direct investment, tourism development with its multiplier effects and improve the competitiveness of Romania.

Thereby, an important aspect that was mentioned in "The International Encyclopedia of business and management: vol. 5: Privatization and regulation" (Warner, 1996: 78-85) concerning the organization and management of public institutions, consists of the issue of liability. The Public Sector Management presents the following paradox - on the one hand, critics see it as being characterized by professional groups lacking accountability, on the other hand, professionals and managers in the public sector will justify bureaucracy by the need to demonstrate political superiority in relation to the press and the public fairness of the proceedings conducted. When adopting or experimenting with new approaches, there is a danger that they be incorporated into a bureaucratic approach. The Public sector management has a great need for legitimacy in comparison with the private sector. Finally, the source of legitimacy lies in the democratic accountability of the public sector, but it raises issues, as democratic legitimacy is a matter of interpretation of the competition policy and it is subjected to various political agendas.

There are authors who believe that with the changes of the post-industrial society until the cyberspace era, it has become increasingly difficult for governments to adapt and respond to changes at the pace desired by citizens (Sinclair, 2006: 92-106). In his "Stealth KM winning knowledge management strategies for the public sector," Niall Sinclair believes that they should find a level of change that is appropriate with regards to time constraints and resources, both human and financial. From his point of view, there is an urgent need for governments to prepare for the retention and dissemination of knowledge, as the current generations of public servants make room for new ones. The author presents a series of case studies in which by using knowledge management models of public-sector, activity is being improved. It is worth recalling the case of the Federal Aviation Administration in the US, which is the responsible institution for civil aviation safety in the United States. The purpose of implementing knowledge management models was the need to streamline business processes and the solution applied in this case is called - Network for knowledge. The implementation of this model followed several steps that ultimately led to an increase in efficiency.

The issue of the role of subsidies for the public transport services is discussed by Hensher and Brewer (2001: 123-144) in "Transport - an economic and management perspectives." The two believe that despite the fact that privatization and deregulation contribute to the economic development organization's ability to efficiently manage their costs and set prices that ensure an efficient allocation of resources, there is

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justification for providing subsidies. The justification is based on the obligation to provide a specific level of service and it cannot be guaranteed by the forces of commercial activity in a competitive market.

Investigations about how the ownership affects the productivity of firms operating in the local public transport, shows that total or partial public firms have lower productivity than privately owned firms (Boitani et al 2013: 1419–1434). The authors conducted a comparative analysis of 77 firms form large European cities over the period 1997 to 2006. Their results are in favor of the idea that private shareholders are correlated with higher productivity. Researchers say that this is because private shareholders have stronger incentives in order to make the firms more efficient and due to the fact that after the privatization process, they only remain productive firms.

Button and McDougall (2006) concludes that despite privatization of the airline industry safety conditions have improved over time on core markets.

Hooper (2002) believes that by holding majority control of state enterprises risk losing the benefits of privatization. The author considers that the most successful examples of airport privatization around the world are those in which the institutional framework is well developed and the political risk factor is reduced. In spite of this argument there are researchers which believe that in a competitive setting, public and fully private airports operate efficiently, but private airports still charge higher aeronautical fares (Adler et al., 2014). Other research (Itani et al., 2015) has shown that private airports are more effective than those controlled by the state, which are even less effective than those with mixed ownership.

There is research that points out that the existence of regulatory weak institutions coupled with mismanaged privatization programs have ended in private monopolies, low economic growth, uneven social development, political instability, an alarming increase in insecurity and social unrest (Vargas-Hernández, 2010).

2 Data and methodology

The Data that is analyzed in this paper are taken from the site of the National Statistics Institute (INSSE). The correlation of indicators of development of road and air transport in relation to the degree of privatization indicators will be tested and the present paper will also apply econometric and statistical methods such as correlation and regression coefficient.

The regression method is relying on the measurement and the prediction of the influence exerted by one or more factors (the exogenous variable – cause X) on a certain indicator (endogenous variable – effect Y). The basic element in regression is the regression function, which presents the dependency of the Y variable on the X variable factor (Zaharia et al. 2010). The regression function can be validated by the dispersion analysis which is calculed by the F test (Fisher Snedecor). The regression model is statistically significant if calculated F is greater than critical F. Also, the model can be considered statistically significant if Significance F is lower than α, where α represents the significance threshold and $1 - \alpha$ represents the confidence level. Usually, $\alpha=0.05$ or $\alpha= 0.01$, corresponding to a confidence level of 95% and 99%.

Thus, the first couple of indicators analyzed are represented by the number of passengers and the number of private enterprises in the road transport market. We will assess the way in which the number

of passengers has been influenced by the evolution of the number of private enterprises, in the period 1998-2013.

Table 1. Evolution of enterprises and the number of passengers

Road transport		
years	**passengers (thousands)**	**private enterprises**
1998	224261	9847
1999	192633	9880
2000	205979	9864
2001	200093	12029
2002	191127	13873
2003	216327	16369
2004	216524	19089
2005	238017	21842
2006	228009	24142
2007	231077	27929
2008	296953	31629
2009	262311	31705
2010	244944	29434
2011	242516	28438
2012	262291	30582
2013	274393	32300

Source: INSSE.

The dynamics of the two indicators show fluctuations throughout the period under review.

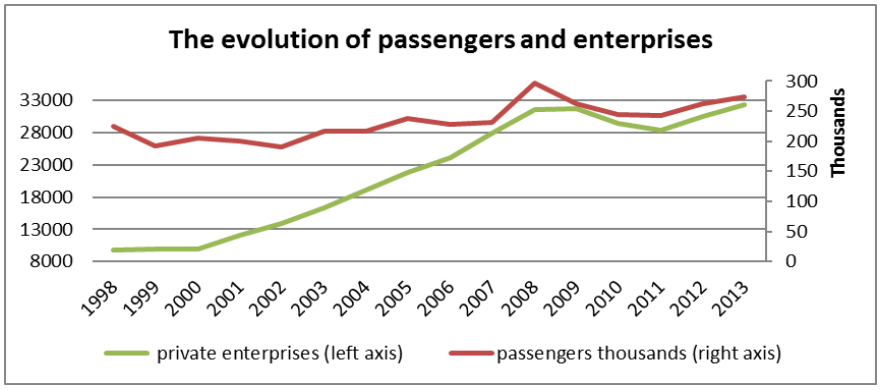

Fig. 1. Road transport dynamics

Considering the evolution of passengers and the number of private enterprises in Romania between 1998 and 2013, the following correlogram of both indicators has been carried out (Figure 2).

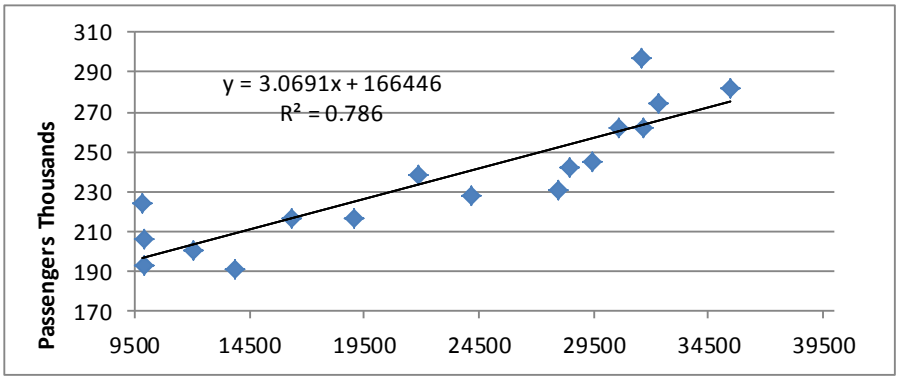

Fig. 2. The private enterprises – passengers correlogram

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It is worth mentioning that the determination degree between the two indicators is 0.786, which means that the number of passengers is 79% influenced by private enterprises; the relationship between them is very strong. The correlation coefficient between these indicators is 0.88 which means that there is a strong positive relationship.

The second and last pair of analysed indicators is the one formed by the number of passengers and the number of aircraft in the air transport market between 1997 and 2014. These indicators were selected because we believe that the number of aircrafts fully expresses the involvement of private agents in this market; this involvement can be correlated with the number of passengers who choose this type of transportation.

Table 2. Evolution of passengers and the number of aircraft

Air transport		
years	**passengers (thousands)**	**no. aircraft**
1997	1924	39
1998	2026	34
1999	2077	38
2000	2358	28
2001	2503	29
2002	2579	32
2003	2900	34
2004	3406	33
2005	4339	44
2006	5497	57
2007	7831	62
2008	9077	71
2009	9093	84
2010	10128	89
2011	10783	83
2012	10728	84
2013	10706	67
2014	11593	65

Source: INSSE.

It is observed that the number of passengers has an upward trend throughout the analysed period. The dynamics are reduced in 2009, probably due to the economic crisis whose effects are felt by the consumers of the transport services. The second indicator - the number of aircraft, recorded some fluctuations in the first 7 years. Since 2004 and until 2010, the number of aircrafts increases, reaching a maximum value of 89 aircrafts in 2010. After this year, the growth trend reverses.

In order to better notice the relationship between the two indicators, the present study carries out a correlogram (Figure 4) and underlines a determination degree between passengers and the number of aircrafts of 86%.

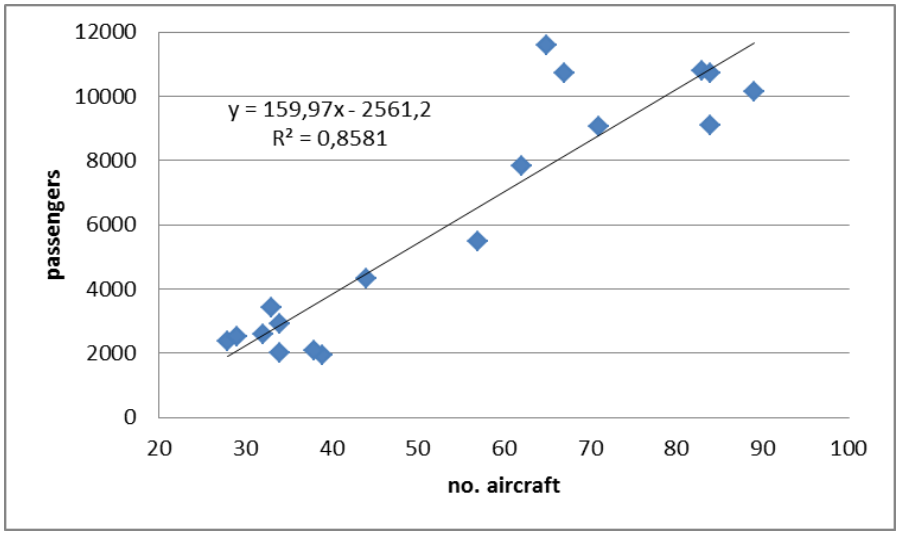

Fig. 3. Air transport dynamics

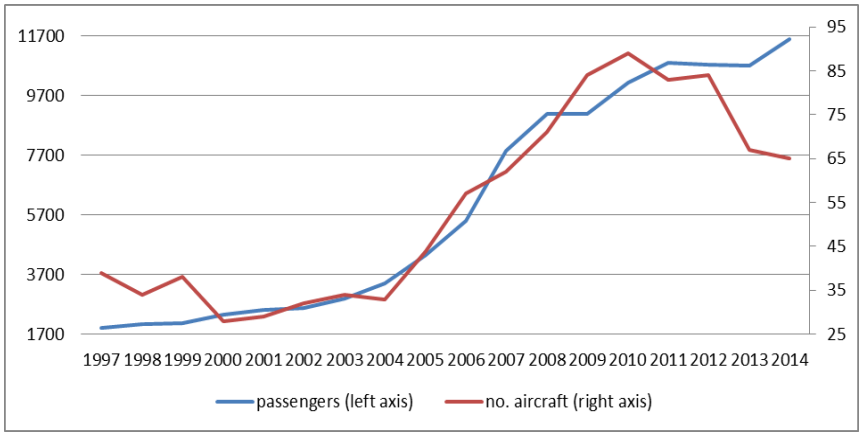

Fig. 4. The number of aircraft – passengers correlogram

Furthermore, the present study will analyse the data by using the spreadsheet software and the results will be presented below (table no. 3).

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Table 3. The determination and testing of the regression model

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,926337
R Square	0,858101
Adjusted R Square	0,849232
Standard Error	1465,899
Observations	18

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	207915350,5	207915350,5	96,75610774	3,45348E-08
Residual	16	34381763,45	2148860,216		
Total	17	242297114			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-2561,16	944,5546442	-2,711498351	0,015404756	-4563,524756	-558,7919645	-4563,52	-558,792
X Variable 1	159,968	16,26274614	9,836468256	3,45348E-08	125,4925044	194,4434678	125,4925	194,4435

The correlation ratio is 0.926, which shows us that there is a strong relationship between the number of aircrafts and the number of passengers. The percentage used by the number of aircrafts to influence passengers is approximately 86% (R Square = 0.8581). Due to the fact that the significance threshold is lower than 0.05 (Significance F = 0.0000000345 < 0.05), the regression model is valid. The model was testing for $\alpha = 0.05$. The correlation coefficient between these indicators is 0.93, which means that there is a strong positive relationship. The model is:

$$\hat{y} = -747.603 + 40.138 \cdot x \qquad (1)$$

In equation (1) $\hat{y}$ represents the number of passengers (expressed in thousands) and x represents number of aircraft. As ta=-2,711 and significant level (P-value) is 0,0154<0.05, it means that the coefficient is statistically significant, considering that fact that the coefficient is taking values between the lower (Lower 95%) and upper limit (Upper 95%) of -4563,524 to -558,7919.

The number of aircrafts coefficient (159,968) indicates that the average number of aircraft increased with 1 unit and the number of passengers increased by about 15996 visitors. Since tb = 9,83646 and P-value is 0.000000034<0.05, the coefficient is statistically significant. Confidence interval ranges from the lower limit (Lower 95%) and upper limit (Upper 95%) of 125,49 to 194,44.

3 Conclusion

The evolution of the passenger road transport is strong influenced by the number of companies in the sector. The quality of the means of transportation may prove more important in consumers' along with the generous offers. Another factor that influenced these results may be the migration of passengers from rail to road transport which has the advantage of high accessibility, but also of better

starting hourly versus rail. The effects of private investment in the aviation sector are well reflected in the number of passengers who decide to use this mode of transport. Increasing the number of travelers from 2012 despite the decrease in the number of aircraft can be explained by increasing the frequency of flights operated by airlines, but also by increasing occupancy or by replace old aircraft with others that have a higher transport capacity. These results are of great importance for the national economy, it can represent a strong argument for stimulating private investment in both these sectors and also in markets such as rail and maritime transport. This stimulation can be promoted by lowering the tax burden, and by removing barriers to entry, so that private investors can easier capitalize on any opportunities that exist. The performed analyses should be interpreted with caution due to the impact of the economic crisis results. Because of that, future investigations are necessary in order to analyze the effects before and after the appearance of the economic crisis. The limitations of this study can be expressed by the fact that data on the number of road transport enterprises are not shared between public and private, so you cannot see exactly how the observed effects are due to the privatization itself and how much is due to the foundation of the new enterprise. By considering these limitations, it can be argued that the role of private enterprises in the two transport markets analyzed is important; its effects can be seen in the increasing number of passengers.

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