Magister Thesis

Romania in the EU – New Roads for Real Convergence?

By

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Abbreviations

ADRC                      Agenția pentru Dezvoltare Regională Centru

ARIS                      Agenția Româna pentru Investiții Străine

BNR                      Banca Națională a României (The Romanian Central Bank)

CEC                      Commission of the European Communities

CEEC                     Central and Eastern European Countries

CEFTA                    Central European Free Trade Agreement

CNADNR                    Compania Națională de Autostrăzi și Drumuri Naționale din România

CNP                      Comisia Națională de Prognoză

COMECON                   Council for Mutual Economic Assistance

CP                       Convergence Program

EC                       European Commission

ECB                      European Central Bank

ECO                      European Council

EEC                      European Economic Community

EEUE                     Eastern EU Enlargement

EFTA                     European Free Trade Agreement

EMU                      Economic and Monetary Union
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EU-8</td>
<td>The EU10 without BG and RO</td>
</tr>
<tr>
<td>EU-10</td>
<td>The CEECs: BG, CZ, EE, HU, LT, LV, PL, RO, SK and SL</td>
</tr>
<tr>
<td>EU-12</td>
<td>The EU before the 4th round of enlargement in 1995</td>
</tr>
<tr>
<td>EU-15</td>
<td>Member States of the EU before 2004</td>
</tr>
<tr>
<td>EU-17</td>
<td>The EU-15 plus Malta and Cyprus</td>
</tr>
<tr>
<td>EU-25</td>
<td>The EU from 2004 to 2006</td>
</tr>
<tr>
<td>EU-27</td>
<td>The EU from 2007 onwards</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>FSN</td>
<td>Frontul Salvării Naționale</td>
</tr>
<tr>
<td>FTA</td>
<td>Free Trade Area</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>IIT</td>
<td>Intra-industrial Trade</td>
</tr>
<tr>
<td>INS</td>
<td>Institutul Național de Statistică</td>
</tr>
<tr>
<td>lhs</td>
<td>left-hand-scale (with regard to the axis of a figure)</td>
</tr>
<tr>
<td>MNE</td>
<td>Multi National Enterprise</td>
</tr>
<tr>
<td>MP</td>
<td>Marginal Productivity</td>
</tr>
<tr>
<td>MPL</td>
<td>Marginal Product of Labor</td>
</tr>
<tr>
<td>MPK</td>
<td>Marginal Product of Capital</td>
</tr>
<tr>
<td>MS</td>
<td>Member State (of the EU)</td>
</tr>
<tr>
<td>NAWRU</td>
<td>Non Accelerating Wage Rate of Unemployment</td>
</tr>
<tr>
<td>NMS</td>
<td>New Member State (of the EU)</td>
</tr>
<tr>
<td>NUTS-II / -III</td>
<td>Nomenclature of Territorial Units for Statistics</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>OMS</td>
<td>Old Member States (EU-15)</td>
</tr>
<tr>
<td>ONRC</td>
<td>Oficiul Național al Registrului Comerțului</td>
</tr>
<tr>
<td>PCR</td>
<td>Partidul Comunist din România</td>
</tr>
<tr>
<td>PMR</td>
<td>Partidul Muncitoresc Român</td>
</tr>
<tr>
<td>PPS</td>
<td>Purchasing Power Standard</td>
</tr>
<tr>
<td>PTA</td>
<td>Preferential Trade Agreement</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
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<td>rhs</td>
<td>right-hand-scale (with regard to the axis of a figure)</td>
</tr>
<tr>
<td>RO</td>
<td>Romania</td>
</tr>
<tr>
<td>ROL</td>
<td>Romanian Leu (national currency of Romania)</td>
</tr>
<tr>
<td>RON</td>
<td>Romanian Leu Nou (national currency of Romania after 2005 reform)</td>
</tr>
<tr>
<td>SEA</td>
<td>Single European Act</td>
</tr>
<tr>
<td>SEE</td>
<td>South Eastern Europe</td>
</tr>
<tr>
<td>SEM</td>
<td>Single European Market</td>
</tr>
<tr>
<td>SGP</td>
<td>Stability and Growth Pact</td>
</tr>
<tr>
<td>SITC</td>
<td>Standard International Trade Classification</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SMP</td>
<td>Single Market Program</td>
</tr>
<tr>
<td>ToT</td>
<td>Terms of Trade</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
<tr>
<td>WW I</td>
<td>First World War</td>
</tr>
<tr>
<td>WW II</td>
<td>Second World War</td>
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</table>
1 Introduction
Romania joined the European Union in 2007. The main interest of this paper is to investigate Romania’s progress and prospects in the context of Eastern EU-enlargement (EEUE). In particular, the paper wants to contribute to the question how to achieve real convergence.

European integration started to play a prominent role in political thoughts and concepts after the experiences of WW I and WW II. In short, European integration aims at a political and an economical goal at the same time. First, integration is believed to reduce the probability of war and violent struggles at least among the Member States (henceforth MS). This notion is sometimes referred to as “peace-argument” (cf. Mussker 2004). Second, integration is expected to augment welfare for all MS; an idea often denoted as “common-market-argument” (cf. ibid). On a political level the peace-argument often has been considered – and still is – the principal one. Nonetheless, even this political goal shall be achieved rather by measures of economic than of straight political integration (cf. Pelkmans 2001: 3). It can be argued that the European Union at its current state is more an economic alliance than a political one. However, the common market is its most important instrument. While the EU presents itself as being based on three pillars, currently the common market is the most developed one. Hence, the Single Market can be seen rather to be the core (ibid: 25) of the EU instead of only one of three well equilibrated pillars. Accordingly, this paper will focus on the economic dimensions of integration.

Brasche (2003) specifies that the EU claims to increase welfare for all of its members through economic integration and its respective market mechanisms. The underlying assumption is that merging markets will result in a convergence of the participating economies (ibid: 45; 218). The most prominent effects of regional integration are optimization of factor allocation, gains from trade by reducing its costs, economies of scale and an enhanced competition; which likewise shall result in reduced costs and prices (cf. Smeets 1996; Breuss 2002).

Up to now, the history of the Single Market has been a story of success. Though it has not lived up to its full potential yet (cf. EC 2007 e) nor is it likely that the ambitious goal of the Lisbon-Agenda (of turning the EU into the best performing market of the world) will be met until 2010. However, despite these opportunities for further improvements integration from initially six MS to now 27 MS created several advantages and proofed to be a rather harmonic process. At least this is true until the 4th round of enlargement to 15 MS in 1995. It has been argued that the success and relative ease of integration was due to the high degree of similarity among the merging economies. Especially from this point of view the 5th round of en-
largement from 2004–2007 has been considered the most ambitious one. Besides Cyprus and Malta ten Central and Eastern European Countries (CEECs) joined the EU, thereby ending the division of Europe that arose with the Iron Curtain. Up to now, it has been the biggest enlargement with regard to both the number of countries and the population joining the EU. Furthermore, the economic differences between the Old Member States (OMS) and the New Member States (NMS) have never been that sharp before. Not only that the CEEC-10 turned only recently from central-planned economies into market economies. Their economic performance was – and still is – well below the EU-15 level. Accordingly, i.e. because the differences between the markets to be merged have been so large, fears have been widespread that the costs and unwanted effects of integration could outweigh its benefits for the OMS. Sometimes, especially in mass media, even a convergence to a lower level than the former EU-15 level has been feared.

In order to assure that a candidate is ready to join the Union the EU established the so called Accession criteria (also known as Copenhagen criteria) which have to be fulfilled before. These criteria shall guarantee a minimum of similarity between the markets to be merged (cf. Brasche 2003: 158). Thus, making the desired convergence process possible and resulting in a catch-up of the less developed economies towards the level of the most developed ones. For the next step of integration, the adoption of the Euro, the Convergence criteria (or Maastricht criteria) have to be met.¹

Especially with regard to the accession of Romania and Bulgaria concerns have been serious among the EU-15 population. Though both countries are often mentioned at the same time there exist important differences between their political and economical structure and development. Thus, this paper will not follow the trend to handle these countries as homogenous and will concentrate on Romania only, without any further references to Bulgaria.

Growth and development is not a natural law or process (cf. Brasche 2003: 161) experienced by every economy at some point of history but dependent on a variety of factors. Many of them can be influenced by political processes and reforms. Among these are social and political stability, human capital, macroeconomic stability and especially a business environment in which market forces can unfold freely. If such a business environment does not exist

¹ The Convergence criteria, laid down in Maastricht, aim at a nominal convergence of monetary and fiscal indicators and have been subject to harsh critics and debates (cf. e.g. Breuss 2006: 406ff.). Despite the fact, that some reasonable arguments for the Convergence criteria exist (ibid.), which on the other hand are not necessarily true for the CEECs (cf. e.g. Hallett & Lewis 2004) this paper focus on real convergence, anyhow. Real convergence refers to the convergence of the standards of living and productivity.
political efforts can help to create it. The Romanian case demonstrates this in some regards. Unlike most CEECs it took some more time for the Romanian economy to recover from the recession of the transition period. After the mid-nineties even a second phase of negative growth had to be recorded. Only a series of reforms, heavily altering the macroeconomic and microeconomic plan of the business environment, ended this crisis of transition. Romania was brought back to its road of convergence and catching-up after 2000.

In the past years Romania’s economy experienced high growth rates and a dynamic economic development. But despite all progress the Romanian GDP per capita is still much below even the EU-27 average. Catching-up will remain the principle goal to be achieved for the next years. Correspondingly, the EU keeps urging Romania for further improvements of its business environment, mainly through better institutions and a continuous fight against corruption.

Then again, a closer look reveals that several regions of Romania perform much better than suggested by aggregate reports and figures. A main interest of this paper is to investigate some determinants of these regional disparities and their role with regard to catching-up. As the typical approach to regional development via NUTS-II units turns out to be less precise in the Romanian case – with regard to both the illustration of the extend of regional disparities in Romania and the clear examination of its determinants – it will be replaced with a more suitable NUTS-III approach. Using quantitative analysis, three main differences in the business environment, namely the quality of public administration, infrastructure and availability of qualified labor, will be tracked and examined concerning their relation to economic performance. This for an entirely new index for infrastructure will be developed as the indicators often deployed do not necessarily reflect business considerations, at least on the local level. The results suggest that in the Romanian case infrastructure, international accessibility and availability of qualified labor are key determinants for explaining differences in economic performance within the country. Institutions themselves as tracked by the limited available data seem to matter to a much lesser degree. The results are further backed by several surveys among investors from and in Romania, which point out that the quality of public administration is sometimes indeed a concern but much better than often expected. Assessed against the importance of infrastructural improvements in Romania, quality of public administration is to a smaller extent an obstacle to business activities or investment decisions within Romania.

The other main interest of this paper is to provide some advice of how to back the Romanian way to convergence via improvements in the political accessible part of the business environment. Hence, the investigations and findings of this paper will be embedded into a general
macroeconomic sketch of Romania’s economy and development after the Revolution in 1989. The findings will be legated to suggestions from the European Union, international financial institutions and the strategy envisaged by Romanian policy makers.

The remainder of the paper is organized as follows. The first part (chapter 2) reviews the theory and practice of regional integration, growth and convergence with particular regard to the special conditions of EEUE. Chapter 2.1 will deal with the general trade approach to regional integration. But as EEUE is not only about additional trade between similar developed economies but about the integration of a poor region (CEECs) into a rich region (EU-15) chapter 2.2 will sketch the neoclassical theory of growth, convergence and catching-up; often denoted as development approach to regional integration. After having sketched the theoretical framework of integration, chapter 2.3 introduces the Single European Market and some evidence on its functioning so far. Afterwards, chapter 2.4 will focus on the special conditions and expectations for EEUE, which will be contrasted with some first evidence from the 2004 enlargement. Overall, this first part of the paper is meant as a short outline of the theoretical foundations of European integration and EEUE, only. An extensive or even complete overview on the literature and evidence is by no means envisaged, nor provided. The chapter closes with the conclusion (chapter 2.5) of some stylized facts for EEUE against which the Romanian economy will be assessed in the subsequent parts of this paper.

The second part (chapter 3) will present Romania from an economical point of view. Chapter 3.1 sketches the initial conditions for the Romanian transition process. Chapter 3.2 traces Romania’s macroeconomic development since the Revolution and is followed by a closer insight into the regional patterns of the Romanian economy (chapter 3.3). Chapter 3.4 and chapter 3.5 provide further details on the labor market, respectively FDI-performance. The main observations of chapter 3 are finally summarized in subchapter 3.6.

Chapter 4 contributes to the question how to facilitate convergence. Chapter 4.1 discusses how the EU, international observers, the business world and the Romanian Government sources envisage to achieve real convergence, respectively how to better the business environment. Afterwards, two major – not necessarily competing – arguments will be tested. The first links economic performance to the quality of the Romanian institutions, the other to the state of the infrastructure and human capital. Given the considerable regional disparities both hypotheses will be tested via linear regression on a NUTS-III level. The results will be discussed in chapter 4.3 and policy implications outlined. Finally, chapter 5 reviews the proceeding of the paper and its findings.
2 Regional Integration, the SEM and its Expected Effects

In general, economic theory of integration expects the same effects for the accession of the CEECs as for the former candidates (cf. Brasche 2003: 170). Therefore, it seems appropriate to start with a general overview on the theory of regional integration. Regional integration “may be defined as the institutional combination of separate national economies into larger economic blocs or communities” (Robson 2000: 1).\footnote{In literature, different names for this concept are used. International (economic) integration, economic integration, regionalism, regional integration or simply integration are the most common terms. This paper will use the term regional integration for the general issue and European integration with regard to the EU.} Following Brasche (2003: 45ff.) the main idea of regional integration is unleasing the forces of market and competition. This process is believed to result in an augmented welfare according to the Kaldor-Hicks criterion.\footnote{Brasche says literally „per Saldo“ (net welfare). This is just the idea of the Kaldor-Hicks criterion, which suggests, that an outcome B is to be preferred to an outcome A, if its net value is higher than the net value of A. The net value is calculated by summing up all gains and losses induced by a change from A to B. It has to be pointed out, that – in a sharp contrast to the often used Pareto criterion – Kaldor-Hicks efficiency favors changes that might produce also losers from change, as long as the gains of the winners outweigh the losses of the losers. For regional integration and globalization issues, economic theory typically refers to the Kaldor-Hicks, and not the Pareto-criterion, what might produce controversies about the (expected) distribution of benefits and losses.} Against the ideal of a fully integrated world economy (first-best scenario), regional integration represents a pragmatic second-best solution (cf. Smeets 1996: 46). Smeets distinguishes five forms of regional integration (cf. Table 2-1), varying in their respective depth (cf. ibid: 60).

<table>
<thead>
<tr>
<th>Table 2-1: Forms of Regional Integration</th>
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<tbody>
<tr>
<td>Preferential Trade Area</td>
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<tr>
<td>Reduced tariffs or free trade of certain goods</td>
</tr>
<tr>
<td>Complete liberalization of trade in goods</td>
</tr>
<tr>
<td>Free Trade Area plus common external tariffs</td>
</tr>
<tr>
<td>Free movement of factors and services</td>
</tr>
<tr>
<td>Coordinated or common economic policy</td>
</tr>
</tbody>
</table>

Source: Smeets 1996: 60
A preferential trade agreement (PTA) reduces tariffs for certain goods only and has to be considered as the lowest form of regional integration. Its logical successor is the free trade area (FTA); the most common form of regional integration worldwide (cf. Robson 2000: 3). Tariffs among its members are abolished but external tariffs continue to be set by every MS separately. An FTA is very likely to yield some first gains of trade by trade creation and trade diversion (cf. next paragraph). On the other hand, a possible trade deflection effect might cause tensions: imports from third countries into the FTA might be redirected through the MS with the lowest external tariff, thereby exploiting the tariff differential (cf. ibid: 28). This means additional tariff revenues for the low-tariff country and lower tariff-revenues for high-tariff countries plus a failure of their protective policy. Furthermore, without a common external tariff, improvements in the Terms of Trade (ToT) towards the rest of the world are not reachable.

The next step of integration – the customs union (CU) – overcomes the trade deflection effect by a common tariff-policy (cf. ibid: 2). It still features the trade creation effect and the trade diversion effect. Additionally, the union can improve its ToT via its external tariff, depending on its size and hence, its bargaining power (ibid: 40f.).† Trade creation means increased consumption of cheaper foreign goods over which the trading partners enjoy comparative advantages (cf. chapter 2.1). At the same time domestic production of the respective goods decreases while domestic production and exports of goods with own comparative advantages increase (cf. ibid: 19). This effect is very likely to increase overall consumption and to serve the producers of exported goods. Trade diversion means a shift from lower charged imports from third countries to higher priced union imports, because the new external tariff of the union will typically raise prices artificially for third-party imports (cf. ibid: 19). This favors domestic producers in the union but might lower the utility of consumers. Though it depends on the very special conditions of the case some general conclusions could be drawn about when the trade creation effect is likely to dominate the trade diversion effect (cf. ibid: 27). First, trade creation increases in union size and the differences of unit costs within the union. Second, competitiveness plays a crucial role. Greater overlapping ranges, especially of high cost-products, offer more possibilities for trade creation. Third, the average level of tariffs before joining the custom union matters. If it is higher, trade creation is more likely to show up. The European Economic Community (EEC) has been a CU since 1968 (cf. ibid: 3).

† On the other hand, this could work also the other way round: increasing tariffs on union exports might worsen the ToT for some of the MS as Roberts (ibid: 40f.) reminds. Anyhow, the bargaining power on world markets ought to increase with the union’s size: the bigger the union market is, the more it will be able to influence the world markets.
A common market grants the additional rights for the free movements of factors, i.e. labor, capital and enterprises. Integrated factor markets shall foster further benefits from integration by promoting “increased specialization according to comparative advantages among countries with different economic characteristics” (ibid: 5) and a relocation of factors. An even more developed form of regional integration is the economic union, featuring “the integration or harmonization of a range of policies” (ibid: 3). Both of them might be complemented by a monetary union. Indeed, a CU is not sufficient even for granting a single product market: It “requires the removal of a host of regulatory barriers, of fiscal barriers and of discrimination in public procurement and public works” (Pelkmans 2001: 68). In contrast to the EFTA, European integration aimed from the beginning at the creation of an economic union (cf. Smeets 1996: 61). European integration at its current state is designed as having two steps. First, joining the EU and its Single Market⁵, and second, joining its monetary union (cf. Breuss 2002: 247). However, both of these steps can be considered here as a form of economic union, according to Table 2-1.⁶

Regional integration can be achieved as either positive or negative integration. While the first form denotes the creation of new institutions (or the modification of the preceding institutions according to the union’s purpose) the latter refers simply to the abolishment of barriers to trade and factor movements (cf. Markusen et al. 1995: 2). In practice both forms occur.

Each subsequent step of integration is expected to feature additional benefits for the participating economies or to unfold the benefits partially achieved by preceding steps of integration to their full extent. Some of these effects will now be shortly introduced to facilitate a better understanding of the economic framework of the EU and EEUE. Chapter 2.1 introduces the trade approach to regional integration by giving an overview about the most important trade effects: gains from trade (chapter 2.1.1), specialization through trade (chapter 2.1.2), increasing market size (chapter 2.1.3) and allocational optimization (chapter 2.1.4). Chapter 2.2 completes the theoretical overview with a short introduction into the development approach towards regional integration. The next two chapters focus on the particular European project. Chapter 2.3 contains a brief description of the Single Market’s main features (chapter 2.3.1)

⁵ When referring to the EU’s Single Market the terms common market, internal market or single market are typically used equivalently. For the sake of uniformity, this paper will stick to the designation as Single (European) Market (SEM); at least when it comes to EU issues.

⁶ Some doubts have been expressed, whether the EU and its predecessors really fit into such classifications (e.g. Hitiris 2003: 49) or not. These critics are mainly based on the special institutional design of the European project even from its times as a CU and the subsequent steps of integration, which were accompanied by hybrid forms from the typologies point of view. Anyhow, for the concern of this paper such niceties can be considered insignificant.
and a short overview about the evidence (chapter 2.3.2) while chapter 2.4 discusses the expectations (chapter 2.4.1) and first evidence (chapter 2.4.2) legated to the first wave of Eastern European EU Enlargement in 2004. The last chapter (2.5) summarizes the reasoning of chapter 2 and derives some stylized facts from both theory and evidence of regional integration and EEUE for benchmarking purposes in the subsequent parts of this paper.

2.1 The Trade Approach to Regional Integration
Most benefits of regional integration can be derived from the theory of international trade, though it has to be stressed that in the case of the EU political goals and considerations always play an additional role.

2.1.1 Gains from Trade
Trade is advantageous for all parties involved. But except for the obvious cases where countries provide each other with goods hardly available to the domestic economies (such as oranges in most northern countries and wood in many southern countries), trade was often (or sometimes still is) believed a zero-sum game (cf. Markusen et al.; 1995: 61): the gain of the one is the others’ loss. David Ricardo was the first, who laid the theoretical foundation for a theory of trade that considers mutual benefits for all trading partners (cf. ibid: 69).

Gains from trade may arise from two different sources. First, the gains from exchange and second, the gains from specialization (cf. ibid: 66). Gains from exchange simply refer to the mutual benefit realized by partners exchanging goods relatively scarce in the own economy but vastly available in the other economy (such as the orange-wood example). To the recipients, the received good is at least equal or even more valuable than the good given in exchange and vice versa. If both sides were not better off through trade, it simply would not occur at all. The Edgeworth box gives a neat illustration of this idea. Gains from specialization might be less obvious but not less striking.

2.1.2 Specialization through Trade
By assuming productivity differences among nations, Ricardo showed that specialization and trade can yield a higher level of consumption for all trading partners. This level would be im-

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7 The following sketch of theories is far from being unique. Any manual on international trade in general, regional integration or the economics of the EU in particular will feature an excellent insight into the topic. Therefore, references are given only in some cases. Nonetheless, two manuals shall be highlighted: Markusen et al. (1995) not only for being comprehensive but for being as much intuitive as formal and El-Agraa (2004) for an extensive overview of the European economies (including the CEECs) and several foreign economies for benchmarking purposes.
possible to achieve in autarky, as every trading partner owns different technologies, featuring other levels of productivity. Hence, every country should specialize on goods for which its economy features a higher productivity relative to other economies. In other words countries should specialize according to their lower opportunity costs. Ricardo called these comparative advantages.\(^8\) This specialization will result eventually in an augmented quantity of goods, which can be redistributed via exports among the trading countries.

A somewhat more advanced theory of comparative advantages, specialization and trade is given by the Heckscher-Ohlin model. Here, productivity differences and comparative advantages arise not from different technologies but from a different factor endowment, hence, different factor prices.\(^9\) Thus, trade in goods, based on the same technologies such as many industrial products can be proven as mutual beneficial. In the Heckscher-Ohlin world every country specializes on the export of products for which’s production it owns the factors in a relatively abundant quantity. Thereby, not only overall production and respectively consumption levels will increase. Furthermore, factor prices – in less technical terms: income levels and living standards – will converge indirectly via commodity prices. In this case trade in goods might serve as a substitute for a direct trade in factors.

In the real world, though, such an equilibration of factor prices is seldom observed. Even if commodity prices tend to be balanced, factor prices often are not. Additionally, when it comes to European trade patterns a stunning proportion of intra-industrial trade (IIT) shows up. This seems to be an obvious contradiction to the dominating inter-industrial trade suggested by the theories based on comparative advantages. The classical models of international trade are challenged, not only as in the classical view “a country cannot both import and export the same product” (Robson 2000: 48) but as they completely fail to explain the phenomenon of IIT and its benefits. On the one hand, it shall be reminded that not all IIT is trade in final goods, thus representing horizontal specialization. To a considerable extent IIT represents patterns of vertical specialization and the respective trade in intermediate goods (cf. ibid: 48). On the other hand, further considerations were also taken into account and identified in the

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\(^8\) In a broad sense a natural given, warm climate and the artificial climate in greenhouses can be interpreted as competing technologies. In this case a southern country would have a comparative advantage in the production of certain foods as their production requires less effort and input compared to a northern country, being dependent on costly greenhouses. General spoken, a technology in economics (often) denotes the ratio between a unit of output and its necessary input.

\(^9\) Another reason for different factor prices is mentioned by Siebert (2000: 43). Different preferences and demand structures across countries can result in different factor prices even if the applied technologies and factor endowment are the same. Though the reasons for the differing factor prices may vary, the effects of trade will usually be the same as in the Heckscher-Ohlin case.
1980s. Especially the name Krugman has to be mentioned here (cf. ibid: 5). Overall, Markussen et al. (1995: 80f.) suggest five reasons for trade:

1. Different technologies
2. Different (relative) factor endowments
3. Increasing returns to scale (economies of scale)
4. Different tastes (demand patterns)
5. Overcoming market distortions (such as imperfect competition)

A great deal of the latter three points new to our analysis can be shortly explained having a glance at the features of market sizes.

### 2.1.3 Increasing Market Size

Gains from trade according to points 3 to 5 are fostered by an increasing market size itself. Following Robson (2000: 83ff.) an increasing market size will lead to more competition and a reduced market segmentation, thus overcoming the issue of imperfect competition. This is because merging markets will decrease the share of an enterprise in the home market but increase its share in the formerly foreign markets via the easier access. Hence, firms in the union are forced via the increased competition to lower their profit rates in favor of the customers, which enjoy now lower prices. Then again, firms might be compensated by an overall expanded market allowing economies of scale. With increased market size production can be enlarged, this way reducing average production costs. Further cost reductions can be achieved by plant specialization, while the trade expansion and different tastes among regions foster an increased product diversity. Taking these notions into account, not only the reasons for IIT and its benefits are explained but some further insights in the advantages of union enlargement are gained. Anyhow, as prerequisites for IIT similar production structures and – to some extend – tastes (demand patterns) are required. Some distortions on domestic markets such as local taxes on production might favor the demand for foreign products. But, in general, most market distortions are barriers to trade, thus decreasing market size and hampering the gains from trade.

However, trade and specialization might produce mutual gains but these have not to be evenly distributed; nor among the countries, neither within the countries. This issue is by far more obvious, when it comes to factor movements. The mechanisms involved are rather the same.
2.1.4 Allocations Optimization – Factor Movements

After this quick insight in trade theory a more controversial issue remains to be addressed: trade in factors or factor movements; often simply denoted as re(al)location of factors or allocational optimization. Neoclassical models typically assume for both of the factors, labor and capital, a diminishing marginal product.\(^\text{10}\) This is a quite reasonable assumption as normal workers (labor) in e.g. construction will not process double the amount of soil just for being equipped each with an additional handbarrow (capital).\(^\text{11}\) Nonetheless, wisely deployed it might fasten the working process and increase the overall productivity. Likewise, the productivity will not double, though increase, if each two workers (labor) use the handbarrows. This simple example also clarifies that the marginal product of labor (MPL) increases in capital and vice versa that the marginal product of capital (MPK) increases in labor. This increase, though, is only a declining one. Furthermore, every factor is rewarded with its marginal product as income.

As discussed above, countries might have a different factor endowment. Trade may not always be sufficient to balance factor productivities among them. Here, a crucial incentive for factor relocation arises. First, overall productivity can be increased by moving factors with a relatively low MP to regions with a higher MP and second, the respective factor income will increase via this relocation (for the movers). Optimal factor allocation is achieved when MP across regions is equilibrated. Overall welfare improves and all regions will enjoy a higher income. The controversial point here is that the augmented net welfare can be unevenly distributed and might produce losers, too.

First, workers from capital-scarce, lower-income regions are attracted by higher wages in capital-rich regions. Their migration from the capital-scarce regions towards the capital-rich regions increases the total output of the latter but lowers their MPL to some extent. Hence, wages there. The MPK on the contrary increases and so does income from capital. For capital the story works the other way round. Movements of capital from capital-rich regions to capital-scarce regions mean a higher income from capital for the capital-movers and higher wages for labor in the capital-scarce regions, as MPL rises in additional capital. Capital-owners in the formerly capital-scarce zones are worse off, because the additional capital has decreased

\(^{10}\) The notion of marginal product or marginal productivity refers to the additional output generated by an additional unit of input, such as an extra hour of work or another machine added to the production line. Likewise marginal costs are the additional costs for the production of an additional unit of output. The name “marginal” indicates that marginal productivities are typically derived with calculus and not as simple fractions as in the case of elasticities or average values.

\(^{11}\) The example is inspired by Feess (2000: 85f.), who reasons about the effects of additional shovels in the context of partial factor variation.
their MPK to some extent. The same is true for the MPL in the regions the capital has been moved from. In general, neoclassical models predict an overall improvement with unevenly distributed gains. Capital owners from richer regions and workers from poorer regions will both be better off. Their gains are considered to outweigh the losses of capital owners from poorer zones and from workers in the richer regions in terms of numbers. This process often causes tensions in public debates. The recent case of Nokia, relocating a part of its production and some R&D from Germany to Romania, demonstrated this in some regards. Anyhow, whether such a relocation of factors is desirable, and if so, how to (re-)distribute the gains from it is not the concern of this paper. Nonetheless, a noteworthy argument in favor of factor movements is given by Brasche (2003: 191) and shall be repeated here. Especially trade unions blamed factor relocation for wage dumping. On the contrary, the trade union’s demand of not moving capital to poorer regions could be seen as hampering a MS of not making use of its comparative advantages. Finally, richer regions are likewise not accused of technology dumping, when making use of their technological advantages to dominate foreign markets.

This far, a great deal of the economic ratio behind regional integration has been captured. A further effect of regional integration is (additional) growth and convergence. This effect must not be underestimated and will be discussed in the next subchapter.

2.2 The Growth and Development Approach to Regional Integration
The core idea of the development approach to regional integration stems from neoclassical growth theory and is formally captured in the Solow-Swan Model (cf. e.g. Burda & Wyplosz 2002: 44ff. for an introduction). Output in terms of GDP per capita ($y$) is believed to be directly dependent on the capital-labor ratio $k$, i.e. the amount of capital per worker or inhabitant. The productivity of the capital stock and the labor included depend on the technology, which is expressed by the production function $y = f (k)$. Growth in terms of increased GDP per capita occurs when the capital stock $k$ is augmented. As capital (just like labor) features only a diminishing marginal product, growth rates will be higher when the capital stock is lower and decrease with the augmentation of the capital stock. The capital stock grows with investment – captured here as the saving rate $sf(k)$ – but (real) depreciation $\delta$ (i.e. capital wore-out) will set an upper bound to capital accumulation. This is because depreciation is

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12 However, if trade unions or minimum wages block an adjustment of wages downwards no additional jobs in the capital-rich-zones will be created. The excess of labor force will result in a rise of unemployment. The German reunification might be an ample example.
linear while the marginal product of capital is a degressive function, thus, gains grow only in a decreasing manner while maintenance costs grow linear with the capital stock. Accordingly, GDP per capita will grow with capital accumulation until the saving rate (i.e. the investment and reinvestment possibilities) just can replace the losses from capital depreciation.

This situation is termed steady state \((k^*, y^*)\). After an economy reached its steady state no more growth can occur but via two mechanisms. First, an increased saving rate could shift the steady state upwards by making a further augmentation of the capital stock permanently feasible; obviously, only at the price of lower consumption. Second, technological progress can shift the production function upwards, thus the steady state. Output \(y\) is thereby augmented and hence, savings. This is of course just a very basic version of the Solow-model but sufficient for our needs here.

The Solow-model has at least two important implications for regional integration. First, more developed economies, which feature already a bigger capital stock grow slower than developing economies (with the same steady state), where MPK is still higher. Second, the steady state of an economy depends on the technologies deployed and its investment opportunities (here captured as the saving rate).

This means that regional integration ought to have two effects. First, liberalization of capital markets, technological diffusion and the alignment of the business environment (institutions) should homogenize the production functions and investment possibilities among the markets to be merged, hence their steady states. This process is a convergence to the upper level as less developed economies adopt the technologies and institutions of the better developed economies, not vice-versa. Second, the economies with a lower capital stock, hence income, will grow faster than the developed economies. This catch-up is facilitated by their higher MPK, which ought to attract more investments than the developed economies as a higher MPK means higher returns on capital. The reasoning is just the same as the in the preceding chapter 2.1.4 about factor movements and allocational optimization. The welfare assessment
remains likewise the same. If capital and technology diffusion is mainly driven by the relocation of factors, capital-owners in the richer regions and workers in the poorer regions are better off, while capital owners in the poorer regions lose together with workers from the richer regions. If capital and technology diffusion is mainly driven by additional investments, capital owners in general are better off as they face more investment opportunities (maybe with the exception of those from the poorest region). Furthermore profit workers in the poorer regions as they can expect an augmentation of the capital stock and an increasing MPL.

To sum it up, regional integration should yield a convergence of income levels and living standards among the participating economies by a catch-up of the less developed economies towards the higher level. This is reached by institutional alignment, technology diffusion and the liberalization of capital markets. Empirical literature tries to track convergence as either β-convergence or σ-convergence. The first refers to the observation of higher growth rates among poorer economies, the latter tracks the “decrease in the dispersion of income levels” (Vass 2005: 6).

Next, we will turn to the SEM and the related EU policies and have short insight into the empirical assessment of the effects of regional integration in the European case.

2.3 The Single European Market
The beginning of the Single Market lies in the 1980s.

As the European Community had been a custom union since 1968 (cf. Weindl & Woyke 1999: 99) the next objective was the removal of non-tariff barriers to trade. Thus, allowing the desired economics of scale, efficiency gains through increased competition, stimulating innovation and creating a wider choice at lower prices for consumers (cf. EC 2007 e: 6). The removal was intended to be realized until 1st January 1993 (cf. ibid: 18) when the Single Market came into force (cf. EC 2007 b). The European Monetary Union (EMU) was to be achieved in a second step by 1999, respectively in 2002 concerning the adoption of the Euro (cf. EC 2007 e: 20).

2.3.1 Main Features of the Single Market
The main features of the Single Market are widely known as »the four freedoms«, which are the free movement of goods, services, capital and persons. The rules concerning these four

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13 According to Robson (2000: 92) and Hitiris (2003: 49) already the Rome Treaty was meant to achieve the four freedoms (cf. chapter 2.3.1). However, in the 1980s trade and investment were still hampered by many barriers. The EEC was sometimes even caricaturized by the term of the “uncommon market” (Robson: 92). Moreover, the European economy performed low in several crucial economic sectors. The Single European Act (SEA) was the first treaty which actually gave an unambiguous definition of the SEM (cf. Pelkmans 2001: 37).

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freedoms are supplemented by additional rules for a harmonization and improvement of the business environment and the protection of intellectual property rights (cf. EC 2007 b). The entire legal body of the EU (acquis communautaire) has to be adopted by every MS.

According to a white paper on the Single Market Program (SMP), published in 1985, all physical, fiscal and technical barriers to the four freedoms had to be removed. This meant in detail the removal of border controls, the standardization of industrial regulations and product specifications\(^{14}\), the liberalization of financial markets, the opening of government procurement to cross-border competition, the harmonization of VAT and the elimination of other competition barriers within the Single Market (cf. ibid: 19). Some other non-tariff barriers to trade which were to be removed are mentioned in Brasche (2003: 45ff.): elimination of state controlled monopolies, protectionism and distortion of competition in favor of domestic producers through subsidies (a practice called »state aid« in the EU jargon), specific admission requirements for certain professions or fiscal barriers created by different taxation systems. An extensive overview regarding all obstacles to overcome in order to realize the four freedoms is to be found at Weindl & Woyke (1999).

Brasche reminds (2003: 46) that certain non-tariff barriers are more or less natural and thus are likely to persist. Among these he mentions language, culture, different preferences, spatial and cultural closeness, the costs of negotiations and contracts or of information procurement. He further points out (cf. ibid: 47) that an extended Single Market can also induce new problems: big enterprises have a clear advantage and could outperform small firms, which may have performed well on a national market before integration. Instead of increased competition a group of peaceful oligopolies could arise or even some new monopolies. Hence, special safeguards for competition were to be considered. They are addressed with regard to cartels, monopolies and state aid in the EU competition-policy (cf. Pelkmans 2001: 223ff.).

The creation of the Single Market meant an important altering of the business environment. A study on behalf of the EC (2007 e: 27f.) distinguishes several microeconomic effects, which were expected for the short-, medium- and long-run: first, in the short-run competition effects were expected to appear. Increased allocative efficiency was anticipated as the increased cross-border competition should yield a reallocation of resources, lower costs, reduced profit

\(^{14}\) Harmonization of product specifications quickly turned out to be a thankless task. Attempts to establish a unitary safety directive for toys soon got stuck in details such as the flammability of Santa Claus’ beards and the proper labeling of beach balls. Several similar experiences (some regulations were negotiated over ten years) suggested a shift to the principle of mutual recognition according to the “Cassis de Dijon" judgment from 1979 (cf. Weindl & Woyke 1999: 118).
margins and, hence, lower prices for consumers. In addition, the EMU should facilitate price transparency. Second, in the medium-run firm’s behavior was expected to alter. Reduced production costs and economies of scale should lead to increased product differentiation, concentration on core business activities and lesser sectoral diversification on firm level. Third, in the long-run the changed firm behavior should alter the industrial structure of Europe. Industrial concentration was expected to decline, intra-industry-trade and inter-industrial specialization of regions and countries to increase. Moreover, competition was believed to stimulate innovations. This process should be supported by declining R&D costs per unit sold (due to the increased market size) and FDI-activities (in theory accounted as movement of capital). The latter were expected to facilitate technology transfers and diffusion. On the macroeconomic level these developments have been believed to aggregate in additional growth and employment (cf. ibid: 55f.).

The EU names ten benefits brought to citizens by the SEM: Increased prosperity, additional jobs, wider choice of products and services, lower prices, huge potential markets, increased ease of doing business, less red tape, better value for taxpayers, more opportunities to work, live and study abroad and finally easier travelling and shopping (cf. EC 2007 e).

Breuss (2002: 245, 247) systematizes the effects of integration in the context of EEUE and uses four categories of effects:

1. Trade effects (following from the reduced costs of trade)
2. Single Market effects (leading to efficiency gains and increased price competition)
3. Factor movements (FDI-activities and migration)
4. Costs of enlargement

Despite the original context this classification suggested by Breuss might serve for the general case when it comes to integration effects. The expected effects listed by Smeets (1996: 57) or Brasche (2003: 45ff. and 170ff.) fit into these categories as well.

2.3.2 Empirical Assessment of the Single Market
Up to now some research on the effects of the SEM has been done. The conclusions of the most important studies will be reproduced, following the neat outline given by Begg & El-Agraa (2004).\textsuperscript{15} The Cecchini/Emerson report was a quite optimistic ex ante study, issued in

\textsuperscript{15} Their overview covers the time until 2003. For the later years this paper adds findings from to EC 2007 e. The empirical research including EEUE remains to be addressed in chapter 2.4.2.
A total potential gain of between 4% and 6% of EU-12 GDP (about 200 billions of ECU) and the creation of two million extra jobs were estimated due to the SEM. Even 7% of GDP and five million additional jobs seemed conceivable to the Cecchini/Emerson report (cf. ibid: 192ff.). The first large-scale study ex post was issued in 1996. The Monti report (Monti 1996) was less enthusiastic and asserted about 1% additional GDP growth by 1994 and 500,000 extra jobs (Begg & El-Agraa 2004: 194). This somewhat disappointing result was explained by the economic data being limited to the year of 1994. In other words, the short period of time the SEM was achieved and furthermore by the failure of implementing certain parts of the SEM before 1994 or 1995 (cf. ibid: 1994). According to EC (2007 e: 58ff.) several barriers keep to exist even today. Finally, the 2003 report on the SEM, issued by the Commission (EC 2003) proclaimed a 1.8% higher EU-GDP (164.5 billions of Euros) and 2.5 millions of extra jobs by 2002 “thanks to the internal market” as the EC (2003: 2) sums up. Additionally, exports to third countries had risen and FDI-flows “more than doubled as percentage of GDP” (ibid). Customers started to enjoy lower prices through increased competition and doing business got much easier (ibid: 2f.). Overall, it is commonly agreed that the SEM has been a success. The EC (2007 e: 8) accounts a 2.2% increase of EU GDP in 2006 as due to the SEM. Additional employment was estimated to be about 2.75 millions of extra jobs in the same year (i.e. 1.4% of total employment). Nonetheless, these gains could even be double, if remaining barriers were removed (ibid). Among the remaining barriers the following are mentioned: slow or improper transposal of community directives into national legislation (ibid: 58), frictions concerning standards and their mutual recognition (ibid: 59), limited trade and cross-border activity regarding services – despite their outstanding contribution the EU’s GDP of 70% (ibid: 62) –, and few public procurement, which remains to be opened up to competition (ibid: 62). Other barriers stem from differences in the countries tax-, social security and pension systems (ibid: 72ff.). Regarding the free movement of people, language “is one of the main barriers” (ibid: 73) as 50% of the EU population do not speak a second language (ibid). Concerning EEUE some conclusions are drawn, too. While the paper admits that EEUE constitutes “a challenge to its [the SEM; SH] proper functioning” (ibid: 7), no evidence for a disruptive impact on product and labor markets of the SEM have been found yet. Rather the “the economic changes induced by this round of enlargement have been absorbed

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16 The findings of Cecchini were published in 16 volumes by the Commission of the European Communities (CEC 1988) and as a summary, widely known as Cecchini report (Cecchini 1988). The latter was addressed to a large public. The “definitive technical work is that by Emerson et al. (1988)” as Begg & El-Agraa (2004: 192) point out. Their findings presented in this chapter are however taken from Begg & El-Agraa (2004), with the exception of EC 2003 and EC 2007 e.
Quite smoothly” (ibid). Anyhow, the risks of tensions seem “augmented” (ibid). The next chapter will add some evidence about EEUE.

2.4 Eastern EU Enlargement 2004

Eastern EU Enlargement has been “a central pillar in Europe’s post-Cold War architecture” (Baldwin et al. 1997: 125). The typical argument for EEUE is that peace, prosperity and stability in Western Europe can be maintained or even enhanced by promoting it all over Europe (cf. EC 2006 a). As often pointed out, EEUE, the fifth enlargement has been the most ambitious one; concerning the number of both the countries and the population joining the EU. In particular, the acceding countries had very different political, economical and social backgrounds compared to the EU-15 (cf. EC 2006 b: 1). It was the first one reunifying countries from the former European blocs which were divided by the Iron Curtain for nearly half a century (cf. ibid: 13). EEUE’s foundations were laid in 1993 on the Copenhagen summit of the European Council (ECO) where the well-known Copenhagen criteria17 were settled and an invitation to apply for membership was made. The process of integration into the EU was designed as having two steps. First, the acceding countries should be integrated into the EU Single Market and only afterwards into the European Monetary Union (cf. Breuss 2002: 247).18 As step two was taken yet only by one NMS and this paper is mainly concerned about real convergence it will be dealt with the impact of the integration into the Single Market, only.

Negotiations for the fifth enlargement were conducted from 1998 to 2003, when accession treaties were signed for Cyprus, Czechia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia (EC 2006 b: 14). In the case of Bulgaria and Romania negotiations lasted until 2004 (their accession treaties were signed in 2005; NewsIn 2008: 134). The first ten countries joined the EU in 2004, Bulgaria and Romania followed in 2007.

Breuss (2002: 249f.) stressed “several asymmetries” between the OMS and the NMS: first, a bloc of rich countries had to integrate a bloc of still poor countries and second, a large bloc integrated a small one. In addition, the labor productivity differed notably. Baldwin et al.

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17 These are in short democracy, market economy and acquis communautaire (Breuss 2002: 245). Further specifications (like rule of law, human rights and the like, which are subsumed here under the point “democracy”, are mentioned in EC 2006 b: 13f.).

18 It should be added, though, that the NMS are monitored according to the Convergence (Maastricht) criteria of the Stability and Growth Pact (SGP), too. Their progresses are tracked as for all other candidate countries, which did not adopt the Euro yet, via “convergence programs”. These are annually updated presentation of their medium-term fiscal programs. Euro-countries are monitored likewise but in their case the respective documents are termed “stability program” (EC 2008 a: 2).
(1997: 129f.) argued that this could be due to a bad capital stock, which might be changed easily taking the “high level of education in the CEECs” (ibid) into account (higher than in the south). Some differences between the OMS and the 2004 joiners are illustrated in Table 2-2. While the population of the EU-8 accounted for some 16.5 % of the EU-25 population real EU-8 GDP did not reach more than 7.5 % of the real EU-25 GDP in 1995. Real GDP per capita in the CEECs reached on average a share of 44 % of the EU-15 level.

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<th>Table 2-2: Population and GDP for the OMS and the NMS</th>
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<td>All figures for 1995</td>
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<td>Population (Millions)</td>
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<td>% of EU-15 Population</td>
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<td>% of EU-25 Population</td>
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<td>Real GDP (Billions, Int-$)</td>
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<td>Percent of EU-15 GDP</td>
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<td>% of EU-15 GDP per capita</td>
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<td>% of EU-25 GDP per capita</td>
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Source: PWT 6.2; own table, own calculations

Baldwin et al. (ibid) also called attention to several sectoral differences between the EU-15 and the CEECs (mainly concerning the role of agriculture) and the asymmetric importance of trade between the two blocs: while trade with the EU-15 is crucial to the CEECs, trade with them is marginal to the EU-15.\(^{19}\) Accordingly, the impact of integration always was estimated as considerable for the CEECs but on average as marginal for the EU-15 (cf. EC 2006 b: 1). On the other hand, this average is composed of very different levels of importance to separate EU-15 Member States (cf. Breuss 2002: 245). “Unevenly distributed” gains (Baldwin et al. 1997: 167) can be expected as countries like Finland, Austria and Greece have export shares of more than 11 % to the CEECs while the EU-15-average is about 4 %.\(^{20}\) The export share to the CEECs is even lower for Portugal, Spain and the UK (less than 2 %). For the first two even negative impacts were taken into account.

2.4.1 Expected Effects of EEUE
EEUE was preceded by controversial debates with high expectations on the one side and serious concerns on the other side. Mass media sometimes anticipated a flood of cheap labor overrunning Western Europe and a massive relocation of economic activities eastwards. EU officials stressed the benefits of EEUE and economists sought to forecast the effects of integrating the CEECs into the EU, thereby producing a vast bunch of studies and estimations. A

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\(^{19}\) In general foreign trade is more important to the CEECs. Exports plus imports account on average for 93 % of GDP in the CEECs but only to 55 % in the EU-15 (cf. EC 2006: 2).

\(^{20}\) Germany having an export share of 8 % to the CEECs has to be accounted to the first group, too.
comprehensive ex ante study by Breuss (2002) considered “all possible integration effects” (ibid: 245), which were trade effects (reducing the costs of trade), single market effects (enhanced competition and efficiency), factor movements (FDI-flows from the West to the East and vice versa for labor) and transfer costs (eastwards from the West). An extensive listing of ex ante studies and estimations about the economic impact of EEUE was arranged on behalf the EC (2006 b: 25) and is reproduced in Appendix 1. Though they deployed quite different models the studies yielded consistent and even similar results (with respect to both the qualitative nature of the predicted effects and to their quantitative degree). This observation was also made by the EC (cf. ibid: 22), which additionally pointed out that even the degrees of aggregation and regions covered differed among the studies.

On average, all evaluations agreed that enlargement would be a “win-win” situation, both for the CEECs and the EU-15 (Baldwin et al. 1997: 125; Breuss 2002: 245; EC 2006 b: 1). Corresponding to the asymmetric size of the two blocs the shock of enlargement was expected to be much more pronounced in the CEECs than in the EU-15. Breuss predicted 5 – 6 % of additional GDP growth for Czechia and about 8 – 9 % for Hungary and Poland until 2011. Until 2008 the Old Member States (OMS) should increase their GDP about additional 0.5 %. Other estimations for the EU-15 ranged from somewhat lower values (Baldwin et al. 1997 estimated some 0.2 %, Heijdra et al. 2002 about 0.3 %) up to 0.6 % (Lejour et al. 2001). But it also turned “out that enlargement is not only about trade and growth potentials, but also about redistribution of income of labor market winners and losers” (Breuss 2002: 247). The OMS Austria, Germany and Italy were typically expected to profit more than other OMS from enlargement (Baldwin et. al. 1997) while Spain and Portugal might face a negative impact (Breuss 2002, Kohler 2004). Breuss also considered a negative impact for Denmark (Breuss 2002), Kohler (2004) for Ireland and Greece. Barry (2004), on the other hand, explicitly did not project any disruptive impacts for Ireland.

Most studies predicted only a moderate redistribution of income and labor. This might be because they relied on data provided by Boeri & Brucker (2001). They estimated a net migration inflow of about 335,000 persons for the first year and a subsequent decline to some 100,000 or 150,000 per year, with Austria and Germany as main destinations. Around 35 % of them were expected to be workers. Hence, the stock of about 0.85 million migrants from the CEEC in the OMS (2001) was expected to increase up to 3.9 million in a period of 30 years. Blanchard (2001) criticized these estimations as systematically to low. On the other hand, the free movement of workers remains restricted up to 2011, anyhow. Only three OMS (Ireland, Swe-
den and the UK; cf. EC 2006 b: 80) were not restricting their labor markets in 2004. For the case of ending this restrictions Marques & Metcalf projected stronger effects, though, they relied themselves on the estimations provided by Boeri & Brucker. The migration issue remains to be readdressed in chapter 2.4.2.2.

2.4.2 First Evidence from EEUE 2004

Now, four years after the first wave of integration it could be supposed that the first ex post conclusions have been drawn. But both data and examinations of the existing data are still rare. This is probably not due to a lack of interest but to the short period, which hardly allows any in depth examination of the data, except some descriptive analysis. Most of the few studies which assess the actual impact of EEUE are comprised and discussed in EC (2006 b). Virtually all of them assume rational expectations in order to extend their database in the pre-accession era and to justify the results as driven by integration. This proceeding seems plausible as enlargement was on the one hand widely known and credible (cf. e.g. Kohler 2004: 26). On the other hand, integration actually started in the mid-nineties when the Association Agreements with the CEECs were signed and many barriers to trade were removed. As the evidence on general trade effects of European integration and the SEM were already discussed in chapter 2.3.2, this chapter focuses on convergence (chapter 2.4.2.1) and factor markets (chapter 2.4.2.2 for labor and chapter 2.4.2.3 for capital) of the NMS, which joined in 2004.

2.4.2.1 Growth and Convergence

According to the development approach of integration the phenomenon of (conditional) convergence should show up in the data. Indeed, the 2004 joiners exhibited on average higher growth rates than most EU-15 countries. Noteworthy outliers are Luxembourg and Ireland. Beside these two exceptions the data (cf. Figure 2-2) looks pretty much as the first derivation of the Solow-Swan model in an economic textbook rather than the noisy pictures often to be found in the real data.

A similar graphic is given by the EC (2006 b: 44), which sees “capital accumulation and technological progress” (ibid: 45) as the main driving forces of this convergence process. $\beta$- and $\sigma$-convergence are illustrated e.g. by Szekely & Watson (2007). Nonetheless, the large differences between the CEECs and the EU-15 persist. Likewise differences between the CEECs are considerable as not all 2004 joiners perform similarly well. Per capita GDP in 2004 (measured in PPS) “ranged from 43.1 % in Latvia to 75 % in Slovenia” (ibid: 43). An average
growth rate of 4 % and of 2 % for the EU-15 per annum would imply that convergence would not be achieved before 2040 (ibid: 45).

Figure 2-2: Initial Real GDP per Capita and Average Growth Rates 1995 – 2004

Source: PWT 6.2; own graphic, own calculations

While the impact of capital accumulation and technological progress has been considered a positive one for GDP in the CEECs, the EC accounts the contribution of labor as “mostly … negative” (ibid: 45). However, as capital-labor ratios and productivity levels are still lower as in the EU-15 further growth potentials can be assumed.

2.4.2.2 Labor Markets and Migration

EEUE’s impact on the labor market can be twofold. The first way is via movements of the Eastern European labor force towards the EU-15. The other way is via the relocation of economic activities from the EU-15 to the NMS. The impacts from such a capital movement towards the CEECs will be dealt with in the chapter (2.4.2.3), when it comes to FDI-flows. This chapter will cover the impact resulting from migration flows.

Wage levels in the CEECs differ remarkably from those of the EU-15. According to Boeri & Brucker (2001: 4) they range from 10 % to 40 % of the EU-15 average. Beside the nominal difference wages in CEECs actually fell beginning in the mid-nineties by 10 % and started to make up these losses only in 1999. They fell again in 2001 by over 15 % and started to recover in 2003 once more (cf. EC 2006 b: 56, Graph 23).21 Although “in 2005, unit labor cost

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21 These high changes in nominal wages are at least partly driven by inflation. The further costs of inflation and the uncertainty about future connected to it might be additional incentives for migration.
growth in the EU-10 is expected to have outpaced that in the EU-15” (ibid: 56) there are still strong incentives for westwards migration flows to be suspected. Breuss’ model (2002: 255f.) predicted over the years additional GDP growth for some OMS because migration surpluses would decrease the wage levels in the EU-15.22

Another strong incentive for migration from Eastern Europe to the EU-15 is the higher rate of unemployment, especially of the young, maybe partly hidden by a lower activity rate. The activity rate in the EU-15 has been about 73 % in the period from 2001–2005 but it was only about 65 % in the NMS (cf. EC 2006 b: 45). Structural unemployment in the OMS (measured by the NAWRU) decreased in the same period by some 0.75 % to about 7.75 % but it increased in the CEECs by 2.5 % to the total level of 13 %. Unemployment rates for the young amounted to 30.4 % in the CEECs in 2004, while the respective value for EU-15 reached only 16.7 % (cf. ibid: 54). This situation on the labor market is well captured in Figure 2-3.

These unfavorable conditions in the CEECs seem to persist despite the strong growth recorded during the last years and correspond to the negative contribution of labor to growth in the EU-10. Anyhow, the available evaluations agree that migration of EU-8 workers westwards was “rather limited” (EC 2006 b: 81).

“Overall, the percentage of EU-8 nationals in the resident population of each EU-15 Member State was relatively stable before and after enlargement, with increases in the UK and, more conspicuously, in Austria and in Ireland ... There is

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22 This is because of the fact that “firms in the EU can produce more with more labor at lower wages” (Breuss 2002: 256).

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Concerning numbers the EC report seems much more cautious. Just the case of Poland is discussed and quantified (cf. ibid: 81ff.). In the first year of EU-accession about 407,150 Poles migrated according to Polish officials. Most of them (340,530) were seasonal workers. Main destinations were Germany and the three countries which did not restrict access to their labor markets. Informal short-term migration is estimated to some 600,000 – 700,000 annually (cf. ibid: 82, footnote 53). On the first sight the few numbers provided seem much higher the estimations by Boeri & Brucker as already migration from Poland exceeded the 335,000 persons projected for the first year by far. Then again, the high number of seasonal workers rather supports the EC’s point of view. Probably most of them would have come to the OMS anyhow as seasonal workers, since the respective opportunities existed already in the past and both, Germany and Austria did not grant additional access to their labor markets after 2004. Other estimations range between 50,000 and 175,000 new entries from the EU-8 for the UK in the first year (cf. ECAS 2005: 10ff.), maybe about 85,000 for Ireland (ibid: 12) and perhaps some 21,800 for Sweden (ibid: 13). The next ECAS report (2008: 4) accounted some 685,200 employees from the EU-8 in the OMS by the end of 2006, reaching shares of the local labor force between 0.6 % in Germany up to 2.4 % in Ireland. Similar results are given by Pohl (2006), who cannot observe disruptive impacts on the labor markets of the UK or Ireland either. The migration inflow was contrawise perceived as a successful measure to deal with shortages on the domestic labor markets (ibid: 30). These findings are in line with the conclusions from the EC’s SEM assessment (2007 e: 7), cited in chapter 2.3.2.

2.4.2.3 FDI-Flows and Relocation of Economic Activities

FDI-flows to the NMS have grown significantly beginning in the mid-nineties. From being “virtually residual” (EC 2006 b: 69) they reached a level of 40 % of the local GDP in the CEECs by 2004. Firms from the EU-15 states are main investors (77.5 % in 2004), followed by US- and Swiss firms (ibid: 71, Table 7). Nevertheless, the EC emphasizes that this development should not be seen as a relocation of factors from the OMS to the NMS. This notion is based on two arguments (EC 2006 b: 74): First, despite the growing FDI-flows towards the NMS, their share of the EU-15 outflows amounted only to 4 % in 2004. Thus, the EU-15 remains with a share of 53 % from all FDI-outflows the most important destination for FDI-activities, followed by the USA (12 %). Second, few of the FDI-flows toward the NMS are “substitutions of activities carried out previously in the home country” (ibid: 74) but rather
based on market access considerations as also stressed by Boeri and Brucker (2001: 10). This optimistic view is generated from the findings of five studies (cf. Table 9 in EC 2006: 74). Two of them surveyed e.g. that only few (1 % to 1.5 % for the Netherlands) of all the jobs lost in the past years were lost due to relocation of economic activities and only the half of those relocated economic activities moved towards the CEECs (from the Netherlands).

![Annual FDI-Inflows for the EU 15 and the CEECs, 1998 – 2006](image)

Source: IMF Statistics Online (BOP); own graphic, own calculations

On the other hand, relocation activities from Germany and Austria created from 1990 to 2001 a total of 660,000 new jobs abroad, while the share of the domestic job loss was marginal (0.3 % for Germany and 0.7 % for Austria). The other three studies estimated substitution effects between wage differences in the OMS and the NMS as being nearly neglectable. Overall, few of these FDI seem to be a movement of existing capital but new investments, which augment the overall capital stock of the EU-25. This notion is likewise reflected in Figure 2-4. First, the FDI-inflows to the CEECs (EU-10) recorded a growth in the covered period, especially beginning one year before the accession of the first eight CEECs (violet line, millions of US-$, left-hand-side). A short decrease of the annual FDI-inflows to the EU-15 between 2000 and 2004 (blue line, millions of US-$, left-hand-side) is to be explained by an overall-decrease of FDI-inflows caused by an economic downturn worldwide (cf. BA-CA

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23 Data for Greece was missing for 1998 and for Slovakia for 2001 and from 2004 to 2006. Cyprus and Malta are not considered in the calculations and the figure.

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2004: 4). The CEECs were likewise affected, though they recovered somewhat earlier than the aggregate trend (red line, millions of US-$, left-hand-side). It was caught-up in the following years, anyway. On the one hand, it is true, that the share of total FDI-inflows in the EU decreased slightly after 2004 for the EU-15 (light blue area, right-hand-side). But, likewise, it is true that by far most of the FDI is still destined to the EU-15 and even augment the capital stock there.

2.5 Conclusions – Some Stylized Facts for EEUE
This chapter provided a short insight into the economic theory of regional integration and the particular case of European integration. Beside its politically desired effects of promoting peace and stability among Europe, integration is believed to yield economical benefits for all participants. Among the more or less equally developed economies the creation of the SEM shall reduce the costs of trade, foster competition and efficiency through economies of scale and specialization. Prices for consumers are expected to converge on a decreased level, likewise the costs for producers. Competitiveness and innovation is believed to increase. Integration of less developed but well prepared economies (i.e. the fulfillment of the accession criteria) into the Union ought to result in a real convergence towards higher standards of living and income levels via a catch-up effect. However, Robson calls to attention, that regional integration does not grant economic prosperity by itself. “Regional integration is plainly no substitute for sound domestic economic policies, and is unlikely to succeed in their absence” (Robson 2000: 7).

Empirical assessments have proven the SEM as a story of success but also as unfinished, yet. First evidence from the 2004 round of enlargement supported the beneficial expectations legated to EEUE while the concerns enjoyed this far less empirical support. Despite a slower than expected decrease of unemployment in the CEECs migration seems to be moderate, at least in relative terms. Nonetheless, the migration issue is not answered yet definitely. Main targets for migration so far have been Germany, Sweden, the UK and Ireland. FDI-flows towards the NMS started to grow considerable in the mid-nineties and have been a key factor for their modernization (cf. EC 2006: 69). Nevertheless, the EU-15 remained by far the unchallenged main destination for FDI and augmented its capital stock considerable. Furthermore, the overwhelming part of FDI-activities in the NMS does not seem to be accompanied by sizable job destruction in the EU-15. An important discovery was that the effects of EEUE started already several years before EU-accession actually took place. This result might be
explained through rational expectations and the high degree of credibility which agents ascribe the EU on the one hand, but on the other hand, integration (in terms of a removal of many barriers to trade) started already with the signing of the Association Agreements during the nineties.

Hence, coming now to the actual concern of this paper, some stylized facts and expectations may be derived against which the Romanian case can be assessed henceforth.

First, some convergence should show up in the data (in terms of $\sigma$-convergence or $\beta$-convergence or both). All CEECs grow faster than the EU-15 countries, though at a different pace.

Second, FDI-inflows should increase notably since the mid-nineties and accelerate before accession. On the other hand, not all CEECs succeeded in the same extent to attract FDI. Neither in absolute or relative (per capita) terms (cf. Figure 2-5) nor with regard to the qualitative nature of the FDI attracted. While Hungary and Czechia enjoyed an FDI-driven shift towards a more technology intensive production profile, countries like Latvia and Lithuania attracted more investments in labor-intensive industries (such as the textile or timber industry; cf. EC 2006 b: 72).

Third, especially with increased FDI-activities, labor-productivity should increase. On the other hand, the extent will depend also on the sort of FDI attracted.

Fourth, despite a dynamic growth in the last years, CEEC labor markets seem to recover at a slower pace than GDP evolution would suggest. Most CEECs feature notably low activity rates, which are accompanied by high unemployment. However, unemployment rates were subject to sharp disparities among the CEECs. Front-runner was Poland, better off were the Czechs and the Hungarians. Paradoxically, high rates of unemployment and shortages on certain sectors of the labor market may show up at the same time.

Fifth, according to their labor market situation, the CEECs feature a high but hard to track migration potential. These might explain a part of the paradox of labor market shortages despite high rates of unemployment on domestic labor markets as it often are more requested workers which migrate successful.

Overall, EEUE yielded several benefits for both the CEECs and the EU-15, too. It facilitated real convergence and increased standards of living, whereas the EU-15 opened up new markets for their exporting industries. The positive experiences with the 2004 enlargement might facilitate this process for Romania. On the other hand, the formal act of joining the Union
does not grant success by itself. The 2004 joiners performed very different and not all succeeded in attracting equally FDI-inflows or in achieving comparable levels of real convergence. Joining the club might grant better access to foreign markets but cannot endow with competitiveness and an attractive business environment.

Figure 2-5: FDI per Capita in the EU-8 from 1998 – 2006

Source: IMF Statistics Online (BOP, IFS); own graphic, own calculations

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24 Slovakia was removed from the figure as data was missing for the year 2001 and from 2004 to 2006.
3 The Romanian Economy

Romania joined the EU in January 2007 and augmented the EU-population by 22 million people. Hence, Romania is now the seventh most populous country in the EU-27 and the second biggest country (and market) after Poland among the NMS. It provided the EU with 100 more embassies, 2,100 additional diplomats plus the biggest and most important port at the Black Sea, which will connect Western Europe with the latter via the Danube (cf. Ungureanu 2006). Two principal pipelines will traverse Romania, thus granting Central Europe access to Caspian oil and gas.25 Second only to Finland, Romania administers now the largest external border towards the East (ibid.).

But Romania’s accession to the EU has not always been an issue without reservations. The Bavarian Minister Emilia Müller (2006) e.g. welcomed the decision to integrate Romania into the European Union but also emphasized that the accession of NMS should not cause negative externalities for other MS. Likewise, EU accession negotiations with Romania were much stricter than with formerly acceded MS and higher hurdles had to be taken before accession in 2007 (cf. Gabanyi 2006 a). The motives were not always based on calm assessments, only. Sometimes the European Parliament rather used the accession issue to deal with internal conflicts (cf. ibid.).26 On the other hand, Romania did few effective efforts so far in communicating its progresses to a broader public. Hence, even scientific literature was sometimes surprised to find “Romanian institutions … better than could be expected” (cf. Kaminski 2004: 13). The huge gap between the widespread image and Romanian realities is frequently reflected in surveys, which investigate the opinion of investors that already do business in Romania on the one side and potential investors on the other side (cf. e.g. Ernst & Young 2008). Then again, not only Western Europeans but also Romanians have some reservations towards the immediate effects of enlargement. Though the European Union is widely positive associated (Eurobarometrul 2007: 25) and an extraordinary large share of interviewees wishes enlargement, most people seem to know, that they will have to face also hard times.27 While interviewees who think that enlargement will worsen their situation admit that it will better after some years, those who expect mainly a bettering from enlargement are conscious that it will last some years until the positive effects will manifest (cf. Eurobarometrul Rural

25 Barbezet & Neal (1998: 385) even stated, in economic much more difficult times, that Romania’s strategic position is the strongest argument for EU-Accession. Findikci (2006) considers the integration of the Black Sea space via Bulgaria and Romania to be an important part of peacekeeping policies for Europe (ibid: 21).
26 Göll (2006: 44) even denoted the criticisms that Romania would lack the necessary economic dynamics of some European parliamentarians in 2005 as “amazing” (“wundern”) when assessed against the available data.
27 Or as Marinoiu (2006) puts it: “if one wants to see a rainbow, one has to accept the rain” (ibid: 105).
2005: 28f.). As it seems now both sides will be right after all. Despite all progresses Romania is still a poor country. Although catching-up has accelerated much since 2000 the real per capita GDP accounted to some 38.8% of the EU-27 level in 2006 and is expected to reach some 41.5% in 2008 (cf. Eurostat 2008). This might be comparable to Latvia and Lithuania between 2000 and 2003, or even to Poland in the late nineties. But front-runners like Slovenia, Hungary or Czechia exceeded values between 51% and nearly 77% already in 1997 (ibid.). Therefore, catching-up will remain the main goal for several years (cf. EC 2008 a: 10). Joining the European Union will not only grant easier access to formerly foreign markets but will lead to a convergence of several consumer prices (on a higher level for the Romanians) and requires considerable investments for alignment, which are by no means covered by structural funds Romania might benefit from. Brasche (2003: 159ff.) discusses the costs of enlargement for the NMS by pointing out that structural funds granted to the NMS are much smaller than to the formerly integrated MS from Southern Europe. Disbursements are restricted to the maximal value 4% of GDP annually, whereas the current GDP is relatively small now and thus, reduces costs of enlargement for the OMS. In contrast to the support from structural funds, which represent the costs of enlargement for the EU-15, the adjustments costs of enlargement are to be found, especially with regard to the acquis communautaire. Brasche estimates them to 5% – 10% of GDP just for environmental measures. In addition, rising personnel costs for institutional alignment and a loss of revenues through tariffs have to be taken into account. Furthermore, infrastructure has to be adjusted towards European Union standards. In the case of Poland these adjustments required further investments of 2.5% of GDP as e.g. about 80% of dairies and meat processing companies had to be modernized. On the one hand, such adjustments are beneficial investments in the long run, on the other hand, not only the well working rules have to be transposed into domestic laws (ibid: 161). All these adjustment costs have to be paid essentially by the NMS themselves and can be added to the annual club-fee which amounted in the Romanian case to ca. 1.1 billion of Euros in 2007 (cf. Nicuț 2008). This was nearly another 1% of GDP. Thus, the question arises how Romania will manage the challenges from enlargement and how real convergence can be fostered. Hence, this chapter will examine the current state of the Romanian economy before further assessments will take place in chapter 4. As Romania entered transition without having any experience with reforms, democratic regulations and free markets the largest part of the 1990s was spent with their development. Only after 2000 Romania could embark on the common

28 Revenues from tariffs have to be transferred to the EU. Revenues from tariffs are a main resource of the EU-Budget (cf. Weindl & Woyke 1999: 57). According to Gardo (2006: 664) income from tariffs contributed some 6.2% to total Romanian Government revenues, which accordingly ought to decrease.
catch-up path of the other CEECs. Accordingly, we start with a short resume of the initial conditions in chapter 3.1. Chapter 3.1.1 recapitulates the political inheritance and frame for transition while chapter 3.1.2 gives a quick insight into the economic legacy of communism. Afterwards the big picture of the Romanian economy and its development remains to be drawn (chapter 3.2). First, five stages of the Romanian transition process will be outlined (chapter 3.2.1 and subchapters) and then subsequently reidentified in the main sectors (real, labor, monetary, fiscal and external) of the Romanian economy (chapter 3.2.2 and subchapters). After having drawn this big picture of the Romanian economy and its development from 1990 up to now chapter 3.3 turns to the important issue of regional disparities. The regional different stages of development and economic performance will be highlighted via an overview following the division of NUTS-II regions. The latter soon will turn out to understate, respectively to exaggerate the performance of the entailed NUTS-III regions. Therefore, every chapter on a region identifies additionally the disparities within the regions. According to their special importance chapter 3.4 takes a closer on labor markets and chapter 3.5 on the FDI-performance so far. This way, some further, more qualitative insights into special weaknesses and strengths of the Romanian economy will be gained. These will be summarized in chapter 3.6 and serve as foundation for the more quantitative assessment of further growth and development prospects during chapter 4.

3.1 The Initial Conditions
It has often been noticed that the Romanian transition period was harder and for a long time less successful than in other CEECs (e.g. Dăianu 2000; Wyplosz 2000, Maniu et. al 2001; Scrieciu & Winker 2002, Dulleck 2006; Ianoș 2006). The reasons are mainly attributed to sluggish and incoherent reforms, which often were interrupted by unsustainable, populistic economic policies. As a consequence, the misallocation of resources persisted longer and a lack of credibility blocked the needed FDI-inflows for modernization and adjustment. But sluggish reforms do not need to be a function of missing political will or sheer incompetence, only. Even researchers, which favor the governance-approach (such as Dăianu 2000) underscore that there are upper bounds to adjustment capacities. These, in turn, are influenced by the initial conditions and the magnitude of required reforms. Hence, sometimes stop and go measures can hardly be avoided (cf. ibid: 23), even if they do not foster a fast readjustment.29

29 Especially as readjustments like resources flowing at new prices “from low to high productive areas … can generate much pain in a real economy” (Dăianu 2000: 3). Wyplosz (2000) assessed the debate between gradualists and fast-movers against the evidence gained so far from transition and concludes “that Big Bang is high-
Taking the initial conditions into account, a comparison of Romania to the other CEECs shows that the latter underwent at least partially reforms, especially during the 1980s while Romania “practiced late Stalinism until the very end of the Communist regime” (ibid: 3) and entered during the 1980s a state sometimes described as “self-dependence” (Scrieciu & Winker 2002: 3) or (semi-) autarky (cf. Maniu et. al. 2001: 17; Dulleck 2006: 644). Thus, while most other CEECs’ start into transition was already backed by an existing political opposition, at least rudimentary existing market economy institutions, some foreign (non COMECON) trade relations and better governance Romania had to develop these institutions during the 1990s from next to nothing.

3.1.1 Political Background and Dynamics after the Revolution

In 1944 Romania was occupied by the Red Army, which gave way to a rapid build-up of the formerly entirely unimportant Partidul Comunist din România (PCR) (cf. Schaser & Volkmer 2006: 297ff.). As reparations, most capital and output was diverted towards the Soviet Union while the communist party came to power in 1947 with massive election fraud and the Soviets’ help. The whole opposition was destroyed, their leaders executed as “fascists” and the Socialist Republic of Romania was born (ibid.). The new constitution was adopted from Stalin’s draft of 1936. Romania joined COMECON and in 1955 the Warsaw Pact. The whole economy and society was nationalized and centralized (cf. chapter 3.1.2). The first secretary general of the meanwhile renamed Partidul Muncitoreșc Român (PMR)30 was Gheorghe Gheorghiu-Dej, a former trade union leader and loyal follower of Stalin. During the Soviet’s “anti-zionistic” campaign (1950 – 1952) he “cleaned” the party from Jews and rivals. At the same time, after Stalin’s death in 1953, he used this purge to claim the destalinization to be “finished” (ibid.). Due to his loyalty and conservative attitude Soviet troops left Romania in 1958. However, COMECON’s suggestion to stop Romania’s industrialization in favor of agriculture gave a quick end to the short period of Russian-Romanian friendship. With some smart moves between 1963 and 1964 Gheorghiu-Dej reached a considerable degree of independence from the Soviet Union, closed Russian cultural institutes in Romania, sent Moscow’s KGB advisers home and deleted Russian from the syllabi.

But the system itself remained unchanged. After Gheorghiu-Dej’s death in 1965 Nicolae Ceaușescu, cobbler and labor leader who left school after the fourth class, was found to be the right successor. The party was again renamed to PCR and the ruling class changed. Ceaușescu

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30 Romanian Workers’ Party.
himself held virtually all important positions within state and party and governed the country as *Conducator* and “earthly god” (ibid: 307) via presidential edicts. He based his “national communism” on the Marxian-Leninist notion that nations will survive revolutions for an uncertain time and opposed the Soviet Union successful for several times. He condemned the intervention in Czechia 1968, held diplomatic relations with Germany and even Israel during the six-day-war and welcomed President Nixon. Thus, he gained an acceptable reputation at home and abroad. But the distance to the Soviet Union concerning foreign politics was not reflected by a more liberal domestic policy. It rather facilitated the economic and political isolation of the country. The living conditions worsened in favor of a fast debt repayment (cf. 3.1.2) and monumental architecture projects. After the revolution of 1989, which’s real dynamics still are subject to debates and never have been unambiguous clarified, Ceaușescu and his wife were caught in 22.12.1989 and publically shot on Christmas, three days later. As Ceaușescu was reluctant to “import” (ibid: 310) “glasnost and perestroika” Romania entered into transition without ever having experienced even slight reforms.

Accordingly, the political landscape afterwards was rather chaotic. An extensive overview of the parties involved, the constitution and its amendment, the different governments and important politicians is given by Alexandrescu & Stoica (2005). In absence of an available opposition – the victory of the revolution was proclaimed by poet Mircea Dinescu via TV (cf. Schaser & Volkmer 2006: 311) – it were old politicians, conducted by Ion Iliescu and his Frontul Salvării Naționale (FSN), who happened to take power again. The first elections in 1990 confirmed their claim for leadership (cf. Gabanyi 2006 b). Nonetheless, several measures for democratization were introduced. The Romanian party system witnessed some extraordinary dynamics of new- and re-foundings, alliance-buildings, fusions and renamings (ibid: 529) but stabilized subsequently. The following elections (1992, 1996, 2000 and 2004) gave mostly power to alliances consisting of several single parties and also included a change of power each time. Some political observers (Stelian Tănase) even dare to expect that just three parties will gather in parliament after the forthcoming elections in 2008 (cf. Business Standard 2008 a).31 While this assertion might be based more on wishful thinking than realism it indicates nonetheless how much the conceivable constellations have changed. Up to now four alliances had been part of the Governments. Three of them consisting of each two parties, one involved six different parties (cf. Alexandrescu & Stoica 2005: 345–353).

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31 This optimistic point of view is of course not unchallenged. The renown political analyst Cristian Pârvulescu prefers the notion that “vom avea parte de un an imprevezibil” [we will witness an unforeseeable year, SH] (cf. Business Standard 2008 a).
The first constitution of Romania came into force by the end of 1991 and was slightly revised in 2003. From 1991 to 2003 the political system was classified as “semi-presidential”, afterwards as parliamentary (cf. Gabanyi 2003: 531). President and parliament are elected simultaneously. The effective power of the president (maximal time of office lasts two legislation terms) is subject to several checks and balances, which actually make it hard for him to fulfill the population’s high expectations towards his position (ibid.). Furthermore, in particular since the President cannot dismiss the Prime-Minister, conflicts between President and Government are frequent. The results from such a cohabitation already worried the European Commission regarding the latest quarrels about the replacement of the Minister of Justice and the reliant resume of reforms in the judicial system (cf. Escritt 2008).

3.1.2 The Economic Inheritance of 40 Years of Communism

It has often been highlighted that the economic initial conditions for the Romanian transition process were untypically “dire” (OECD 1998: 1). Many articles on Romania’s transition stress their importance for the following developments (e.g. Dăianu 2000; Maniu et. al 2001; Scrieciu & Winker 2002). The definite overview in this regard might be the IMF working paper by Demekas & Khan (1991). Accordingly, this chapter is nearly entirely based on their assessment.

Other CEECs already gained first experiences with basic economic reforms in the 1960s and onwards, though to a differing degree. Some featured a political opposition and most had a larger expatriate community, which could help with foreign advice and assistance. Not so in Romania. Emigration had been subject to tight controls, even concerning interior migration. Cities with over 100,000 inhabitants remained virtually closed and the institutional design was Stalinist. Despite some few and insignificant reforms the Romanian economy remained „essentially unchanged” (ibid: 5) until the very end of Ceaușescu. The entire economy was centralized and private production property absent – with the unimportant exception of a few private farmers in the countryside. Prices and wages were centrally set and had no allocative function. Labor mobility was likewise controlled from the top. Most people were employed in enterprises (centrals) with 8,000 employees on average; some of them employed over 100,000 persons. Foreign trade was centralized, capital inflows restricted and unattractive. Output objectives were more and more unrealistic, what lead to a “vicious circle of tightening of controls, greater disorganization, and further tightening of controls” (ibid: 11). Main objective of the 1980s was the (p)re-payment of all foreign debt, which relied on large current account surpluses. As export performance was weak, these were achieved by substantial cuts in im-
ports and household supply – in spite of a continuous population growth\textsuperscript{32} – a quantitative and qualitative decline in investment and heavy taxation. The outcome of this economic policy was stagnation, low foreign reserves, the erosion of the capital stock and dramatic shortages of basic consumer goods. The industry got more and more energy intensive, so that energy was further diverted from households to industry. Demekas & Khan (1991) conclude in their IMF working paper:

\begin{quote}
“The economic legacy of Ceaușescu was an economy with an inefficient industrial structure and an almost totally obsolete capital stock, a completely disorganized system of production and distribution, a collectivized agricultural sector, a decaying infrastructure, and a population whose living standards had been forced steadily down to a level where even basic necessities – food, heating, electricity, medical attention – were hard to come by. There is little doubt that the initial conditions in Romania for the reform were far worse than those faced by the other reforming Eastern European countries”(Demekas & Khan 1991: 46ff.).
\end{quote}

\section*{3.2 Macroeconomic Development 1989 – 2006}

The following rough outline of the macroeconomic development will cover the period from the end of 1989, respectively 1990 until 2006 as much of the definitive data for 2007 is missing yet. Overall, the database seems satisfying. Most of the data used for the following overview is taken from the Romanian National Institute of Statistics (Institutul Național de Statistică, INS). With the exception of Government financial statistics an IMF assessment (2001) described their data collection and processing as generally meeting, “and in many instances exceed[ing]” recommendations (cf. IMF 2001: 1). For few statistics improvements were recommended.\textsuperscript{33} First, five stages of the transition process will be sketched (chapter 3.2.1 and subchapters) and afterwards reidentified in the different sectors of the Romanian economy (chapter 3.2.2 and subchapters). The chapter closes with a brief summary of the year 2007, when Romania joined the EU. This will mainly rely on the current business press.

\subsection*{3.2.1 Sub-Periods of the Transition Process}

Ianoș (2006) breaks the Romanian transition period (from 1989 up to now) down into five sub-periods. His distinctions are broadly in line with the division of Dăianu (2000), which

\textsuperscript{32} Contraception and abortion were legally banned during the Ceaușescu era what resulted in the desired high fertility rates (3.7 in 1967, about 2.4 during the 1980s) which turned low only after 1990 (cf. Betea 2004: 250).

\textsuperscript{33} Concerning the used data (national accounts) discrepancies between quarterly and annual estimations were criticized. This chapter relies on the annual estimates.
distinguishes about four sub-periods until 1999 and sticks, as a central banker, to a more monetary approach. However, before Romania could embark on its convergence path it endured two longer recessions of transitions, which were interrupted by a short period of artificial and unsustainable “growth”. The main achievement of the 1990s was the difficult build-up of new, democratic and market-orientated institutions as preconditions for economic recovery. The given outline follows the division of Ianoș but considers Dăianu and other sources likewise.

3.2.1.1 1990: Decisive but Populistic Start into Transition
The first year after revolution started – like in most other CEECs – directly with a sharp decline in output (Figure 3-1, chapter 3.2.2.1), which was not just due to a correction of sugar-coated statistics during the communist era (as sometimes argued, e.g. partly by Maniu et. al. 2002: 77) but real (as demonstrated e.g. by Dulleck 2006). Nevertheless, employment and migration towards the cities (plus 5%, Ianoș 2006: 609) was on the rise. Dăianu (2000: 10) even reports an unaffordable rise of real wages by 11% for this year. However, a foundation for deep changes was laid. A first round of price liberalization took place, labor mobility controls were abolished, private sector activities and private banks allowed. Additionally, a privatization law was introduced while commercial and central banking services were separated (cf. Demekas & Khan 1991: 47).

3.2.1.2 1991 – 1992: Further Attempts to Reform
The next two years followed with an accelerating drop in production. The first official reported unemployment rates (Figure 3-5) witnessed an increase from 3% (1991) to 8% (1993) within a single year, despite the fact that the massive lay-offs were buffered by retirements and the land reform from 1991 (cf. chapter 3.2.2.2), which reversed the migration trend from urban to more rural parts of the country (cf. Ianoș 2006: 609ff.). Further important reforms took place in 1991. After two additional rounds of price liberalization some 80% of prices could be set by the markets. Import quotas were abolished and tariffs reduced; new incentives for exporters were set and state owned enterprises somehow commercialized. Two new privatization laws followed (cf. Demekas & Khan 1991: 47). Overall, the first three years might be characterized by fragile institutions and disorganization (Dăianu 2000; Dulleck 2006). These are the rapid abolishment of the old institutions without the “rapid build-up of market-based

34 Dăianu subsumes the years from 1990 to 1993 to a first sub-period, while Ianoș splits them in two sub-periods. For the years 1993 to 1997 it works the other way round. Dăianu distinguishes a period from 1994 to 1996 and from 1997 onwards, while Ianoș accounts the years from 1993 to 1996 to the next sub-period. The two different approaches do not exclude but complete each other as they are rather a function of the different accentuations (Dăianu focuses on monetary issues and Ianoș on real sectors).
institutions” (Dăianu 2000: 9) and the failure of most operating enterprises to react flexible on new demand and supply conditions. A surging demand of foreign goods, combined with a shun of domestic products, was financed by dissaving and the drain of the anyhow scarce foreign reserves (ibid: 10). The exchange rate (Figure 3-12, chapter 3.2.2.3) remained overvalued and though many prices (such as basic consumption, energy, heating and sewerage) remained subject to controls anyway, the IMF supported program from 1991 failed to stop boosting inflation (cf. ibid. and Figure 3-12 in chapter 3.2.2.5). Prices for energy and raw materials remained artificially low. Notable FDI-inflows remained absent as privatizations were not backed by neither sufficient property rights (ibid: 10ff.) nor a predictable future.

3.2.1.3 1993 – 1996: Stop of Reforms, Large Subsidies and Fragile Growth
The next years brought a significant deceleration of reforms and privatizations, while a “fragile growth” (ibid: 13) was induced via massive subsidies for loss-making (Maniu et. al. 2000: 50ff.) and import-dependent (cf. OECD 1998: 2), heavy industries, which’s main output were immense arrears (some estimated 36 % of GDP by the end of 1996; cf. ibid: 4). Privatizations so far covered only most of the small enterprises and the land reform. Huge farms (mainly cattle) and the large industrial companies remained state controlled. “Strategic” enterprises (contributing to 20 % of employment and holding the lion’s share of the arrears) were not even included in the privatization programs (cf. ibid: 10). The environment for SMEs remained complicated and underdeveloped (cf. ibid: 15). After a peak in 1994 (about 11 %) unemployment was reduced to 6.6 % by 1996 (Ianoş 2006: 609ff.). Nonetheless, social systems came under pressure as the contribution base continuously eroded while the number of beneficiaries increased (cf. OECD 1998: 6f.). The rise in production was not met by demand what resulted in a large accumulation of stocks (Maniu et. al. 2000: 50ff.). Inflation decreased during 1995 and 1996 but experienced the next “sharp rise” already by the end of 1996 (Dăianu 2000: 14), due to the unsustainable subsidies. Excess demand established black market exchange rates while the official exchange rates were mainly allocated to subsidized industries (cf. OECD 1998: 5). The policy-mix lost any credibility and required urgent changes (Dăianu 2000: 14). International financial institutions froze their support (cf. OECD 1998: 3). By the end of 1996 the opposition came to power for the very first time.

3.2.1.4 1997 – 2000: Restructuration and a new Wave of Privatizations
“Big Bang” came in 1997 when reforms were resumed with the assistance of the IMF and the World Bank.35 The extent and pace of the shock-therapy was qualified as “impressive”, even

35 One World Bank document rather sees 1999 as the turning point when a short but sharp financial crisis changed politicians’ attitude toward far reaching fiscal reforms (cf. chapter 3.2.2.5 and World Bank 2005: v–vi).
when assessed against other CEECs (OECD 1998: 2). Over 100 new laws were adopted during 1997; among them a new law with regard to FDI and foreign investors were granted the right to buy land. 2,700 companies (about 263 of them large industrial enterprises) remained to be privatized, some 50 % of them during 1997. The exchange rate was now driven by markets, tariffs on imports further reduced, prices for energy, agricultural output and public services liberalized. Credits to the agricultural sector phased out and most subsidies were subsequently abolished (cf. ibid: 2ff.). The social costs of “Big Bang” should be buffered by a partly indexation of low incomes and an increase of family allowances (cf. ibid: 6), whereas the general monetary policy turned restrictive and budget deficits (including the large quasifiscal deficits) were refrained. Attempts to separate economic policy and current political coalitions were made in 1999 via the adoption of a medium-term strategy for EU-accession (cf. Scrieciu & Winker 2002: 9). A first result of “Big Bang” was another recession in terms of negative GDP growth, rising unemployment and interior migration (Ianoș 2006: 609ff.) while inflation decelerated more modest than initially hoped. The latter was partly due to the resume in price liberalization. The exchange rate was further depreciated. Nonetheless, in spite of a shrinking GDP and a growing shadow economy (i.e. reduced government revenues) the budget deficit decreased due to the “cuts in public expenditures” (Dăianu 2000: 15) and growing foreign reserves from privatization revenues via stock markets (ibid: 18). The global environment was unfavorable. Beside the Russian crisis in 1998, which affected the confidence in the new markets negatively, the UN ban on Romania’s traditional trading partner Yugoslavia was a costly issue for Romania (cf. Scrieciu & Winker 2002: 16f.) all over the nineties further aggravated by the accompanying “blockage of the Danube” (World Bank 2004 a: 81). The social strain resulted in the end of 2000 in a reelection of the left-wing coalition which already conducted Romania until 1996.

3.2.1.5 After 2000: Strong and Sustainable Growth

However, probably the quick recovery proves Wyplosz’ conclusion right that “it has paid to start early and to move fast” (Wyplosz 2000: 36). After 1999 no more negative growth had to be recorded. On the contrary, since 2000 Romania experienced high growth rates – as the other CEECs already did during the later 1990s – despite a downturn of the global and European Economy (cf. BA-CA 2004: 4f.). The new government, though seeming again committed to a more gradualist approach, stuck to the formerly agreed stabilization program and even accele-

36 Some of these restructurations had to cope with heavy resistance. The restructuring of the mining sector in 1999 was accompanied by massive protests of the miners. Some 10,000 of them tried to invade the Capital and nearly brought the country into the state of emergency (cf. Gallagher 2005: 202). However, the failure of this fifth “Mineriada” 1999 marked a positive change in the Romanian society and politics (cf. Angelescu 2006: 11).
rated privatization (cf. Scrieciu & Winker 2002: 10) at the beginning. A further incentive for acceleration of reforms and privatizations were EU-Accession negotiations and preparations, which also helped to maintain and deepen macroeconomic stability (cf. IBRD 2006: 2). The contribution of the private sector to GDP exceeded the government’s contribution, reaching a weight of 65.6 % of GDP by 2000 and expanding to nearly 70 % by 2005 (INS 2007). The number of SMEs has been on the rise and unemployment was significantly reduced (Ianoș 2006: 609ff.) By 2005 some 431,135 SMEs (1992: 126,549) contributed to 60.7 % of employment (1992: 12.3 %) and to 57.6 % of total turnover (1992: 30.9 %) in the main sectors (INS 2007). However, the activity rate (Figure 3-6, chapter 3.2.2.2) remained low and still indicates persisting problems on the labor market, which is regional and sectoral torn between sharp shortages and excess labor force (cf. chapter 3.3, subchapters and chapter 3.4). Further privatizations brought new investors and FDI-inflows while the election of a new, liberal Government in 2004 might have strengthened confidence in the country. Accession negotiations were conducted until 2004 and in 2005 the treaty was signed. By 2007 Romania joined the European Union. Currently, Romania is the second most attractive CEEC for FDI (after Poland) among European investors (cf. A.T. Kearny 2007: 36).

3.2.2 Development of Sectors
The outlined sub-periods of transitions so far are reflected in the different sectors of the Romanian economy and changed their structure heavily. Beside the description of the respective sector’s dynamics each subchapter provides an insight into their main driving forces.

3.2.2.1 The Real Sector
Romania’s economy started to exhibit first signs of recession already during the 1980s, when in the years 1986, 1987 and 1989 some negative growth in real GDP per capita had to be recorded. The recession accelerated after 1989 and was followed by a short period of artificial recovery after 1992 (cf. Figure 3-1 and Figure 3-2). In this first period of recession real GDP per capita fell from 4,702.69 International Dollars (I-$) in 1989 (NL: 16,499.23 I-$, HU:

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37 Later, to avoid further social costs, especially in one-company towns, restructuring lagged again while arrears increased. These were often shifted to the “private” sector. Most problematic sectors were mining and railways. Total arrears ranged between 35.4 % and 40.5 % of GDP from 2000 to 2003 (cf. IMF 2004).

38 On the other hand, big enterprises still play a major role in Romania. The six leading companies (Petrom, Electrica, Rompetrol, Automobile Dacia, ArcelorMittal Galați and Metro) had together a turnover of some 13 billion of Euros in 2007 (cf. Groenendijk 2008). According to current Eurostat (2008) data this would account roughly for over 10 % of Romania’s total GDP at market prices.

39 For the sake of greater comparability the data referring to real GDP is taken from Penn World Table 6.2 and expressed in the hypothetical currency of International Dollars (I-$). For orientation purposes some data for the Netherlands (NL) is given, as it resembles Romania nearer in population size as e.g. Germany (cf. Dulleck 2006). For further benchmarking purposes regarding the CEECs the respective data for Hungary (HU) is added as the Hungarians followed a somewhat more stable path of recovery.
8,459 I-$) to a mere 3,862.47 I-$ in 1992 (NL: 19074.92 I-$, HU: 7,920.83 I-$). This means negative growth rates of up to −12.98% (1991) in Romania, while Hungary’s highest negative growth rate was about −10.76% (1991).

Figure 3-1: Real GDP per Capita 1989 – 2004

![Real GDP per Capita 1989 – 2004](chart1.png)

Source: PWT 6.2; own graphic

Figure 3-2: Growth Rate of Real GDP per Capita 1989 – 2004

![Growth Rate of Real GDP per Capita in 2000 constant prices](chart2.png)

Source: PWT 6.2; own graphic
Whereas most CEECs faced an U-shaped evolution of GDP (cf. Wyplosz 2000: 2) Romania’s GDP evolution should be described better as W-shaped: the initial output decline was followed by some artificial, unsustainable growth, not even making up for the losses and was soon followed by another recession (cf. chapter 3.2.1) due to unfinished but necessary restructuring.\footnote{An indeed clearly W-shaped curve is to be found in Figure 3-7 or at Dulleck (2006: 643), who illustrates the evolution of standardized GDP per capita for several CEECs and Austria. Figure 3-1 rather prefers to illustrate the evolution of GDP \textit{and} to compare its absolute dimension with these of other countries.} Maybe by 2000 GDP recovered and exceeded the initial level from 1989. The subsequent years can be characterized by strong and stable growth, in spite of a less favorable European and even global economic environment.

Some comparative studies (e.g. Figuet & Nenovsky 2006) claimed that significant convergence progress had not been achieved in Romania, when assessed against other CEECs. Such results are the consequence of average buildings which do not distinguish (as e.g. EC 2007 d: 13 does) between the period of (one or both) recessions in the nineties and the achievements after 2000. Since the recovery is mainly driven by a sustainable “explosion” in exports (cf. Kaminski & Ng 2004) and internal demand (cf. BA-CA 2004: 5; Zaman 2007 a: 2) the strong growth is widely expected to continue over the next years.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Sectors_Relative_to_GDP_1990-2005.png}
\caption{Sectors Relative to GDP 1990 – 2005}
\end{figure}

\textit{Services approximated as difference of GDP in current prices and the contributions of other three sectors: agriculture, industry and construction.}

\textit{Source: INS 2008; own graphic, own calculations}
The transition and recovery period was accompanied by major changes in the sectoral composition of the Romanian GDP. The completely oversized industrial sector (about 40.52% of GDP in 1990) was rapidly downsized, reached a share of some 24.80% by 1999 and continued more or less stable afterwards. On the contrary, the contribution of agriculture remained stable in the first years of transition and even witnessed a slight growth in some years. This development does hardly reflect a productivity growth in the respective domain but is rather due to the massive decline in industrial output. The contribution of agriculture to GDP in the year when recovery was achieved (2000) is a better but still overestimating indicator for the performance of this sector (some 11%), especially when the employment share of this sector (over 41% in 2000) is taken into account (cf. chapter 3.2.2.2). Another indicator for the low performance of the agricultural sector is its negative contribution to net exports (cf. Scrieciu & Winker 2002: 14, 38). The underdeveloped services sector (32.3% in 1990) grew moderately until the mid-nineties and accelerated its growth only beginning in 1997, reaching a share of over 61% by 2005. Anyhow, this value is still below the EU-27 average of 71.4% in 2006 (own calculations based on Eurostat 2007: 8). The construction sector was subject to several fluctuations following broadly the general pattern of the Romanian transition process. Starting with a share of 5.36% in 1990 it was strongly affected by the first recession and recovered during the first period of fragile growth until 1997. It was hit again by the second recession but recovered fast after 2000 and enjoys currently a real boom. The evolution of GDP composition is only partly reflected by labor market structures.

3.2.2.2 Labor Markets
The distribution of total employment among sectors reveals sharp productivity differences among them when assessed against their contribution to GDP. While initially the sectors’ share of GDP corresponded more or less with their contribution to total employment the situation changed considerable after the revolution. At least this is true for the services sector and agriculture. Whereas services generated some 61% of the total output in 2005 their contribution to total employment grew only moderately and reached a share of 39.09% in the same year (less than 11% more as at the beginning of transition). The respective EU-27 average amounts to 68.7% for 2006 (own calculations based on Eurostat 2007: 8). According to the downsizing of the industrial sector employment in industries declined significantly and corresponds now roughly with the industrial contribution to the Romanian GDP.

A somewhat puzzling evolution is that of the immensely growing importance of the agricultural sector for employment, which in turn follows an opposite pattern concerning its contri-
bution to GDP. “Employment” in agriculture rose during the recessions of the nineties from 28.18% to nearly 41.4% by 2000 and decreased during the following growth period from 2000 onwards only relatively few by nearly 10% until 2005.

This rising “employment” in agriculture is closely related to the evolution of employment and unemployment in general and served as a buffer for the massive lay-offs during the nineties. Since the first official tracking in 1990 a massive increase in unemployment from 3% to a first peak of 10.9% in 1994 and a second peak in 1999 (11.8%) had to be witnessed. Anyhow, sheer unemployment rates do not reflect the actual job destruction sufficiently clear as the decline in total employment reveals. Beginning in 1991 the Romanians had to face a continuous decline in total employment, which did not decelerate even during the freeze of reforms in the early and mid-nineties. Job destruction reached its peak only in 1999 and left the labor market with some 8.39 million of working persons, followed by only slight fluctuations even during the recovery period after 2000. Overall some 2.42 millions of jobs got lost (that would account roughly for some 10% of the total population or for 22.6% of the employed persons in 1990). Official unemployment rates do not reflect this evolution by any means but
rather follow the periods of recession and recovery identified in chapter 3.2.2.1. Hence, they build an M-shaped mirror image of the W-shaped GDP evolution.

Figure 3-5: Total Employment and Job Destruction 1990 – 2005

The relatively low unemployment rates of the Romanian transition economy and their (at a first glance) favorable evolution is mainly driven by three determinants. The first one is the massive and constant decline of the activity rate from about 82 % in 1990 to a mere 64.19 % by 2004 (cf. Figure 3-6). The activity rate regained only precious few, despite the slightly growing share of employable persons in the same period. Second, but to a far lesser degree, long-term migration might contribute to the decline in unemployment. On the other hand net migration is rather low, both in absolute and relative terms. Then again, short-term migration might do a good job in explaining a considerable part of the decline in both, unemployment rates and activity rates. This issue remains to be readdressed in chapter 3.4. Third, the typical mentioned and probably most important buffer for unemployment is a process, sometimes described as “reruralization” (cf. Heller 2006: 44). In 1991 the Romanian government returned agricultural land, expropriated during the communist era, to the former proprietors. (Self-)Employment in agriculture was further facilitated by direct lending (cf. Scricciu & Winker 2002: 7). Though the refunded properties were rather small – about 2.5 ha on average (cf. Neve & Olteanu 2006: 513) and not sufficient in size for commercial usage – a considerable part of the excess labor force created by the massive deindustrialization was provided with
an alternative “occupation” in subsistence culture (cf. Popescu 2006: 89ff). This turn from more productive large-scale agriculture towards unproductive subsistence agriculture explains both, first the countervailing importance of agriculture for GDP, net exports and employment and second, the favorable seeming evolution of unemployment rates.

The evolution of real wages so far contributed few in making the labor market more attractive to the population. Corresponding to the decrease of overall production and the massive inflation dynamics (cf. Figure 3-12, chapter 3.2.2.4) Romanian real wages fell considerable to 58.9 % of the level of 1990 until 1993. After a short make-up until 1996 the next negative peak was recorded in 1997 and even in 2005 they reached just a mere 89.5 % of their starting level from 1990. Again, like unemployment rates, real wages tended to follow the W-shaped GDP evolution but at a lower level. On the other hand, the last years witnessed several rounds of salary growth in two-digit ranges (cf. chapter 3.2.3). Nonetheless, current average gross

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41 Standard neoclassical models of labor-markets, especially the notion of voluntary unemployment often have been criticized as unrealistic. This might be true for Western European labor markets but the data here seems to be in line rather with the neoclassical models. It was not always a lack of jobs but a lack of jobs offering wages the people were ready to work for, which characterized the labor markets during the late nineties and subsequent years. Hence, people better tried their luck with domestic production, illicit work or (short-term-) migration.

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salaries amounted to some RON 1,340 in 2007 and are expected to reach RON 2,169 by 2013 (cf. CNP 2008 b: 3). This would mean an increase from a gross salary of some 360 € to maybe 600 € at the current exchange rate (own calculations, exact values might differ with the exchange rate).

**Figure 3-7: Evolution of Real Wages and Real GDP per Worker 1990 – 2005**

3.2.2.3  **The External Sector**
A main export destination before the Revolution was Russia. However, the Russian Federation directly lost its predominant importance in both absolute and relative terms (about 22 % of total exports in 1991) to a share of a mere 1.16 % of total exports in 2006 (own calculations, INS 2008). Important export destinations among other SU-countries did not exist then, with the natural exception of the annexed Republic of Moldova (a large part of the former historical province Moldova). In the last years trade relations seemed to have intensified again, especially with other former SU-countries, but to a relatively small degree (smaller than to other CEECs or even Turkey in both absolute and relative terms). The most important trading partner among former SU-countries is not surprisingly Moldova (27.6% in 2006 of all exports to this region), followed by the Ukraine (27.4%, i.e. 1.3 % of total exports), which is host to a large Romanian minority in the annexed parts of the Bucovina. Anyhow, the region’s share of total exports diminished during the nineties considerable. The traditional important trading partner Yugoslavia was due to the inner turmoil and UN bans less important during the nineties but regained some importance since 2003 (some 3 % of total exports in 2006).
Main export destinations of today are to be found now within the EU. Some 58.65% of total exports were delivered to the EU-17 in 2006, further 11.87% to the CEECs. The first place among the EU-15 is held by Italy (17.94% of total exports and 30.59% of exports to the EU-17 in 2006), followed by Germany (15.71% of total exports and 26.78% of exports to the EU-17) and France (7.5% of total exports, 12.79% of EU-17 exports). Spain holds surprisingly only the sixth place after Great Britain, the Netherlands and Austria. Main trading partner among the CEECs was and still is Hungary with nearly 5% of total exports and 41.6% of exports towards the CEECs, followed on a lower level by Bulgaria and Poland. Another trading partner of risen importance seems to be Turkey, while the rest of the world even lost (relative) importance. Oversea Western Countries (such as Australia, Canada and the United States) hold a marginal share among exports but exceeded – nevertheless – in most years even former Yugoslavia in both relative and absolute terms.

These developments are at first the result of several changes in the foreign trade policy. In 1992 Romania joined the EFTA. In 1993 the EU Association Agreement was signed and ratified in 1995. In the same year, 1995, Romania signed the Uruguay Round Agreement of the WTO and in 1997 Romania joined the CEFTA (cf. Scrieciu & Winker 2002: 14). While the EU Association Agreement had an immediate and strong positive impact in absolute and rela-
tive terms (cf. Figure 3-9), the impact of CEFTA seemed to be laggard and moderate (cf. Vass 2005: 26). Another driving force seems to be an increased competitiveness due to restructuring and a risen share of high quality FDI (cf. next paragraph).

In absolute terms the first rise in exports could be recorded from 1993 to 1997, what seems to be driven by trade creation and trade diversion due to the European Association Agreement (cf. Figure 3-9), which included an extensive kind of asymmetrical preferential trading agreement (PTA; cf. Rault et. al. 2007). Afterwards exports stagnated on a somewhat higher level until 1999 but witnessed beginning in 2000 an unexpected strong and steady growth in all markets likewise. Export conditions did not really improve since 1996, overall EU-demand was stagnant and FDI-inflows, which were an important driver of export performance in other CEECs had been rather modest until this time (cf. Francis & Ng 2004). The exchange rate (cf. Figure 3-12 in chapter 3.2.2.4) had stabilized just in this moment after a period of heavy devaluation, which in turn not had been accompanied by a significant rise in exports and, hence, does not seem to be the main determinant of this development.

Overall, Kaminski & Ng (2004) ascribe the first wave of export growth from 1994 to 1997 mainly to trade diversion effects and the abolishment of trade monopolies, while the second, less expected wave of growth after 2000 was the result of “an impressive progress in industrial restructuring” (ibid: 1) and a more diversified and competitive (capital- and skill-inten-
sive) export offer (ibid: 10f.). This development seemed puzzling as export performance in other CEECs was mainly driven by huge FDI-inflows and Romania performed worst until 1997 concerning FDI. Backed by findings of Damijan et. al. (2003) and Javorcik et. al. (2004) the risen export performance is found to be due to a large number of (small) foreign – mainly Italian and German – firms, an unexpected business friendly environment and significant knowledge-spillovers to domestic firms, which could observed only in few other CEECs; such as Czechia, Poland or Hungary (cf. Kaminski & Ng 2004: 14ff.). This way, Romania managed to improve its export performance by expanding and diversifying the export share of capital- and knowledge intensive goods with relatively few FDI and to become a part of European production chains. As this development took place against the fallen import demand of the EU countries they expect this development to remain relatively stable even during times of recession (cf. ibid: 26). The World Bank assessment (2004 a: 25ff.) yielded a similar result. Nonetheless, there still exists a gap to be closed “between endowment in high-skilled labor force and abundance of resources favoring agricultural production and the factor intensity of EU-oriented export basket” (ibid: 27) while low wages and a low tax burden (cf. BA-CA 2004: 6) remain main comparative advantages. In addition, the concentration in labor-intensive industries persisted despite some convergence of trade patterns toward the EU (cf. De Benedictis & Tajoli 2003).44

Figure 3-10: Evolution of Trade Deficits and the Current Account 1991 – 2006

Source: INS 2008, IMF (BOP, WEO), own graphic

44 Two thirds of the exports in 2006 were “minerals, chemicals, basic metals, wood, clothes and footwear” (Georgescu 2007: 91).
Import patterns do not differ much from export patterns concerning the weight of the trading partners (cf. Appendix 2 and Appendix 3). The single exception is Russia as an important supplier of petroleum and gas (cf. Bobocea 2005), thus featuring an increased weight among total imports. What differs is the total amount of imports. Romania has been a net importer since the very beginning of the nineties, with trade deficits of up to some \(-8\%\) of GDP during the nineties and further acceleration during the recovery period. Especially in the last years trade deficits, and hence, current account deficits, exceeded levels of \(-10\%\). The trade deficit has been and still is a main driver of the large current account deficits, which could partly be covered through FDI-inflows and large remittances from workers abroad. Another main driver of the current account deficit during the nineties was Government lending and in recent years a new wave of private credits, which – of course – are not covered by domestic savings.

With the exception of “manufactured goods” (10\%) no category from Figure 3-11 yielded a surplus in 2005. This single surplus was only due to the subcategories of furniture, apparel and in particular clothing and footwear. Further, often modest surpluses were generated in the subcategories (according to SITC Rev.3) living animals, skins, oil seeds, vegetable oils, wood, ores, iron and steel (but not manufactures thereof), electrical energy, inorganic chemicals, fertilizers, non-ferrous metals and “other transport equipment”. The last category contains railway vehicles, air- and spacecraft, ships, boats and the like. In the Romanian case the
surpluses in this category are probably generated by the railway sector and the shipyards at the Black Sea (cf. chapter 3.3.2). Improvements are to be expected for the machinery sector due to the success of the recent Dacia models (Renault) and the latest activities of Ford, which started in 2008, while the textile and apparel sector had to face a declining importance in recent years.

3.2.2.4 The Monetary Sector
Not only real sectors were shaken during transition. The decline in output was accompanied by hyperinflation, which reached its first peak (256.1 %, cf. Figure 3-12) only in 1993. Afterwards it remained below 50 % for two years. The extent of inflation exceeded effects from price corrections (which ought to be an once-off adjustment anyhow; cf. Wyplosz 2000: 4) and the monetary overhang due to the decline in output by far. It was rather closely related to the exchange rate controls of the first years. Official exchange rates were primarily allocated to subsidized industries (cf. OECD 1998: 5) and only after 1997 market driven (ibid: 21ff.).

The former central banker Dăianu has two explanations for the turmoil of the monetary sector during the nineties, a straightforward one and then a technical, again very insightful one. First, Dăianu & Kallai (cf. 2004: 2) clarify that without a working tax system (cf. chapter 3.2.2.5) seignorage was the only way to finance government expenditures. Second, Dăianu & Vranceanu (2001) explain the connection between high inflation and exchange rate controls as a form of indirect subsidizing. First, transition economies were not just “standard economies hit by a large adverse supply shock, which had to solve simultaneously a problem of monetary overhang and declining output” (ibid: 3). They inherited a centralized landscape of vertical interdependent enterprises, which risked to collapse entirely, even if only few of the firms had fallen out. On the other hand, not all intermediate products were home-made; especially energy had to be bought via world-markets. A rising exchange rate would have undermined the attempt to back these firms via subsidies and blocked energy prices in domestic currency. The budget deficits were financed by the central bank, what led to the vicious circle of increasing prices due to the increasing money supply and additional pressure on the exchange rate. “Even if the central bank had striven to keep the parity constant, the loss of competitiveness entailed reserve depletion and, in the end, the currency had to be devalued. A new inflation cycle is at work” (ibid: 4). Later on, second, after the abolishment of many direct subsidies, the creation of massive arrears had a similar effect, as “the resulting deficit is in general monetized” (ibid.). But then, it was the private sector, which had a dominant incentive

45 Dăianu himself was chief economist of the BNR from 1992 to 1997. From 1997 to 1998 he was finance minister of the Romanian Government under Prime-Minister Victor Ciorba [cf. Alexandrescu & Stoica (2006: 390f.)]. © Copyright Romania Central • All rights reserved • Official download site at Romania Economy
for pretending to be weak and to create the arrears as a form of tax exemption (ibid.). However, with the existence of a private sector the foundations for elimination of loss-making firms at lower social costs were laid (the following resume in restructuration, respectively lay-offs, can be observed well in Figure 3-5). After the liberalization of the exchange rate by 1997, when inflation reached another peak of about 155 % annually, inflation finally started dropping. Until the end of the nineties the BNR still tended to intervene quite often on the markets but the rise in prices decelerated subsequently at an average pace “by international and regional standards” (IMF 2004: 28).

In short, the inflation dynamics of the nineties were driven by the Government’s intention to reduce the social costs of transition and to increase its revenues via seignorage. The situation improved further after strengthening the independence of the Central Bank in 1998 when a new law (No. 101/1998) stipulated price stability as a main goal and reduced the Government’s access to seignorage revenues (cf. Albu & Pelinescu 2000: 12). Another interesting observation is that the peaks of inflation (respectively the freeze in disinflation) coincided with the election years 1992 and 1996/1997, respectively 1999/2000, but not so in 2004 (cf. chapter 3.2.2.5 for further observations).

Figure 3-12: Annual Inflation and Exchange Rates 1991 – 2005

The IMF (2004: 22ff.) identified three important sources for inflation in Romania after 2000. First, inflation persistence; this is the time inflation needs to disappear after it once appeared

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46 Exchange rate data taken from PWT 6.2. Direct quotation, expressed as national currency against 1 Int.-$. © Copyright Romania Central • All rights reserved • Official download site at Romania Economy
as a reaction on a shock. Exchange rate and labor shocks were found to be the other important sources of inflation, while demand shocks turned out to have a neglectable impact. The disinflation strategy after 2001 was a prudent and gradual one, aiming at reducing inflation by some 30% a year. This strategy seemed to work fine and was qualified as “appropriate” by the IMF (ibid: 29). In 2005 Romania officially joined the new club of “Inflation Targeters” (cf. Dăianu & Lungu 2006: 23) among the transition economies. So did most other CEECs in that time, following the example of several Western countries such as New Zealand or Canada. The outcome so far has nowhere been a big improvement, nor has it worsened the situation (cf. ibid: 29ff.).

3.2.2.5 The Fiscal Sector

By international standards, Romania is a low indebted country but indebtedness has risen continuously during the nineties, mainly externally financed (cf. Albu & Pelinescu 2000: 4). Nonetheless, in 1999 Romania witnessed a short financial crisis and barely avoided default, by massive balance of payment adjustments, including a reduction of the budget deficit by 50% (cf. Dăianu & Kallai 2004: 4). While general foreign debt is still rising, Government debt as a percentage of GDP and budget deficits were moderate and declining over the last years (cf. Figure 3-13). Eurostat data from 1995 to 2006 suggests that the decline in Government debt as percentage of GDP seems to be due to both, a very sharp deceleration in making new debts and the accelerated growth of GDP in the last years, not due to a reduction of the absolute amount of debts.

According to the low standards of living, the basically home-made reforms in Romania after 1989 had the additional objective of improving the living conditions of the population (food, heating, electricity). A first increase in expenditure (for real wages, subsidies, pensions and transfers on the one side and a cut in taxation on the other side) seemed to some extent “inevitably” (Demekas & Khan 1991: 19). After starting in transition without notably debts Romania (some 230 million US-$ in 1990; cf. Albu & Pelinescu 2000: 2) managed to accumulate debts amounting closely to 40% of GDP (domestic public debt plus foreign debt). Main driving forces were the decline in output (shrinking GDP), an eroding tax base and, hence,
shrinking revenues, combined with the costs of reform and restructuring, further intensified by the harder access to international capital markets (cf. ibid). Other accelerators seem to be a “political business cycle” (ibid: 19) during the nineties and heterogeneous coalitions (ibid: 3). Public debt accelerated during the elections in 1992 and 1996 and increased only moderate afterwards (cf. ibid: 3). That observation seems to be valid also for the year 2000 but not for 2004. These accelerations also coincide with the peaks in inflation during the respective years and the freeze in disinflation during the year 2000 (cf. chapter 3.2.2.4). The notion of heterogeneous coalitions refers to the public finance theory rule of thumb that the more parties are involved into a coalition the more free-spending Governments tend to be.

Main source for the rise in public debts are large primary deficits. Conventional deficits might have been rather moderate but they were accompanied by large quasi-fiscal deficits of e.g. 8.2% in 1992 or 6.5% in 1996 (cf. ibid: 9). The latter were financed by seignorage as the tax system performed low. Toader (2005) demonstrated a descending taxation burden as a share of GDP from 35.5% in 1990 down to 27.3% by 2006. Tax burden was measured as total revenues from effectively collected taxes, duties and contributions to the general consolidated budget. The degree of taxation subsequently declined until 1997, experienced a short rise until 1999, decreased again until 2001 and remained more or less stable afterwards.

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Figure 3-13: Budget Deficits and General Government Debt 1990 – 2006

Source: Eurostat, Gardo 2006, own graphic

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50 Due to the absence of reliable, continuous and coherent data from one source for the whole period Figure 3-13 has to be considered with some caution. Budget deficit data from 1990 – 2001 is taken from Gardo (2006: 657), likewise the data on foreign debt. General government debt and GDP at market prices are taken from Eurostat. Anyhow, the figure is broadly consistent with literature and might be sufficient for illustrating the general trends. © Copyright Romania Central • All rights reserved • Official download site at Romania Economy
Reasonable explanations are the low performance of the tax collection system and tax evasion. The government tried to defy the sharp fluctuations in revenues during the nineties with several tax reforms, which all aimed at a broadening of the tax base but also reduced marginal tax rates (ibid: Albu & Pelinescu 2000: 9). The latest tax reform removed the progressive income tax system by the introduction of a uniform flat tax of 16% on personal and corporate earnings and the simultaneously removal of many exceptions. Some first progresses, especially in reducing the size of the shadow economy, could be observed but social contributions still are fairly high and might hamper the efficiency of the tax reforms (cf. EC 2008 a: 11ff.).

3.2.3 Rough Outline: The Year 2007 and Outlook

During 2007 the Romanian GDP grew by some 6.1% (cf. Business Standard 2008 a) and reached the level of 121.43 billion of Euros at market prices, the respective value for the approximately same sized Netherlands was 272.77 billion of Euros (cf. Eurostat 2008). The Romanian real GDP per capita corresponds to a level of some 40% of the EU-27 GDP per capita at PPS (ibid.). Labor markets witnessed a further reduction of unemployment (4.4% as national average; Business Standard 2008 a) despite an accelerated growth of labor costs which reached about 23% at the end of the year (cf. Crăciun 2007).^51^ Many articles dealt even with severe shortages on the labor market (cf. chapter 3.4). FDI-inflows (cf. chapter 3.5) amounted to some 6.5 billion of Euros (cf. Business Standard 2008 a). On the other hand, due to a widened trade deficit and an exploding (private) credit market, FDI and workers’ remittances of further 7 billion Euros^52^ could not make up more than half of the growing current account deficit. The latter reached the level of −14% at the end of 2007 (cf. Business Standard 2008 a). Government spending, though rising in absolute terms, remained relatively modest in relative terms, leading to a budget deficit of −2.7% (ibid.). Eurostat calculated a general public debt of some 13% of GDP, the Romanian Ministry of Economy and Finance instead announced a public debt of still low 20.5% of GDP. The differences arose, as usually, since Eurostat does not consider credits which are guaranteed by the state. Most of the public debt was domestic, the external public debt accounted to some 8.8% of GDP. The low value of 13% was achieved despite an increase in public debt by 24.2% compared to 2006 (cf. Wall Street 2008). Overall fiscal policy seemed to be expansionary in 2007.

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^51^ Even other CEECs still register two-digit growth rates of labor-costs. Lithuania even excelled Romania in this regard during 2007 and registered a growth of 30% (cf. Crăciun 2007).

^52^ While Romania benefited from an inflow of about 7.16 billion of Euros from its workers abroad some 1.2 billion of Euros were sent from Romania into other countries, indicating a repatriation of profits. About 1.1 billion had to be paid for EU-Membership. Hence, the effective benefit of the received remittances amounts to some 4.86 billion of Euros (cf. Nicuț 2008).
Inflation was about 6.57 % (ibid.) what corresponded with the seventh highest value in the EU-27 (cf. Folcuț 2008) and was of course well above the benchmark of the Maastricht criterion. Main drivers were raising prices for energy and food. The exchange rate fluctuated around 3.33 RON/EUR (cf. Business Standard 2008 a).

The high confidence in the EU and beneficial view on European institutions (69 % in 2007; cf. Eurobarometrul 2007: 6) was not reflected by a likewise extraordinary participation during the elections for the European Parliament. After the year 2006 was marked by the “Dosariada” (cf. Popa 2006) – the public investigation of the Securitate archives and the accompanied removal of badly implicated politicians – “laitmotivul anului”53 (Deleanu 2008) 2007 in domestic politics were several tensions between President Traian Băsescu and Prime-Minister Călin Popescu-Tariceanu. In April the Parliament even opted for a suspension of President Băsescu, while the population voted contrary in May. Nonetheless, a kind of cohabitation persisted, much to the displeasure of the European Commission as the reformation of the judicial system was postponed for several months because Băsescu and Tariceanu did not manage to agree on the right candidate for the replacement of the former Minister of Justice.

For 2008 the analysts from Business Standard (2008) expect a further, but due to the worsened economic climate, decelerating growth between 5 % and 7 %. Mugur Isărescu, the Goveuer of the BNR foresees even another seven years of growth (cf. Moise 2008). The initially envisaged inflation target of 3.8 % (± 1 %) will hardly be met by Romania as even the well established economies face currently such levels of inflation. A value between 6 % and 8 % seems more conceivable. Exchange rates could fluctuate between 3.3 RON/EUR and 3.75 RON/EUR, while unemployment is expected to shrink slightly to 4.3 % (cf. Business Standard); in spite of further expected two-digit salaries increases in many branches.

Anyhow, while the mood seems quite positive so far – at least in the business press – not all regions in Romania profit to the same extent from the progresses made during the last years. Chapter 3.3 will shed some light on the regional patterns of the Romanian economy and thereby deepen the insight in future prospects, problematic issues and the business environment.

53 “Leitmotiv of the year”[SH].
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3.3 The Regions of Romania

Romania (cf. Figure 2-2) is divided into 41 counties and the Municipal Bucharest. Another division would distinguish four historical and cultural provinces: Transylvania (green) in the north-west and center, Moldova (red) in the east, and Walachia (Oltenia and Muntenia) in the South (blue). The two counties Tulcea and Constanța at the Black Sea (yellow) belong to the Dobrudja.

Figure 3-14: The Counties and Historical Provinces of Romania

In general, the Capital and its surrounding county Ilfov are described (e.g. Ianoș 2006: 606) as better developed, followed by Transylvania and Banat (the western part of Transylvania along the Hungarian and Serbian border). Especially the north-east of the country and its south-west are considered backwarded. Ianoș assumes that the economic development of Romania is asymmetrical driven by FDI-flows, which follow the main traffic roads. Popescu (2006: 90ff.) explicates that the southern and eastern parts always were more rural, while handcrafted-oriented trades are characteristic for the central and western parts. She describes the economic profile of the early 20th century Romania according to the historical-cultural main provinces. Transylvania, traditional better developed and focused on handcrafts and extraction of raw

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54 It is admitted that, in general, Wikipedia might not be the best fitting source for reviewed, high quality information. On the other hand, this map does perfectly well, looks good and is free of charge.

55 Ianoș (2006) uses the share of workers and office staff as proxy for development. The mentioned pattern remains stable when other indicators such as GDP per capita are deployed (cf. e.g. Figure 3-15, Figure 3-16 and for details Appendix 4).

© Copyright Romania Central • All rights reserved • Official download site at Romania Economy
materials, both Walachia and Moldova based on agriculture but also featuring some industrialized cities. On the contrary, Oltenia and Dobrudja are described as backwarded, solely depending on agriculture. In the first two decades of socialism some county Capitals, which already were big cities then, were industrialized. These tend to dominate the regions and counties even today (such as Iași, Craiova, Cluj-Napoca, Timișoara, Oradea or Târgu-Mureș). Secondary centers followed after a next wave of industrialization in the 1960s and 1970s. These often remained mono-sectoral and had more problems to deal with the consequences of restructuration after the 1989. Heller (2005: 55) tracks the spatial patterns of the Romanian economy via the net balances of interior migration for 2004. The picture remains rather unchanged. The Capital and the surrounding county Ilfov attracted the most people, followed by the western counties from Transylvania and Banat: Timișoara, Arad, Caraș-Severin, Bihor and the central Transylvanian counties Sibiu, Mureș, Cluj and Brașov. The only county from the north with a (slightly) positive migration balance is (surprisingly) Botoșani (probably because retired workers returned home from other counties such as Hunedoara), in the South-East as to be expected Constanța and again surprisingly Giurgiu in South-Muntenia. All other counties faced negative or neglectable positive migration balances.

Regarding regional development prospects scientific literature seems to concentrate rather on agri- and silviculture, raw materials and tourism, rather than other economic activities (e.g. Ianoș 2006, Popescu 2006). The growing services sector, re-industrialization via FDI-activities and the various trade activities are less often taken into account in a sharp contrast to the considerations in the business media or investment guidebooks.

After 1990, Romania shifted its spatial policy from a central-based policy to a regional-based policy, in compliance with EU-standards (cf. Benedek 2006: 105). According to four criteria (number of inhabitants, surface, cultural identity and functional-spatial relations; cf. ibid: 125) Romania was divided 1998 into eight Development Regions. The eight regions serve as NUTS-II units and as a framework for development policies (ibid: 123), while the counties serve as NUTS-III units. The model was criticized on the one hand, for the few and only weak competences of the regional institutions (Regional Development Office and Regional Development Council), which remain subordinated to a national institution (National Development Council) that is controlled to 50 % by the government (ibid: 127). On the other hand, the composition of the regions lacks coherence. Especially the South-East Region (cf. chapter 3.3.2) is considered to be very heterogeneous from several points of view. First, it combines each two counties from the three different historical provinces Moldova, Muntenia and Do-
Second, they are not always really well connected and exhibit, furthermore, a very different economic performance (cf. ibid: 128). However, as Romania entered the EU with this regional model it seems exhausting to suggest better compositions of Development Regions. The important point is that the current division rather hides the regional disparities than to reveal them. Figure 3-15 and Figure 3-16 might illustrate that.

**Figure 3-15: Regional Disparities by Development Regions 2005**

![Regional Disparities by Development Regions 2005](image)

*Source: INS 2008; own graphic, own calculations*

**Figure 3-16: GDP per Capita in Current Prices, by County 2005**

![GDP per Capita 2005 (current prices, RON) by County](image)

*Source: INS 2008; own graphic, own calculations*
The subsequent chapters will present the eight Development Regions of Romania in order to deepen both the insight into the current state and development of the Romanian economy and additional potentials and problems. The comprehensive “Manual de România” by the Romanian News agency NewsIn (2008) was of particular importance for these chapters, which rely to a large extent on it.

### 3.3.1 Regiunea Nord-Est

The North-East Region consists of the six counties Bacău, Botoșani, Iași, Neamț, Suceava and Vaslui. This Development Region hosts 17.25% of Romania’s total population on 15.5% of the total territory. It contributed 11.81% to the Romanian GDP in 2005 (own calculations, INS 2008). The population is concentrated in the rural parts of the county. In 2006, the region featured the lowest GDP per capita of all in Romania and even Europe, reaching with 3,051 € just 67.8% of the Romanian average (cf. NewsIn 2008: 10). As already criticized, the North-East Region still disguises considerable regional disparities rather than to reveal them. While the local GDP per capita in Bacău (2005) was just some 7% lower than the national average, the county Vaslui reached just a mere 52% of the national average (INS 2007, own calculations for 2005).

The weak economic performance of the North-East Region has to be attributed, first to the breakdown of the forced industrialization of the 1960s and 1970s (mainly chemical, petrochemical and car industry). Second, to the low urbanization-level and the barely developed infrastructure, which both hampered FDI-Infows and thus, hindered the spread of new economic activities. Accordingly, per capita GDP remained well below the national average in recent years. Agriculture still is the main “occupation”, having a share of 42.7% of total employment, followed by services (33.7%), the industry and construction sector (23.6%). The unemployment rates belong to the highest in Romania and even grew in the last years – against the national trend of shrinking unemployment. Again, Vaslui, might serve as an example as its unemployment rate grew from the 10.1% to 11.25% from 2005 to 2006 (though it decreased a bit by 2007). A considerable part of the population migrated to other counties or

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56 Unless referenced otherwise, information and the data for 2006 are taken from NewsIn (2008: 10ff.). © Copyright Romania Central • All rights reserved • Official download site at Romania Economy
abroad. This reduced the unemployment rate but left just children and the elderly in many locations of the region, especially the Bucovina. Migration and its effects are hard to quantify, though. Anyhow, main destinations are Western Europe and Israel. Money transfers sent from emigrants from this region cannot be estimated reliable as only a fraction is transferred via the banking system. The banking sector in Romania is still underdeveloped as only some 51 % of the population had a bank account in 2007 (cf. Popa 2008), what also might vary among regions. However, the demand deposit stocks of the population in foreign currencies grew considerable from 2006 to 2007 by 36.6 % and summed up to 143 millions of Euro.

On the contrary, the region failed in attracting considerable FDI-inflows. Up to 2006 just a mere 1.2 % (411 millions of Euros; 110 € per capita; cf. ADRC 2008) of the total FDI-inflows to Romania where destined to the North-East Region. Accordingly, the regions share of total Romanian Exports was low (6.3 % in 2006) and even decreasing. The low and likewise falling imports (4.2 % of total Romanian imports in 2006) lead on the one hand to a neglectable contribution to the Romanian trade deficit but have to be taken, on the other hand, as an indicator for the exceptional low standard of living in the North-East. Economic activities are concentrated in few economic centers, what might be reflected in the NewsIn ranking of regional leading firms. Out of 30 top rated firms twelve were from Bacău, seven from Iași, further six from Neamț, while the county Suceava contributed just three enterprises, Vaslui and Botoșani each one (cf. NewsIn 2008: 68).

For the next years the Comisia Națională de Prognoză (CNP) estimates an increase of exports and nearly a doubling of GDP per capita up to the still low value of 5.400 € per capita by 2010 (cf. CNP 2008 a: 7). NewsIn sees strong potential for the Region in tourism, wood industries and agriculture. Critical points remain the low productivity of labor, the weak business environment in small and medium sized cities – reflected by a small number of SME – and the poor infrastructure. Especially modern highways and aviation links are missing.

Then again, local administration, as monitored by NewsIn, performed rather well and got the second place among all regions, reaching a score of 17.1 points of 20 possible. Here some first doubts about the predominant role of the quality of public administration for a viable business-environment (as suggested by the institutional approach, cf. chapter 4) in Romania could arise.

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57 For a more detailed discussion of the Romanian migration potential cf. chapter 3.4.
58 NewsIn monitored 23 local authorities according to four criteria. For more information on the NewsIn monitoring cf. chapter 4.2.1.4.
3.3.2 Regiunea Sud-Est

The Development Region South-East is host to 2.846 million people (13.16 % of total population) containing the six counties Brăila, Buzău, Constanța, Galați, Tulcea and Vrancea. These represent about 15 % of the total Romanian territory. Some 11.48 % of the Romanian GDP stem from this region (INS 2008, own calculations for 2005). In 2006 the regional GDP per capita reached 3,935 € and was about 12.5 % lower than the national average. Like the North-East, this region is subject to strong regional disparities: Brăila, Buzău, Galați, Tulcea and especially Vrancea perform rather low, the local GDP per capita of Constanța was with 5,434 € by 38 % higher than the national average and about 80 % higher than the local per capita GDP of Vrancea. CNP projects by 2010 a growth potential of regional GDP of 74 % (8,800 €) and a doubling of local GDP for Constanța (9,183 €).

The disparities and development gaps between the counties of the region are further reflected by the distribution of regional top ranked firms by NewsIn 2008. While 22 of the 30 top rated enterprises are located either in Constanța (12) or in Galați (10) the other eight firms are settled in Tulcea and Buzău. Neither Brăila, nor Vrancea succeeded in leading one of their firms in the top (cf. NewsIn 2008: 77). Indeed, after some hard years of industrial restructuration the situation stabilized in the last years. Unemployment rates are rather low. On the aggregate level the South-East Region faced some 4.4 % of unemployment in 2007, ranging from 3.5 % in Constanța to 5.5 % in Buzău (INS 2008) on county-level. Anyhow, in smaller cities with poor infrastructure unemployment might be higher.

The economic profile of the region is diversified, though mainly characterized by services such as tourism at the Black Sea and transports; the latter part of the region profits from various maritime and fluvial (Danube) transportation links.

,,Industria, susținută de combinatul siderurgic Sidex Galați, rafinăria Petromidia, centrala nucleară de la Cernavodă, șantierele navale din Brăila, Galați, Tulcea, Constanța și Mangalia și de fabricile de celuloză și hârtie Celhart Donaris din

59 Again, if not stated otherwise, all information and data for 2006 are taken from NewsIn 2008. This applies also to the subsequent chapters.
Brăila, creează mai puțin de un sfert (22 %) din produsul intern brut regional” (NewsIn 2008: 19).

The region succeeded in attracting the second highest share of total Romanian FDI-inflows (7.7 % – 2.653 billions of Euros, 935 € per capita; cf. ADRC 2008), with Constanța as main destination (38 % of regional FDI-inflows). The good performance of the region and especially Constanța is attributed to an attractive infrastructure, the maritime and fluvial links to European and Asian markets, a significant touristic potential, the diversified industry and cheap energy from the nuclear power station at Cernavodă. According to the prominent role of FDI in the region some 30.8 % of regional GDP where exported in 2006. This means a share of 13.3 % of total Romanian exports. Compared to exports imports were rather low (9.4 % of total Romanian imports) and as a result the regions contribution to Romania’s trade deficit amounted just to a mere 2.5 % in 2006.

The regions administration, scored in Buzău, Constanța and Focșani (Municipality of Vrancea), achieved the third rank in the latest NewsIn monitoring report, reaching a score of 14.6 of 20 possible. Actually, Constanța performed best on the regional level (18), followed by Buzău (17). The average score was heavily decreased by Focșani, which gained just 8.5 points.

3.3.3 Regiunea Sud-Muntenia

The Development Region South-Muntenia consists of seven counties (Argeș, Călărași, Dâmbovița, Giurgiu, Ialomița, Prahova, and Teleorman) on 14.45 % on the total Romanian territory. The 3.34 million inhabitants, representing 15.41 % of the total population, contributed in 2005 about 12.60 % to the Romanian GDP (INS 2008; own calculations). Regional GDP per capita was about 3,680 € in 2006 and included a growth of 22 % from 2005. By 2010 the CNP estimates a further growth of up to 6,532.8 € (CNP 2008 a: 9). The region can be divided in two parts featuring a massively differing performance. First, the counties Călărași, Giurgiu, Ialomița and Teleorman are traditionally underdeveloped
and depend heavily on agriculture. They build the second poorest part of Romania after certain areas of the North-East (cf. chapter 3.3.1). The restructuration and shut-down of many industrial activities after 1989 left the region with high rates of unemployment. Due to the ongoing unimportance of the coal mining sector over the next years the situation is likely to persist. Unemployment rates ranged 2005 from 5.0 % in Argeș to 12.1 % in Ialomița (INS 2007).

On the other hand, the counties Argeș, Dâmbovița and Prahova enjoy a dynamic and diversified industrial activity and where important contributors to regional GDP. Some of the industries introduced in the 1970s survived; such as the production and processing of oil and gas or the car and electrical industries. Overall, the industry contributes 29 % to regional GDP. According to NewsIn (2008: 84) 21 of the 30 top rated regional enterprises are from the counties Argeș (7) and Prahova (14). The other counties contribute between one and three firms, Teleorman none.

Due to important Pan-European transportation links and natural resources like oil, gas, coal and mineral waters, the region attracted about 6.5 % (2.228 billion of Euros, 673 € per capita; cf. ADRC 2008) of total FDI-inflows to Romania. This is the fourth place after the Capital, South-East and the Center. Important investors are e.g. Renault and Samsung. Accordingly, exports are rising (from 2006 to 2007 by 27.8 %) and reach a share of 13.4 % of total Romanian exports. The region’s contribution to the Romanian trade deficit is low (5.75 %). Here again, a considerable part of the massive growing deposits in foreign currency of the population might stem from emigrants working abroad.

The aggregate score for the public administration according to NewsIn 2008 was 14.5 points of 20 possible, thus reaching the fourth place of the ranking. Again, the authorities in the cities Pitești (county Argeș – 18 points) and Alexandria (county Teleorman – 17 points) performed rather well, while Târgoviște (county Dâmbovița – 8.5 points) decreased the aggregate score of the region. While the relatively bad score for Dâmbovița and the good one for Argeș might be in line with the notion of the importance of public administration for the Romanian business environment the result for Teleorman definitely is not.
3.3.4 Regiunea Sud-Vest Oltenia

The Development Region South-West Oltenia contains the five counties Dolj, Olt, Vâlcea, Mehedinți and Gorj. 10.68 % (2.306 million) of Romania’s population live here on 10.67 % of Romania’s territory and contributed 8.37 % to the Romanian GDP in 2005. The only county, which exceeded in 2005 the national average, was Gorj (114.66 %). Vâlcea reached some 98 % of the national average GDP per capita (INS 2008, own calculations). Regional GDP per capita in 2006 reached 3,730 €. After a massive restructuring of the mining sector the region contributes to 17.7 % of Romania’s total unemployment and has few prospects for a change of this situation in the following years (NewsIn 2008: 22ff.). As a great deal of unemployment is hidden through subsistence agriculture, unemployment rates ranged 2005 from 6.3 % in Dolj and 9.5 % in Mehedinți (INS 2007). Some 52.5 % of the population live in the rural parts of the region. Despite the low standards of living the migration potential in this region seems to be more modest than in other regions, judged on demand deposits in foreign currency of the population (44 million of Euro in 2007 – this is less than a third of the deposits in foreign currency of the North-East cf. chapter 3.3.1).

FDI-inflows destined to South-West Oltenia were modest and reached just a mere 2.7 % (938 millions of Euros, 409 € per capita; cf. ADRC 2008) of total FDI-stocks in Romania up to 2006. This failure in attracting more FDI is due to considerable development deficits:

„Acest lucru s-a întâmplat deoarece Oltenia are o infrastructură precară, cu cea mai mică densitate a rețelei ferovioare, legături comerciale cu vecinii de peste Dunăre practic inexistente, standarde joase ale hotelurilor, incapacitate de a oferi consultanță în afaceri, porturile dunărene fără dotări, un randament slab al agriculturii și efectele sărăciei” (NewsIn 2008: 34).61

The industry in South-West Oltenia is characterized by coal-fired and hydroelectric power plants. About 75 % of the hydraulic generated energy and about 25 % of the energy depending on fossil fuels stem from this region. Rising energy prices may contribute to a rising in-

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61 “This is due to the poor infrastructure of Oltenia, which features the lowest railway density, hardly any trade relations over the Danube and business consultancy, low hotel standards, bad endowed ports, a low productivity of the agricultural sector and poverty effects” [NewsIn 2008: 184, SH].
come in the future. Some privatizations stimulated the regional economy and in the beginning of 2008 Ford bought a car production plant in Craiova (county Dolj) and drew further investors in the region. Exports (6.8% of total Romanian exports) have risen in 2006 by 26.7% and low imports generated even a modest surplus. Again, this surplus reflects rather the low standards of living than the economical strength of the region. CNP forecasts consider a GDP per capita of 6,634.5 € reachable by 2010 (cf. CNP 2008 a: 10). NewsIn (2008), on the other hand, claims that the region might be underestimated as the official forecasts do not take the benefits of important privatizations into account. Anyhow, the analysts from NewsIn underline the urgent need of “un efort investițional masiv pentru a rezolva problema infrastructurii” (NewsIn 2008: 36). The distribution of the 30 top ranked enterprises from the region according to NewsIn favors Vâlcea (9), followed by Dolj (8), Gorj and Olt (each 5) and Mehedinți (3) on the last place (NewsIn 2008: 92). These relatively low intra-regional disparities might be interpreted as a somewhat equally weak development of the counties.

The public administration was monitored in Slatina (county Olt), Târgu-Jiu (county Gorj), Craiova (Dolj) and Dobreta Turnu-Severin (county Mehedinți). The aggregate score was rather low (10.7 of 20 possible points) and rewarded with the sixth rank (only undercut by București-Ilfov, cf. 3.3.8). While Târgu-Jiu (16.5) and Craiova (16) performed well, Slatina decreased the score heavily with a contribution of 2.5, followed by Turnu-Severin (8). The bad ranking of Slatina is of special interest as it again indicates that public administration is not the only important factor for investment decisions in Romania (as suggested by institutional approaches). Slatina managed to attract considerable FDI-inflows with Continental and Pirelli as front-runners. The Pirelli tires are meant for export to world markets and thus, have a strong need for a capable transportation network. Indeed, NewsIn remarks:

"Trei drumuri europene traversează regiunea, unul dintre ele (DE 70) legând Capitala de Timișoara, poarta de ieșire spre Occident. DE70 trece prin câteva dintre principalele orașe ale regiunii, Slatina, Craiova, Dobreta Turnu-Severin" (NewsIn 2008: 93).  

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62 Of course the transaction did not take place without requests for further improvements for the local infrastructure; especially the railway and highway network and the local airport have to be extended (cf. Șerban 2008).  
63 “a massive investment effort in order to solve the infrastructural problem” [SH].  
64 Information gained through a personal conversation with a Pirelli quality engineer during summer 2006 when I was visiting occupationally one of the plants.  
65 “Three European Roads cross the region, one of them (E 70) links the Capital to Timișoara, the doorway towards the Occident. E 70 passes some of the region’s major cities: Slatina, Craiova and Dobreta Turnu-Severin” [SH].
3.3.5 Regiunea Vest
The Development Region West contains four counties (Arad, Caraș-Severin, Hunedoara and Timiș), which are host to 1.93 million inhabitants (8.93 % of the total population) on 13.4 % of the Romanian territory. About 10 % of the Romanian GDP was generated in the West Region (2005). Regional GDP per capita reached 5,256 € in 2006 and was mainly generated by the viable services sector. According to CNP projections the region might reach a GDP per capita of 9,127.8 € by 2010 (cf. CNP 2008 a: 11). Anyhow, the region managed already a threefold growth as GDP per capita amounted just to a mere 1,697 € in 1998. Services contributed 2006 to 38.8 % of employment, followed by industry and construction (34.5 %), while the agricultural sector is relatively small with a share of 26.7 %.

The region profits from its traditional occidental orientation and profile and from its various links to high quality transportation networks beyond the borders. Front-runner is the county Timiș with its Capital Timișoara, which contributes 16 to the 30 top ranked enterprises by NewsIn (2008: 100). Arad follows with 8 enterprises, Hunedoara with further 5 firms, but Caraș-Severin with just one. Timiș is host to nearly 660,000 inhabitants and over 40,000 students (INS 2007). Many important investors such as the car industry supplier Hella are attracted by the region and especially Timișoara. Despite its attractive economic profile migration is an important issue to the West Region. Not only most Saxons (Germans) and Serbs left the country, also many Romanians from this region preferred to try their luck abroad and left the labor market with shortages of specialists and qualified labor. This trend tends to affect FDI-inflows negatively and decreased the unemployment rate (3.4 % for the region and 1.7 % for Timiș in 2007; cf. INS 2008) while the occupation rate even increased by 3.1 % (cf. NewsIn 2008: 40). Demand deposits in foreign currencies of the population amounted up to 127 million € in 2007, what meant a twofold growth within a single year.

Nonetheless, the region attracted 5.6 % (about 1.948 billions of Euros, 1,010 € per capita; cf. ADRC 2008) of total FDI-inflows to Romania (sharing the second place with the Development Region Center, concerning per capita FDI), which helped considerably to shift the region’s economy from heavy industry to prefabrication (cf. NewsIn 2008: 105). The various
transportation roads and railways toward the EU-markets, also used as transit area for international trade with non-EU countries, plus four airports (two of them international), stimulated various economic activities in a broad range of domains. About 15.3% of total Romanian exports were produced in the West Region, what settled the four counties directly after the Capital Bucharest. Thus, despite considerable imports the regions contribution to Romania’s external deficit has been neglectable in the past, though it might increase in the future. Nonetheless, the West Region is not without regional disparities either. After industrial restructurations and shutdowns in Hunedoara and Caraș-Severin both counties are confronted with persisting high unemployment rates (4.9% and 7.1% in 2007; INS 2008) as a new wave of economic activities is still absent. FDI tends to avoid both counties. Anyhow, even the two tail ends of the region exhibit a relatively good economic performance. Caraș-Severin still generates a GDP per capita that was just 2.44% below the national average; Hunedoara even exceeded the national average by 2.18%. Arad’s GDP per capita was nearly 29% higher than the average and Timiș exceeded it by nearly 55%, only outperformed by Ilfov and Bucharest (INS 2008, own calculations).

The public administration was ranked only fifth, reaching an overall score of 14.1 points (from 20 possible). Hunedoara (same county) and Timișoara (county Timiș) gained both 17 points, while Arad decreased the score with a contribution of 8.5 points. Again, the relatively bad result for Arad assassed against the much better result for Hunedoara might increase doubts that an attractive business environment is just a simple function of the quality of public administration.

3.3.6 Regiunea Nord-Vest
The Development Region Nord-West consists of six counties (Bihor, Bistrița-Năsăud, Cluj, Maramureș, Satu-Mare and Sălaj), which have a share of 14.3% of the Romanian territory and host 2.73 million inhabitants (12.66% of Romania’s population). The region contributed some 12% to the total Romanian GDP (2005, INS 2008, own calculations) and was rewarded with a GDP per capita of 4,282 € in 2006. CNP (2008 a: 12) projections estimate a GDP per capita of 7,608.8 € for 2010. The region features a high degree of urbanization and a
relatively broad supply of financial services, usually only to be found in the Capital Bucharest. Services account for some 35.8% of employment and 45% of regional GDP. So does agriculture with an employment share of 35% (13% of regional GDP) while industry and construction reach only a share of 29.2% (31% of regional GDP).

Unemployment is low and ranged in 2007 from 2.4% in Bihor to 4.5% in Sălaj (INS 2008). Nonetheless, these positive figures hide sharp regional disparities. Bihor, next to the Hungarian border, with its local Capital Oradea would better fit into the belt of the West Region as it rather resembles its neighbor counties like Arad and features a local GDP per capita being 15% higher than the national average (INS 2008, own calculations). Likewise the county Cluj with its traditional university-city Cluj-Napoca and its over 65,000 students (INS 2008) would better fit into the economical and cultural cluster of the better developed counties from the Center Region (cf. chapter 3.3.7). Now being assigned to the Nord-West Region Cluj’s local GDP per capita – about 37% higher than the national average – just hides the substandard GDP per capita of the other counties in the farer north, which might better fit into the cluster of the Nord-East-Region (cf. chapter 3.3.1), even though, they are somewhat better developed. The county Maramureş reached a GDP per capita of 82.37% in 2005, followed by Sălaj (88.07%), Bistrița-Năsăud (91.5%) and Satu-Mare (92.37%). Likewise, the NewsIn (2008: 108) ranking of the 30 region’s top firms reflect the domination of Cluj (10) and Bihor (5). The other counties contributed each 4 enterprises to the top 30, with the exception of Maramureş (3).

The relatively good infrastructure (highway building is in progress, railways and three airports) creates a business- and FDI-friendly environment. About 4.6% (1.57 billion of Euros, 575 € per capita; cf. ADRC 2008) of total Romanian FDI-inflows were directed to the Development Region Nord-West, where they are spread over 13,200 enterprises. Traditional cross-border relations supported this trend. Seven European highways cross the region and grant an easy access to occidental markets. Especially the – yet unfinished – “Autostradă Transilvania” stimulated the business environment in the area of Cluj. After being finished, maybe in 2012, it will link the Romanian Capital to Hungary via the route București – Brașov – Târgu-Mureș – Cluj – Borș66 (cf. NewsIn 2008: 109).

In 2006 some 11.09% of total Romanian exports stemmed from this region; but also imports contributed with 1.1 billion of Euros (9.8% of regional GDP) a considerable part to Roma-

66 Borș is an important check point at the Romanian-Hungarian border, near to the Capital of Bihor, Oradea.
nia’s trade deficit. Over 133 millions of Euros on the population’s demand deposits in foreign currency might indicate the importance of migration for this region.

The public administration as monitored by NewsIn 2008 achieved the first place in the ranking with a general score of 18 points from 20 possible. Tracked were the local authorities of Oradea (Bihor – 18 points), Cluj-Napoca (Cluj – 17.5 points) and Baia Mare (Maramureș – 19 points).

3.3.7 Regiunea Centru
The Development Region Center consists of six counties (Alba, Brașov, Covasna, Harghita, Mureș and Sibiu). Together they cover 14.3 % of the Romanian territory and are domicile to 2.53 millions of inhabitants (11.7 % of the total population). About 11.9 % of the Romanian GDP was generated in the heart of Transylvania in 2005 (INS 2008, own calculations). GDP per capita in 2006 reached 4,725 € which could grow up to 8,451.9 € by 2010 according to CNP forecasts (CNP 2008 a: 13). 2006 some 45 % of regional GDP were created in the services sector (39.3 % of employment), 35 % in the industry and construction sector (34 % of employment) and 12 % by agriculture (26.7 % of employment). Only two of the six counties featured 2005 a (slightly) lower GDP per capita than the national average (these are Harghita with 93.49 % and Covasna with 96.74 %; INS 2008, own calculations); the other four counties are well above: Alba: 104.62 %, Mureș: 108.87 %, Sibiu: 125.59 % and Brașov: 134.55 % (ibid, own calculations).

Despite the relative high GDP per capita, the regional average salary tends to be lower than the national average and unemployment tends to be higher than the national average (5.2 % for 2006 and 4.1 % for 2007; INS 2008). Unemployment (4.9 % for the region) ranged in 2007 from 3.2 % in Sibiu to 7.2 % in Covasna (INS 2008). While unemployment decreased over the last years the occupation rate remained constant (in contrast to other flourishing regions and counties such as West and Timiș). This might contribute to a viable migration potential, especially of the younger generations, which continued even after the exodus of the Transylvanian Saxons around 1990. The population holds demand deposits in foreign curren-
cies of 120 millions of Euros, which even grew by 31 % in the first 5 month of 2007 when rather a decrease would have to be expected (due to several holidays).

A well developed infrastructure concerning both railways and roads, two airports (Târgu-Mureş and Sibiu, a third airport in Braşov will be finished in the next time) and an already diversified industry sector helped to attract about 7.7 % (2.559 billions of Euros, 1,010 € per capita; cf. ADRC 2008) of total Romanian FDI-inflows. Business activities seem to be concentrated on the SME-level as FDI is spread over 12,800 enterprises. The FDI-inflows helped to endure the restructurations of the last years. Nearly all branches are to be found in Transylvania, a traditional strong developed region with Braşov and Sibiu as front-runners:

„În centrul României, industria s-a dezvoltat mai devreme decât în alte zone ale țării. Meșteșugurile practice din vechime au încurajat apariția unor centre industriale importante … cele mai dezvoltate activități din regiune sunt industria construcțiilor de mașini și a prelucrării metalelor, industria chimică, cea a materialelor de construcții, a prelucrării lemnului, extractivă, textilă și alimentară“ (NewsIn 2008: 118).

According to NewsIn 2008 there is still much potential for further investments in the future. Especially the touristic potential is believed to be immense but hampered by inferior hotel services and the absence of respective development plans. The region’s top list of enterprises (NewsIn 2008: 116) is dominated by Braşov (11) and the cultural Capital of Europe 2007 – Sibiu (7) –, which contribute over 50 % of the top rated firms. They are followed by Alba (5), Mureş (4), Harghita (2) and Covasna (1).

The public administration was tracked in the three cities Braşov (county Braşov, 18 points), Târgu-Mureş (county Mureş, 19 points) and Sibiu (county Sibiu, 17 points) and first ranked, together with the North-West Region as both regions gained an overall score of 18 points from 20 possible.

67 These are not always reflected in official statistics. There are counties featuring a higher railway or road density than e.g. Sibiu. On the other hand, these statistics do not take into account which of the roads are really needed and frequented for business activities. In particular, the region profits a lot from its strategic position as an intersection of main transports routes, both railways and highways and is crossed by three European Roads (cf. NewsIn 2008: 118).
68 “In the center of Romania, the industry developed earlier than in other parts of the country. Handcrafts, practiced from ancient times encouraged the development of strong industrial centers … Today, the most developed activities are the car construction industry, metal processing, wood manufacturing, production of construction materials, the extractive and chemical industry, textile and food industry” (NewsIn 2008: 265; SH).
3.3.8 Regiunea București-Ilfov

This region consists of the Municipality Bucharest and the surrounding county Ilfov. About 2.2 millions of inhabitants (10.2 % of the total population) live here on some 0.008 % of the total Romanian territory and generated in 2005 about 21.71 % of the country’s total GDP. Regional GDP per capita amounted to 9,040 € in 2006 and might increase up to 16,041.3 € by 2010, according to CNP forecasts (CNP 2008 a: 14). The region is dominated by Bucharest, the country’s (and even South-Eastern Europe’s) biggest market for business and services. Agriculture accounts to less than a neglectable 1 % of regional GDP and is to be found only beyond the borders of the Capital. Some 20 % are contributed by the diversified industry, further 10 % are generated by the construction sector and nearly 70 % are created by the services sector (INS, 2008; own calculations for 2005). Over 5 % are contributed by financial services and 19.17 % by the real estate sector. The local GDP per capita of Ilfov was 55 % higher than the Romanian average in 2005; the local GDP of Bucharest nearly amounted to 249 % compared to the national average (100 %).

On the other hand, the high GDP per capita was not reflected by average salaries, which were just some 24 % higher than the national average in 2006. About a third of the Romanian universities are to be found in Bucharest (cf. Miroiu and Florian 2006: 576), nonetheless they hardly manage to supply the grasping demand for qualified labor as unemployment rates might indicate. Unemployment is low and ranged in 2007 from 1.5 % in Ilfov to 1.8 % in Bucharest (INS 2008) where only unqualified labor might be affected.

The high productivity is accompanied by a sturdy demand for imports (88.2 % of regional GDP) and contributed according to NewsIn some 74 % to Romania’s trade deficit. Not surprisingly exports represented just 27 % of the regional GDP and 21 % of total Romanian exports. Nearly 65 % (22.205 billion of Euros, 10,004 € per capita) of total FDI-inflows were destined to this region (ADRC 2008). Most of the top rated firms by NewsIn (2008: 124) are settled in the Capital. Just four of the 30 top rated enterprises from this region are located in Ilfov. These are: Carrefour, Metro, Phillip Morris and Porsche.
The infrastructural development is relatively good. The region is the intersection of important high- and railways and further backed by two international airports. Most parts of the road network are modernized, though it is usually overcharged by the immense and daily traffic.

The public administration got worst ranked by the NewsIn monitoring 2008, achieving an overall score of just 8 points from 20 possible. On the other hand, the aggregate value contains considerable 16 points for the Capital and 0 points for Buftea (county Ilfov). The NewsIn scores for the public administration will be used in subsequent chapters (cf. chapter 4.2) to further examine the connection between economic performance and the quality of institutions in Romania.

3.3.9 Inherited Regional Disparities in Romania
Regional disparities are nothing new in Europe. The interesting point is their persistence and maybe slightly increasing trend. In the Romanian case, the year 2000 was the first year with clear positive growth. Furthermore, many subsidies were removed only between 1997 and 1999. Hence, the year 2000 seems the best fitting starting point for tracing the development of regional disparities in Romania.

Figure 3-25: GDP per Capita 2000 by County

Since 2000, few things have changed concerning the order of the counties. Only few stepped up in rank (namely some Transylvanian counties which outperform now the few better developed counties from the south) while the disparities between the counties even have slightly
increased. This is illustrated by the mean which moved some steps to the right when compared to Figure 3-16. In 1998, the earliest year with regional GDP per capita data at both INS and Eurostat, the coefficient of variation amounted to some .35, decreased by 2000 to .32 and reached again .35 by 2005. Convergence and a catch-up on the regional level would imply higher growth rates for initially poor counties and lower growth rates for the “richer” counties. But such an effect is not to be observed.

Figure 3-26: Growth Factor 2000 – 2005 and Initial GDP per Capita

Source: Eurostat 2008, own calculations, own graphic

The good news is that also the poor regions grow but the rich regions do likewise, even at a slightly faster pace. Per capita GDP doubled on average between 2000 and 2005 and growth was equally distributed among the counties, thus did not follow any convergence path. The coefficient of variation even suggests an increasing trend of regional disparities. Overall, the pattern of regional disparities is not a new one but seems inherited as it still are the traditional better developed counties which continue to exhibit higher per capita GDP levels.

Accordingly, for further use in chapter 4 the appropriate measurement for regional disparities are not growth rates as they do not exhibit a usable trend but the perpetuated more or less equidistant GDP per capita levels among Romania’s counties. From a technical point of view the persistence of regional disparities has the advantage that it is virtually indifferent for most cross-county calculations for which year GDP data is deployed. The typical deployed Development Region perspective will be abandoned as county-level data reflects the development
gaps more clearly. Chapter 3.4 and 3.5 will add some observations with regard to labor markets and FDI-attractivity on the national and regional level.

### 3.4 Labor Markets and Migration

Unemployment differs considerably on the regional level. The coefficient of variation for average unemployment rates on county level between 2000 and 2005 amounted to .28. However, official unemployment underestimates the actual waste of labor resources, which is better captured by the evolution of the activity rate (cf. chapter 3.2.2.2 and Figure 3-6). The activity rate started from 82 % in 1990 and decreased continuously until 2003. In the subsequent years it fluctuated between 64 % and 65 %. The average activity rate on county level between 2000 and 2005 was about 67 % with few variations among the counties (coefficient of variation .08). Zaman (2007 b) reports that urban unemployment rates tend to be higher than rural unemployment rates as in the rural areas subsistence agriculture serves as a buffer. In general, Romania’s labor market is perceived as restrictive (cf. Mareș & Mocanu 2005) and social contributions are frequently criticized as being too high (cf. EC 2004, 2008 a).

Often mentioned in the business press are (local) shortages on the labor market and associated phenomena such as extensive and costly job-hopping, which might be partly reflected in Figure 3-27. Counterintuitively, extensive economic activities, FDI in particular, (cf. chapter 3.5 for details and further information on the chosen indicator) keep being concentrated on few economic centers, despite the excess demand for labor generated by this crowding.

**Figure 3-27: Unemployment Rates 2005 and FDI Activities 2007**

![Unemployment Rates 2005 and FDI Activities 2007](image)

\[
y = -0.0002x + 0.0015 \\
R^2 = 0.349
\]

*Source: INS 2008, ONRC 2008 c, own calculations, own graphic*
Over 82% of the labor resources have attended at least secondary education, over 12% attended tertiary education, with a higher share (18.27%) among the young (cf. Zaman 2007 b: 3). Nonetheless, especially qualified labor is predominantly affected by shortages.

A vivid migration potential and the still large size of the shadow economy might not only contribute to the low activity rates but also to the shortages on the labor markets. Romania lost nearly 2 million inhabitants between 1991 and 2006 (INS 2008). Nevertheless, most of these population losses can be explained by a higher mortality rate than birth rate after the total fertility rate began turning low in the nineties (cf. footnote 32 on page 35) whereas the officially tracked net migration is rather modest.

Figure 3-28: Adjusted Population Loss and Net Migration 1991 – 2005

On the other hand, some differences between official net migration figures and mortality adjusted population shrinkage suggest that also informal long-term migration is at work. While the first gap (1992) might be explained well with statistical proceedings (cf. Heller 2006) the second gap (2002) coincides with the new introduced right for Romanians to visit the Schengen area twice a year without visa, each time for a maximal stay of 90 days. However, the total amount of migration flows is hard to track and further data is missing, yet.

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69 For a recent discussion on the size of Romania’s shadow economy cf. Albu 2007.
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However, estimations frequently assume some 2 millions of Romanians working abroad (cf. e.g. Andrei & Păuna 2006; Dill et. al 2005 or Fuster 2008), often for – not necessarily formal – seasonal working. Main destinations are unchallenged Italy and Spain what affected especially the Romanian construction sector negatively. Attempts to retract the abroad working Romanians by special offers and assistance had very limited success so far. The respective job fairies initiated in Italy caught very little attention, yet (cf. e.g. Carbuneanu 2008) what is in line with rather similar experiences in Poland (cf. Fuster 2008).

3.5 FDI and Economic Activity
Romania’s FDI-performance was low for a long time when compared to other CEECs. Note-worthy FDI-inflows started only after the new wave of privatizations (cf. chapter 3.2.1.4) in 1997 but soon decelerated again until 2002. Romania could join the other three front-runners in absolute terms afterwards, only.

![Figure 3-29: Share of FDI-Inflows into the CEECs 1998 – 2006](chart)

Source: IMF statistics online (BOP), own calculations, own graphic

Though Romania caught-up in recent years, there still seems to be much room for further FDI-inflows both in absolute and relative terms when compared to other CEECs. Per capita

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70 Data for Slovakia was missing for 2001 and 2004 -2006. Accordingly, Slovakia was only considered for share calculation in the years with available data. As Figure 3-29 indicates FDI-inflows vary notably in all CEECs over the covered period. Hence, Slovakia was not considered for average building (Figure 3-30) as especially years with higher inflows are missing. Thus, an average value would probably underestimate Slovakia’s performance.

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FDI in 2006 amounted to some 528 US-$, what represents a big improvement but was still only undercut by Poland and (503 US-$) and Slovenia (275 US-$). Hungary attracted even 1,028 US-$ of FDI per capita.

Concerning regions, FDI is unevenly distributed in Romania (cf. also chapter 3.3). The BNR provides some data on NUTS-II level for the years 2003 – 2006. Greenfield data is available for the years 2005 and 2006.

The share of Greenfield investments among the total FDI-stock amounted to some 42.21 % in 2005 and to 49.46 % by 2006. The highest share of total Greenfield FDI-stocks in 2006 was

Source: IMF Statistics online (BOP), own calculations, own graphic

Source: BNR 2008, own calculations, own table
recorded in the Region Bucharest-Ilfov, followed by Center (9.57 %), the West (7.96 %), North-West (5.96 %) and maybe the South (5.2 %) which caught-up compared to the previous year (3.97 %). Comparable data on county level is missing to my knowledge. On the other hand, as already observed by Kaminski & Ng (2004) and World Bank (2004), focusing at monetary data alone can be misleading in the Romanian case. Both studies observed an extraordinary economic activity with regard to the number of firms, which was not suggested by the amount of monetary FDI-inflows (cf. chapter 3.2.2.3). This way, Romania managed to achieve an unexpected high export performance and to become one of the few CEECs where significant spillovers could be detected. This development was to a large extent driven by the large number of relatively small firms.

Useful data in this regard is provided by the Oficiul Național al Registrului Comerțului (ONRC 2008 a: 23), which provides an overview of the number of registered companies with foreign participation between 1991 and 2007 on county level. The table includes also the amount of subscribed capital in the national currency, US-$ and Euro.

Figure 3-31: Foreign Capital per Capita and GDP per Capita

A comparison with former reports – the earliest report is available for the year 2001 – suggests that it were continuously the same counties which attracted the lion’s share of foreign participation firms. There is – of course – a strong relationship between FDI in monetary terms and economic performance (GDP per capita) in Romania but it diminishes once the driving forces Bucharest and Ilfov are removed (cf. Figure 3-31 and Figure 3-32). The main
outliers are the three counties Călărași, Argeș and Galați. Argeș e.g. is dominated by Automobile Dacia SA, Renault and some other suppliers of the automobile industry such as Draxlmaier (cf. NewsIn 2008: 90) or Galați by a huge steel combination and power central.

Figure 3-32: Foreign Capital per Capita and GDP per Capita (without B and IF)

Source: ONRC 2008 a, INS 2008, own calculations, own graphic

Figure 3-33: Foreign Firms per Capita and GDP per Capita

Source: ONRC 2008 a, INS 2008, own calculations, own graphic
On the contrary, the number of firms with foreign participation per capita is very unevenly distributed among the counties and a much better predictor for economic well being and attractiveness. Additionally, it provides a relation which remains perfectly stable after the extreme cases like Bucharest and Ilfov are removed ($R^2 = .64$), thus the data fit remains even better as of the monetary indicator including Bucharest and Ilfov.

Figure 3-34: Total Number of Firms per Capita and GDP per Capita

Thus, local economic performance and attractiveness to FDI in Romania are better expressed by the number of firms with foreign capital on the local level (NUTS-III), not by the money included. This is quite reasonable as some lagging counties attracted large amounts of foreign capital due to the privatization of the heavy industry (such as the steel and energy sector or the automotive industry). Then again, these activities do not guarantee prosperity for the county as a whole nor seem these counties to be too attractive for other kinds of investors, yet. The pattern persists and even stabilizes with regard to linearity if the total number of firms, both entirely domestic and with foreign participation is taken into account. The total number of firms is captured here again with data from ONRC (2008 b: 7) as registered companies between 1990 and 2007 and adjusted for county population size. A closer look on the counties Călărași, Argeș and Galați reveals now that economic activity is rather low and clearly below the mean what is also reflected in lower per capita GDP. Hence, the monetary large-scale investments there seem quite isolated.

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Accordingly, regional disparities in terms of attractiveness to FDI on the local level will be measured henceforth as the number of firms with foreign participation (per capita), not in monetary terms. Likewise, overall attractiveness to economic activity in general will be measured as from now on as the total number of firms registered per capita (cf. Figure 3-34). This is justified as the number of firms seems to be a better indicator for attractiveness and economic performance in Romania than monetary flows, because the latter are distorted by isolated large-scale investments in heavy industries and energy sectors. This is also in line with findings from Kaminski & Ng (2004) and World Bank (2004) which underpinned the importance of SMEs for the Romanian economy and export performance.\footnote{This might be true in particular for the flourishing services sector in Bucharest and some Transylvanian counties. Call-centers, software and consulting companies just like marketing agencies (with international service) are relatively cheap to build up but may yield a higher income as many capital-intensive industrial activities.}

An interesting observation to be made in this regard is the confirmation of several business press articles which describe foreign economic activity as concentrated in few economic centers, despite labor markets being swept clean and significantly higher salaries for qualified labor and sometimes even for unqualified labor.

One could of course argue that this relationship actually works the other way round. That is to say that per capita GDP is higher because of the higher (foreign) economic activity. But first, this notion would not explain why the respective counties were initially chosen (or avoided)

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by foreign investors as they were, second, already better developed before and third, the trend still persists as Figure 3-36 indicates. The registration pattern from 1991 to 2007 correlates almost perfectly with the new registration during 2007 (cf. Figure 3-37).

The result of this concentration of economic activity is not only higher GDP per capita for the lucky counties but often also full employment and a sharp concurrence on labor resources. At the same time other counties still feature excess labor force and ought to have a higher MPK.
judged over their lower GDP per capita levels. Total economic activity and foreign economic activity are highly but not perfectly correlated. In particular, the relation does not seem to be a strict linear one (cf. Figure 3-38) even though also a linear model fits well ($R^2 = .826$).

Figure 3-38: Total Economic Activity and FDI-Activity 1991 – 2007

As it seems, foreign economic activities react somewhat more sensitive on the business environment conditions on the local level than purely domestic activities. It remains to be investigated what actually drives FDI and domestic location decisions in Romania.

3.6 Conclusions – Some More Stylized Facts
Beginning with the year 2000 Romania definitely joined the club of catching-up economies among the CEECs. Only between 2000 and 2005 the Romanian per capita GDP grew more than twofold and is expected to reach 41.5 % of the EU-27 average as measured in PPS by 2008. The nineties in turn were mainly spent with the hard development of working political and market economy institutions, which had been virtually absent before. As a consequence of untypical dire initial conditions, relatively timid reform attempts and lacking experience with reforms all through the nineties, Romania experienced two major recessions and devastating hyperinflation. More decisive reforms and privatizations in the end-nineties laid the foundations for a more sustainable recovery. Overall, some 2.5 millions of jobs got lost in this period, mainly in the formerly oversized industrial sector. However, official unemployment was buffered by a massive expansion of unproductive self-employment in the agricultural...
sector (to this extent an unique issue among the CEECs), heavily decreased activity rates and (short-) term-migration (a common issue among the CEECs). The erosion of the tax base, a large amount of subsidies and arrears in the nineties lead to large fiscal and quasi-fiscal deficits. Overall, little budgetary space is left, whereas Romania is actually a less-indebted country by both, regional and world standards. Nonetheless, SGP criteria have to be met while at the same time EU-membership still requires immense adjustment costs. Most debt, both government and private debt, is foreign owned and reflected by large current account deficits. The recovery after 2000 was mainly driven by exports and internal demand, thus seems sustainable. Especially the export sector could surprise with an unexpected good performance. Then again, imports grew much faster than exports did and the resulting trade deficits contributed further to the accelerating current account deficits. The latter is mainly financed – but only partly covered – by mobile resources such as worker’s remittances and FDI. Up to 2.5 million Romanians are estimated to work abroad, mainly in Spain and Italy. Noteworthy FDI-flows remained absent during the nineties but increased after the second round of privatizations after 1997 and accelerated considerable since the first years before EU-Accession. Currently, Romania belongs to the most attractive FDI-destinations among the CEECs. Furthermore, FDI-activity was often underestimated when it was judged after the size of monetary flows, only. A closer look revealed an extraordinary FDI-activity of small but productive firms, which contributed significantly to the surprising export performance.

Assessed against our stylized facts from chapter 2.5 most dynamics observed in other CEECs work in Romania also, though the convergence path was embarked later on, only. FDI-activities helped to shift production towards more skill-intensive sectors but it is still unclear if Romania will join the smaller club of CEECs which attract more technology-intensive than labor-intensive FDI-flows. Currently, a large part of exports still belong to less skill-intensive sectors. Together with an increased productivity of labor real wages increased considerable but are still much below European-average. Hence, labor markets recover at a much slower pace than GDP evolution would suggest. High unemployment rates were avoided by massive self-employment in agriculture and low activity rates which are, again, rather typical for the CEECs. Obviously, a large part of the labor force still prefers the shadow and home economy, long- or short-term working abroad. Macroeconomic imbalances remain a risk like in most other CEECs and budgetary space is narrow. Romania will probably – as the other CEECs – have problems to absorb structural funds, which require also a co- and pre-financing. A closer look on the regional patterns of the Romanian economy reveals sharp regional disparities,
which are likewise typical for many CEECs and shall be captured in some stylized facts concerning the Romanian economy.

*First*, GDP per capita differs heavily among regions (NUTS II). The extent of regional disparities becomes even much more pronounced once the typical NUTS-II perspective is abandoned in favor of a NUTS-III (county-) perspective. It should be mentioned here that Romania’s counties still are not too small units but on average maybe just five times smaller than the entire Belgian territory and host on average over 500,000 inhabitants (INS 2008).

*Second*, while the national economy follows the typical convergence pattern, i.e. clearly exhibits higher growth rates than more advanced economies, such a catch-up remains absent among the regions. Less developed regions grow more or less at the same pace as better developed regions do and have to struggle with high unemployment whereas the better developed regions even struggle with FDI-hampering shortages on their labor markets.

*Third*, the regional disparities seem to be more or less inherited as their persistence and constant extent among the available regional data suggests. The current pattern resembles broadly the traditional pattern all through the 20th century and even before. From a more technical point of view the rather stable ranking order of counties makes it nearly indifferent for which year GDP per capita data is deployed for cross-county comparisons. This is in particular true for the years after 2000 when most subsidies and other distortions had been removed.

*Forth*, oddly enough, FDI-activities strictly prefer the already better developed counties despite their higher propensity to shortages on the labor market, higher salaries and associated phenomena such as extensive job-hopping. Judged by qualitative data, the lion’s share of FDI-activities seems to focus on counties which already exhibit a developed economic environment, a qualified labor force and better infrastructure.

*Fifth*, as a consequence, some counties benefit to a much lesser extent from the SEM than others do. Low export and import levels reflect their weak connections to the Single Market. As FDI – up to now – preferred rather to be born with a golden spoon in the mouth it can hardly be expected that these counties attract more FDI unless they are modernized.

On the one hand, regional disparities are nothing out of the ordinary, not even in the EU-15. Nonetheless, regional disparities within the CEECs and in Romania are on the very high side. Rather than taking this phenomenon for granted chapter 4 will try to investigate some of their driving forces and to determine their role in the process of real convergence.
4 Achieving Convergence

The assessment of the Romanian economy so far yielded an ambiguous picture. Overall, Romania enjoyed a sustainable seeming recovery and high, export driven growth rates which are likely to continue for the next years. On the other hand, economic disparities between Romania and the EU – even to some other CEECs – are still obvious. Furthermore, the extent of the persistent regional disparities in Romania and the concentration of extensive economic activities on few counties suggest that not all counties can reap the profits of the Single Market to the same extent. The less developed counties grow also but do not catch-up and tend to be avoided by foreign investors. Most of them exhibit likewise few domestic activities. Thus, the expectation that increasing their competitiveness might play a major role in accelerating the process of real convergence seems reasonable.

This chapter seeks to contribute to the question how real convergence can be fostered by increasing the competitiveness of Romania’s economy by facing the challenges of regional disparities. In order to guard against misunderstandings it has to be stressed that this paper does not want to discuss whether and how to reduce regional disparities in Romania or to equalize economic performance among regions. The principal aim is not homogeneity. The paper rather tries to discuss how eventually overall economic performance can be improved by mobilizing further resources in all regions. This for regional disparities are deployed as proxies for a different endowment of competitiveness factors and for identifying these critical factors for success. It remains to be hoped that an additional endowment with these factors can activate currently unused resources in the low performing regions and thus increase the convergence potential of Romania’s economy. If such a measure turns out to work fine the result could of course be (a higher degree of) homogeneity. But that does not need to be true in every case as also better endowed counties could (and should) augment their stock of these factors.

“Convergence certainly cannot be taken for granted” (Vass: 2005: 5) and thus requires also governmental efforts. But the overwhelming amount of policy areas to be reformed and adjusted would make it impossible to deal with all of them in this paper. Thus, the following analysis will focus on only three of them; namely institutions, infrastructure and education.

The topics were not chosen arbitrary and ad hoc but take current issues into account. First, Romanian policy makers themselves do not tire to consider infrastructure and education as the main levers for real convergence and even trace back the regional disparities to the regional

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72 If such a measure turns out to work fine the result could of course be (a higher degree of) homogeneity. But that does not need to be true in every case as also better endowed counties could (and should) augment their stock of these factors.
differing endowment with infrastructure. Second, a large part of the business press and many business surveys seem to support their view as they likewise identify infrastructure as a major problem. Education is understandably commonly believed to play a crucial role in shifting production toward more skill-intensive sectors and to assure long-term competitiveness. Third, though they perfectly agree with the Romanian assessment Western observers seem to emphasize the role of institutions and governance. Modern economics likewise identified institutions as important elements of the business environment, which robustly were proven capable to explain a part of the unexpected behavior of capital flows after their liberalization. All three, not necessarily competing suggestions are accounted for by assessing them in quantitative linear regression models.

The paper of course recognizes the importance of macroeconomic stability and good economic policies. Nonetheless, they will not be subject to further investigation as from now. This is because the impact of both can be expected to be uniformly distributed all over the country and hence, might play a secondary role in stimulating the catch-up of lagging regions. In turn, the patterns of the real sectors are not uniformly distributed in Romania, as outlined in chapter 3.3 what might be due to locally different factors.

The idea of the following chapter is simple. After having sketched the main areas of interest (chapter 4.1) by various observers and scientific literature so far, chapter 4.2 turns to test the impact of the three chosen factors. First, the impact of institutional quality on the local level will be assessed with regard to the regional differing FDI-performance, overall economic activity and GDP per capita. Afterwards chapter 4.2.3 addresses the impact of infrastructure and education, respectively the availability of qualified labor, on per capita GDP, overall economic activity and again FDI. These examinations will use multiple linear regression analysis. Chapter 4.3 concludes the main findings from our proceeding and discusses their implicit policy implications relegating them to the general macroeconomic context before chapter 5 summarizes the main observations and findings of the paper as a big picture.

### 4.1 What does Matter?

Overall, Romanian Policy makers have a very clear idea about what has to be changed but implementation progress sometimes suggest that the necessary experience is missing, yet. The

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73 That is not to say that Romanian policy makers do not recognize the importance of institutions and their improvements. Indeed, there are several reform attempts envisaged or under way. However, there sometimes seem to be slight differences when it comes to the setting of priorities.

74 Furthermore, valuable advice for fiscal and monetary policy is already given by several institutions, such as by the EC via the convergence programs, by the IMF and the World Bank via occasional but strong assessments.
EC advice on the contrary is very reasonable but also fairly generic. Very detailed – even lucid – information and assessments were issued by the World Bank Group. Business Surveys among (potential) investors reflect the gap between the more negative perception of the Romanian business environment from potential investors and the better appreciation of already active investors. Both groups of interviewees give valuable hints which areas are considered obstacles to economic activities. Finally, scientific literature provides several models and frameworks which might be applied to the Romanian case. This chapter tries to sum up main areas of concern before some of them will be subject to further empirical investigation.

4.1.1 Romania’s Policy Makers

The Romanian Government seeks to face the challenges imposed by EC-Accession and the need for a further catch-up in several programs. A broad outline is developed in the general “Strategie de post-aderare 2007 – 2013” (Guvernul României 2006). More flesh on the bones is put in the more tangible development plans of some Ministries (such as the “Programul Național de Dezvoltare Rurală” of the Ministry for Agriculture and Rural Development or in particular Ministerul Transporturilor, Construcțiilor și Turismului 2008) or the “Programul Național de Reforme” (Guvernul României 2007 c and 2007 d), which faces the additional challenges posed by the Lisbon Agenda. The monumental “Planul Național de Dezvoltare 2007 – 2013” (Guvernul României 2005) targets at shifting virtually all economic, public and social sectors towards EU-standards within the framework of the European Cohesion Policy and identifies the main areas of concern as identified by Romanian officials. As six priorities of immediate importance are identified an increase of economic competitiveness and a shift to a knowledge based economy, development and modernization of the transport infrastructure, environment protection, enhancement of the human capital and strengthening of administrative capacities. Rural development and finally the reduction of regional disparities (ibid: 5).

These priorities, especially with regard to human capital and infrastructure (Guvernul României 2007 a: 9 and Guvernul României b: 8) are reflected in the annual updated “Convergence Programs” which are required within the framework of the Stability and Growth Pact (SGP) and the coordination of economic policies focus on nominal convergence. Though nominal convergence is not a concern of this paper these programs include also current economic analysis and reform attempts and reflect the budgetary conflict between the achievement of nominal convergence and the investment requirements in favor of real convergence. The convergence programs are assessed on behalf of the EC, which contain further recommendations; again mainly with regard to nominal convergence as stipulated by the SGP and
few explicit recommendations of how to solve that conflict of objectives. Up to now, Romania handed two such Convergence Programs in (Guvernul României 2007 a and 2007 b) and both were assessed on behalf the EC (EC 2007 d and EC 200 a). The documents yield the quite consistent impression that main objectives are modernization and enhancement of the Romanian stock of infrastructure and human capital, even to the price of public spending being higher than appreciated in Brussels, though a prudent and predictable budget execution is explicitly envisaged. Further objectives are administrative reforms and rather in line with EU-suggestions.

4.1.2 EU-Suggestions
A paper on structural challenges for the candidate countries (EC 2004) recommended improvements of the business environment, mainly by increasing the quality of public administration and services. The budget should be restructured in favor of the enhancement of human capital, administrative capacity and infrastructure. The revenue side should be improved by broadening the tax base and improved tax collection further facilitated by more flexibility on the labor market and a reduction of the high social contributions (cf. ibid: 6). Further assessments, such as the assessment of the first (EC 2007 d) or second (EC 2008 a, b) Romanian convergence program criticize a pro-cyclical loosening and the back loaded attempts to deficit adjustments (EC 2007 d: 6). In particular, shifts from investments to current spending in the past were criticized (ibid: 30f.). This for, the effectiveness of the high allocation of expenditures to the pension system (ibid: 38), infrastructure and human capital (ibid: 42) were doubted. On the other hand, Romania was invited to reduce the high pay-roll taxes to stimulate further decrease of the informal sector (ibid: 4). Overall, rather a deficit reduction is recommended. In the same manner, the commission (EC 2008 b) recommended based on EC 2008 a to “exploit the good times … for more demanding budgetary targets” (EC 2008 b: 3) and to “control the envisaged high increase in public spending and review its composition so as to enhance the growth potential” (ibid.). Suggestions of how to enhance the growth potential were not really given, though. On the one hand, the assessment and the commission recommend focusing on administrative capacity, public finances and macroeconomic stability, the business environment, labor markets, education, R&D, infrastructure and other fields whereas, on the other hand, the planned increase just for these purposes were criticized as unrealistic. Ways how to solve this conflict of objectives were not discussed. Just recently, the EC adopted a new recommendation, which advised Romania again to return to the medium term objective of a structural deficit of 0.9 %, warned from an overheating of the economy and to stick to a credible and predictable budget execution (cf. Business Standard 2008 c)
4.1.3 World Bank
The World Bank Group supported Romania during the nineties and after 2000 with various programs. Key areas as perceived by the World Bank will now be outlined based on three more recent reports for the macroeconomic level and completed by the latest business environment ranking for the microeconomic plan.

The assessment of challenges for the Romanian economy conducted by the IBRD (2006) underpins the importance of further improvements of governance and institutional capacities. Especially administrative barriers to business activities should be overcome (cf. ibid: 2). The efforts undertaken so far to combat corruption seem to be successful and should be continued (cf. ibid: 7). Macroeconomic imbalances remain a matter of concern. The growth of private credits keeps setting the current account under pressure (cf. ibid: 3), which’s deficit is on the one hand not so high by regional standards but to a large part financed by mobile resources rather than FDI (World Bank 2004 a: 9). Arrears declined substantially but are not eliminated (cf. IBRD: 2) what underscores the importance of hard budget constraints (World Bank 2004 a: 66ff.). A unique phenomenon even among the CEECs was that also “profitable private companies” (cf. ibid: 68) were allowed to create arrears. The labor market suffers from a skills-mismatch, urging for further reforms in the education system while the flexibility of the labor market should be increased and taxation on labor reduced (cf. ibid: 110ff. and IBDR 2006: 2). Reforming the low performing (but potentially competitive, cf. ibid: 14) agricultural sector requires special care due to its high contribution to employment (cf. ibid: 8) but is needed to shift resources to more productive sectors (cf. World Bank 2004 a: 17). The dimension of the reformation needs in agriculture is vividly illustrated by some figures. In 2000 about 4.8 million persons were involved in the Romanian agricultural sector and represented some 72 % of the entire EU-15 labor-force in agriculture while productivity was by no means comparable. Whereas an EU-15 worker in agriculture contributed an output of some 21,000 Euro the respective value in Romania amounted to a mere 1,500 Euro. This was not just a matter of pricing and shares. Taking milk as example, every cow in the EU-15 yielded some 5,800 liters per annum, while the respective value in Romania was 3,000 liters (cf. ibid: 82ff.).

As the end of the still unfinished privatization process is foreseeable FDI-inflows might slow down (cf. IBRD 2006: 4) and anyhow FDI remained below potential (cf. World Bank 2004 a: 25). The dynamics seem to have changed somewhat now but the problem remains the same. While Romania currently performs well with regard to FDI the extent of the current account deficit increased sharply, so that even FDI and increasing mobile resources (workers’ remittances) are not sufficient in size to cover the deficit.

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75 Surveyed enterprises reported a substantial decrease in the frequency and amount of bribes during the period from 2001 to 2005 (cf. IBRD 2006: 7). For more details cf. chapter 4.1.4 and the paragraph about the “BEEPS”.
76 The dynamics seem to have changed somewhat now but the problem remains the same. While Romania currently performs well with regard to FDI the extent of the current account deficit increased sharply, so that even FDI and increasing mobile resources (workers’ remittances) are not sufficient in size to cover the deficit.

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a: 10). Hence, budget execution should be prudent and further revenues mobilized since adjustment costs for environmental upgrading and infrastructure will be substantial. Just the upgrading costs for environmental measures will amount to some 30 billion of Euros during 2005 – 2015 (IBDR 2006: 17) of which only 7 billion are covered by EU-funds (World Bank 2004 a: 185). A large part will have to be paid by local authorities and the private sector. Making budgetary space for the co- and pre-financing of EU-funds will be a main challenge (cf. IBRD 2006: 5), while the social security system remains a long-term risk (cf. 16). The IBRD assessment appreciated the recognized “linkage between infrastructure and human capital development and growth” (ibid: 10) by the Government program and supported the strategy to focus on modernization of infrastructure, agricultural improvements and to enhance human capital (cf. ibid: 10). Road transport costs are estimated to be 30 % – 60 % higher than they should be (cf. ibid: 15). World Bank 2004 a (108ff.) urges to reduce rural poverty by public investment in physical infrastructure and reducing the isolation of remote villages, education and a better environment for land transactions.

The business environment as being monitored by the Doing Business Project of the World Bank Group (2008) was ranked 48th out of 178 countries which represents an intermediate rank when compared to other CEECs (better than e.g. Poland, Slovenia or Czechia but behind Bulgaria, Hungary or the front-runners Estonia and Latvia, which gained the places 17 and 22). The low ranked areas were the categories employing workers (145th), registering property (123th) and paying taxes (134th), followed by dealing with licenses (90th) and closing a business (81th). Good ranked areas were starting a business (26th), getting credit (13th), protecting investors (33th), trading across borders (38th) and enforcing contracts (37th). The bad rankings resulted from the difficulties concerning employment and hour rigidities, while registering property takes a long time (150 days) and the process of closing a business suffers from shortages in the justice system. The high taxation of labor and the social contributions result in a total tax rate of 46.9 % on profits whereas the profit tax itself is low (10.9 %). Overall taxation seems complicated, consisting out of 96 different payments.

4.1.4 The Business World

Further insight in the business environment can be gained through business surveys. These might be of different quality but nonetheless contribute to the big picture. At first, most investors seem to be satisfied with their location decision. AHK (2006: 1) found 85 % of German investors satisfied with their business in Romania, though it should be mentioned that only 55 enterprises were interviewed. The next report (AHK 2007) found even 94.5 % of 66
interviewed firms happy with their location decision. Ernst & Young (2008) took a primarily cross-country perspective and interviewed investors from all over the globe with a focus on Western European CEOs with regard to investments in South-Eastern-Europe (SEE). Romania was found to be the most attractive country for investment (52%), followed by Turkey (50%). Distinguishing between already active investors and potential investors revealed a huge gap between the evaluations of several location factors. Especially production growth prospects are often underestimated by potential investors as well as human capital and infrastructure. Distinguishing location factors for the eight best ranked countries left a positive impression for Romania in virtually all categories, only challenged by Greece and Turkey. Nonetheless, the weak points were “quality of live”, “transport infrastructure and logistics” and “telecommunication infrastructure” which were clearly outperformed by Turkey and Greece. Overall 19% appreciated the availability of qualified labor, 25% the productivity growth prospects and 26% labor costs. Areas to improve were telecommunication and transport infrastructure (cumulated 27%) followed by red tape and corruption (cumulated 19%). This leads to the conclusion that potential investors tend to underestimate human capital and infrastructure but that they nonetheless are mentioned first when it comes to the need for further upgrades. 15% suggested a flexibilization of labor regulations and improvements of living conditions. The most attractive FDI-opportunities were industrial (56%), followed by the tertiary sector (44%) what was comparable to Poland.

The interviewees in the likewise cross-country orientated Enterprise Survey (2005), yet another World Bank project, identified tax rates and administration as major constraints to business (34% and 36% respectively), followed by corruption (30%) and labor regulations (16.35%). Some 15.32% reported “crime, theft and disorder” as major constraints, on the other hand, the amount of damages reported was absolutely insignificant (0.15% of sales) when assessed against regional (0.41%) and world standards (1.88%), despite security costs (0.43% of sales) being less than half of the regional standard (1.02%) and much smaller as the world standard (1.66%).77 Infrastructure was not dealt with, except the delays in telecommunication and energy connections. The respective figures were low by world standards and average by regional standards.

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77 This is also much less as the damages and security costs reported for e.g. Germany. Concerning corruption it should be mentioned that in e.g. Hungary, Czechia or Bulgaria a higher percentage expects the need of bribes and gifts in order to get things done than in Romania. But curiously, a significant smaller share of firms considers corruption as a “major constraint” to (their?) business activities. The reasons for these incoherent seeming judgments remain unclear and leave sometimes rather an impression of sophisticated whining when compared to other CEECs.

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The EBRD-World Bank “Business Environment and Enterprise Performance survey” (BEEPS 2005) identifies similar areas of concern for Romania. Though it detected clear improvements when assessed against the 2002 survey, the unchallenged worrying areas were macroeconomic stability and uncertainty about regulatory policies (both about 60 %), followed by tax and financing issues (60 % and 50 % respectively) or other kinds of regulations (about 25 %). Assessed against them were infrastructure and land title issues (both about 20 %) less important but belonged on the other hand to the few domains which did not significantly improve since 2002. Corruption remains an important area of concern as 20 % of firms reported that bribes were frequent. On the other hand, this value included a decrease by nearly 50 % against the 2002 value. The reported bribe tax decreased from 2.5 % of annual sales to some 0.50 % – 0.75 %. This development represents a good progress and success of the anti-corruption measures as Romania turned from being regional champion in this regard (among the SEE-countries) into the best reformer of SEE. However, red tape and regulations remain major constraints and unofficial payments persist. The perception of labor regulations has even worsened (about 20 % in 2002 vs. some 40 % in 2005). The availability of qualified labor worries an increased share of interviewees (about 35 % in 2005 vs. some 30 % in 2002). Concerning infrastructure some 19 % report problems with regard to transportation followed by electricity (about 16 %) and telecommunications (about 14 %). This is broadly in line with the AHK (2006) survey, which figured out the efficiency of public administration, public infrastructure, rule of law and corruption (in this order) as the most problematic fields.78 This impression was confirmed in the subsequent survey (AHK 2007). The labor market is overall positively assessed but critical points were labor market regulations and the availability of specialists. Nonetheless, when assessed against other CEECs and China the interviewed investors ranked Romania as most attractive (even when assessed against Germany or Austria).79 The most frequent suggestions were to improve the fight against corruption, to reduce red tape, to increase the efficiency of public administration and to improve infrastructure.

To sum up, the used surveys qualify Romania as an attractive destination for FDI. The evaluation gap between investors and potential investors suggest that the business environment is much better than commonly expected but nevertheless, the answers of both domestic firms and actual investors in Romania indicate the need for further improvements. Unchallenged

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78 The problematic areas were expressed in grades of satisfaction between 1 and 6, with 1 representing the highest degree of satisfaction. The four mentioned areas were graded between 3.93 and 4.14.

79 The ranking order is of course not too thrilling but should be expected when companies are interviewed which already have chosen Romania as location for their business, thereby expressing their very preferences. However, this result illustrates well that few investors were disappointed in Romania or many even positively surprised.

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main concerns are the macroeconomic stability, followed by institutional quality and public administration, labor-related issues and infrastructure.

4.1.5 Scientific Approaches
A main insight after the liberalization of capital markets was that investments did not behave as expected. While theory suggested that investments will focus on the poorest regions – which ought to exhibit the highest profit rates (MPK, cf. chapter 2.1.4) – they rather preferred the already developed countries (with a lower MPK), followed on a significant lower level by “middle-income-countries”. Soon, macroeconomic and institutional frictions such as inflation or insufficient property rights in the least developed countries were identified as main causes for this contra-intuitive behavior of capital flows on the global level. Further on, several additional variables were introduced and the general concept of “business environment” got prominent. Overall, the macroeconomic climate, political stability, institutions, governance and human capital were found to stimulate – or to suppress – domestic economic and FDI-activities, hence, growth. Typically the names Barro, Mauro and in particular Kaufmann’s governance project (cf. Kaufmann et. al. 2007 a; 2007 b) are to be mentioned in this regard.

Garibaldi et. al. (2002) focused on transition economies and found the uneven distribution of FDI among 25 transition economies to be dependent on “economic fundamentals” (ibid: 30) such as “macroeconomic stability, the level of economic reforms, trade liberalization, natural resource endowment, the privatization method, direct barriers to inward direct investment, and a measure of government »red tape« that reflects obstacles to investment and entrepreneurship and is closely related to corruption” (ibid.). Initially four more governance indicators had entered the regression but were removed due to individual and jointly insignificance (ibid: 24). Quantitative studies dealing with governance issues on the local level in Romania (NUTS II or NUTS III) are missing yet to my knowledge.

Several other cross-country studies found a significant positive impact of infrastructure on FDI (e.g. Wheeler & Mody 1992, World Bank 1994, Kumar 2001, Mollik et. al 2006). Kumar (2001) showed that infrastructure is an important driver of growth and plays a major role in attracting export-oriented FDI. He even advises developing countries “to focus on the development of physical infrastructure” (ibid: 16) rather than other kinds of incentive competitions with developed countries in order to attract FDI. Demekas et.al. (2007) demonstrated this pattern as persistent across the CEECs. Bellak et. al (2007) even found in their CEEC-sample that a better endowment with infrastructure compensates for higher (corporate) tax levels. Infrastructure is typically captured by road and railway densities, motor- and waterways or the
number of major sea- and airports (cf. ibid: 7). Often deployed are (fixed or mobile) telephone line frequencies or other communicational measures. Many studies found these to be the most significant variables (cf. chapter 4.2.1.5 for critics).

The role of infrastructure on the regional level for attracting FDI was assessed e.g. by Basile (2002) for the Italian case. FDI in Italy has been continuously unevenly distributed, preferring the developed north, followed by the middle part of the country while the south was treated with several reservations. Basile found public infrastructure to be an important explanatory variable for this unequal distribution of FDI-activities. Simulations suggested disappointingly that considerable upgrades of the infrastructure stock would be necessary to yield significant attractivity effects for the South. Namely the infrastructure stock of the South had to be increased by 160 % to reach the level of Milan in the North or by 80 % to reach the average level of the middle part, while a more reasonable (that is to say, a more feasible) increase of just 10 % is expected to yield hardly any effects (cf. ibid: 27ff.). Goodspeed et. al. 2006 obtained similar results for Mexico but mainly concentrated on telephone lines as proxy for “international infrastructure” and “domestic infrastructure” for interstate and secondary roads. International infrastructure was found to be more important than domestic (cf. chapter 4.2.1.5 for critics).

Breisinger (2006) examined the role of different kinds of roads and a hydro power plant for the Vietnamese case. Road investments were found to have “sizable impacts on trade” (ibid: 130) to be explained by “market opening effects”. Urban roads increase exports “while rural roads lead to a stronger increase of imports” (ibid.). On the other hand, rural roads lead also to higher GDP growth than urban roads, mainly driven by agricultural growth, which also contributes to the substitution of imported agricultural goods with domestic agricultural goods. This mechanism facilitates likewise the increase of exports of agricultural goods (ibid. 130ff.). On the contrary, the hydro power plant had mainly positive effects for the other regions as an outcome but to a much lesser degree for the region it was located at.

Van Suntum et. al. (2008) assessed the state of the German Infrastructure with regard to transports, energy and telecommunications and discuss output effects, cost saving effects and effects of holding necessary investments back based on the available stock of literature. Overall infrastructure was frequently found to be an important accelerator of growth with considerable effects even among well developed countries like Germany or the USA. An enterprise survey by Ernst & Young found transport infrastructure even to be considered more important than labor costs (cf. ibid: 25f. footnote 58). Estimated output elasticities in different studies
ranged from 0.08 to 0.5 (cf. ibid: 13). This is because infrastructure represents an intermediate product in most production processes and thus, reduces the costs for the private sector, which is thereby stimulated. The effects of lowering infrastructure investments for e.g. the German case were lost growth opportunities of up to 4.1 % for the period from 1990 – 1994 (cf. ibid: 12). In particular, traffic related infrastructure was found to yield very pronounced effects, concerning growth and cost saving effects (ibid: 13ff.). The additional good news for the CEECs is that many traffic related infrastructure projects in this region were even found to yield much higher returns, ranging between 7.1 % and 25.1 %.

For the Romanian case few studies dealt with infrastructure. Hilber & Voicu’s (2006) contribution to agglomeration economics was conducted on county (NUTS-III) level and included also road- and railway densities for the counties, yet without significant results for these two variables. Zaman (2007 a) chooses another approach and calculated an “Index of Infrastructure Availability” (ibid: 9) for the eight Development Regions (NUTS II). The index considers railway densities plus the ratios of national roads to local roads and modernized roads. This index is a smart way to capture the quality of the regional infrastructure which differs sizable among regions. Unfortunately it was not statistically applied to regional GDP or FDI and only two correlation coefficients were given. The first for regional GDP and road density (.79) and the second for railway density (.93) and regional GDP without clarifying what was about their significance or additional details. The Index of Infrastructure Availability was not deployed for quantitative assessments.

4.2 Assessment: Public Administration and the Business Environment
Chapter 4.1 provided a short overview of economic threats and constraints to business, hence, growth in Romania. Virtually all evaluations taken into account emphasized the importance of a stable macroeconomic environment, predictable economic policies and regulatory quality. The importance of these factors for the Romanian economy can be taken for granted. They were mainly followed by the quality of public administration, infrastructure and human capital. The latter three might vary not only among countries but also within the borders of a country. Here arises an opportunity for estimating their impact on economic performance, given the pronounced regional disparities in Romania. First, chapter 4.2.1 introduces a set of different variables for further examination. Afterwards chapter 4.2.2 estimates the impact of

80 These elasticities mean that an increase of public infrastructure spending by 1 % will yield between roughly 0.1 % and 0.5 % additional GDP growth. Or to put it differently, several projects were found to yield about 173 millions of Euros a year for every billion investment. Assuming an average economic life of 30 years this would imply a net utility gain of some 4.2 billion of Euros (cf. ibid: 15).
public administration on local economic performance and chapter 4.2.3 follows with infra-
structure and human capital. The reason for the separation of tests is first our institutional data
being limited to 24 counties; the second reason will soon become obvious. The results are
concluded in chapter 4.3 and in chapter 5 related to the general context.

4.2.1 Variables Deployed
The following chapters will use seven variables in order to express regional disparities on the
NUTS-III level in Romania. As outcome (dependent) variables will be deployed:

<table>
<thead>
<tr>
<th>Table 4-1: Outcome Variables and Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
</tr>
<tr>
<td>( Y_i )</td>
</tr>
<tr>
<td>( FDI_i )</td>
</tr>
<tr>
<td>( TEA_i )</td>
</tr>
</tbody>
</table>

Source: Own table

The used predictor variables are the following:

<table>
<thead>
<tr>
<th>Table 4-2: Predictor Variables and Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictor</td>
</tr>
<tr>
<td>( G_i )</td>
</tr>
<tr>
<td>( IA_i )</td>
</tr>
<tr>
<td>( H_i )</td>
</tr>
</tbody>
</table>

Source: Own table

4.2.1.1 GDP per capita
The outcome variables are derived from observations made during chapter 3.3.9 and chapter
3.5. \( Y_i \) – GDP per capita – differs sizable in Romania what is best obvious on county level.
Neither the extent nor the regional pattern changed significantly during the past years, making
it virtually indifferent which’s year per capita GDP is chosen as outcome variable. Nevertheless,
the year 2005 is the last one with available data on county level and might show the pat-
tern of regional disparities in income more clearly as most subsidies where removed then and all counties had some five years of positive growth in which they could exhibit their potential.

4.2.1.2 FDI-Activity

FDI – \( FDI_i \) – is captured via the number of firms with foreign participation per capita. This is because exact monetary FDI-flows on county level are missing and data on subscribed foreign capital per county is distorted by large-scale enterprises in otherwise less attractive counties. These large-scale investments, most probably due to privatization of heavy industries and the energy sector are typically not accompanied by higher per capita GDP, nor do they draw too many other investors into the region. On the other hand, several counties attracted a huge bunch of foreign owned SMEs, which seem to be very productive on the aggregate level, though relatively little capital is at stake. The regions with higher FDI-activity tend to feature also a higher per capita GDP, profit from FDI-spillovers to domestic firms (a rarer phenomenon among the CEECs) and have been continuously the same (cf. chapter 3.5 for detailed information and reasoning). Thus, \( FDI_i \) considers all registered firms with foreign participation registered between 1991 and 2007, adjusted for county-population size.

4.2.1.3 Total Economic Activity

Entirely analogous, total economic activity (\( TEA_i \)) is captured by the total number of firms per capita, registered between 1990 and 2007. Just like FDI-activity, total economic activity is unevenly distributed among the counties and correlates highly but not entirely with FDI-activity. Foreign firms seem to be somewhat more pretentious as FDI-activity appears as a progressive ascending function of domestic economic activity in the plots.

4.2.1.4 Institutional Quality

The first predictor \( G_i \) – or institutional quality – is provided by NewsIn 2008. Institutional quality does not necessarily need to be uniformly distributed all over the country, not even corruption levels.\(^{81}\) Unfortunately, fitting data with regard to corruption on the local level is missing to my knowledge\(^ {82}\) but the Romanian news agency NewsIn (2008) published in their comprehensive “Manual de Romania” a monitoring and ranking of the public administration

\(^{81}\) The IHK Pfalz states in their FAQ that, at first, corruption does matter in Romania. On the other hand, Romania seems to be much better than its reputation. Most SME and big investors claim that corruption never has been an issue to them. Nonetheless, some branches, especially transportation are much more frequently subject to corruption incidents than others. Furthermore, “lassen … sich auch regionale Unterschiede feststellen” [regional differences can be identified; SH]. Cf. http://www.pfalz.ihk24.de/produktmarken/international/Laender__Maerkte/laender_regionen/anhaengsel4531/FAQ.jsp. With regard to institutional quality the Western part of Romania is perceived more business-friendly than the East but data is missing. However, even the West performs not uniformly well and also some parts in the East do well.

\(^{82}\) The latest World Bank “diagnostic surveys on corruption in Romania” (World Bank 2001) captured interviewees from different regions but did not use the regions to control the results. Its results seem obsolete when compared to more recent surveys (cf. chapter 4.1.4), anyhow.
for the eight Development Regions (cf. chapter 3.3). For each Development Region between three and four local authorities from different counties were monitored in the period of 1st August to 12th September 2007. The 24 contacted institutions were the City Halls of the county-municipalities and thus, do not just represent marginal institutions but ought to be of major importance.

Each local institution was contacted twice, one time via fax and one time by post. According to law 544/2001 NewsIn requested information concerning “execuția bugetului primăriei, în ultimul an fiscal, modificările în structura personalului și în organigrama instituției. De asemenea, a fost solicitată și o listă a proiectelor de investiții derulate în 2006” (NewsIn 2008: 17). The institutions were scored according to the four criteria “complying with legal deadline”, “quality of answers”, “response time (counted in days)” and “information accuracy”. For each category a score of 5 points could be reached.

Law 544/2001 establishes that each public institution is free “to levy a tax for the copying of the documents” (ibid: 169). Pricing for this service is not arranged by law and remains up to local authorities. However, with the exception of the City Halls from Bucharest and Iași no single institution exercised this option.

4.2.1.5 Infrastructure and International Accessibility
The second predictor $IA_1$ – or infrastructure and international accessibility – is an own composite index and requires some explanations. Literature deploys different indicators for the state of infrastructure (cf. chapter 4.1.5). Often telecommunication variables (such as fixed telephone lines per capita) are found to have the strongest and most significant impact on FDI-location decisions (cf. e.g. Bellak et. al 2007). This might be – to some extent – a reasonable point, especially for cross-country studies, but the causality seems unclear in my opinion.

To make the long story short, fixed telephone lines per capita of course correlate strong and significant with both GDP per capita and the number of foreign firms on county level on Romania. However, with regard to the three chosen outcome variables, the impact loses dramatically size and significance once the other predictors are deployed. These in turn remain both strong and significant. Cf. Appendix 6 for a model including fixed telephone lines per capita.

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83 An exception was the Development Region Bucharest-Ilfov. For this region two local authorities got monitored and ranked; one from the county Ilfov and one from the Capital.

84 “the budgetary execution in the last fiscal year, structural and personnel changes. Furthermore, the agency requested a list of investment projects carried out in 2006” (NewsIn 2008: 169, SH).

85 “Bucharest City Hall levies a 1 leu tax for the copying of a page while Iași City Hall imposes a 3 lei tax for the same service” (ibid: 169).

86 However, with regard to the three chosen outcome variables, the impact loses dramatically size and significance once the other predictors are deployed. These in turn remain both strong and significant. Cf. Appendix 6 for a model including fixed telephone lines per capita.
line is a prerequisite for most business activities and hence, agglomeration of firms will increase the frequency of fixed telephone lines per capita. But that does not necessarily mean that the sheer availability of telephone lines attracted the firms. Fixed lines might be available at other places but are simply less solicited due to an otherwise less attractive business environment. Furthermore, a higher per capita GDP will make the access to telecommunication services more affordable for households. For sure, the frequency of subscribers to such services is also a matter of availability. But a fixed telephone line in Romania is relatively equally available in Bihor, Arad or Sibiu. Thus, the differing frequencies of subscribers in these counties are more likely to be explained by differing income and urbanization levels (i.e. via the size of average households, not necessarily via availability only) and different degrees of economic activities. Due to the difficulties in detangling the causalities in the telecommunication sector the variable will not deployed here. The paper will focus rather on more unambiguous transport and traffic related variables as it is unlikely that FDI-inflows caused the existence of European Roads or airports several years before.\(^87\)

Often used is overall road density, others consider only certain kinds of roads. Accordingly, a first starting point could be the road density of the counties. However, eyeballing the data shows that this approach would be misleading. A simple regression for the 24 counties from the NewsIn 2008 monitoring yields only a weak effect and does not even fit the data appropriately (\(R^2 = 0.0143\)). The regression improves somewhat after the share of modernized roads is deployed as predictor variable. Nonetheless, the relation leaves the biggest part of the variance unexplained (\(R^2 = .3413\)) and overall road densities do not differ dramatically, anyhow. Does this mean that infrastructure does not matter either?

Most probably not. Ianoș (2006) linked FDI-performance to the course of main traffic roads, and NewsIn (2008) identified infrastructural shortages likewise explicitly as major explanatory factors for local economic performance and FDI-performace. As seen in the case of Sibiu (cf. footnote 67 on page 71) “infrastructure” from an economic point of view can be considered (relatively) well even if network densities (29.4 % for Sibiu in 2005, INS 2007) are relatively low. Sibiu profits from its position as intersection of main traffic roads (typically the European Roads are considered as such) and the existence of an international airport. Likewise does Cluj, further supported by the current building of the motorway “Autostrada

\(^{87}\) Large-scale FDI-inflows were sometimes accompanied by solicitations for infrastructural enhancements. However, this phenomenon is rather a new one as huge FDI-inflows arrived relatively late in Romania. Furthermore, these enhancements will not be considered in the predictor variable but just these facilities, which were already available or planned before.
Transilvania”. So do Constanța (both further backed by an airport and two important maritime ports) and the Capital Bucharest (two airports).

Currently, Romania features only a short highway but several projects are under way. The best working roads are the “national roads” [“drumuri naționale”, maybe comparable to German country roads (“Landstraße”)]. In general, Romanian roads are in a bad state (cf. SAR 2007) what is also reflected in the share of modernized roads (cf. Figure 4-1). There are two classes of national roads (clasa A and clasa B). Some national roads of both classes are allocated to “international” (this is to say heavy) traffic – but not all. Even the allocated roads are actually not capable for this purpose (cf. Guvernul României 2005: 81f.) but alternatives are missing and as a result they suffer from a heavy over-utilization which in turn is not helpful for maintaining their anyway critical state. To sum up, what really differs significantly across Romanian counties is not the statistical tracked overall density of roads but the endowment with “international” transportation links.

International traffic links are to be found on the map on ARIS’ website (Agenția Româna pentru Investiții Străine, 2008). ARIS is a legal Romanian agency, which seeks to be the “Government leading body for providing consultative services to foreign investors” (ARIS,

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88 In turn, the share of modernized roads improves considerable if only national roads are considered and reaches typically levels of over 90 % per county (cf. INS 2007).
89 Of course, other kinds of roads are also open to “international” traffic but they are more restrictive concerning transport masses and dimensions. I would like to thank the Romanian Ministry of Transports for clarifications.
2008). Provided, among other information, is an interactive map containing roads, airports and ports, planned and existing highways plus railway connections. This map is the main source for the index $IA_i$. Most, but not all European Roads are considered on this map; especially only few class B European Roads were considered. While this pre-selection on behalf ARIS may actually be an useful indicator of which roads are “advertisable”, I gathered road data nevertheless from Microsoft Map Point 2006, European edition. To guard against misunderstandings: beneficiaries of this measure are solely the less well endowed counties.

This focus on European Roads can be backed by some examples. First, a look on the official traffic news, issued by the Compania Națională de Autostrăzi și Drumuri Naționale din România (CNADNR) for today (2008-04-11) announces three interruptions of traffic on national roads (all due to reasons like “Alunecare de teren din cauza precipitațiilor”) and impeded traffic at further 16 locations on national roads for similar reasons (just in two cases due to modernization and construction works). Second, another illustration of the state of the Romanian road network might be expressed by the rule of thumb that you can account for one hour of driving to make some 50 or 60 km (average for all kind of roads). The IBRD (2006: 15) estimates that road transportation costs in Romania are 30 % – 60 % higher than they should be. Furthermore, Nokia might serve as example. Nokia’s new plant at the place of Jucu is already connected to the infrastructural relatively well endowed local municipality Cluj-Napoca nearby via a national road and features, furthermore, a local railway station on double electrified rails. Nonetheless, these existing connections of the industrial park Tetra-rom III did not seem to fit the needs of Nokia and its suppliers as their demand for another highway, mainly parallel to already existing national roads, towards the airport and next motorways (currently under construction) might indicate (cf. e.g. Cireașa 2008). Overall, the state of the national roads is not optimal. On the other hand, they are Romania’s best working roads and some of them – termed “European Roads” – make part of the Pan-European Transport network and are open to heavy traffic. The state of the other roads is worse and hence, firms seem to find it important to be near as possible to European or at least national roads.

Hence, I suggest an index for “infrastructure”, consisting of five single indicators:

1. Number of airports and ports (both, maritime and fluvial, according to ARIS)
2. Intersection of European Roads (according to Microsoft Map Point 2006, EE)

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90 Slide of soil due to rainfalls [SH].
91 Cf. e.g. [http://www.cjcluj.ro/harta5.html](http://www.cjcluj.ro/harta5.html) for the national road and [http://www.cjcluj.ro/harta3.html](http://www.cjcluj.ro/harta3.html) for the railway station. Both maps are exposed on the County councils web site.
3. Number of European Roads (according to Microsoft Map Point 2006, EE)
4. Number of motorways (existent or planned, according to ARIS)
5. Important border position (Hungarian border or Black Sea)

While well working ports might be cheap means of transports, airports are additionally a time saving mean, mainly for human traffic, thus indispensible for MNEs and their personnel flows. Hence, for each airport and port a county is scored with one point. As Brașov’s airport is currently still under construction it was scored with 0.5 points. The county Ilfov does neither possess an airport nor another kind of port but as it actually contains Bucharest (two airports) and its surface represents just a small fraction of other counties’ surface it was scored with one point. The position as intersection of European Roads was likewise rewarded with one point. No half points were given but if the intersection was next to the border of another county each of them gained one point. The intersection indicator captures the fact that some counties are traversed in all four directions by European Roads while others are just crossed or strived. Furthermore, an intersection of European Roads evidently increases the transportation opportunities. Likewise, each European Road crossing a county was scored with one point with the exception for roads which just crossed a small part of the county without passing a main city. These counties were scored with 0.5 points (Neamț). Again, each motorway (existing or planned for the near future) crossing a county was scored with another one point. No half points were given. The planned routes for the highways to be build have been known for a long time now and many are currently worked at, though the effectivity of implementation is not always thrilling (cf. e.g. Turnock 2006). The position next to the Hungarian border or the Black Sea was scored with another point and applied only to the western counties (Arad, Bihor, Satu Mare and Timiș) and the two counties at the Black Sea (Constanța and Galați). This indicator accounts for the availability of high quality transportation facilities (at least for transit purposes) beyond the Hungarian border (cf. e.g. Kohagen 2007 a or NewsIn 2008) or at the Black Sea (cf. e.g. Kohagen 2007 b or NewsIn 2008). The railways system...
was not considered in order to keep things simple. According to the ARIS map the beneficiaries would have been again the already better endowed counties anyhow and furthermore just some 28% of all goods are transported on railways (cf. Guvernul României 2005: 84) despite their greater (potential) effectivity. Human traffic for MNEs is unlikely to use the Romanian railway system. All values enter the index without being weighted as every kind of weighing would be the same questionable as their non-weighing.

Usually deployed control variables for FDI are wages or unemployment but they can be skipped in the Romanian case as economic activities – FDI in particular – within Romania tend to behave contra-intuitive and mostly avoided regions with higher unemployment and lower wages so far (cf. chapter 3.5).

4.2.1.6 Human Capital
The third and last predictor $H_i$ – human capital or availability of qualified labor – is the total number of students enrolled per county according to INS 2008. A quota of students per county does not seem appropriate as it is the overall available labor force, which attracts FDI and stimulates business activities in general. The indicator suffers from one outlier, which actually is just a statistical artifact. County Ilfov has no students enrolled as they are – for obvious reasons – enrolled in Bucharest. Nonetheless, the data set was not adjusted as it would be arguable how to allocate the numbers among the two units. We just keep in mind that this outlier will lead to an underestimation of human capital in the regression.

4.2.2 Assessment of Institutional Quality
After the outcome variables and their predictors have been introduced this chapter will deal with the impact of institutional quality $G_i$. The assessment was separated from the other predictors for two reasons. First, the public administration test considers only 24 counties while the test of infrastructure and human capital includes all counties in order to increase precision. The second reason is illustrated in Figure 4-2. A simple regression in the form

$$Y_i = \alpha + \beta G_i + \epsilon$$

using the NewsIn score for the 24 monitored local authorities as predictor variable and GDP per capita 2005 as outcome variable turns out to be a thankless exercise unless a more Popperian attitude is adopted. The relation is weak ($\beta = .058$) and of a low significance (.788). The explained variance is neglectable ($R^2 = .003$). The constant $\alpha$ (RON 12,540.48) is even nearly
as high as average GDP per capita on county level itself (RON 13,271.81). The situation does not improve substantially if the other outcome variables are deployed.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Predictor</th>
<th>R²</th>
<th>Regression Fit F</th>
<th>Constant</th>
<th>B</th>
<th>Beta</th>
<th>T-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( Y_i )</td>
<td>( G_i )</td>
<td>.003</td>
<td>.074</td>
<td>12,503.90</td>
<td>52.807</td>
<td>.58</td>
<td>.273</td>
<td>.788</td>
</tr>
<tr>
<td>( FDI_i )</td>
<td>( G_i )</td>
<td>.001</td>
<td>.011</td>
<td>.006</td>
<td>-3.3E-05</td>
<td>-.023</td>
<td>-.106</td>
<td>.916</td>
</tr>
<tr>
<td>( TEA_i )</td>
<td>( G_i )</td>
<td>.013</td>
<td>.279</td>
<td>.069</td>
<td>.001</td>
<td>.112</td>
<td>.529</td>
<td>.602</td>
</tr>
</tbody>
</table>

*Table 4-3: Regression Results for \( G_i \)*

A further look on the distribution does not suggest a non-linear or any other kind of trend; therefore further tests will be skipped. We rather see most monitored authorities achieving good rankings but per capita GDP varies dramatically even among same ranked counties. Additionally, the worst result for public administration (City Hall of Buftea, county Ilfov obtained zero points) is accompanied with the second highest per capita GDP, thus, far above the average GDP per capita. This works also the other way round. The poorest county of the sample (Teleorman – RON 8,011.35 per capita GDP in 2005) excelled with a score of 17 points (City Hall of Alexandria).

\[ y = 52,034x + 12504 \]
\[ R^2 = 0.0033 \]

*Figure 4-2: Simple Regression – GDP per Capita and Public Administration, by County*

*Source: Data from INS 2008 and NewsIn 2008; own graphic, own calculations*

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95 This average value refers only to the current sample. The slight differences between the figures in the table and the equation in the Excel generated chart are due to rounding errors.

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There might be several reasons for this result. First of all it seems striking that local Romanian authorities did not perform that bad (mean $\bar{x} = 14.54$ out of 20 possible points, standard deviation $s_x = 5.28$). Actually, most of them did rather well and only six out of 24 authorities were scored below the high average. One might suspect sponsorship effects as the local authorities could be interested in pleasing the agency NewsIn. Then again, this notion fails to explain why some of the authorities were not interested in making a good impression while others were. Another objection would be that the administration score is from 2007 but GDP per capita data is from 2005. Indeed, it might be possible that certain incidents (e.g. EU-accession) changed the behavior of the authorities in recent time. Such a change can, of course, not be reflected by GDP data from 2005. On the other hand, the given county order with regard to GDP per capita from 2005 is not new and probably unchanged, thus, GDP data for 2005 nonetheless might serve as a proxy.\(^6\) One could also argue that the sample was too small and the results are, hence, randomly. Furthermore, it is obvious that the indicator is a neat but weak one as it covers only few dimensions of several possible dimensions concerning institutional quality. Therefore, the result has to be taken with some caution and is by no means a blueprint for Romania’s authorities. But it nonetheless supports the frequent notion that things in Romania often work better than expected. While the range and variation of achieved scores confirm the expectation that administration in Romania can be and (too) often is deficient, the large share of well scored cases suggests that more often things get easily done. This is by the way in line with my personal experience gathered while working at this paper. I contacted Romanian authorities thrice and got at least answered or easily helped out. Ironically, I cannot say the same about Transparency International (Romanian Office), which did not even bothered to answer my mail.

4.2.3 An Alternative Model: Infrastructure and Education
The next test will assess the relationship between the remaining predictors and the outcome variables. But at first we shall eyeball the data and distributions for a while. The lowest aggregate score on the infrastructure index reached was 1 (by e.g. Telorman), the highest score was achieved by Bucharest (10). A simple regression indicates a considerable effect and seems to fit the data adequately ($R^2 = .6215$, cf. Figure 4-3). An interesting observation is that the ranking order of the Transylvanian counties becomes clearer. Cluj (CJ), Timișoara (TM) Arad (AR) or Sibiu (SB) exceed Hunedoara (HD), Harghita and Caraș-Severin (CS) not only with regard to per Capita GDP but also concerning infrastructure. Constanța (CT) on the other

\(^6\) Furthermore, the ranking order of the counties can be expected to be unchanged as CNP projections on NUTS-III level do not indicate major changes.
hand demonstrates that infrastructural well endowed counties must not be worse off just for belonging to the East, so do Bacau (BC), Suceava (SV) and Iasi (IS), even though these better endowed counties in the East nevertheless seem to suffer from infrastructural shortages of their neighbor counties which of course have to be traversed when it comes to logistics (cf. Figure 4-4). For instance, travelling from Galați to checkpoint Nădlac (Arad) on European (and national) Roads would require the indirect route via Brăila, Ialomița, Bucharest and so on.

**Figure 4-3: Simple Regression – GDP per Capita and Infrastructure, by County 2005**

\[ y = 1417.6x + 6302.1 \]

\[ R^2 = 0.6215 \]

GDP per capita follows a similar pattern on the map (cf. Figure 4-5). But the maps and the distribution in Figure 4-3 also clarify that infrastructure does of course not account for all the variance. With regard to FDI the slight nonlinear relation between GDP per capita and foreign economic activity – as observed in chapter 3.5 – becomes a real cubic function once \( Y_i \) is replaced by \( IA_i \) as predictor variable (cf. Figure 4-6). The effect can nonetheless be tracked sufficiently by linear regression, even though the linear model underestimates the role of infrastructure. The same is true for overall economic activity, \( TEA_i \), which follows the same pattern as FDI, though foreign firms seem to react even more sensitive to infrastructure than domestic firms.

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97 This might also apply to Dolj (DJ) in the South. The county is infrastructural relatively well endowed, but surrounded by less well endowed neighbors and thus seems like an isolated island on the map in Figure 4-4.
Figure 4-4: Map – Infrastructure and International Accessibility, by County

Source: Microsoft Map Point 2006 and own data

Figure 4-5: Map – GDP per Capita, by County 2005

Source: Microsoft Map Point 2006 and own data

Note: not all roads visible on this map are European Roads. Some of them are normal national roads.
The effect of human capital, $H_i$, can likewise be tracked well via linear models. Again, a simple regression analysis indicates a relatively strong effect and a well fit of the data, only diminished by one major outlier (county Ilfov without students but a very high per capita income). This outlier actually is none as students from Ilfov are obviously enrolled in Bucharest. For illustrational purposes, both Ilfov and Bucharest were removed from Figure 4-7.  

See Figure 4-6: FDI, Infrastructure and International Accessibility.

$y = 0.0006x^2 - 0.0035x + 0.0065 \quad R^2 = 0.7928$

$y = 0.0019x - 0.0028 \quad R^2 = 0.5041$

See Figure 4-7: Simple Regression – GDP per Capita and Students, by County, 2005.

$y = 0.1152x + 9893.1 \quad R^2 = 0.4111$

---

99 The regression result including Bucharest and Ilfov is even better, despite the considerable negative effect of Ilfov for the regression: $y = 10517 + 0.0794x$ with $R^2 = 0.584$ (cf. Appendix 5 for the figure).
After the removal of Ilfov and Bucharest three more outliers draw attention. These are Dolj (DJ), Galați (GL) and Iași (IS). All three perform better than their neighbors but worse than counties with a better infrastructural endowment or a better location. The relation between FDI and human capital ($R^2 = .76$) suffers from many outliers, which become especially visible if Bucharest and Ilfov are removed from the sample ($R^2 = .35$). But on the other hand, the relation is stronger and relatively linear with regard to total economic activity ($R^2 = .642$). Both predictor variables will be used now for multiple linear regressions in the form of

$$Y_i = \alpha + \beta_1 IA_i + \beta_2 H_i + \epsilon$$

A detailed overview on the results for GDP per capita ($Y_i$) is presented in Table 4-4 to Table 4-8. The results suggest a strong and highly significant impact of both predictors while the data is fitted well.

### Table 4-4: Descriptive Statistics (SPSS) – GDP

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y_i$ (GDP per Capita)</td>
<td>11,871.14</td>
<td>4,219.73</td>
<td>42</td>
</tr>
<tr>
<td>$IA_i$ (Infrastructure and International Accessibility)</td>
<td>3.92</td>
<td>2.35</td>
<td>42</td>
</tr>
<tr>
<td>$H_i$ (Human Capital or Availability of Qualified Labor)</td>
<td>17,058.66</td>
<td>40,631.11</td>
<td>42</td>
</tr>
</tbody>
</table>

*Source: Own table, own calculations*

### Table 4-5: Correlations (SPSS) – GDP

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>$Y_i$</th>
<th>$IA_i$</th>
<th>$H_i$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y_i$</td>
<td>1.000</td>
<td>.789</td>
<td>.764</td>
</tr>
<tr>
<td>$IA_i$</td>
<td>.789</td>
<td>1.000</td>
<td>.588</td>
</tr>
<tr>
<td>$H_i$</td>
<td>.764</td>
<td>.588</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*Source: Own table, own calculations*

### Table 4-6: Model Summary (b) (SPSS) – GDP

<table>
<thead>
<tr>
<th>Model</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Std. Error of Estimate</th>
<th>Change Statistics</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
<td>F Change, df1, df2, Sig. F Change</td>
</tr>
<tr>
<td>1</td>
<td>.872(a)</td>
<td>.760</td>
<td>.747</td>
<td>2,121.41</td>
<td>0.760</td>
<td>61.610, 2, 39, .000</td>
</tr>
</tbody>
</table>

*Source: Own table, own calculations*

### Table 4-7: ANOVA (SPSS) (b) – GDP

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>554,536,196.94</td>
<td>2</td>
<td>277,268,098.47</td>
<td>61.610</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>175,514,798.65</td>
<td>39</td>
<td>4,500,379.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>730,050,995.59</td>
<td>41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Own table, own calculations*
Table 4-8: Coefficients (SPSS) (a) – GDP

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower B.</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>7,408.715</td>
<td>682.431</td>
<td>10.856</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$IA_i$</td>
<td>931.650</td>
<td>174.552</td>
<td>.518</td>
<td>5.337</td>
</tr>
<tr>
<td></td>
<td>$H_i$</td>
<td>.048</td>
<td>.010</td>
<td>.459</td>
<td>4.728</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: Y_i*

Source: own table, own calculations

Both independent variables correlate highly (infrastructure $r = .789$; qualified labor $r = .764$) with economic performance, captured here as GDP per capita by county at a highly significant level ($> 99.9 \%$). With an $R^2 = 0.76$ the model fits the data well and the constant $\alpha$ of RON 7,408.72 is by far smaller than average GDP per capita on county level (RON 11,871.14). The standardized coefficients $\beta_i$ for infrastructure of .518 and for human capital of .459 indicate both a strong, positive influence of the predictor variables on economic performance (GDP per capita). All parts of the model are also individual highly significant at a $> 99.9 \%$ level. These results are in line with frequent complaints in the business press about the difficult connection to the European business network and shortages on (qualified) labor markets. Hence, the impact of the two predictors on FDI and total economic activity remains to be tested next.

Table 4-9: Descriptive Statistics (SPSS) – FDI

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>$FDI_i$ (Foreign Firms per capita)</td>
<td>0.0045</td>
<td>0.0062</td>
<td>42</td>
</tr>
<tr>
<td>$IA_i$ (Infrastructure and International Accessibility)</td>
<td>3.92</td>
<td>2.35</td>
<td>42</td>
</tr>
<tr>
<td>$H_i$ (Human Capital or Availability of Qualified Labor)</td>
<td>17,058.66</td>
<td>40,631.11</td>
<td>42</td>
</tr>
</tbody>
</table>

Source: Own table, own calculations

Table 4-10: Correlations (SPSS) – FDI

<table>
<thead>
<tr>
<th></th>
<th>$FDI_i$</th>
<th>$IA_i$</th>
<th>$H_i$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>FDI_i</td>
<td>.1000</td>
<td>.710</td>
</tr>
<tr>
<td></td>
<td>IA_i</td>
<td>.710</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>H_i</td>
<td>.873</td>
<td>.588</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>FDI_i</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>IA_i</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>H_i</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Own table, own calculations

Table 4-11: Model Summary (b) (SPSS) – FDI

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Change Statistics</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
<td>df2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sig. F Change</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>.906(a)</td>
<td>.821</td>
<td>.812</td>
<td>0.0027</td>
<td>0.821</td>
<td>89.589</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.801</td>
<td></td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), H_i, IA_i; b. Dependent Variable: FDI_i*

Source: Own table, own calculations

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Table 4-12: ANOVA (SPSS) (b) – FDI

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>.001</td>
<td>2</td>
<td>.001</td>
<td>89.589</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.000</td>
<td>39</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.002</td>
<td>41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), \( H_i \), \( IA_i \); b. Dependent Variable: \( FDI_i \)

Source: Own table, own calculations

Table 4-13: Coefficients (SPSS) (a) – FDI

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>Sig.</td>
<td>Lower B.</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.000</td>
<td>.001</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>( IA_i )</td>
<td>.001</td>
<td>.000</td>
<td>.30</td>
<td>8.319</td>
</tr>
<tr>
<td></td>
<td>( H_i )</td>
<td>1.06E-007</td>
<td>.000</td>
<td>.697</td>
<td>1.06E-007</td>
</tr>
</tbody>
</table>

a. Dependent Variable: \( FDI_i \)

Source: own table, own calculations

Again, the both predictors do a good job in tracking the location decision of foreign investors. The linear model underestimates the role of infrastructure (\( \beta = .3 \)), which does not follow a linear trend but actually appears as a cubic function in the plot. Nonetheless, the explained variance (\( R^2 = .821 \)) indicates a well fit of the data and the individual significance levels are highly satisfying (>99.9). The results are similar for total economic activity.

Table 4-14: Descriptive Statistics (SPSS) – TEA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>( TEA_i ) (Total Economic Activity)</td>
<td>.071</td>
<td>.022</td>
<td>42</td>
</tr>
<tr>
<td>( IA_i ) (Infrastructure and International Accessibility)</td>
<td>3.92</td>
<td>2.35</td>
<td>42</td>
</tr>
<tr>
<td>( H_i ) (Human Capital or Availability of Qualified Labor)</td>
<td>17,058.66</td>
<td>40,631.11</td>
<td>42</td>
</tr>
</tbody>
</table>

Source: Own table, own calculations

Table 4-15: Correlations (SPSS) – TEA

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>( TEA_i )</th>
<th>( IA_i )</th>
<th>( H_i )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( TEA_i )</td>
<td>1.000</td>
<td>.764</td>
<td>.801</td>
</tr>
<tr>
<td>( IA_i )</td>
<td>.764</td>
<td>1.000</td>
<td>.588</td>
</tr>
<tr>
<td>( H_i )</td>
<td>.801</td>
<td>.588</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Sig. (1-tailed)

<table>
<thead>
<tr>
<th>( TEA_i )</th>
<th>( IA_i )</th>
<th>( H_i )</th>
</tr>
</thead>
<tbody>
<tr>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Own table, own calculations

Table 4-16: Model Summary (b) (SPSS) – TEA

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Change Statistics</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>.879</td>
<td>.772</td>
<td>.761</td>
<td>.011</td>
<td>.772</td>
<td>1.537</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), \( H_i \), \( IA_i \); b. Dependent Variable: \( TEA_i \)

Source: Own table, own calculations
Having in mind that the impact of infrastructure did not seem throughout linear with regard to FDI and total economic activity it becomes clear that the linear models above underestimate the role of infrastructure. Thus, a curve estimation shall show how much the fit of a simple regression could be improved if a nonlinear model would be applied.

A similar estimation for total economic activity leads to the conclusion that the linear model is more appropriate as the individual significance of the equation parts gets lost in the cubic model.

4.3 Discussion of Results and Conclusions
Just as expected linear – both simple and multiple – regression models showed a significant and strong positive relation between infrastructural endowment, the size of the qualified labor market and regional GDP per capita. The same is true, if the outcome variable GDP per capita is replaced by FDI or total economic activity. On the contrary, the tests for the impact of institutional quality on regional economic performance did not yield any result with the availa-

**Table 4-17: ANOVA (SPSS) (b) – TEA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.015</td>
<td>2</td>
<td>.008</td>
<td>66.189</td>
<td>.000(a)</td>
</tr>
<tr>
<td>Residual</td>
<td>.004</td>
<td>39</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.020</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), H_i, IA_i; b. Dependent Variable: TEA_i*

**Table 4-18: Coefficients (SPSS) (a) – TEA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower B.</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.050</td>
<td>.003</td>
<td>14.399</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>IA_i</td>
<td>.004</td>
<td>.001</td>
<td>.447</td>
<td>4.728</td>
</tr>
<tr>
<td></td>
<td>H_i</td>
<td>2.00E-007</td>
<td>.000</td>
<td>.538</td>
<td>5.699</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: TEA_i*

**Table 4-19: Curve Estimation for IA_i and FDI**

<table>
<thead>
<tr>
<th>Model</th>
<th>Predictor</th>
<th>R²</th>
<th>Regression Fit F</th>
<th>Constant</th>
<th>B</th>
<th>Beta</th>
<th>T-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple, linear, with H_i</td>
<td>IA_i</td>
<td>.821</td>
<td>89.589</td>
<td>.000</td>
<td>.001</td>
<td>.3</td>
<td>3.583</td>
<td>.001</td>
</tr>
<tr>
<td>Simple, linear</td>
<td>IA_i</td>
<td>.504</td>
<td>40.654</td>
<td>–.003</td>
<td>.002</td>
<td>.710</td>
<td>6.376</td>
<td>.000</td>
</tr>
<tr>
<td>Simple, cubic</td>
<td>IA_i</td>
<td>.852</td>
<td>72.809</td>
<td>–.001</td>
<td>.001</td>
<td>3.358a</td>
<td>3.890</td>
<td>.000</td>
</tr>
</tbody>
</table>

*a. whole function: FDI = –.001 + 1.187 IA_i – 3.612 IA_i + 3.358 IA_i (with the positive terms significant)*

**Source:** Own table, own calculations
The plots did not suggest another kind of trend and the monitored Romanian institutions performed mostly well, anyhow. Infrastructural well endowed counties could obviously outweigh institutional deficits with other location factors. This result does not suggest by any means that institutions and governance does not matter. Both, infrastructure and education are public goods and are mainly provided (or not provided) by the government. The patterns of regional disparities seem to be inherited and it will require some political efforts to set an end to this trend.

The best performing counties with regard to GDP per capita exhibit also a better developed infrastructure and international accessibility, a greater number of students and a greater economic activity in terms of firms founded between 1991 and 2007. While there is a robust linear relationship between infrastructure, human capital and the total number of firms, foreign firms seem to react even more sensitive to infrastructure, best to be captured as a cubic function while the relationship to human capital can be expressed well by a linear function. There exists likewise a positive cubic relationship between the number of domestic firms and the number of foreign firms what might be another indicator for a more pretentious behavior of foreign firms and what leaves the impression that cross-border-orientated economic activities in general react more sensitive to development in terms of international infrastructure and the economic development of their location. Infrastructural better endowed counties, which are mainly surrounded by less well endowed counties, seem to suffer from the shortages of their neighbors. On the one hand, they attract more FDI, unfold a greater economic activity and are rewarded with a higher per capita GDP as their less lucky neighbors but on the other hand their economic performance does usually not reach the levels of likewise well endowed counties at a better location.

The relationship between FDI and human capital is positive but less strong than for human capital and GDP or overall economic activity. This might indicate that yet not all FDI-activities depend so much on highly qualified labor and further room for enhancements of skill-intensive FDI-activities might be assumed. In turn, FDI favors counties with an already developed economic profile as the number of foreign firms increases heavily with the overall

---

100 One might argue that the impact of institutional quality could have been well assessed in a cross-country setting using e.g. the governance indicators by Kaufmann et. al. 2007. This is just what I did. But after I examined the data, building averages of the percentile ranks (95 % confidence level) for 1996 – 2006 and performing a multiple regression with all six indicators for FDI per capita averages for the same period and the 10 CEECs, the results were far from being significant, while individual variable effects were more than modest. It might be that results improve if a lower significance level is accepted but on the other hand a rationale for such a proceeding is missing, yet. As this “result” is rather in line with the findings of Garibaldi et. al. 2002 I refrained of including this exercise into the paper.
number of firms. To name the best performing regions, judged by GDP per capita performance and the number of foreign firms per capita attracted it turns out that these regions are essentially the traditionally better developed regions.

Front-runners, after the Capital and its surrounding county Ilfov, are with regard to foreign firms mainly the Transylvanian counties and the Banatean-Transylvanian border belt. The east and the south feature hardly any counties which managed to attract a comparable number of foreign firms. The best performing counties there – though below the average – are the already “familiar faces” such as Iaşi in the east of Prahova in the south. A noteworthy exception is the infrastructural well endowed and important seaport Constanţa at the Black Sea.

With regard to GDP per capita the pattern is rather the same. Above average are again the Capital and Ilfov, Transylvania and the Banat while the south and east contribute mainly to the bottom of the economic hierarchy.

Taking the historical persistence of these patterns into account it becomes clear that infrastructure and education are not only exogenous and entirely independent variables but also reflect a traditional development pattern. Transylvania has been better developed from ancient times on and enjoyed higher political attention during the 20th century. Likewise, during the Ceaușescu era economic development plans focused on the Capital, Transylvania and few economic centers in the south or east of the country. The higher development of these lucky counties in terms of human capital, cross–border connections and economic activity lead to a stronger consideration in intra- and international interconnection plans and thus, facilitated the building of a better infrastructure. A mechanism that seems to continue judged on the course of the new planned highways and the allocation of funds, respectively the setting of priorities. The new planned highways consider primarily the already well endowed counties in the west and the center. Few eastern counties are considered and remain connected to the west only via a detour through the Capital. Some northern counties and southern counties are not considered at all, a fact also captured by the composite index for infrastructure and international accessibility.

101 The restrictions to rural migration, i.e. the closure of bigger cities, during the Ceaușescu era (cf. chapter 3.1.2) probably hampered urban agglomeration and maybe the rise of new economic centers. The land reform and shift to self-employment in agriculture during the nineties (cf. chapter 3.2.2.2) probably had a similar effect. Hence, the regions which already featured bigger cities and a higher degree of urbanization had – and continue to have – an advantage with regard to the accumulation of human capital.  
102 For instance, the urban motorways granted to Nokia had as a consequence the postponement of reparation works on 11 other national roads, mainly in infrastructural less well endowed counties (cf. Cireașa 2008).
This means a perpetuating virtuous circle for the better developed regions and a vicious circle for the lower developed regions. A higher endowment with human capital and infrastructure stimulates economic activities. Stronger economic performance in turn facilitates further improvements in infrastructure and the accumulation of human capital, which both become also more affordable in economic performance. Poor counties in turn seem sometimes to come only second, especially when it comes to expensive large-scale infrastructure projects and hence, tend to remain periphery.

Having the still urgent catch-up needs even of the better developed counties in mind, it becomes clear that it would not be a solution to stop this trend by cutting expenditures for the better developed counties. Even these have a strong need for further investments. Additionally, it cannot be expected that an abundant endowment with physical infrastructure and higher education institutions will turn all currently low performing counties into economic centers. But an equally distributed accessibility and improved interconnection of all counties will probably set an end to the fragmentation of labor markets – as e.g. pending becomes more practicable – and trade flows – via cheaper and improved logistics – and finally an easier accessibility of education. Furthermore, despite the focus on major roads in this paper, the importance of the local road network must not be neglected (as also recognized in Guvernul României 2005: 316). A certain part of the traffic on national roads (such as carriages) could be avoided if the local road network would be repaired and extended (cf. SAR 2007: 2; 4).103

Unfortunately, these results have some important fiscal implications. First, the current and planned stock of physical infrastructure still seems to be insufficient to connect all counties equally to the SEM and into worldwide business structures, though they are of course fitting with regards to immediate needs (cf. World Bank 2004 b: 11). The current projects already lead to budgetary shortages (cf. Ministerul Transporturilor 2007) but additional projects should nonetheless be considered to make all counties equally accessible. The returns of such investments are according to literature (cf. chapter 4.1.5) are high, even for well developed countries what seems to be in particular true for catching-up economies like the CEECs. The costs of underinvestment in infrastructure and human capital are on the other hand even higher. Romanian policy makers are therefore advised to stick to their current agendas and even encouraged to extent them if possible.

103 While this paper completely accepts SAR’s (2007) assessment of the importance of local infrastructure in Romania, the notion that highways and the like are somewhat overestimated is not supported by our results. The local road network as outlined by SAR is badly needed for competitive local economic activities and a well interconnection of labor markets, while the international infrastructure network is indispensible for sound business activities and the integration of local activities into the national economy.

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Summary and Conclusions: New Roads for Convergence?

Romania joined the European project in 2007. European integration (cf. chapter 2) is believed to augment welfare for all participants by removing barriers to trade (cf. chapter 2.1) and to lead to a convergence of economic performance and living standards. In particular, less developed economies shall catch-up and reach the level of the better developed economies (cf. chapter 2.2). Up to now, the SEM has been a story of success (cf. chapter 2.3) what seems likewise to be true for EEUE (cf. chapter 2.4).

Just like most of the formerly acceded CEECs Romania (cf. chapter 3) seems to be on a good convergence path and could even positively surprise in some regards, though it joined the club of converging economies with some delays due to worse initial conditions (cf. chapter 3.1) and timid reform attempts during the nineties of which many were overcome after 2000 (chapter 3.2). A regional perspective (cf. chapter 3.3) even shows that some parts of Romania perform much better than suggested by aggregate reports and figures while others lag, maybe more than expected. Catch-up dynamics among Romania’s regions seem to be absent, i.e. regional disparities persist. Regional disparities are best obvious on county level (NUTS-III) whereas the usual deployed Development Region approach (NUTS-II) still hides a great deal of disparities within the entailed NUTS-II units. GDP per capita levels differ considerable among regions and so do total economic activity and attractiveness to FDI. Against the theoretical expectation that FDI would prefer poorer regions with higher unemployment (cf. chapter 3.4) FDI crowded (cf. chapter 3.5) throughout in the better developed regions, despite higher salaries and an accelerating trend to cleared labor markets.

Nevertheless, Romania still is the second poorest economy in the European Union concerning GDP per capita and catching-up remains the principle goal to be fostered (cf. chapter 4). Common advice (cf. chapter 4.1) mainly suggests improvements of the macroeconomic climate and the business environment, with a focus on institutional improvements. The importance of such measures can be taken for granted. The business press and surveys among enterprises urge furthermore for infrastructural improvements and the enhancement of qualified labor what is consistent with the agenda of Romanian policy makers. As the macroeconomic environment and the general institutional design are uniformly distributed all over the country chapter 4.2 deployed regional disparities as proxies for different incentive structures in the local business environment. Using linear regression three variables were chosen as predictors for regional disparities, namely FDI activities, per capita GDP and total economic activity. The first predictor, institutional quality, was – in a sharp contrast to expectations to be derived...
from the institutional approach – not capable to contribute to the explanation of regional disparities in Romania. On the contrary, the paper found very strong evidence that infrastructural endowment and human capital explain the largest part of all variance at a high significance level for all three outcome variables, what is in line with literature for this region in general and other countries. In contrast to a part of the literature so far, transportation and traffic related variables were found to be much more important and significant than telecommunication variables. Whereas European advisors seem to focus either on macroeconomic and fiscal issues, i.e. nominal convergence or institutional improvements the results (cf. chapter 4.3) rather support complaints in the business press, common knowledge of Romanian citizens, Romanian economists such as Daniel Dăianu or the Central Banker Mugur Isărescu (cf. e.g. Dăianu 2006, Moise 2008), Romanian Policy makers (cf. Guvernul României 2005) and (not only foreign) investors as, for instance, the CEO of Pirelli Tyres Romania Enrico Malerba (cf. Business Standard 2008 b). In particular, Malerba criticized a lack of political visions in this regard and warned that Romania might lose attractiveness in the coming years, if infrastructural shortages and the situation on the labor market do not improve. With regard to labor, he suggested to persuade the people not to leave the country rather than to focus on retracting emigrants, which might have stabilized meanwhile, anyhow.

The main conclusions which might be drawn from the preceding assessment are the following. While the big picture suggests an impressionable economical progresses and real convergence dynamics, convergence among the Romanian regions remains absent. Especially the considerable increased FDI-inflows still concentrate on few economic centers, which have been traditionally better developed. Overall, the most successful counties feature a greater stock of infrastructure and qualified labor, which seem to stimulate overall economic activity and FDI and hence, are rewarded with a higher per capita GDP. Counties, which possess a greater stock of infrastructure – but less qualified labor – are usually better off than their less well endowed neighbors but worse off than counties which feature both factors and are not affected by infrastructural shortages of their neighbors. An additional endowment of all counties with infrastructure and an augmentation of human capital can be expected to stop this trend. Focusing on less well endowed counties only does not seem promising as also the better endowed counties still have a strong need for improvements after over 40 years of communistic ignorance and non-maintenance (cf. 3.1.2 chapter for details).

The current stock of infrastructure and the planned projects to be built in the next years are a necessary step in the right direction but do not seem to be sufficient to set an end to the cur-
rent trends. Especially many counties in the north and the south remain only weak connected to Pan-European transportation (heavy traffic) networks, whereas high quality roads (highways) for some counties are not even considered, yet. The east remains likewise weak endowed with high quality infrastructure and will grant motorway access towards the west of Romania and occidental markets only via detours through the Capital unless the only recently planned Autostrada Est-Vest will be finished. While the currently planned routes might be based on current feasibility considerations or the reasonable assumption that not all counties can turn into economic centers their precarious endowment with infrastructure still causes negative externalities for some better endowed counties. In particular, the better endowed counties in the east and some in the south seem to suffer from shortages of their neighbor counties, which still have to be traversed when it comes to logistics. Furthermore, labor and product markets remain fragmented and interior migration flows distorted, hence, e.g. education might be less equally (easy) accessible. Competitiveness of the (potentially) agricultural sector cannot be expected as long as rural areas are just insufficient connected to domestic urban and European markets.

That is to say, in more theoretical terms, that not all Romanian counties are equally well connected to the Single Market – not even to domestic markets – in a very literal sense. Hence, despite the formal act of joining the Union some barriers to trade and business persist and may set upper boundaries for the extent and pace of real convergence, in a manner which might be comparable to Liebig’s law of the minimum. The availability of qualified labor is a further factor which must not be underestimated for the competitiveness of the Romanian economy and again might set an upper bound to convergence potential in an increasing skill- and knowledge based European and World economy. This insufficient connection to the SEM is not only reflected by a much lower FDI activity in infrastructural bad endowed counties but also in a reduced total economic activity and lower import and export levels, which in turn reflect also the lower standards of living in the respective counties.

The results have unfortunately some important fiscal implications and do not even promise quick returns. Both, infrastructural upgrades and the enhancements of human capital will require sizable investments for many years to come while even the – nonetheless impressive – current agenda is sufficient in size to set the budget under pressure, especially when it comes to the fulfillment of the Maastricht criteria. The returns of such investments, though high and especially in the Romanian case promising, will probably appear with delays, only. Nevertheless, Romania still is a less-indebted country when compared to other NMS and in particular
when compared to the heavily indebted OMS for which the SGP was actually designed for. Therefore, an temporarily increased budget deficit should not be too worrying, neither concerning the SGP, nor regarding the envisaged adoption of the Euro in 2014, if additional Government spending will be allocated to long-term investments such as infrastructure, education and R&D. This is in particular true if the favorable growth prospects for Romania and the additional growth prospects from such investments are taken into account and assessed against the lost growth prospects of not intensifying infrastructural investments. Even well developed economies – like the German or American – were demonstrated to suffer if investments in infrastructure were not sufficient in size. On the other hand, the EC is certainly right when it urges for more fiscal discipline and more predictable budgetary policies.

Another important finding of the paper was the confirmation of the predominant importance of SMEs and domestic economic activity for the Romanian economy. For these kinds of enterprises the still high taxes on labor might be a serious constraint. Hence, a further reduction of labor costs could further facilitate (formal) economic activity.

Furthermore, the Romanian business environment and economic development is much better than commonly known. Hence, Romania is strongly advised to do more efforts on communicating its efforts and progresses to a larger public rather than leaving the field to mass media which often seem to be more thrilled by the state of some rural islands in the country instead of the more pleasant developments in many other parts of Romania. Such a more visible image campaign could further facilitate the current boom in e.g. the automobile and IT industry, which were just lately explicitly mentioned as a vision for Romania by Prime Minister Călin Popescu-Tariceanu. A decisive proceeding with regard to clarify corruption suspicions, especially on the high level (such as in the recent case of Adrian Năstase) would further contribute to strengthen Romania’s image inside the borders and abroad.

On the other hand, this assertion is by no means a blueprint. There is still much room left with regard to institutional improvements, which are – of course – at least as much required as infrastructural upgrades (which are likewise a matter of governance). Whereas some Mediterranean GDP per capita levels might be a good first target value, the Mediterranean style of public administration and Mezzogiorno definitely are not.
6 Bibliography


BENEDICTIS, LUCA DE AND TAJOLI, LUCIA; 2003: “Economic Integration and Similarity in Trade Structures”; FEEM Working Paper, No. 54.06, Hamburg


BRASCHE, ULRICH; 2003: Europäische Integration. Wirtschaft, Erweiterung und regionale Effekte. München

BREISINGER, CLEMENS; 2006: Modelling Infrastructure Investments, Growth and Poverty Impact. Frankfurt am Main


BREUSS, FRITZ; 2006: Monetäre Außenwirtschaft und Europäische Integration. Frankfurt am Main


BUSINESS STANDARD; 2008 c: “CE recomandă României să adopte urgent o planificare 

budgetară pe termen mediu și să reducă deficitul budgetar”, http://www.standard.ro/

articol_48199/ce_recomanda_romaniei_sa_adopte_urgent_o_planificare_budgetara_pe_termen

_mediu_si_sa_reduca_deficitul_budgetar.html [Retrieved 2008-06-13]

CARBUNEANU, NARCISA; 2008: “Vă dau bani ca să veniți acasă”, Magazinul Românesc. Ziarul

Românilor din Germania, Nr. VI/12, p. 2

CEC; 1988: Research on the Costs of Non-Europe. Basic Findings. 16 volumes. Brussels

dershot

CIREAŞA, DORU; 2008: Preţul autostrăzii Nokia: 11 drumuri naţionale nereparate. Cotidianul, 

http://www.cotidianul.ro/pretul_autostrazii_nokia_11_drumuri_nationale_nereparate-


CNP; 2008 a: “Proiecţia principalilor indicatori macroeconomici pentru perioada 2008 –

2013. Prognoza de primăvară”, http://www.cnp.ro/user/repository/prognoza_de_primavara


CNP; 2008 b: “Proiecţia principalilor indicatori economic-sociali în profilul teritorial până în


CRĂCIUN, OANA; 2007: “Români, pe podiul Europei la creşterea salariului”, Cotidianul, 

http://www.cotidianul.ro/romani_pe_podiumul_europei_la_cresterea_salariului-37074.html,

[Retrieved 2007-12-17]


553–567. In: Kahl, Thede; Metzelin, Michael and Mihai-Răzvan Ungureanu: Rumänien. 

Raum und Bevölkerung, Geschichte und Geschichtsbilder, Kultur, Gesellschaft und Politik

heute, Wirtschaft, Recht und Verfassung, historische Regionen. Wien

DĂIANU, DANIEL; 2000: “Structure, Strain and Macroeconomic Dynamic in Romania”, RCEP


DĂIANU, DANIEL; 2006: Ce vom fi în Unin.ue. Pariul modernizării României. Iaşi


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GALLAGHER, TOM; 2005: Theft of a Nation: Romania since Communism. London


Geschichte und Geschichtsbilder, Kultur, Gesellschaft und Politik heute, Wirtschaft, Recht und Verfassung, historische Regionen. Wien


Hitiris, Theo; 2003: European Union Economics. Dorchester


Marinou, Ana Maria; 2006: “What will Happen after the European Integration?”, Romanian Economic Journal, 21, pp. 101–105


Miyamoto, Koji; 2003: „Human Capital Formation and Foreign Direct Investment in Developing Countries“, OECD Development Working Paper No. 211


PELKMANS, JACQUES; 2001: European Integration. Methods and Economic Analysis. Harlow


Robson, Peter; 2000: The Economics of International Integration. Cambridge


Siebert, Horst; 2000: Außenwirtschaft. Stuttgart


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WEINDL, JOSEF AND WICHARD WOYKE; 1999: Europäische Union. München


## 7 Appendices: Detailed Figures

**Appendix 1: Studies Assessing the Impact of EEXEU; Issued before 2004**

<table>
<thead>
<tr>
<th>Author</th>
<th>Year of study</th>
<th>Method</th>
<th>Area covered</th>
<th>Variable</th>
<th>Results</th>
<th>Impact</th>
<th>Period</th>
<th>Any other remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. Baldwin, J. Frantzi, R. Pories</td>
<td>1997</td>
<td>General equilibrium model</td>
<td>EU15</td>
<td>Whole economy</td>
<td>Real income: +0.2%</td>
<td>Steady state</td>
<td></td>
<td>Lower risk premium is driven for stronger results</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CEEC7 (CZ, HU, L, SI, SK, BU, RO)</td>
<td>+1.5%/18.8%</td>
<td></td>
<td></td>
<td></td>
<td>Enlargement includes CZ, CZ, HU, PL, SI, SK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EU15</td>
<td>Public finance</td>
<td>EUR 19 bn (0.2% of GDP)</td>
<td>1999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Barry</td>
<td>2004</td>
<td>Economic integration theory</td>
<td>Ireland</td>
<td>Trade</td>
<td>Agricultural trade (cereal, dairy products) not threatened.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FDI</td>
<td>No distortion(s) (to technology)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Labour market</td>
<td>Skilled migrant beneficial for economy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Breuss</td>
<td>2002</td>
<td>OEF world macroecon. model</td>
<td>13 of EU15</td>
<td>GDP</td>
<td>+0.5%/ +8.9%/+3.6%</td>
<td>2005-2010</td>
<td>2001-2010</td>
<td>For ES, PT, DK the costs surpass the benefits</td>
</tr>
<tr>
<td>DG ECFIN</td>
<td>2001</td>
<td>Growth accounting analysis</td>
<td>AC-8</td>
<td>Whole economy</td>
<td>+1.2%/2.1% +1%/1.8%</td>
<td>1994-2000</td>
<td>Annual</td>
<td>Central European scenario. Significant impact in EU-10, modest in EU-13.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CEEC-10</td>
<td>GDP growth</td>
<td>+0.5%/0.7%</td>
<td></td>
<td>Cumulative</td>
<td></td>
</tr>
<tr>
<td>M. Grassini, R. Bazzoni, A. Moscardi</td>
<td>2001</td>
<td>Multi-sectoral model (ENTIMOS)</td>
<td>Italy</td>
<td>GDP</td>
<td>+0.5%/ +0.3% +0.6% +1.2%</td>
<td>2000-2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EU-15</td>
<td>GFCF</td>
<td>+0.5%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>B. Hajdka, C. Keuschnigg, W. Kohler</td>
<td>2002</td>
<td>General equilibrium model</td>
<td>EU15</td>
<td>Overall welfare</td>
<td>+0.3% of GDP</td>
<td>Steady state</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smaller than real income which does not consider forgone consumption</td>
<td></td>
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</tr>
<tr>
<td>W. Kohler</td>
<td>2004</td>
<td>Calibrated general equilibrium model</td>
<td>Individual EU15 countries</td>
<td>Overall welfare, % of GDP</td>
<td>+2 (AT)/-1.3 (PT)</td>
<td>Steady state</td>
<td></td>
<td>Bensed PT, site a negative impact in EM, IE and ES.</td>
</tr>
<tr>
<td>C. Keuschnigg, W. Kohler</td>
<td>2002</td>
<td>Calibrated general equilibrium model</td>
<td>Austria</td>
<td>GDP</td>
<td>+0.56%</td>
<td>Long-run scenario is reported. Fiscal position improves, despite higher net contributions to EU. Expected wage surge constant. Only immigration of skilled may widen the wage spread.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Contributions to EU budget</td>
<td>+1.75% of GDP +15.9% +0.7% +0.5%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>C. Keuschnigg, M. Keuschnigg, W. Kohler</td>
<td>2001</td>
<td>Calibrated dynamic general equilibrium model</td>
<td>Germany</td>
<td>GDP</td>
<td>+0.45%</td>
<td>Long-run membership scenario is reported. Expanded activity swells the tax base. Investment led expansion. Some potential for adverse redistributive effects</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The welfare neutral net contribution</td>
<td>+1.08% of GDP +46.7% +0.5% +0.6%</td>
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<td></td>
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<td></td>
<td>Wage income</td>
<td>+2.8%</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skilled and unskilled wage</td>
<td>-0.81%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>T. Kristensen, P. Rommoore Jensen</td>
<td>2001</td>
<td>Structural, dynamic, large-scale macro- economic model of the Danish economy (ADAM)</td>
<td>Denmark</td>
<td>GDP</td>
<td>-0.45%</td>
<td>2000-2010</td>
<td></td>
<td>In the long run, positive effects from immigration and productivity outweigh short-term costs.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Exports</td>
<td>+0.6%</td>
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<td></td>
<td>Imports</td>
<td>-9.8%</td>
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<td></td>
<td></td>
<td>GDP</td>
<td>+1.44%</td>
<td>2000-2005 (scenario of neutralized budget effect)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Investment Employment</td>
<td>+1.27%</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wage rate</td>
<td>-0.28%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Legou, R. de Mouy, R. Nader</td>
<td>2001</td>
<td>Gen. equilibrium model</td>
<td>EU-15, CEEC-7</td>
<td>Welfare effects</td>
<td>+0.1%/+0.6%</td>
<td>Long-run % of GDP</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>+5.3%-1.8%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>M. Maliszewska (CASE Poland)</td>
<td>2003</td>
<td>General equilibrium model</td>
<td>EU-15, Hungary, Poland</td>
<td>Welfare effects of trade liberalisation</td>
<td>+0.92% +2%</td>
<td>Long-run % of GDP</td>
<td>Base scenario</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. Rad, S. Bradley</td>
<td>2001</td>
<td>Integration theory</td>
<td>Old and new Member States</td>
<td>Overall economy</td>
<td>Strongly positive</td>
<td>Increased trade and efficiency. Limited migration consequences.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Box 2: Results of studies ahead of enlargement on its economic impact**

- **Source:** EC 2006 b: 25

Source: INS 2008, own graphic, own calculations


Source: INS 2008, own graphic, own calculations
Appendix 4: GDP per Capita 2005, RON, Current Prices, by County – Detailed

Source: INS 2008; own graphic, own calculations
Appendix 5: Simple Regression – GDP per Capita and Students, all Counties, 2005

Appendix 6: Multiple Linear Regression – IA<sub>i</sub>, H<sub>i</sub>, and Telephone Lines per Capita

### Outcome Predictors R<sup>2</sup> Regression Fit F Constant B Beta T-value Sig.

| Y<sub>i</sub> | IA<sub>i</sub>, H<sub>i</sub>, Tel/cap | .794 | .47459 | 6,097.002 |  |  |  |  
|---|---|---|---|---|---|---|---|---|
| Fixed Telephone Lines per Capita |  |  |  |  |  |  |  |  
| H<sub>i</sub> |  |  |  |  |  |  |  |  
| IA<sub>i</sub> |  |  |  |  |  |  |  |  
| FDI<sub>i</sub> | IA<sub>i</sub>, H<sub>i</sub>, Tel/cap | .867 | 80.076 | −.001 |  |  |  |  
| Fixed Telephone Lines per Capita |  |  |  |  |  |  |  |  
| H<sub>i</sub> |  |  |  |  |  |  |  |  
| IA<sub>i</sub> |  |  |  |  |  |  |  |  
| TEA<sub>i</sub> | IA<sub>i</sub>, H<sub>i</sub>, Tel/cap | .813 | 53.781 | .038 |  |  |  |  
| Fixed Telephone Lines per Capita |  |  |  |  |  |  |  |  
| H<sub>i</sub> |  |  |  |  |  |  |  |  
| IA<sub>i</sub> |  |  |  |  |  |  |  |  

**Note:** Reduced significance of IA<sub>i</sub> is not only due to distortions caused by the telephone indicator but to the somewhat nonlinear relation between IA<sub>i</sub> and TEA<sub>i</sub>, respectively FDI<sub>i</sub>; cf. chapter 4.2.3

Source: INS 2008; own graphic, own calculations

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### Appendix 7: County Data 2005 – GDP, Population, Registered Firms and Education

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<th>2005 GDP Millions of Lei</th>
<th>2005 GDP per Capita RON</th>
<th>Number of Firms Registered at ONRC 1991 – 2007</th>
<th>Total Number of Firms Registered at ONRC 1990 – 2007</th>
<th>Number of Persons 2005</th>
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### Appendix 8: Infrastructure and International Accessibility

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Source: Own index, own calculation; based on Map provided by ARIS 2008 and Microsoft MapPoint 2006, EE