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Regional Dynamics in Romanian Counties: Convergence and Trade

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1. Introduction

The process of European integration beginning with the third stage of Economic and Monetary Union has intensified the coordination of the economic and sectoral policies of the EU Member States. The process of coordination has been done in order to harmonize national economic policy objectives to minimize the negative impact of economic policy measures taken by some EU member countries to other member countries and reduce the temptation for Member States to have an inadequate behaviour. In the case of Romania achieving real convergence was an essential goal for its integration into the European Union in 2007. The issue of convergence, both nominal and real, is very important not only from the policy perspective but also from the perspective of the theory of economic growth. From an economic policy point of view in the case of persistently large (or widening) gaps between poor and rich countries (regions) there could be a need for economic policy measures (domestic and international) to stimulate a catch-up process. The convergence issue is also relevant in the political context of European integration. The Article 2 of the Treaty of European Union stipulates itself that *"The Community shall have the task……to promote…… a high degree of convergence of economic performance……the raising of the standard of living and quality of life and economic and social cohesion and solidarity among Member States."* In a similar vein, article 130a stipulates that *"the Community shall aim at reducing disparities between the levels of development of the various regions including rural areas"*. Significant transfers have been provided for in the framework of the Structural and Cohesion Funds to support the process of economic convergence in the peripheral regions, i.e. regions with real per capita GDP significantly below the European Union average. From the perspective of the economic growth theory the reduction of existing gaps in developmental and income levels between countries and regions in other words the convergence of regional incomes is postulated by the neo-classical model of growth. The idea of a transitional growth path to a

steady state income on which growth rates decline is the fundamental theoretical ingredient of convergence analyses.

In this chapter we analyzed the growth dynamics in the Romanian economic over the period 1995-2008 and the link between the observed growth dynamics and the economic geography of the country. The analysis of the growth dynamics is carried out at county level and using different time spans. Regarding the time spans we have first decided to perform the analysis for the whole period 1995-2008. However due to the fact that within this timeframe at least two periods with different growth dynamics can be distinguished we have broken down the whole period into three subperiods, 1995-2000 a period of recession in the Romanian economy, 2000-2004 and 2004-2008 two periods of expansion and high growth. The analysis of the growth dynamics is followed by an econometric exercise which first tries to check for the (non)existence of convergence and then we have studied to which extend the economic geography of the country is a key ingredient in the observed growth dynamics. The results on the one hand show that disparities across Romanian counties regardless of the time period under analysis have not been narrowing away. On the other hand when we look at the factors behind the observed growth dynamics, the economic geography of Romania emerges as one of the key factors behind this divergence phenomenon. Finally we have also analyzed the main patterns of trade in the Romanian economy over the period 2000-2007. The results show that trade deficit in Romania is growing over time.

The rest of the chapter is structured as follows: Section 2 briefly reviews the neo-classical growth model as it constitutes the theoretical framework on which the empirical section of the first part of the chapter is based. Section 3 offers a thorough analysis of the growth dynamics in Romania over the period 1995-2008. Section 4 carries out an econometric exercise to link the economic Geography of the country with is growth performance over the period 1995-2008. Section 5 gives a general overview of the Romanian trade after the transition. Section 6 looks at the specialization patterns of the Romanian trade. Section 7 studies the geographical orientation of the Romanian exports. Section 8 analyzes in more detail the international trade during the financial crisis of the years 2008-2010 and finally section 9 establishes the main conclusions of the chapter

2. Theoretical framework: The neo-classical model of growth

2.1. The neo-classical model of growth

For most of the period since the end of the Second World War the analysis of economic growth has been dominated by debates which have swirled around the neo-classical growth model. The concept of convergence has its roots in this model generally referred to as the Solow model of growth and whose origin were the works of [1,2]. The basic neo-classical model describes a one-sector closed economy with a composite single "Robinson Crusoe" agent (Household/producer) who owns the inputs and manages the production process.

The following discussion of this model is based on chapter one of [3] (1995) book titled *Economic Growth*, chapter one of [4] (2000) book titled *Apuntes de Crecimiento Económico* and [5]´s book titled Advanced in Macroeconomics.

In the simplest form of the neo-classical model output Y at time t is a function of the variables physical capital $K(t)$ and labour $L(t)$ and the level of technology which is exogenous:

$$Y(t) = F(A(t), K(t), L(t)) \tag{1}$$

The central characteristics of the neo-classical model are the assumptions that (i) The level of technology is exogenously determined. (ii) The production factors labour and capital each have diminishing marginal products and (iii) The production function shows constant returns to scale. The level of technology $A(t)$ is considered as given. It is exogenously determined. In the long term, only a rise in technological level enables an increase in the steady state output. The assumption of a given technology to which every economy has free access is a strong simplification, given that technological progress is largely the result of research activities; however, there is some justification for this assumption. On a world-wide scale certain technological standards have been reached to which an economy can find more and more easily access (for instance software that one can download from internet sites). In general, the argument of equal access to available technology or fast technology diffusion can be considered to be valid for highly open economies with a similar level of basic education of the population.

Technology is treated as labour augmenting: $Y = f(K, L * A(t))$. It raises output in the same way as an increase in labour. (In this sense an innovation is Harrod neutral. i.e. the relative inputs shares $K * F_K / L * F_L$ are unchanged for a given capital/output ratio[1].

In the neoclassical model of growth a key assumption is that the marginal product of capital is positive but it declines with raising capital. Hence, all other factors equal, any additional amount of capital yield a decreasing rate of return in the production function. Under this condition, capital accumulation does not make a constant contribution to income growth. The assumption of diminishing returns has been heavily challenged by new growth theory which believes for instance human capital accumulation to yield constant returns, if not increasing ones- a possibility when considering knowledge spill-overs.

The condition of constant returns to scale implies that we can rewrite the production function in per capita terms. in its intensive form as it is also called:

$$y = f(k) \equiv F\left(\frac{K}{AL}, 1\right) = k^{\alpha} \tag{2}$$

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[1] An alternative assumption is that technological progress is Hicks neutral

2.2. Convergence in the neo-classical model of growth: Theoretical concept

The neo-classical model of growth postulates the convergence of regional incomes. Given the dynamics of this model of growth discussed in the previous section, one may expect that in a set of economies, which have the same steady state per capita income and which differ only in their initial capital endowment per person and per capita income, initially poor economies will grow faster than rich economies to converge finally to the same per capita income. In the literature, the phenomenon that poorer economies on average will grow faster than richer ones (over the long term) has been termed as β - *convergence*. Such differential growth is necessary to reduce the inter country variation of per capita income levels. A tendency for the dispersion of per capita incomes (as measured by their standard deviation) across a group of countries to fall over time has been labelled σ - convergence. Clearly, progress in σ -*convergence* is not only a function of the differential rates of growth between poorer and richer countries but also of the size of the initial income gap.

β -*convergence* is a necessary but not a sufficient condition for σ -*convergence*[2]. β - convergence implies the existence of a longer-term catch-up mechanism, i.e forces which work towards the narrowing of income differences across countries. These forces, however, can be offset by temporary shocks which adversely (or positively) affect short-run growth performance. This is why the existence of β -*convergence* may not be fully reflected in changes of the dispersion of income levels[3].

The basic kind of convergence to a common steady state is referred to *as absolute convergence* ([6, 3, 7, 8, 9, 10]). The assumption of a unique steady state will be only satisfied if all economies have the same fundamental parameters, i.e., saving rate, population growth, capital depreciation and above all the same level of technology. The view that economic growth is a complex function of a wide range of interrelated factors over and above traditional factor inputs has led some analysts to develop the idea of *conditional convergence*. This remains within the neo-classical framework but describes the tendency of countries to converge on their own long run equilibrium paths as a function of a number of preconditions or "conditioning variables", i.e richer economies converge towards a high level of income, whereas poor economies converge towards a lower level income level (see [11]). Differential growth rates then reflect the distance of countries from their own steady states[4]. This of course is a concept of convergence which has a completely different meaning from that of (absolute) β -*convergence.* In the case of groups of countries with broadly similar long-run equilibrium positions, there may be a tendency for (absolute) convergence within such groups (Convergence clubs) but not between them[5].

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[2] For a discussion of these convergence concepts see [12].

[3] See [14] and [15].

[4] [16], p.284.

[5] [17] Comparing income levels in 1870 and 1979, identified a group of 16 advanced economies in such a convergence club. It is noteworthy that he found also some tentative evidence for club convergence among a group of the former

2.3. Methodologies of convergence analysis

Convergence studies can be placed in three broad categories: Cross-Section studies for absolute and conditional convergence, panel data analysis and Markov chain analysis. I sketch their main arguments and characteristics here.

2.3.1. Cross section estimation of absolute convergence

[13] in their prominent paper titled "Convergence" (Journal of Political Economy, Vol. 100(2), April 1992, pp.223-249) estimate the absolute β convergence on the basis of a univariate cross-country regression of per capita income growth between year t and $t+T$ ($\frac{1}{T}\log\left(\frac{y_{i,t+T}}{y_{i,t}}\right)$) on the initial level of per capita income ($y_{i,t}$). The steady state income per capita of an economy is y_i^* and x_i^* is the steady state growth rate of output corresponding to the labour augmenting technological progress. So the specified equation to test β convergence would be:

$$\frac{1}{T} * \log\left[\frac{y_{i,t+T}}{y_{i,t}}\right] = x + \frac{(1-e^{-\beta*T})}{T} * \log\left[\frac{y_i^*}{y_{i,t}}\right] + u_{it,t+T} \tag{3}$$

In practice, estimation is effected with the reduced form ([3, 4]):

$$\frac{1}{T} * \log\left[\frac{y_{i,t+T}}{y_{i,t}}\right] = a + \frac{(1-e^{-\beta*T})}{T} * \log\left[y_{i,t}\right] + u_{it,t+T} \tag{4}$$

In this specification one does not find the steady state y^* or the steady state growth rate x. Both are contained in the intercept a:

$$a = x + \frac{(1-e^{-\beta*T})}{T} * \log(y_i^*) \tag{5}$$

2.3.2. Cross Section estimation of conditional convergence

The available empirical evidence does not support the universal convergence hypothesis: there is no systematic tendency for poor economies to grow faster than richer ones. In fact, the dominant feature has been for diverging productivity levels and real per capita incomes between the group of advanced industrialized economies on the one hand and the developing countries on the other[6]. There are, of course, some significant exceptions, such as

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centrally planned economies. A more restrictive form of the "club convergence" hypothesis is the requirement that countries are broadly similar both as regards their fundamental structural characteristics and their initial conditions [9].

[6] For this empirical evidence see [18, 19, 20, 4].

the East Asian growth rates. The general conclusion however, is that countries do not tend to converge to the same balanced growth path but rather settle on different ones. Such differences would lead to steady state differences. Conditional convergence is estimated on the basis of a multivariate regression analysis with initial income and a set of "conditioning variables" X_i as proxies for the determinants of the long-term balanced growth path of the individual economies.

The equation to estimate is the following one:

$$\frac{1}{T} * \log \left[\frac{y_{i,t+T}}{y_{i,t}} \right] = a + \frac{(1 - e^{-\beta * T})}{T} * \log \left[y_{i,t} \right] + X_i + u_{it,t+T} \qquad (6)$$

Conditional convergence exists if the coefficient on the initial income is negative. In other words, in case of conditional convergence there is a negative partial correlation between initial income per capita and subsequent growth.

2.3.3. Panel data estimation of convergence

Region-specific effects can be modelled by employing panel data estimation techniques. As a panel data estimation technique uses observations for several points in time it is built on a richer information set[7].

The general econometric specification of a panel data model is the following one:

$$\frac{1}{T} * \log \left[\frac{y_{i,t+T}}{y_{i,t}} \right] = a_i - \frac{1}{T}(1 - e^{-\beta * t}) * \log \left[y_{i,t} \right] + \psi_{t,t+T} + u_{it,t+T} \qquad (7)$$

However in order to use OLS in the estimation, the coefficient $\frac{1}{T}(1 - e^{-\beta * t})$ is changed by a general coefficient b an the equation can be rewrite in the following way.

$$\frac{1}{T} * \log \left[\frac{y_{i,t+T}}{y_{i,t}} \right] = a_i - b * \log \left[y_{i,t} \right] + \psi_{t,t+T} + u_{it,t+T} \qquad (8)$$

where the error term are composed of a_i an unobserved individual effect which is constant over time, a time-specific factor $\psi_{t,t+T}$ which equally effects all individuals and a random error $u_{it,t+T}$.

The average growth rate between t and $t+T$ should be negatively related to the initial logarithm of the per capita income level $\log(y_{i,t})$. This relationship is represented by the common coefficient b. The region-specific fixed effect present over the whole sample period is captured with a_i. The term $\psi_{t,t+T}$ represents the time-specific effect affecting all

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[7] [23] show that cross-section analysis lead to a systematic downward bias of the convergence coefficient due this technique neglects unobservable factors and hence suffers an omitted variable bias.

individuals in period t, $t+T$. This specification of the model means that we estimate convergence through a two-way fixed effects model (see [21, 22]).

The region-specific fixed effect a_i determines the region´s steady state income. This fixed effect is a concept similar to taking explanatory variables or country dummy variables in the conditional convergence analysis. The difference with the conditional convergence analysis is that panel data estimation allows for continuous individual conditional effects while the former assumes to identify groups of individual units.

## 3. Growth dynamics at the Romanian county level

This section analyses the growth dynamics across Romanian counties over the period 1995-2008. Figure 1 plots the 1995-2008 average real per capita GDP growth rate at county level. During this period we can see that 23 counties are growing below the national average per capita GDP growth rate and 19 counties are growing above the average. Map 1 shows that the poorest regions are in the East, South-East and South parts of the country and the richest counties are in the West and North-West parts of Romania. The county of Covasna located in the center of the country with its high mountainous geography can be considered an exception.

Source: Own elaboration based on INSSE and Eurostat data
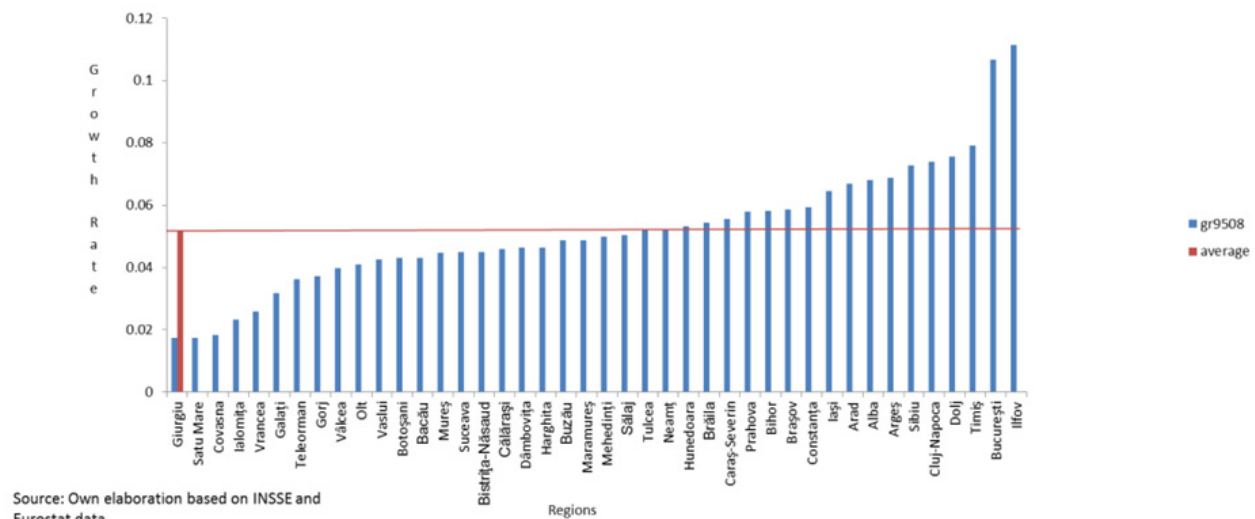
Figure 1. Average growth rate in Romanian counties: 1995-2008

Map 1 shows very clearly the different growth paths across Romanian counties. Giurgiu, Ialomita and Gorj at the lower end of the growth scale can be seen as isolated counties in the sense that they are not sorrounded by other counties wich feature the same growth path. Only Covasna and Vrancea are neighbors within this group. At the upper end of the scale. the best performing counties are situated in the West part of the country and Transilvanya with the exception of the capital Arges and Dolj. It is also worth to remark that the next group of counties which are above the lower end in terms of growth rates are place mainly in the North-East economic region with the exception of three counties from the Center economic region and another three counties from the South-Muntenia economic region.
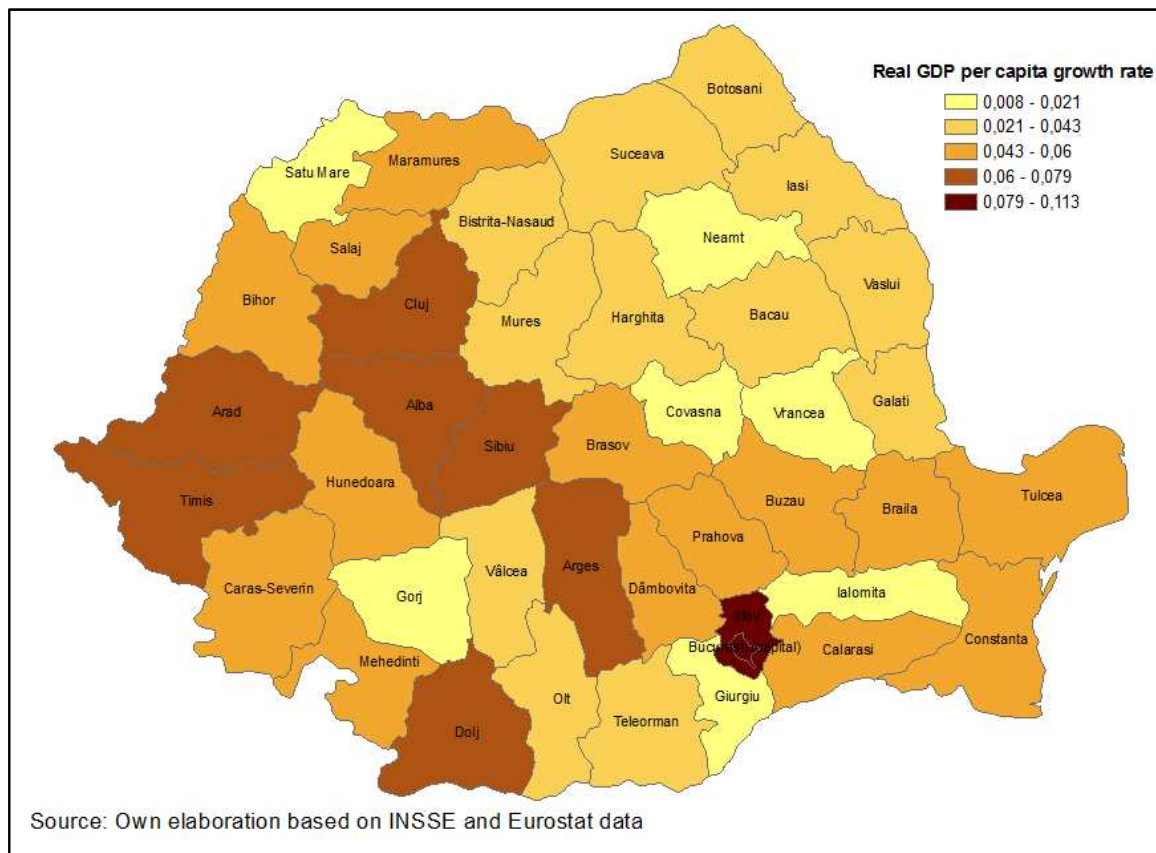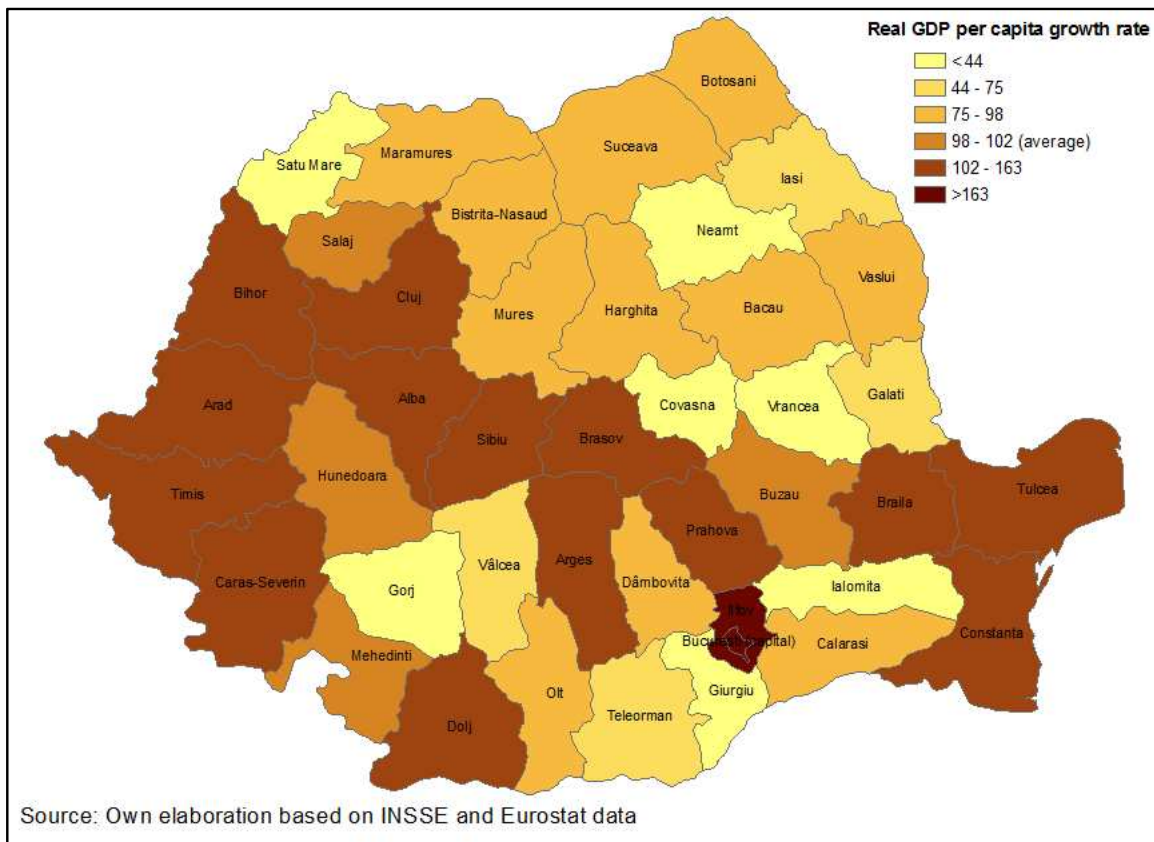
Map 1. Growth rate of Romanian regions 1995-2008

If we standardized the value of the national average per capita GDP growth rate and compute each county´s relative ratio to the national average a much clearer picture about those counties which perform better and worse than the national average and how are they spatially distributed can be obtained. The results of this transformation can be seen in map 2. From the map it can be seen that 18 counties plus the capital are situated above the national average and 23 counties are below this average. Among the highest disparities between neighboring counties in a spatial sense are the cases of the Bucharest-Ilfov county and Giurgiu and Ialomita counties. Giurgiu and Ialomita ratio is 44% whereas the Bucharest-Ilfov region ratio with the national average is situated 163% above it. Again the map shows that the Western parts of the country are emerging among the best performers.

Figure 2 represents the average per capital GDP growth rate in Romanian regions in the years of the economic crisis of the 90s. 19 counties are situated below the national average per capita GDP growth rate, most of them from the Eastern and Southern parts of Romania. The most spectacular fall in growth was registered in the Neamt county (North-East) with almost a -20% per capita GDP growth rate. During this period only five counties have registered positive growth rates. Map 3 provides us with an image of the spatial distribution of counties according their respective growth rates.

Map 2. Growth rate in Romanian regions 1995-2008 (average pcGDP growth=100, 1995)
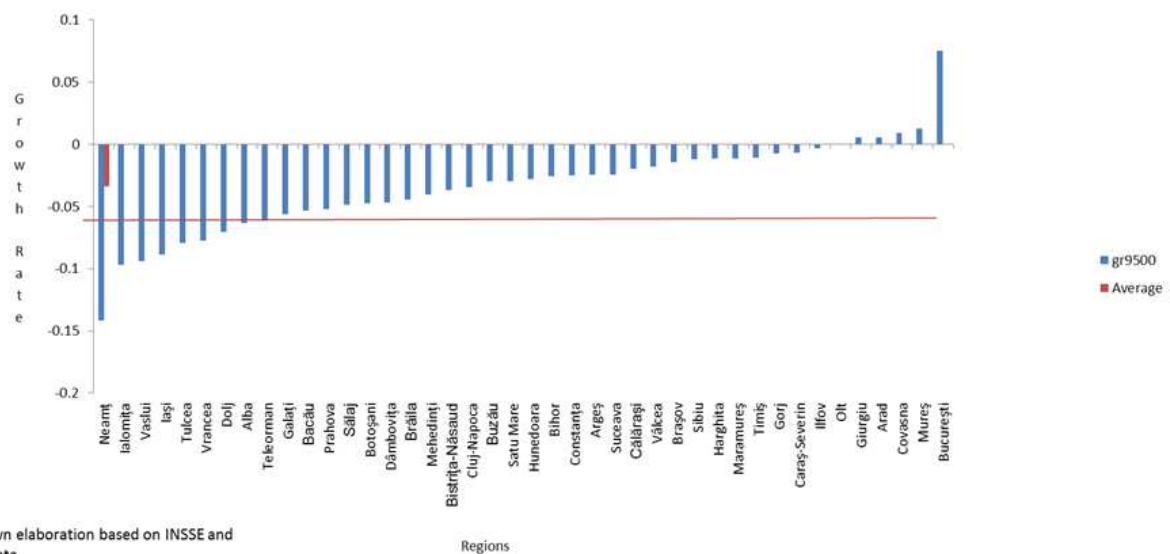
Figure 2. Average Growth Rate in Romanian counties: 1995-2000

After the economic crises in the last half of the nineties and the implementation of the economic reforms and new elections in 2000 a totally new economic landscape showed up for Romania. New economic activities were boosted and the growth rates in some counties reached values between 15 to 18%. This positive economic trend was in part helped by a European favorable economic climate. Under these circumstances during the period 2000-

2004 (figure 3) 19 Romanian counties experienced a rapid economic growth above the national average and just 2 counties from the South experienced a growth rate just below 5%. One of the most relevant cases is the Giurgiu county which continued in recession until 2004. In the period 2004-2008 this position was taken by the Covasna county. Both counties are the poorest counties in Romania.
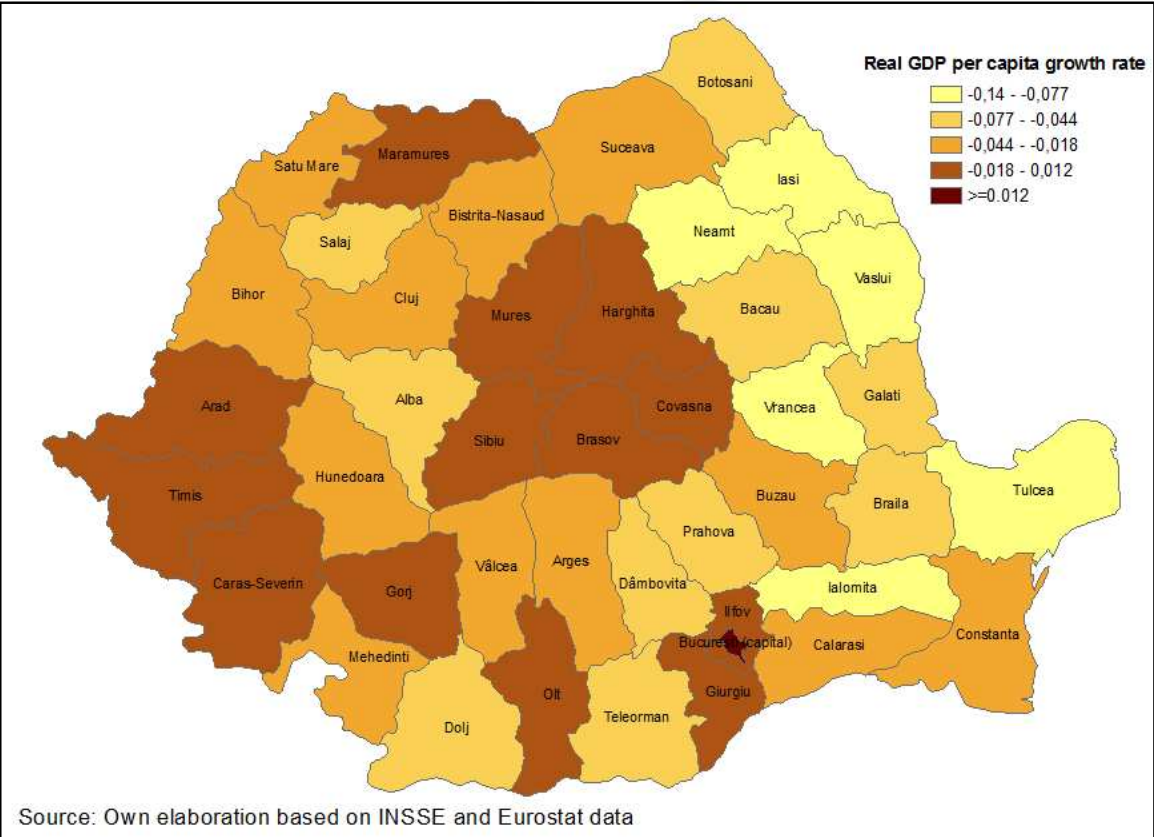
Map 3. Growth rate in Romanian regions 1995-2000
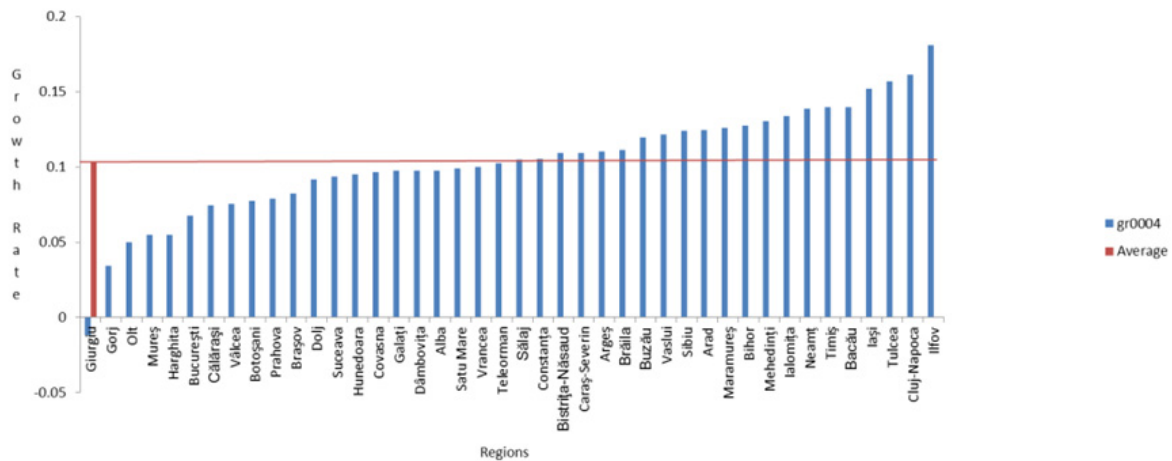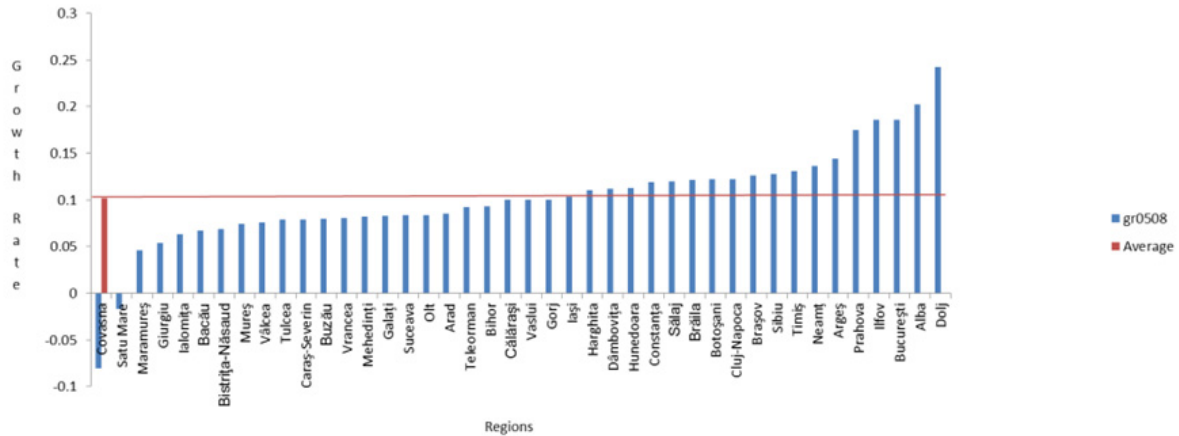

Source: Own elaboration based on INSSE and Eurostat data

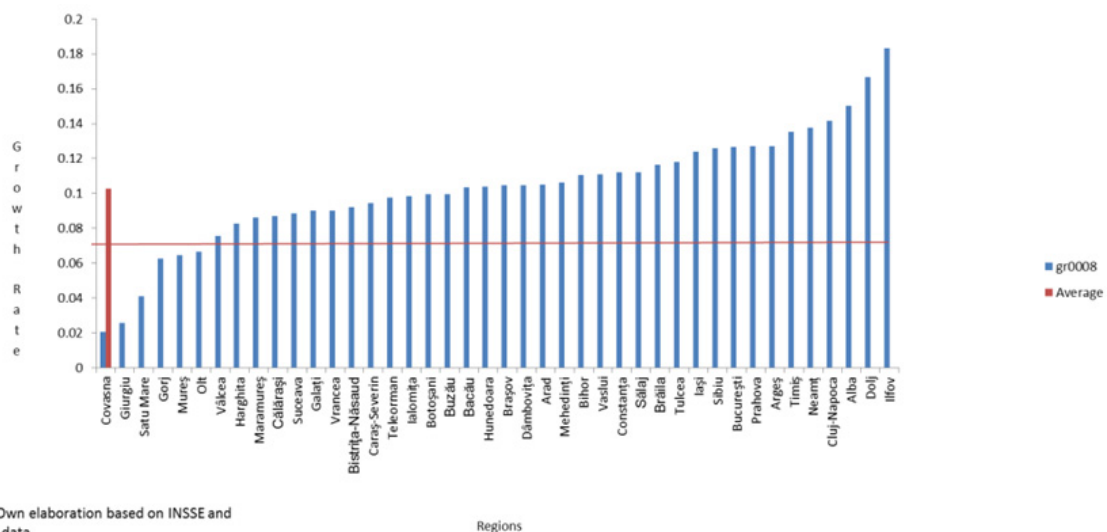**Figure 3.** Average Growth Rate in Romanian counties: 2000-2004

The economic boom in the first half of the 2000s continued in the period 2004-2008 (figure 4) although with a mild reduction in growth rates with respect to the previous period. However. even during this period some counties outperform their previous growth rate values such as Bucharest with a 20% growth rate two points above its average growth rate in 2000-2004. Again the countries from the West parts of Romania remain as the ones performing above the national average growing on the range 11-16% annualy.

Source: Own elaboration based on INSSE and
Eurostat data

Figure 4. Average Growth Rate in Romanian counties: 2004-2008

In order to wrap up some final conclusions on the economic boom from 2000 onwards we have merged in figure 5 the growth rates across Romanian counties for 2000-2008. It is worth remarking that many counties during this period have experienced growth rates well above the national average and the majority of the good performing counties are located in the West and Center parts of Romania (map 4). The capital once again highlights being the leader in terms of economic growth and the Covasna and Giurgiu counties experienced the lowest growth rates during this period.

Source: Own elaboration based on INSSE and
Eurostat data

Figure 5. Average Growth Rate in Romanian counties: 2000-2008

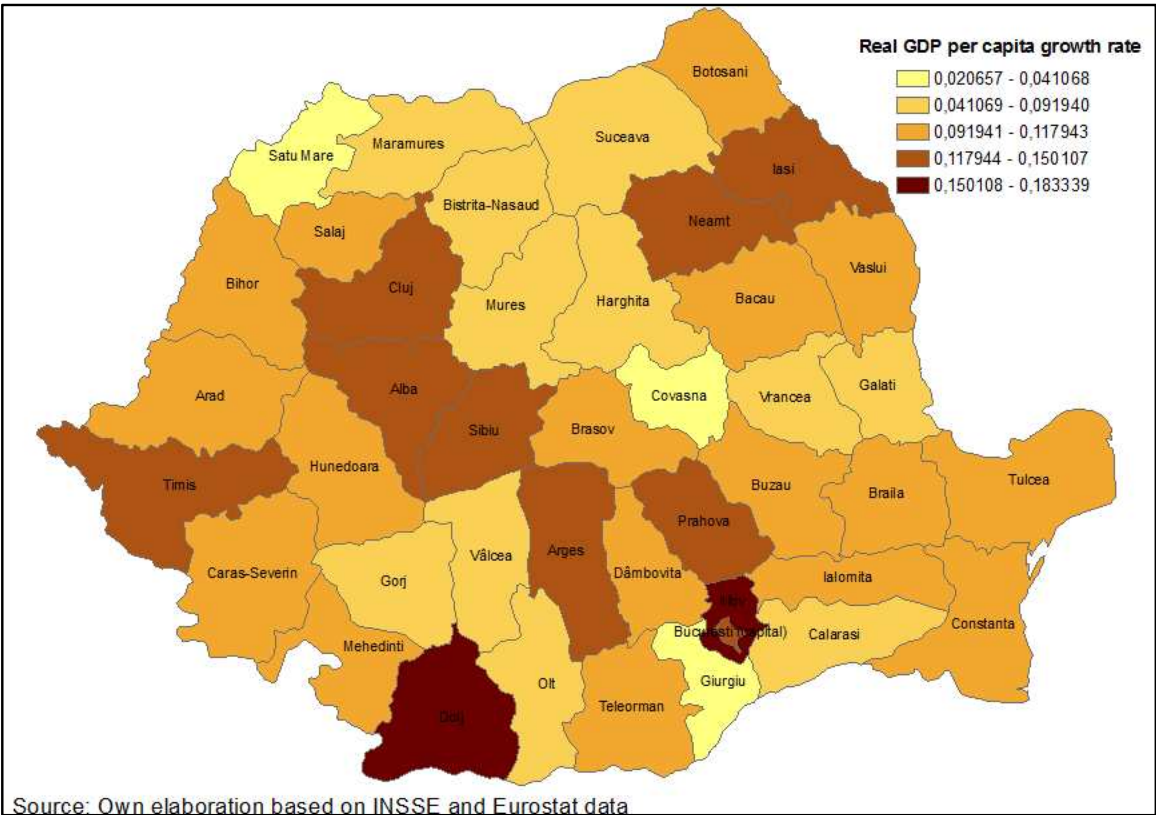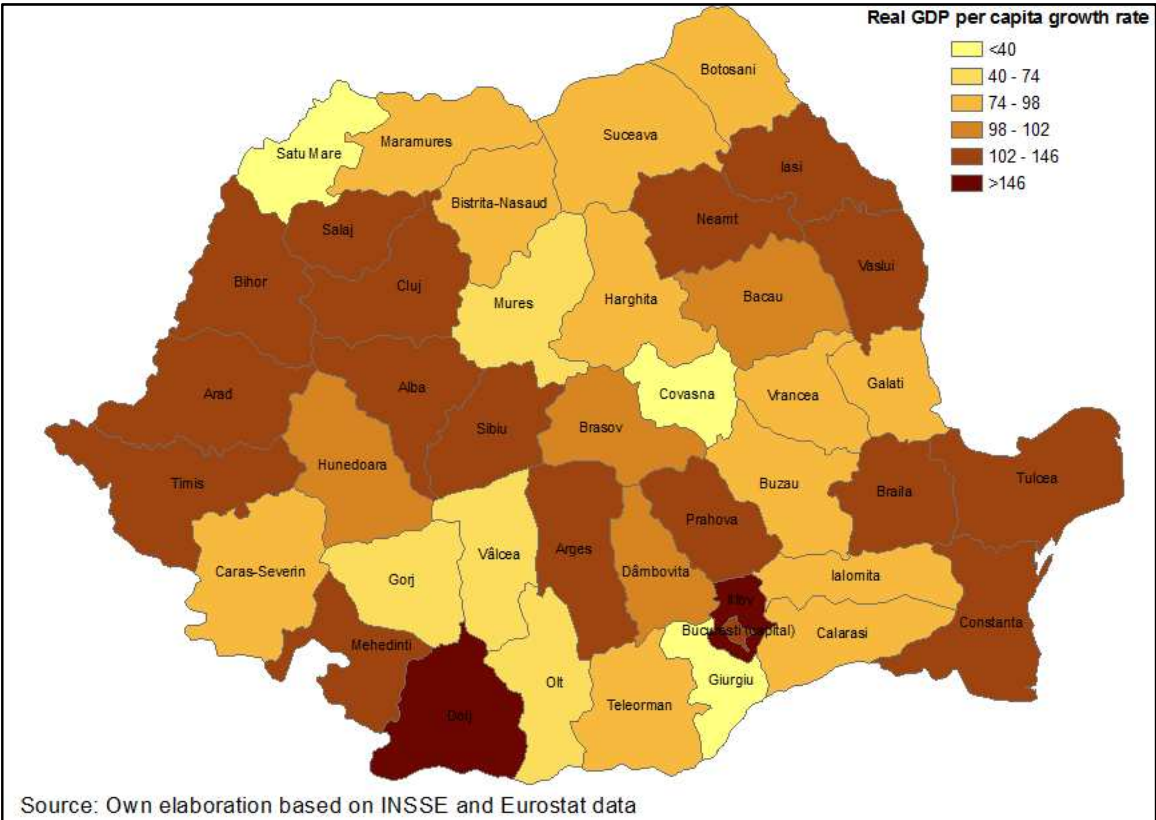**Map 4.** Growth rate in Romanian regions 2000-2008

Map 5. Growth rate in Romanian regions 2000-2008 (Average pcGDP growth rate = 100, 2000)

Computing the county ratios of the per capita GDP growth rates with respect to the national average give a quite interesting picture (map 5). The Giurgiu, Covasna and Satu Mare counties are the counties located at the lower end of the index (below 40% with respect to the national average). On the upper end of the scale are Bucharest and Dolj county (above 146% of the national average). The West economic region jointly with North-West and Center economic regions were the leading regions that boost the Romanian economy during the 2000-2008 period due mainly to the high investments in the auto-motion electronic industry (Timis, Cluj, Sibiu and Bihor county).

4. Growth dynamics and economic geography in Romania: 1995-2008

In this section we will perform an econometric exercise to test for the pattern of divergence found in the analysis of the Romanian growth by typology of region. In this section we test to which extend variations in regional market access over time have an impact on the growth rates observed across the different periods under scrutiny. Therefore, we will carry out OLS estimations regressing growth rates for three periods, 1995-2008, 1995-2000 and 2000-2008 against the initial level of GDP per capita in 1995, 1995 and 2000 respectively and the increase in regional market potential observed over the period under analysis. The data for this analysis comes from the Romanian National Institute of Statistics located in Bucharest (INSSE) which offers data on nominal GDP per capita (GDP p.c.) in the Romanian currency "new leu" (RON) at different levels of desegregation Nuts 1, Nuts 2 and Nuts 3[8] and data on annual inflation rates at country level. In our case and following the vast majority of European regional convergence analysis, we will use data for the 42 counties in which Romania is divided at Nuts 2 level. The reason why we have chosen 1995 as our initial year is due to problems with data availability and comparability. The Romanian National Institute of Statistics does not have data on GDP per capita for the years 1990-1994 at Nuts 2 level. However we could resort to use Eurostat data which is available since 1993 but these data is not computed using the same methodology since the data for the period 1993-1997 are calculated according to the ESA 79 methodology and from 1995 onwards according to the ESA 95 methodology. Therefore we have decided to start with the year 1995 in order to avoid comparability problems. Before carried out our estimations we have transformed our nominal per capita GDP figures into real values by building up a GDP deflator using the information on the annual inflation rates from the INSSE database. Regarding the other key variable, the increase in the regional market access for the different periods of time, we have first computed the regional market potential for the years 1995, 2000 and 2008 by resorting to the well-known [24]' (1954) market potential function. If we consider a world made up of n regions; i:1……..n, the Harris' (1954) market potential in the ith region can be obtained as a weighted sum of the volume of economic activity in the surrounding locations where the weighed scheme is the inverse of the distance between

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[8] Nomenclature of Territorial Units for Statistics is a geographical division of the European Union's territory that subdivides each Member State into a whole number of regions at NUTS 1 level. Each of them is then subdivided into a number of regions at NUTS 2 level and these again are subdivided into a number of regions at NUTS 3 level.

locations. Mathematically, [24]´s (1954) market potential in its simplest formulation obeys to the following expression:

$$MP_i = \sum_{j=1}^{n} Y_j g(d_{ij}) \tag{9}$$

where MPi is the market potential on location I, Y_j is an index of purchasing capacity of location j (usually gross value added, gross domestic product or population), d_{ij} is the distance between two generic locations i and j and g(·) is a decreasing function. The market potential function can be understood as a measure of how far a location is from its consumer markets and therefore it can be used as a proxy for the demand potential that the whole population exerts over every location in the space. Therefore the higher is the market potential index of a location; the higher is its attraction power on production activities.

In our case we will compute market potentials for the years 1995. 2000 and 2008 proxying the volume of economic activity by the real Gross valued Added. In a second step we will compute the increase in regional market potentials over the period on which we run the estimations. Regarding the calculation of bilateral distances in the market potential function it is made on the basis of the road distances expressed in kilometres between the capital cities of each Nuts 2 region in which Romania is divided. For the calculation of the internal distance within each Nuts 2 region, it is approximated by a function that is proportional to the square root of each regions´ area. The expression used is $0.66\sqrt{\dfrac{Area}{\pi}}$ where area is each region area expressed in squared kilometres (km2). This expression gives the average distance between two points on a circular location (see [25, 26, 27]) for a discussion of this measure of internal distance).

Therefore the model adopts the following form:

$$\log\left[y_{i,t+T} \Big/ y_{i,t} \right] = \alpha + \beta \log\left[y_{i,t} \right] + \gamma \log[\Delta MP_{i,t,t+T}] + u_{it,t+T} \tag{10}$$

The term on the left-hand side of the equation is the growth of per capita GDP from the base year t to the year t+T. Initial per capita GDP in region i is given by $y_{i,t}$. $\Delta MP_{i,t,t+T}$ represents the change in market potentials between the base year t and the year t+T and and $u_{i,t,t+T}$ is the disturbance term.

All data are nationally standardized in order to minimize spatial autocorrelation problems. Thus, our variables are indices of how well a county region is doing with respect to its national average or how much market potential a county has in relation to the national average. Results will tell us to which extend variations in market potentials are affecting counties 'performance. (see [xx]) [xx] Lopez-Rodriguez, J. Cosmin-Bolea, G. and A. Faiña (2011). Economic Remoteness and Wage Disparities in Romania, Tijdschrift voor economische en sociale geografie, Vol(102) 5, pp. 594–606.

Table 1 presents the results of estimating equation (10) on the sample of 42 regions in Romania for the periods 1995-2008. 1995-2000 and 2000-2008. In Columns 1 we regress the average per capita GDP growth rate in the period 1995-2008 on the 1995 per capita GDP level. In column 2 we regress the average per capita GDP growth rate in the period 1995-2000 on the 1995 per capita GDP level and in column 3 we regress the average per capita GDP growth rate in the period 2000-2008 on the 2000 per capita GDP level. The results of these first set of estimations show that the coefficient of the initial level of GDP per capita in each period is always positive and significant, signalling the process of regional divergence. Columns 3 to 6 introduce the effect of the variation in the market potentials over time. The results of these last set of estimations show once again that even after controlling for the effects of changes in regional market potentials over time the initial level of per capita GDP levels is positive and statistically significant. Moreover our results also point out to the fact that regional changes in market potentials positively affect Romanian cross-regional growth rates. This result is consistent with a pattern of divergence in income levels among Romanian regions, pattern we have already seem in the previous section of this chapter.

Dependent Variable	per Cápita GDP Growth					
	1995-2008	1995-2000	2000-2008	1995-2008	1995-2000	2000-2008
Regressors	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.69**	-0.25	0.94**	0.56**	-0.22	0.94**
	(0.06)	(0.25)	(0.04)	(0.09)	(0.26)	(0.095)
Log per cápita GDP 1995	0.29**	1.44**		0.52**	1.42**	
	(0.04)	(0.17)		(0.04)	(0.18)	
Log per cápita GDP 2000			0.026**			0.034**
			(0.009)			(0.01)
Log inc MPGDP1995-2008				0.11		
				(0.05)		
Log inc MPGDP1995-2000					0.020**	
					(0.009)	
Log inc MPGDP2000-2008						0.094
						(0.01)
Estimation	OLS	OLS	OLS	OLS	OLS	OLS
R2	0.55	0.69	0.51	0.59		0.57
Prob (F-statistic)	0.00	0.00	0.00	0.00	0.00	0.00
Number observations	42	42	42	42	42	42

Note: Table displays coefficients for OLS estimations and Huber-White heterocedasticity robust standard errors in parenthesis. The dependent variable is the log of per capita GDP growth in the years 1995-2008, 1995-2000 and 2000-2008 (Columns 1, 2, 3, 4 and 6) . Log per capita GDP1995 and 2000 is the logs of per capita gross domestic product in the years 1995 and 2000. Log inc MPGDP1995-2008, 1995-2000 and 2000-2008 are the increases in market potentials between 1995-2008, 1995-2000 and 2000-2008 respectively. For data sources see text. * and ** signify statistical significance at the 5% and 1% levels

Table 1. Regional Growth estimations

5. Romanian trade after the transition: General overview

After 1989 the volume of Romanian international trade was very much affected by the national economic crisis. the collapse of CAER and the cold relations with Yugoslavia (because of the war) and the conflicts in the Arab countries[9]. On top of these issues we have to add the imbalances of the Romanian economy characterized by an over dimensioned industrial structure, the lack of leading technology industries and a clear development strategy at national level. Moreover, for many Eastern European economies was very difficult to reconstruct flows based on market economy grounds. Technical standard differences between Eastern and Western Europe trade goods led to a reorientation of exports towards low value added ones.

During the mid-nineties Romania exports, following other former socialist countries in Central Europe, were mainly directed to EU countries. In 1997 Romanian exports to the EU represented 55% of total exports, being the most important trade partner. However, still nowadays Romanian international trade has a marginal position within the framework of world international trade flows.

Year	Export FOB	Import CIF	Balance (Export FOB-Import CIF)	Year	Export FOB	Import CIF	Balance (Export FOB-Import CIF)
1990	5.775	9.755	-3.980	1999	8.505	10.392	-1.887
1991	4.266	5.793	-1.527	2000	10.367	13.055	-2.688
1992	4.363	6.260	-1.897	2001	11.385	15.552	-4.167
1993	4.892	6.522	-1.630	2002	13.876	17.862	-3.986
1994	6.151	7.109	-958	2003	17.618	24.003	-6.385
1995	7.910	10.278	-2.368	2004	23.485	32.664	-9.179
1996	8.085	11.435	-3.350	2005	27.730	40.463	-12.733
1997	8.431	11.280	-2.849	2006	32.336	51.106	-18.770
1998	8.302	11.838	-3.536	2007	40.471	70.414	-29.943

Table 2. Commercial balance of Romania during 1990-2007 (billion dollars)
Source: Romanian Institute for National Statistics (INSSE)

Table 2 gathers data on the evolution of exports[10], imports and trade balance (figures expressed in billion US dollars) for Romania over the period 1990-2007. In a similar vein to the division carried out for the analysis of the growth dynamics across Romanian regions in the previous sections of the chapter, international trade flows can be broken down into three sub periods: a) 1990-1995 a period characterized by an increase in the volume of trade both in exports and imports. Regarding the exports they increase in this period from 4.2 billion US dollars to 7.9 billion of US dollars (an increase of 85% in the value of exports and from

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[9] According to the WTO, Romania was ranked in 38 place in 1988 in terms of world exports, in 1996 was ranked 59 and in 2010 in 50 place.
[10] See Annex for methodology of trade data gathering
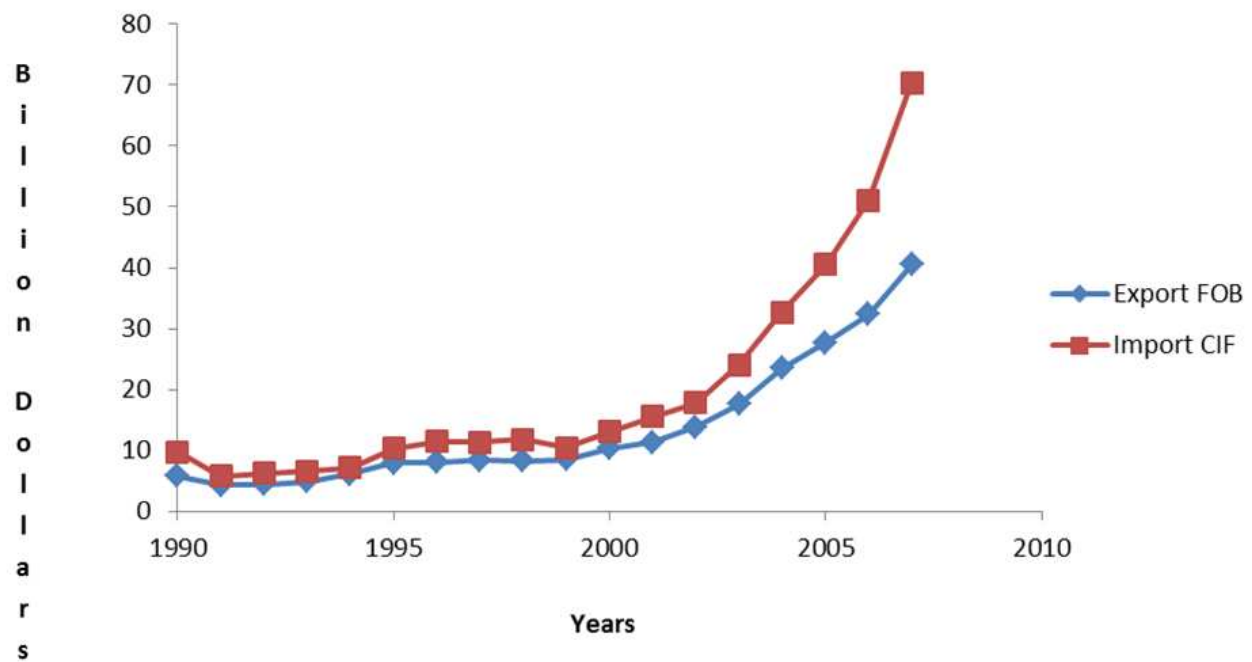
Figure 6. Comercial Balance of Romania: 1990-2007
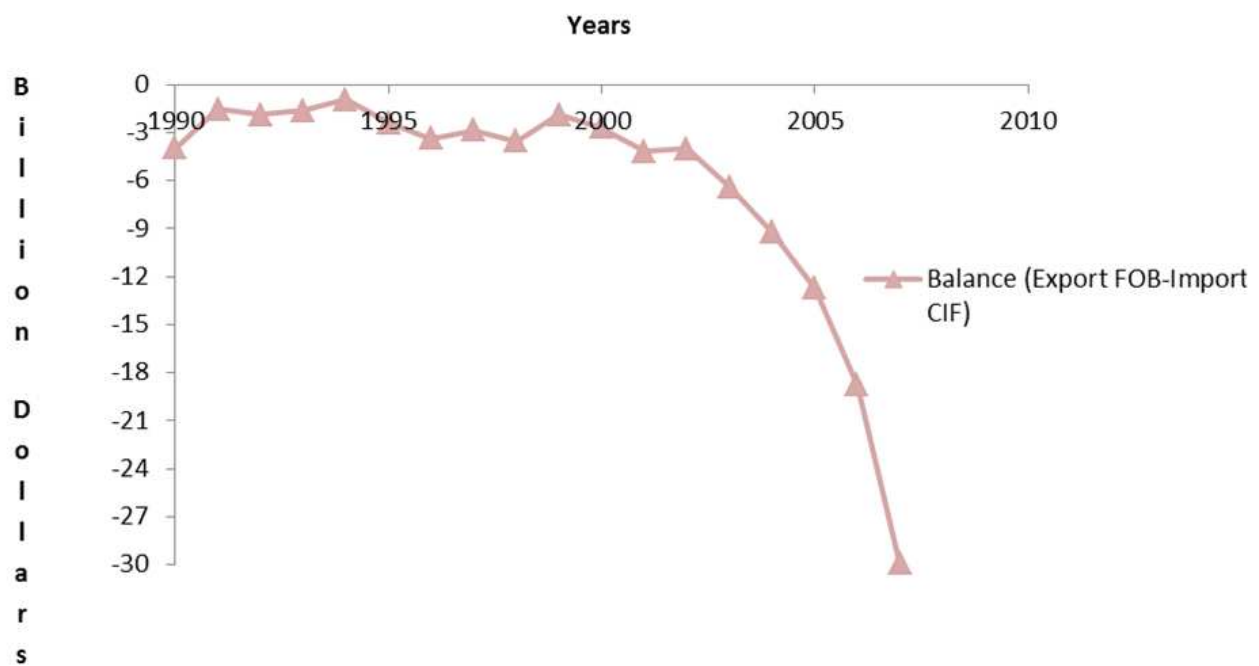
Figure 7. Trade deficit in Romania: 1990-2007
Source: Own elaboration based on INSSE figures

5.79 billion US dollars to 10.2 billion US dollars (77% increase in imports), b) 1996-1999 a period characterized by stagnation in the trade volumes. During this period the Romanian exports practically kept unchanged whereas the imports decrease by 1 billion of US dollars, c) 2000-2007 a period characterized by a boom in terms of the volume of trade between Romania and its trade partners, mainly due to the extraordinary growth of the Romanian economy over this period and also for the positive result of the reforms in the economic

structure. The exports move up from 10 billion of US dollars to 40 billion of US dollars over this period and the imports form 13 billion of US dollars to 70 billion of US dollars, figures which expressed in percentage terms mean an increase of 290% the volume of exports over the course of this seven years and 439% increase in the volume of imports in the same period. As a result in this period the trade deficit increased substantially. from 3 billion US dollars to almost 30 billion of US dollars mainly as a consequence of a process of intensification in the integration of the Romanian economy into the European economy and the rest of the world.

6. Specialization patterns of Romanian trade: 2000-2007

As regards to the exports, Romania is specialized in sectors which are mainly labor intensive (clothing. footwear and furniture) and also in those which are intensive in the use of natural resources (steel products, wood and non-ferrous metals). On the import side, Romanian economy imports are from sectors which are capital intensive.

Tables 3 and 4 (see appendix) show the composition of the Romanian exports by groups of goods and the relative share each group represents in the total volume of exports over the period 2000-2007.

Table 3 breaks down Romanian exports into 10 groups over the period 2000-2007. The data show that the most dynamic groups both in terms of trade volumes and growth are the group of Machinery and transport equipment with an increase over the period 2000-2007 of 372%. This group is followed by the group of manufactured goods classified mainly by raw material with an increase of 194%, the group of mineral fuels, lubricants and materials derived with an increase of 176% and the group of Chemicals and related products not elsewhere with an increase of 157%. One important group of goods in terms of trade volumes but with a much lower dynamism in terms of growth is the second group miscellaneous manufactured articles with an increase of 59%.

A series of observations can be made from data collected in tables 3 and 4:

a. There is a change in the relative importance of the goods exported. In 2000 the group of goods with the highest share in total exports was miscellaneous manufactured articles (36.64%), followed by manufactured goods classified mainly by material: leather, rubber, wood, fabrics, iron, steel nonferrous metals, etc.(19.49%) and machinery and transport equipment (18.91%). By 2007 the group of goods with the highest share in total exports was machinery and transport equipment (34.06%), followed by manufactured different articles (22.31%) and manufactured goods classified mainly by raw material (21.87%)

b. The share of these three groups of goods in the total amount of goods exported increase from 2000 to 2007 representing in the year 2000 over 75% of total exports and in 2007 over 78% of total exports;

c. The lowest share of exported goods is represented by oils, fats, waxes of animals and plants, beverages and tobacco with a total percentage of 0.41% in the year 2000 and 0.87% in 2007.

Group number	Type of goods	2000	2001	2002	2003	2004	2005	2006	2007
1	Machinery and transport equipment	2.132	2.525	3.106	3.356	4.491	5.663	7.738	10.064
2	Miscellaneous manufactured articles	4.131	5.120	5.734	6.071	6.435	6.600	6.666	6.593
3	Manufactured goods classified mainly by raw material	2.197	2.400	2.756	3.019	4.024	4.654	5.234	6.462
4	Mineral fuels. lubricants and materials derived	809	794	1.160	1.023	1.282	2.378	2.597	2.238
5	Chemicals and related products not elsewhere	658	659	686	746	1.039	1.277	1.465	1.693
6	Raw materials inedible. excluding fuels	1.019	778	801	974	1.147	1.078	1.469	1.572
7	Food stuff and animals alive	268	358	359	344	404	489	563	658
8	Beverages and tabacco	25	38	46	37	31	31	46	195
9	Oils. fats and waxes of animal and plants	21	27	9	27	64	63	58	62
10	Goods and transactions not classified in another section of CSCI	13	23	18	17	18	22	14	12
	TOTAL EXPORT	**11.273**	**12.722**	**14.675**	**15.614**	**18.935**	**22.255**	**25.850**	**29.549**

Table 3. Romanian Exports by groups of goods (Billion euros)
Source: Own elaboration based on INSSE figures

With regard to Romanian imports, tables 5 and 6 (see appendix) show the total value of imports by category of goods and the relative share each category represents in the total amount of goods imported over the period 2000-2007. The increase in the volumes of import goods over the period 2000-2007 is bigger than the increase in the volumes of the export goods. The value of imports increase from 14.235 million euro in 2000 to 51.322 million euro in 2007 (360.53% increase) compared with an increase from 11.273 million euro in 2000 to 29.549 million euro in 2007 (262% increase) in the value of export goods.

Group number	Type of goods	2000	2001	2002	2003	2004	2005	2006	2007
1	Machinery and transport equipment	18.91	19.85	21.17	21.49	23.72	25.45	29.93	34.06
2	Miscellaneous manufactured articles	36.64	40.25	39.07	38.88	33.98	29.66	25.79	22.31
3	Manufactured godos classified mainly by raw material	19.49	18.86	18.78	19.34	21.25	20.91	20.25	21.87
4	Mineral fuels. lubricants and materials derived	7.18	6.24	7.90	6.55	6.77	10.69	10.05	7.57
5	Chemicals and related products not elsewhere	5.84	5.18	4.67	4.78	5.49	5.73	5.67	5.73
6	Raw materials inedible. excluding fuels	9.04	6.12	5.46	6.24	6.06	4.84	5.68	5.32
7	Foodstuff and animals alive	2.38	2.81	2.45	2.20	2.13	2.20	2.18	2.23
8	Beverages and tobacco	0.22	0.30	0.31	0.24	0.16	0.14	0.18	0.66
9	Oils. fats and waxes of animal and plants	0.19	0.21	0.06	0.17	0.34	0.28	0.22	0.21
10	Goods and transactions not classified in another section of CSCI	0.11	0.18	0.12	0.11	0.10	0.10	0.05	0.04
	TOTAL EXPORT	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Table 4. Share of exports by groups of goods (%) Source: Own elaboration based on INSSE figures

With regard to the type of goods imported by the Romanian economy, the most relevant group both in terms of amounts, relative share and growth over the period is represented by machinery and transport equipment (group 1) with an increase from 4.1 billion euros in 2000 to almost 20 billion euros in 2007 followed by manufactured goods classified mainly by raw material (group 2) and mineral fuels, lubricants and materials (group 3) with an increase in the volume of imports from 3.8 and 1.7 billion euros in 2000 to 11.8 and 5.5 billion euros in 2007 respectively.

In terms of relative shares the following observations can be made:

a. Machinery and transport equipment is the type of goods with the highest share in total imports over the period: 29.27% in the year 2000 and 38.33 in the year 2007
b. Raw materials (group 2), mineral fuels, lubricants and materials (group 3) and miscellaneous manufactured articles (group 5) which are the second, third and fourth most important group of goods in terms of imports are losing importance over the period. In 2000 their relative shares were 26.70%, 12.08% and 10.88 whereas in 2007 they were 23.15, 10.73 and 8.91 respectively.
c. The share of the first three groups of goods in the total amount of goods imported increased slightly from 2000 to 2007 representing in the year 2000 around 68% of total imports and in 2007 around 72% of total imports;

Group number	Type of goods	2000	2001	2002	2003	2004	2005	2006	2007
1	Machinery and transport equipment	4.168	4.848	5.323	6.251	8.548	10.819	14.415	19.671
2	Manufactured goods classified mainly by raw material	3.801	4.861	5.496	5.942	6.908	7.955	9.514	11.879
3	Mineral fuels. lubricants and materials derived	1.720	2.195	2.103	2.312	3.114	4.548	5.517	5.509
4	Chemicals and related products not elsewhere section specified	1.417	1.721	2.032	2.186	2.727	3.324	4.315	5.238
5	Miscellaneous manufactured articles	1.550	1.892	2.171	2.415	2.581	3.100	3.683	4.574
6	Foodstuff and animals alive	774	1.060	905	1.204	1.297	1.528	1.833	2.664
7	Raw materials inedible. excluding fuels	610	578	597	631	778	903	1.013	1.326
8	Beverages and tobacco	158	185	176	199	260	308	363	312
9	Oils. fats and waxes of animal and plants	37	43	77	59	64	78	87	143
10	Goods and transactions not classified in another section of CSCI	0	0	1	2	4	5	6	6
	TOTAL	14.235	17.383	18.881	21.201	26.281	32.568	40.746	51.322

Table 5. Romanian Imports by groups of goods (Billion euros) Source: Own elaboration based on INSSE figures

Group number	Type of goods	2000	2001	2002	2003	2004	2005	2006	2007
1	Machinery and transport equipment	29.27	27.89	28.19	29.48	32.52	33.22	35.38	38.33
2	Manufactured goods classified mainly by raw material	26.70	27.96	29.11	28.03	26.29	24.42	23.35	23.15
3	Mineral fuels. lubricants and materials derived	12.08	12.63	11.14	10.90	11.85	13.96	13.54	10.73
4	Chemicals and related products not elsewhere section specified	9.95	9.90	10.76	10.31	10.38	10.21	10.59	10.21
5	Miscellaneous manufactured articles	10.88	10.88	11.50	11.39	9.82	9.52	9.04	8.91

Group number	Type of goods	2000	2001	2002	2003	2004	2005	2006	2007
6	Foodstuff and animals alive	5.44	6.10	4.79	5.68	4.93	4.69	4.50	5.19
7	Raw materials inedible. excluding fuels	4.28	3.33	3.16	2.98	2.96	2.77	2.49	2.58
8	Beverages and tobacco	1.10	1.06	0.93	0.94	0.99	0.95	0.89	0.61
9	Oils. fats and waxes of animal and plants	0.30	0.25	0.41	0.28	0.24	0.24	0.21	0.28
10	Goods and transactions not classified in another section of CSCI	0	0	0.01	0.01	0.02	0.02	0.01	0.01
TOTAL		100	100	100	100	100	100	100	100

Table 6. Share of Imports by groups of goods (%) Source: Own elaboration based on INSSE figures

7. Geographical orientation in exports and imports in Romania 2000-2007

Many political factors influenced the economic trade of Romania during the ´90s (Yugoslavia´s war, abolition of CAER, Arab conflicts). However, the transition of the Romanian economy towards a market economy meant also a new step in international trade basically with the reorientation of its trade to other partners which were not the usual ones.

Table 7 (see appendix) shows the international trade (exports and imports) in Romania by geographical area over the period 1995 and 2007:

Table 7 clearly shows that the European Union is the principal trade partner of Romania over the period 2000-2007 both in terms of imports and exports. The main Romanian export countries are Germany, Italy, France, UK, Belgium, Spain, Poland, Netherland, Turkey and Hungary whereas the main importing countries are Germany, Netherlands, Hungary, France, China, Russia, Austria, Poland and Turkey. The amount of exports directed to the EU countries were 8.2 billion euros in 2000 and 21.3 billion euro in 2007 which represented in both periods around 72% of the value of total Romanian exports. With regard to the imports from EU countries they increased from 9.33 billion euros in 2000 to 25.87 billion euros in 2007 however in relative terms the total share of imports from EU countries decrease from 66% to 63%. The second most important trade partner is made up of the other European countries which in 2000 represented 10.6% of total exports and by 2007 15.7%. With respect to the import shares from these countries the figures changed from 14.6 % in 2000 to 16.5%. Therefore, two important observations can be made to the trade flows to this second group; first there is an increase over time in the volumes of trade to these countries and there is also a tendency towards a more balance trade with these countries. Another important feature of the geography of the Romanian trade is the imbalance and changing pattern with respect to Asian countries. While the value of exports to Asian countries kept stable between 2000 and 2007 (3% of total) the amount of imports is much higher and increased from 9% in 2000 to 13% in 2006. South America and Australia/Oceania are the

only trade partners whose shares both in imports (2%) and exports (1%) has kept stable between 2000 and 2007. The balance trade with US and Canada is very stable between 2000 and 2007 with a decrease in both exports and imports from 4% to 2%. With regards to the Romanian trade with Latin America the situation is pretty similar. There are no changes in the relative shares of trade balance between 2000 and 2007.

Geographical Area	E (Exports) I (Imports)	2000	2001	2002	2003	2004	2005	2006	2007
EU COUNTRIES	E	8.20	9.67	10.87	11.85	14.28	15.68	18.26	21.39
	I	9.33	11.67	12.87	14.45	17.33	20.56	25.87	
EUROPE non EU	E	1.20	0.97	1	1.36	2.14	2.99	3.76	4.64
	I	2.08	2.45	2.63	3.44	4.16	5.41	6.75	
ASIA	E	0.35	0.41	0.71	0.64	0.58	0.8	0.81	0.95
	I	1.22	1.25	1.86	1.89	2.76	4.13	5.25	
AFRICA	E	0.38	0.31	0.28	0.26	0.33	0.45	0.52	0.49
	I	0.06	0.11	0.10	0.10	0.12	0.15	0.21	
USA - CANADA	E	0.45	0.44	0.67	0.59	0.59	0.98	0.72	0.63
	I	0.48	0.61	0.62	0.60	0.89	1	1.11	
SOUTH AMERICA	E	0.08	0.1	0.07	0.05	0.05	0.1	0.15	0.28
	I	0.26	0.30	0.28	0.30	0.42	0.57	0.63	
ARAB COUNTRIES	E	0.35	0.46	0.65	0.51	0.60	0.79	1	0.98
	I	0.11	0.22	0.20	0.11	0.16	0.28	0.45	
AUSTRALIA OCEANIA	E	0.004	0.004	0.004	0.004	0.07	0.08	0.05	0.03
	I	0.10	0.009	0.002	0.004	0.004	0.005	0.008	

Table 7. Foreign Trade in Romania by geographical area (billion euros)
Source: Own elaboration based on INSSE figures

8. International trade during the financial crisis: 2008-2010

This last section of the chapter looks at the Romanian International trade over the course of the financial crisis. 2008-2010. Table 8 shows the data for this period. In 2009 Romanian trade flows were severely affected by the crisis initiated during the last quarter of 2007 and beginning of 2008. The decrease in the volume of exports in 2009 compared with the previous year was 13.8% but even more important was the sharp decrease in the value of goods imported. 31.9%. In 2010 the situation changed and both exports and imports had a good performance. Exports increase by 28.2% compared with 2009 in part due to higher foreign prices and a shift towards the export of capital goods. The share of exports in total GDP rose continuously even during the crisis, from 24.1% in 2008 to 30.6% in 2010. The amount of imports increase by 20.1% in 2010 with respect to 2009 but the share of imports in total GDP suffered a sharp decrease in 2009 with respect to 2008 from 37.8% to 31.0% and then a recovery in 2010 to 35.4%.

The coverage of imports trough exports has evolved in a positive way increasing from 63.8% in 2008 to 86.3% in 2010 and also the openness of the Romanian economy has moved in a good direction increasing from 61.9% in 2008 to 65.9%.

	2008	2009	2010*	Annual change	
				2009/2008	2010/2009
	EUR millions			%	
Exports (FOB)	33.725	29.084	37.294	-13.8	28.2
Imports (CIF)	57.240	38.953	46.802	-31.9	20.1
Trade balance (FOB-CIF)	-23.515	-9.869	-9.508	-58.0	-3.7
	%				
Share of exports in total GDP	24.1	25.1	30.6	1.0	5.5
Share of imports* in total GDP	37.8	31.0	35.4	-6.8	4.4
Share of trade balance* in GDP	-13.7	-5.9	-4.8	7.8	1.1
Coverage of imports* trough exports	63.8	80.9	86.3	17.1	5.4
Economy openness*	61.9	56.1	65.9	-5.8	9.8

Table 8. International Trade 2008-2010
Source: National Bank of Romania, National Institute of statistics and Romanian Center for Trade and Investment calculations.
Note: * provisional data

In relation to the type of goods exported (table 9), the most important items in terms of volume were machinery, equipment and transports means amounting more than 15.8 billion euros (these goods represent in 2010 a share of 40.6% on the total value of exports), followed by metal products, paper and wood products, mineral products and agri-foodstuff, beverages and tobacco products. The only types of goods in which the Romanian economy show a strong resistance in terms of exports during 2009 were agri-foodstuff, beverages and tobacco products and machinery, equipment and transport means with an increase in exports during the worst year of the recession by 3.6% and 2.9% respectively.

	2008	2009	2010*	Annual change	
				2009/2008	2010/2009
	EUR millions			%	
Exports-Total	33.725	29.084	37.294	-13.8	28.2
Agri-foodstuff. beverages and tobacco products	2.165	2.242	3.124	3.6	39.3
Mineral Products	3.142	1.784	3.124	-43.2	15.4
Chemical. rubber and plastic products	3.139	2.506	2.060	-20.2	41.4
Paper and wood products	1.112	1.084	3.545	-2.5	34.6
Textiles. apparel. footwear and leather goods	4.782	3.924	1.458	-17.9	9.7
Base metals and products thereof	4.941	2.922	4.304	-40.9	52.5
Machinery. equipment and transport means	12.200	12.553	15.890	2.9	26.6
Others	2.244	2.069	4.455	-7.8	18.8

Table 9. Export Product Structure 2008-2010
Source: National Bank of Romania, National Institute of statistics and Romanian Center for Trade and Investment calculations.
Note: * provisional data

As in the previous years, European countries were the most important trade partner in terms of exports for the Romanian economy accounting for more than 87% of total exports.

Asia was the second geographical area in relative importance (10%) followed at large distance by African countries (2%) and America (1%).

With regard to the imports (table 10), during this period the most relevant imports were made up of machinery, equipment and transport means (35.9% of the total volume of imports in 2010), chemical, rubber and plastic products (16.9%). mineral products (11%). metal products (10.9%) and agro-food products (8.4%). The imports of mineral products suffers the highest fall between 2009/2008 of about 50% followed by base metals and products thereof 41.6% but in 2010 these figures turn up to positive values and also representing the highest increases between 2009 and 2010, 33.1% and 34.9% respectively.

Regarding to the main importing partners, again Europe is rank number one with 84% of the total amount of imports and Asia (especially China) is the second geographical area with more than 13% of total imports. The imports from America reached 2% in 2010 and from African countries just 1%. Australia and Oceania represented less than 1% of total Romanian imports.

	2008	2009	2010*	Annual changes	
				2009/2008	2010/2009
	EUR millions			%	
Exports-Total	57.240	38.953	46.802	-31.9	20.1
Agri-foodstuff. beverages and tobacco products	4.347	3.823	3.915	-12.0	2.4
Mineral Products	7.850	3.883	5.169	-50.5	33.1
Chemical. rubber and plastic products	8.040	6.842	7.971	-14.9	15.7
Paper and wood products	1.566	1.274	1.360	-18.7	6.8
Textiles, apparel, footwear and leather goods	4.027	3.180	3.560	-21.0	11.9
Base metals and products thereof	6.501	3.794	5.116	-41.6	34.9
Machinery. equipment and transport means	20.846	13.429	16.792	-35.6	25.0
Others	4.063	2.728	2.973	-32.8	9.0

Table 10. Import Product Structure 2008-2010
Source: National Bank of Romania, National Institute of statistics and Romanian Center for Trade and Investment calculations.
Note: * provisional data

9. Conclusions

In this chapter the growth dynamics of the Romanian economic over the period 1995-2008 have been studied and them a link between the economic geography of Romania and the observed patterns of growth has been established. The analysis looks at the evolution of growth patterns at county level (42 counties). The time periods used in the analysis follow a natural classification based on the relative performance of the Romanian economy over them. Therefore we have distinguished for the Romanian economy a period of recession 1995-2000 and two periods of expansion 2000-2004 and 2004-2008.

The results of growth regressions carried out for the different periods show that the coefficient of the initial level of GDP per capita in each period is always positive and significant, signaling a process of regional divergence and therefore giving support to the fact that disparities across Romanian counties, regardless of the time period under analysis, have not been narrowing away. Moreover our results also point out to the fact that regional changes in market potentials positively affect Romanian cross-regional growth rates and therefore the economic geography of Romania emerges as one of the key factors behind this divergence phenomenon. Attenuation of the development gaps maintained between Romania and the EU cannot be achieved solely through the use of market forces. The Carpathian counties are among the poorest with few exceptions. There is also a clear undeveloped region in East of the country made up of Botosani, Vasluia and Tulcea and in the South taken in Olt, Calarasi, Ialomita and Gorj. Once with the integration of Romania in the European Union, the mission of the European funds will be to reduce the existing gaps within the regions in Romania and between Romanian regions and the rest of the European Union. In the second part of the chapter we have analyzed the main patterns of trade (volumes of trade, geographical area, and trade composition) followed by the Romanian economy over the period 2000-2010 in light of the growth dynamics seen in the first part of the chapter. The results show that during the years of the boom of the Romanian economy the trade deficit has increased very rapidly. We have also analyzed in more detail the period of the financial crisis, 2008-2010 and the results point out to an improvement in the terms of trade deficit. The geographical orientation of Romanian exports and imports over the whole period is mainly to European countries.

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Appendix

Annex: Methodology of trade data gathering

1.   Data sources:
Intra-community trade of goods details
Extra-community trade of goods details
National Custom Authority (NAC) until 2006 and NCA and NIS after 2007
d.   For EXTRA-EU trade:

EXTRASTAT statistical customs declarations collected by the National Custom Authority (NCA) .

National Institute of Statistics (NIS) collects by statistical forms and process data for imports and exports of electricity and natural gas from importing/exporting companies through statistical forms. These data is subsequently submitted to NCA in order to be processed and to complete the data obtained from custom declarations.

e.   For INTRA-EU trade:

INTRASTAT statistical declarations collected by NIS directly from the trade operators which achieved a value volume of intra-community dispatches of goods higher than lei 900 000 or a volume of intra-community arrivals of goods higher than lei 300 000.

2.   Methodology:
Statistics of foreign trade with goods are compiled by cumulating the data from INTRASTAT and EXTRASTAT systems:
INTRASTAT system: for INTRA-EU trade (exchange of goods between Romania and other member states of European Union);
EXTRASTAT system: for EXTRA-EU trade (exchange of goods between Romania and states which are not member of European Union).
3.   Definition

Export of goods include all goods which by onerous title or free of charge leave the economic territory of the country to the rest of the world destination.

Exports of goods include:

a.   National goods (or nationalized) which leave the territory of the country for ever;
b.   National goods (or nationalized) which leave the territory of the country in order to be processed and then re-imported;
c.   Foreign goods re-exported after the processing for which they were imported;
d.   Non-monetary gold (non-refined gold including ores and concentrates); semi-wrought gold whose gold value represents at least 80% of total value including founding and dust as primary form both coins and bars and alloys;

e. Exports of electric energy and natural gas;
f. Goods sent by postal package;
g. Art objects, collections, antiquities;
h. Ships and aircrafts;
i. Silver ores, concentrates, lingots, non-released pieces and silver wrought or semi-wrought;
j. Supply with fuel and food the foreign ships and aircrafts on the national territory;
k. Exported cinema and TV motion pictures;
l. Exports of goods under financial leasing;
m. Goods used as support for information and software, including floppy disks and CD-ROM with software for general use (not ordered);
n. Exchanges by programme title of civil and military aid, war compensation and military equipment;
o. Goods delivered under leasing or rent condition, which are not returned at deadlines or are purchased for ever;

Exports of goods do not include:

a. Goods leaving the territory of the country and entering the customs warehouses;
b. Dispatches of goods in transit;
c. Temporary exports, namely goods dispatched abroad for various works, repatriated afterwards;
d. Monetary gold;
e. Personal effects and items of passengers;
f. Silver and metal coins, treasury notes and titles in circulation;
g. Goods for national institutions (embassies or armed forces) abroad;
h. Animals temporarily leaving the territory, in order to take part in the races competitions or to be presented at the circus, zoo etc.;
i. Fish sold by Romanian ships, abroad or to the foreign ships;
j. Goods bought and sold abroad without transit of the country;
k. Machinery, equipment, installations and materials sent abroad, which are used by the specialists in construction and assembling works, drilling, prospections, explorations and repatriated afterwards;
l. Sales of goods, services and utilities paid in foreign currency to the joint companies with foreign firms having their headquarters in Romania;
m. Value of repairs for the ships, aircrafts, rolling stocks and cars;
n. Interests cashed from credit exports;
o. Currency contribution achieved abroad from construction and assembling works;
p. Order software;
q. Exports of goods under operational leasing
r. Value of technical assistance and provision of services for imported goods, granted by our national specialists on account of external suppliers.

Exports of goods are estimated at FOB value. corresponding to external market price of goods at the borders of exporting country. Free exports of goods are estimated at FOB value of similar goods.

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