**UNIVERSITY IN SARAJEVO**

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**How far is Western Balkans from Real Economic Integration with the European Union?**

**- PhD Thesis Disposition –**

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**Sarajevo, July 2011**

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# 1. INTRODUCTION

Origins of the European integration process for Western Balkans countries go back to 1999, when the EU proposed Stabilisation and Association Process (the SAP) for the five Western Balkans countries[[1]](#footnote-1). This proposal received additional support in June 2000, when the European Council issued a statement that all Stabilisation and Association Countries are potential candidates for the EU membership; the process was formalized in November of the same year, when the SAP was officially endorsed by both EU and Western Balkans countries at their Zagreb Summit. The European perspective of Western Balkans countries was confirmed in Thessaloniki in 2003, when the SAP was confirmed as the EU policy for the Western Balkans. Ever since, Western Balkans countries started paving their way to full-fledged membership in the European Union, through structural reforms that should bring them closer to fulfilling the membership criteria set in Copenhagen back in 1993. Hence, the Western Balkans countries should be the next group of countries to join the EU upon completion of accession negotiations and signing of the EU Accession Treaties.

Besides the obvious need to formally fulfil membership criteria, an important question for countries that aspire to become EU members is how well they can „fit“ into the European Union, is their level of economic development such that they can genuinely become a part of the single market and single European economic space. Even if the answer is no for the time being, how fast can they progress towards the desired economic stance that would make them equal players on the European playfield, and what can be done to speed up the convergence process, i.e. enhance economic development and reduce gap in incomes?

In order to answer this question, a comparison of the current state of affairs along with the assessment of the timeframe in which these countries can achieve at least average EU level of development needs to be undertaken. A standard tool used in the economic literature and empirical research is assessment of level and speed of income convergence.

Convergence is a concept that became quite popular among economists, as its analysis can provide a useful tool to verify validity of different growth models. It can be analyzed from various aspects: institutional convergence implies harmonisation of legislation, nominal convergence refers to convergence of price levels, and real convergence describes convergence of income levels. In addition, it is interesting to look at convergence in growth rates, which enables assessment of speed of convergence and time required for a country, or a region, to close the income gap with, for example, the region it aspires to become a part of.

In the case of Western Balkans EU integration, institutional convergence will happen through transposition of *Acquis Communautaire*, but the real question that remains to be answered is if and when these countries will achieve real economic convergence with the EU members. This is the question that this research will attempt to answer.

The rest of this Disposition is organized as follows: Part 2 provides an overview of economic growth theories, description of convergence concepts and a brief summary of empirical evidence as regards convergence-related research. Part 3 presents main research objectives, research questions and associated research hypotheses that the research will attempt to address. Part 4 provides a brief description of methodology that will be used in the research, along with tentative definition of dependent and explanatory variables and sources of data that will be used throughout the research. Part 5 provides working outline of the thesis along with the brief description of the content of each chapter. Finally, part 6 provides a description of expected results of the proposed research, as well as its expected contribution and some of the expected limitations.

# 2. THEORETICAL BACKGROUND AND LITERATURE REVIEW

Economic convergence is intrinsically related to economic growth. Therefore, prior to summarizing literature pertaining to convergence, one must briefly reflect on major theoretical approaches attempting to identify determinants of economic growth.

## 2.1. Economic Growth Theories

One can argue that the concept of economic growth is as old as economics itself. However, the first explicit attempt to explain economic growth, through level of saving and capital productivity was made by Sir Roy F. Harrod in 1939 and Evsey Domar in 1946. These early attempts became known in the economic development literature as Harrod-Domar model, and provided foundations for development of exogenous growth model. There are three main theoretical approaches attempting to explain economic growth: the neoclassical growth theory, the endogenous growth theory and most recently, the new economic geography.

The *neoclassical growth theory* was the first one to address the issue of economic convergence, as it predicts it as one of the facts of economic growth. In 1956, Solow modified the Harrod-Domar model by adding labour as a factor of production thus completing the growth equation. In absence of technological progress, the model predicts that an economy would converge to a constant steady state determined by rate of savings and population growth, and once the economy reaches that steady state, further growth will equal that of population growth. Exogenously-given technological change was subsequently introduced; Assuming constant growth of population and savings rate defined as a constant fraction of income, economic growth will, however, be determined only by the exogenously given technological change. During the 1960s the model was extended, especially by David Cass and Tjalling Koopmans.

On the other hand, numerous attempts to explain technological change within the growth models, initiated by Robert Lucas, led to what has become known as *endogenous growth theory*, pioneered by works of Paul Romer. The endogenous growth theory makes technology endogenous and subject to a decision-making process of economic agents. Theory abolishes the key assumption on the neoclassical growth model, the one that pertains to the diminishing returns to capital.

Finally, the *new economic geography,* represented most notably by Paul Krugman, is a theory of emergence of large agglomerations that relies on increasing returns to scale and transportation costs, emphasizing linkages between firms and suppliers and between firms and consumers. As such, it is applied more frequently by spatial economists, while the first two remain popular with macroeconomists.

## 2.2. Concepts of convergence

Convergence, in its broadest sense, is defined as a tendency to become similar or identical. As such, it can take several forms. Heichel, Pape and Sommerer (2005) identified four basic types of convergence: (i) Sigma-convergence (σ) as growing together- variation decreases; (ii) Beta-convergence (β) as catching up – exemplified by catch-up by laggards on leaders; (iii) Gamma-convergence (γ) as mobility – exemplified by a change in ranking; and (iv) Delta-convergence (δ) - as minimizing distance from an exemplary model, for example, as promoted by an international organization.

In the economic literature, however, convergence is most often defined in the context of the neo-classical growth theory, as the process by virtue of which less developed countries will catch up with advanced countries, owing to the law of diminishing returns on capital (Barro and Sala-i-Martin, 1992). A distinction, although not always clear, has to be made between Neo-classical growth theory convergence and optimal currency area theory convergence, the latter being closely related to what they refer to “macroeconomic policy” convergence.

Literature often distinguishes between institutional (i.e. structural), nominal and real convergence. For example, Anderton et al. (1992) distinguish between structural, nominal and real convergence. The structural convergence is the assimilation of economic institutions and practices, while nominal convergence is the convergence of the development of costs and prices and their underlying determinants such as disinflation, and declining exchange rate volatility. The last one, the real convergence, refers to the convergence of working conditions and living standards, or simply the convergence of macroeconomic fundamentals.

Real economic convergence exists when two or more economies tend to reach a similar level of development and wealth. The economic literature operates with two types of convergence, defined in pretty much the same way as in Heitchel et al. (2005): Beta (β) convergence and Sigma (σ) convergence.

In case of β-convergence, literature distinguishes between absolute and conditional β-convergence. The former is said to exist when poor economies grow faster than rich ones, regardless of whether they have a common steady or not. So, poor countries tend to "catch up" with rich ones over time. The latter, by contrast does not imply convergence to the same steady-state, but to a country- or a group-specific steady state influenced by its own specific conditions. In short, conditional β-convergence is said to exist when the growth rate of a country is positively related to the distance from its initial level of income to its own steady-state. In line with this concept, a country grows more if it is initially further away from its own steady-state.

Closely related to the conditional β-convergence is a concept of club convergence. Namely, some growth theories (e.g., Azariadis & Drazen, 1990; Galor, 1996) shows that economies which are rather similar in their structural characteristics (e.g., production technology, preferences, government policies, etc.) may nevertheless converge to different steady state equilibria if they differ in terms of initial conditions. Hence, within a group of similar economies, a common balanced growth path can only be expected if their initial conditions are in the basin of attraction of the same steady state equilibrium — a phenomenon widely referred to as the club convergence hypothesis. Accordingly, economies that approach the same steady state equilibrium are said to form a convergence club (Galor, 1996).

Finally, σ-convergence pertains to variation of income distribution over time. It analyzes the dispersion of income of diverse economies and convergence is said to occur if the dispersion is diminishing over time. Usually it can be measured as the standard deviation of the logarithm of income per capita across different economies. In order to have σ-convergence it is necessary to have β-convergence. Therefore, β-convergence is a necessary but not sufficient condition for σ-convergence.

## 2.3. Empirical evidence

The early empirical research on convergence appears to have been initiated by Baumol (Baumol, 1986), initially on a sample of 16 OECD countries, and later extended to various country groupings. The results of his research revealed that existence of the absolute convergence significantly depends on the sample used in the research. Namely, use of the original OECD sample resulted in a significant negative β coefficient of the initial income variable, thus confirming existence of absolute convergence. However, if more countries, especially heterogeneous, were used in the sample, absolute convergence could not be confirmed. The results of ‘Baumol’ studies rather supported the existence of club convergence, i.e. proved, that countries functioning in similar economic, political and social environments come closer to one another in respect of their income levels.

As the focus of the subsequent research shifted to conditional convergence, which means that besides keeping the neoclassical framework of including in the model the initial income variable, capital and labour, some other factors were added that explain the process of convergence. In the early 1990s, empirical papers concentrated on the use of the ideas of the new growth theory in the analysis of the convergence process (for example Barro & Sala-i-Martin, 1992), including human capital and innovation indicators. The results obtained at a broad sample of countries failed to confirm absolute convergence; however, when the model was augmented by inclusion of human capital variable, regression coefficient confirmed existence of convergence, i.e. conditional convergence.

The predominant approach during 1990s has been to run a regression with GDP growth rate as dependent, and the initial GDP level as one on the explanatory variables. Mankiw, Romer and Weil (1992) derived an equation stemming from an extended neoclassical model, assuming that the rate of technical progress is an exogenous constant common to all countries; versions of this equation was later used empirical studies of convergence, and a large body of empirical research confirmed conditional convergence hypothesis (e.g. Barro & Sala-i-Martin, 2004 and Bloom, Canning & Sevilla, 2002) using various datasets and econometric techniques.

In terms of assessing regional integration and real economic convergence, numerous studies were undertaken in context of European integration and recent enlargements involving CEE countries (e.g. Kaitila, 2004, Varblane & Vahter, 2005 and Vojinovic & Oplotnik, 2008). The studies addressed convergence issues both for individual countries and for various groups of countries and identified existence of conditional or club convergence between the old and the new members.

Finally, not a lot of work exists in terms of convergence of current EU candidate and potential candidate countries. The European Central Bank study (Morgese Borys, Katalyn Polgar & Zlate, 2008) was the only identified study that tested for real economic convergence of transition economies, including current candidate and potential candidate countries, and concluded that there is evidence of conditional convergence in the transition countries of CEE and SEE for the observed period. The analysis also revealed that despite notable improvements, gaps in terms of income per capita relative to the euro area remained large in the countries under review, suggesting that challenges of real convergence will remain relevant for the region even in the medium and the long run.

# 3. Research Objective, Questions and Hypotheses

## 3.1. Research Objective

The objective of this research is to get an answer to an overarching question of possibility, and timeframe for the Western Balkans countries - that are currently candidates and potential candidates for the European Union accession – to achieve real economic convergence with the European Union countries, or at least some of them. In order to achieve this objective, the research will rely on the theoretical literature regarding economic growth and convergence to identify appropriate models and methods to test for existence of absolute and conditional beta convergence and sigma convergence between the EU countries and Western Balkans countries.

The research will test for convergence within these two regions and for existence of convergence clubs. It will also test for convergence between the regions and eventually between convergence clubs. Finally, the speed of convergence and corresponding timeframe for the Western Balkans countries to reach the level of economic development of that in the EU will be calculated. Based on the research findings recommendations will be made regarding policy interventions required to initiate, or speed-up convergence process.

## 3.2. Research Questions

The main question that this research aims to answer is: “Is there real economic convergence of the Western Balkans countries towards the European Union, and when can we expect them to achieve the EU level of economic development?”

Several supporting questions have been identified in order to facilitate answering the main questions:

1. Is there absolute convergence between the Western Balkans and the European Union?

2. Once controlled for the country- and region-specific factors, can the existence of conditional convergence be proven?

3. Are there convergence clubs within the EU and within the Western Balkans?

4. Is Western Balkans converging to some of the EU convergence clubs?

5. Is dispersion of income per capita levels in both EU and the Western Balkans countries increasing or reducing over time?

6. In light of the current developments, how long will it take for the Western Balkans countries to reach level of economic development – measured by per capita income – of that in the EU, or at least a part of it?

7. Targeted policy interventions in the areas of significant influence to economic growth can initiate/facilitate convergence process.

## 3.3. Research Hypotheses

Main research hypothesis is hereby formulated in the following way:

***While there is no absolute real economic convergence of Western Balkans countries with the European Union, conditional convergence exists with at least one group of the EU countries.***

Several working-level hypotheses are formulated to assist in answering the supporting research questions as stated above. These are:

1. There is no absolute real economic convergence between Western Balkans countries and the European Union.

2. There exists conditional real economic convergence between Western Balkans countries and the European Union.

3. There are convergence clubs within the European Union.

4. Western Balkans countries are converging to at least one of the identified convergence clubs in the EU.

5. Dispersion of income per capita between Western Balkans countries and European Union is decreasing (i.e. there exists σ-convergence).

6. Given the current developments, a process of Western Balkans real economic convergence with the EU (or at least one of the convergence clubs in the EU) is slow.

7. Targeted policy interventions in the areas conducive to economic growth can initiate/ facilitate Western Balkan countries’ real economic convergence to the EU.

# 4. Methodology and Data

Real economic convergence refers to the decline of differentials in economic variables across a group of countries. It should occur as a result of increasing economic integration between these countries. If convergence process is ongoing, poorer economies should be reducing the gap between them and their developed counterparts, through generally higher growth rates of real per capita income. The standard models examining convergence are based on the neoclassical growth model introduced by Solow, and a hypothesis is derived that real income levels converge as there is contraction of economic gap between rich and poor countries. Contraction of economic gap is identified by testing for existence of β-convergence (both absolute and conditional) and σ-convergence.

## 4.1. Statistical and Econometric Tools and Model Specification

In order to test for convergence, a regression method to test the negative correlation between initial levels of real per capital income and its average annual rate of growth is required. While testing for absolute convergence requires only these two variables, testing for conditional convergence requires a set of additional “control” variables to see if convergence can be explained by influence of these additional variables.

By contrast, σ-convergence implies that the dispersion of real per capita income across a group of countries decreases over time. This research tests for existence of both β-convergence and σ-convergence. In addition to testing for absolute and conditional β-convergence, based on the assumption of ‘same initial conditions’ i.e. the initial level of income, convergence clubs will also be identified, and same tests will be carried out for the sub-sets of countries that appear to belong to convergence clubs.

Empirical work pertaining to convergence indicates that panel data regression is the best econometric approach to apply, as cross-section analysis would not account for the time dimension of the data. On the other hand, limited number of annual observations for the selected group of countries does not merit a time-series approach.

In its simplest form, a panel regression equation model takes the following form:

where *i* denotes the cross-section dimension, in this case the countries, while *t* stands for the time dimension. In this linear equation, parameter β is a regression coefficient. Parameter ε*it* is an error term, and its structure will depend on the estimation (i.e. structure of the ε*it* will differ depending on the use of OLS, FE or RE estimation).

In this linear regression, is a variable to be explained by the regression, while the is a vector of explanatory variables.

If the equation above is placed in context of the intended research, will represent average annual growth rate of real per capita income in country *i*, and, in case of testing for absolute convergence the will represent initial level of real per capita income in each individual country *i*. Moreover, all variables will be computed in natural logarithms, so the equation will become a log-linear approximation. Hence, the difference in logarithms of the final and initial period will approximately correspond to the logarithm of real income per capita growth rate, or to its percentage change. So, a final regression to test for absolute convergence will be as follows:

where *iT* refers to the last year of the observed period for a country *i*, i0 refers to the initial year of the observed period for a country *i*, and *n* refers to the total number of years for which the observations are made. The β-convergence will be confirmed if regression coefficient β turns negative, and in case of coefficient being -1 then the presence of absolute β-convergence will be confirmed.

In terms of the rate of convergence, the simplest is to derive it directly from the regression results. In this case the regression coefficient β can be interpreted in a way that for example, if β = 0.02 then 2% of real per capita income differential between the observed countries is eliminated every year. However, in order to translate the result into something more appealing, an alternative approach will be used, i.e. a time required for a country to converge to some target level (i.e. EU average, or an average of an identified club) will be calculated – as seen in Iancu, A. (2007) in a following way:

and the result t will indicate how many years are required for, in this case, Western Balkans, to close the income per capita gap with the EU, given the prevailing average growth rates over the observed period.

As opposed to absolute convergence, conditional convergence testing requires the original equation with additional explanatory variables. Some of the variables stem from the growth theories, the others may be confirmed by the empirical research. The extended regression equation then becomes:

where Z comprises all other explanatory variables used in the regression.

In order to assess σ-convergence a variance of real per capita income will be calculated and plotted. Decrease of dispersion will also be tested for significance.

Finally, an alternative approach to assess determinants of growth, such as development accounting, will be attempted to test for significance of explanatory variables; however, the results of this part of research may be impeded by data availability.

## 4.2. Dependent and Explanatory Variables

As explained above, the dependent variable of the regression will be the average annual growth of real per capita income in the sample countries over the observed time. The initial intention is to cover the latest ten years (i.e. 2000 – 2009, or 2001 – 2010), however, in case of conditional convergence this period may have to be adjusted due to the unavailability of data for some of the Western Balkans countries. Data on real GDP per capita in constant prices or PPP GDP per capita in constant prices will be used to calculate the dependent variable.

The main explanatory variable, in line with the regression equation will be the initial level of real per capita income. In terms of conditional β-convergence will include the ‘obvious suspects’, i.e. openness (imports and exports, or sum of the two), inflation (CPI as a proxy for macroeconomic stability), investment in physical capital (either through Gross Fixed Capital Formation or, if feasible, separated by sources of investment – i.e. domestic vs. FDI), but an attempt will also be made to include additional explanatory variables such as size of the government and proxy for human capital. Unfortunately, it is clear that due to data constraints it will not be possible to include innovation or technology diffusion as explanatory variables, and the same may be the case for some other variables typically included in such models in line with endogenous or new economic geography growth theory.

## 4.3. Data Sources

Data sources identified to date comprise available databases of international organisations: World Economic Outlook database (IMF), World Development Indicators database (The World Bank), EUROSTAT databases, OECD databases and Index of Economic Freedom database (Heritage Foundation). Where applicable and appropriate, the data will be supplemented by the data produced by the national statistics of the surveyed countries.

# 5. STRUCTURE AND JUSTIFICATION OF THE THESIS

The working structure of the thesis is as follows:

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APPENDICES

The proposed structure of the thesis comprises 5 main Chapters as follows: 1) Introduction, 2) Theoretical Background and Literature Review, 3) Methodology, 4) Data Analysis and Results and 5) Conclusions and Recommendations.

The first Chapter shall contain introductory remarks regarding the research topic and brief description of the research. Research objective will be presented along with the main research question. Brief overview of the research methodology and justification of the thesis structure will follow at the end of the first Chapter.

Chapter 2 - Theoretical Background and Literature Review - will provide an overview of relevant theoretical underpinnings of relevance for the research, main concepts applicable to the research and finally, the overview of the overview of empirical work undertaken to date in the field relevant to the research. In brief, this Chapter will provide a starting point for the research to be undertaken.

Introduction to the research along with problem statement will be presented in Chapter 3, along with the overview of the selection process and description of the selected methodology. Statement of the research questions and corresponding hypothesis will also be presented in this Chapter. Specification of the statistical methods and econometric models that will be used to provide answers to the research questions and test both the main and working hypotheses will follow. Finally, the Chapter will reflect on the data sources and data availability.

Chapter 4 will be the main part of the thesis, and will begin with the presentation of the exact data to be used in the research. Presentation of comprehensive data analysis will follow, while the Chapter will conclude with interpretation of findings

Chapter 5 will contain conclusions on the basis of analysis and interpretations presented in chapter 4, along with identification of policy implications and recommendations of possible policy interventions stemming from the results of the research. It will also outline directions of possibly further research to be undertaken.

# 6. Expected Contribution, Results and Limitations

The scientific contribution of this research will be to summarize theoretical framework on economic convergence through the prism of growth theory. However, most of the contribution will be empirical by nature, as comprehensive quantitative analysis of Western Balkans’ real economic convergence within the region and with the EU will be carried out, both in terms of income levels and growth rates. The results will not only test for convergence, but in case that it is identified, will also estimate the speed of convergence and point out, through identification of variables with significant contribution to economic growth, areas that need to be tackled in order to speed up real economic convergence of Western Balkans with the EU, along with relevant policy implications. This research will provide basis for further in-debt analysis of factors contributing to economic growth in the region of Western Balkans and its convergence to the EU.

It is expected that while absolute convergence of Western Balkans countries with all EU member states will not be confirmed, research will reveal club-convergence within the European Union, and absolute convergence may be identified between Western Balkan countries and at lease with one of the EU convergence clubs. By contrast, conditional convergence, once a control is introduced for country-specific variables, should be confirmed. It is also expected that the research will confirm conditional income convergence between Western Balkans countries. Research will also point out which determinants of growth, used as explanatory variables in panel regression, have significant contribution to growth.

The greatest limitations to the research pertain to the availability of data for Western Balkans countries, both in terms of relatively short time series and non-existence of data on potential growth determinants identified in the most recent empirical research regarding growth, such as the extent of technological diffusion, educational attainment as a proxy for level of human capital, transfer of technology and know-how, data on investments in research and development as proxy for innovation etc.

# 7. BIBLIOGRAPHY

|  |  |  |  |
| --- | --- | --- | --- |
|  | | **Books:** | |
| 1. | | Acemoglu, D. (2009). Introduction to modern economic growth. *Princeton University Press*. | |
| 2. | | Aghion, P. and Durlauf S. (Eds.). (2005). Handbook of Economic Growth. *Elsevier.* Taken from: http://www.stanford.edu/~chadj/Handbook.html, May 2011 | |
| 3. | | Baltagi, B.H. (2005). Econometric Analysis of Panel Data (Third Edition). John Wiley & Sons Ltd, Chichester. | |
| 4. | | Barro R. J. (2008). Macroeconomics: A Modern Approach. *Thomson South-Western.* | |
| 5. | | Barro, R. J.and Sala-i-Martin, X. (1995). Economic Growth. *MIT Press*. | |
| 6. | | Greene, W.H. (2002). Econometric Analysis (Fifth Edition). *Prentice Hall*, Upper Saddle River, New Jersey, USA. | |
| 7. | | Mankiw, G. N. (2009). Brief Principles of Macroeconomics, Fifth Edition, *South-Western CENGAGE Learning.* | |
| 8. | | Rommer D. (2006). Advanced Macroeconomics, Third Edition. *The McGraw-Hill Companies.* | |
| 9. | | Wooldridge, J. (2002). Econometric Analysis of Cross Section and Panel Data. *MIT Press,* Cambridge, Massachusets. | |
|  | **Articles, working papers and studies:** | |
| 1. | Anderton, R., Barrell, R. and Veld, J. W. (1992). Macroeconomic Convergence in Europe: Achievements and Prospects. In Barrell, R. *Economic Convergence and Monetary Union in Europe*, pp. 1–30. (Newbury Park, CA: Sage). | | |
| 2. | Arratibel, O. et all (2007). Determinants of Growth in the Central and Eastern European EU Member States - a Peoduction Function Approach. *ECB Ocasional Paper Series*, Ocasional Paper No. 61., European Central Bank. | | |
| 3. | Azariadis, C., Drazen, A., 1990. Threshold externalities in economic development. *Quarterly Journal of Economic Development* 105 (2), 501–526 | | |
| 4. | Barro, R. J. & Sala-i-Martin, X. (1992). Convergence. *Journal of Political Economy*, *Vol. 100 (2)*, 223- 251, University of Chicago Press, http://ideas.repec.org/a/ucp/jpolec/v100y1992i2p223-51.html (May 2, 2011). | | |
| 5. | Barro, R. J. (1991). Economic Growth in a Cross Section of Countries. *Quarterly Journal of Economics*, 106(2); 407-43 | | |
| 6. | Barro, R. J. (1994). Economic Growth and Convergence. An International Centre for Economic Growth, *Intitute for contemporary Studies (ICS) Press,* San Francisco, California. | | |
| 7. | Baumol, W. J. (1986). Productivity Growth, Convergence and Welfare: What the Long Run Data Show? *American Economic Review* 76, 1072–85. | | |
| 8. | Bernard, A. and Durlauf, S. (1996). Interpreting Tests of the Convergence Hypothesis. *Journal of Econometrics* 71, 161–173. | | |
| 9. | Berthelemy, J-C. (2006). Convergence Clubs and Multiple Equilibria: How Did Emerging Economies Escape the Under-Development Trap? *De Boeck Universite, Revue d'economie du developpement,* Vol 20, 5 - 41. | | |
| 10. | Bloom, D. E., D. Canning and J. Sevilla (2002). “Technological diffusion, conditional convergence, and economic growth.” *NBER Working Paper* No 8713. | | |
| 11. | Böwer, U. and Turrini, A. (2009). EU accession: A road to fast-track convergence? *European Commission Economic Papers* 393, DG ECFIN, Brussels, Belguim. | | |
| 12. | Boyle, G. E. and McCarthy, T.G. (1999). Simple Measures of Convergence in Per Capita GDP: A Note on some further international evidence. *Applied economics letters,* Vol 6, 343-347 | | |
| 13. | Brida, J. G., London, S. and Risso, W.A. Economic Dynamics and Performance Clubs in a set of American Countries, from: http://ssrn.com (May 8, 2011) | | |
| 14. | Carree, M. and Klomp, L. (1995). Testing the Convergence Hypothesis: A Comment. *Review of Economics and Statistics* 79, 683–86. | | |
| 15. | Caselli F., Esquivel, G. & Lefort, F. (1996) Reopening the Convergence Debate: A New Look at Cross Country Growth Empirics. *Journal of Economic Growth* 1, 363–89 | | |
| 16. | De la Fuente, A. (2002). Convergence across countries and regions: theory and empirics. The paper prepared for a conference on "Growth, capital and new technologies" t*he Instituto Valenciano de Investigaciones Económicas.* Retrieved from http://ideas.repec.org/e/pde52.html, May 2011. | | |
| 17. | De la Fuente, A. (2003). Convergence Equations and Income Dynamics: The Sources of OECD Convergence, 1970 - 1995. *Economica, New Series,* Vol 70 (280). 655-671. | | |
| 18. | Dowrick S. and Quiggin J. (1997). True Measures of GDP and Convergence. The *Americal Economic Review.* Vol 87(1), 41-64. | | |
| 19. | El ouardighi, J. and Somun-Kapetanovic, R. (2010). Convergence and Inequality of income: the case of Western Balkan countries. *The European Journal of Comparative Economics* Vol. 6 (2), 207-225. | | |
| 20. | Galor, O., 1996. Convergence? Inferences from theoretical models. Economic Journal106 (437), 1056–1069. | | |
| 21. | Guerrero, F. (2006). Teaching Convergence: A contribution. *UNR Economics Working Paper Series,*Working Paper No. 06-014. University of Nevada, Reno | | |
| 22. | Heichel, S. Pape, J. & Sommerer, T. (2005). Is there convergence in convergence research? An overview of empirical studies on policy convergence. *Journal of European Public Policy, 12 (5),* 817-40. | | |
| 23. | Hermann, S. and Jochem, A. (2003). Real and Nominal Convergence in the Central and East European Accession Countries. *Intereconomics.* | | |
| 24. | Howitt, P. (2000) Endogenous Growth and Cross-country Income Differences. *American Economic Review* 90, 829–846. | | |
| 25. | Iancu A. (2007) Economic Convergence. Applications, *Romanian Journal of Economic Forecasting* 4/2007, from: www.ipe.ro, May 5, 2011 | | |
| 26. | Islam, N. (1995). Growth Empirics: A Panel Data Approach. *Quarterly Journal of Economics*, 110(4); 1127-70. | | |
| 27. | Islam, N., 2003. What have we learnt from convergence debate?, *Journal of Economic Surveys, vol. 17, No. 3.* | | |
| 28. | Kaitila, V. (2004). Convergence of Real GDP Per Capita in the EU 15: How do the accession countries fit in?, *ENEPRI* Working Paper No. 25 | | |
| 29. | Kaitila, V. (2005). Integration and Conditional Convergence in the Enlarged EU Area. Working Paper No. 31. *European Networks of Economic Policy Research Institutes (http://www.enepri.org)* | | |
| 30. | Lall S. and Yilmaz S. (2000). Regional Economic Convergence: Do Policy Instruments Make a Difference? *World Bank Institute,* The World Bank, Washington, D.C., USA | | |
| 31. | Mankiw, G. N., Phelps, E. S. and, Romer, P. M. (1995). The Growth of Nations. B*rookings Papers on Economic Activity*, Vol. 1, 275-326. | | |
| 32. | Mankiw, N. G., Romer, D. and Weil, D. (1992). A contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics* 107, 407–37. | | |
| 33. | Martin, C. Velazquez, M. and Funck, B. (2001). European Integration and Income Convergence - Lessons for Central and Eastern European Countries. *The World Bank Technical Paper,* Washington D.C., USA. | | |
| 34. | Matkowski, Z. and Prochniak, M. (2004). Real Economic Convergence in the EU Accession Countries. *International Journal of Applied Econometrics and Quantitative Studies, Vol 1 - 3.* | | |
| 35. | Meeusen, W. (2003). Economic Convergence, the 'Stylised Facts of Growth' and Technological Progress: An introduction from the perspective of the theory of growth. *CESIT Discussion Paper No. 2003/03,* Centre for the Economic Study of Innovation and Technology, University of Antwerp. | | |
| 36. | Morgese Borys, M., Katalyn Polgar, E. and Zlate, A. (2008). Real Convergence and the Determinants of Growth in EU Candidate and Potential Candidate Countries: A Panel Data Approach. *ECB Ocasional Paper Series,* Ocasional Paper No. 86., European Central Bank. | | |
| 37. | Padilla, S. B. and Mayer, H.P. (2003), Sources of Growth in Selected Central and Eastern European Countries. *BP & Mayer Consultants*, Ultd and IMAD, Ljubljana. | | |
| 38. | Phillips, P.C.B. and Sul, D. (2007). Transition Moddeling and Econometric Convergence Tests, *Econometrica,* Vol 75 (6), 1771-1855. | | |
| 39. | Quah, D. (1996) Empirics for Economic Growth and Convergence. *European Economic Review* 40, 1353–75. | | |
| 40. | Romer, P. (1990). Endogenous Technological Change. *Journal of Political Economy. Vol. 98, No. 5,* , S71-S102. | | |
| 41. | Sala-I-Martin, X. 1996. The Classical Approach to Convergence Analysis, *Economic Journal*, Royal Economic Society, vol. 106(437), 1019-36. | | |
| 42. | Solow, R. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, *vol.7,* 65-94. | | |
| 43. | Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics* 70, 65–94 | | |
| 44. | Vamvakidis, A. (2008). Convergence in Emerging Europe: Sustainability and Vulnerabilities. *IMF Working Paper* 08/181, Washington D.C., USA. | | |
| 45. | Varblaine U. and Vahter P. (2005). An Analysis of the Economic Convergence Process in the Transition Countries, *Tartu University Press*, from: ideas.repec.org (May 5, 2011) | | |
| 46. | Villaverde Castro, J. (2004). Indicators of Real Economic Convergence: A Primer. *United Nations University,* Comparative Regional Integration Studies. | | |
| 47. | Vojinovic, B. and Oplotnik, Z. J., (2008). Real Convergence in the New EU Member States, *Prague Economic Papers*. | | |
| 48. | Workie, M. T. (2005). Determinants of Growth and Convergence in Transitive Economies in the 1990s: Enpirical Evidence from a Panel Data. *Prague Economic Papers 3,* from: ideas.repec.org (May 5, 2011) | | |
| 49. | Yigit, T. and Kutan, A. M. (2004). European Integration, Productivity Growth and Real Convergence, *William Davidson Institute,* Working Paper No 657 | | |
| 50. | Yin, L., Zestos, G.K., and Michelis, L. (2003). Economic convergence in the European Union. *Journal of Economic Integration*, 18 (1), 188-213. | | |
|  | **Other sources:** | |
| 1. | http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/ | |
| 2. | [www.heritage.org](http://www.heritage.org/) | |
| 3. | [www.imf.org](http://www.imf.org/) | |
| 4. | [www.oecd.org](http://www.oecd.org/) | |
| 5. | [www.worldbank.org](http://www.worldbank.org/) | |

1. European Union institutions and member states define the "Western Balkans" as Albania and the former Yugoslavia, minus Slovenia. Namely, Western Balkans countries to be included included in this research are: Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro and Serbia. Kosovo will not be included in this research due to data constraints. [↑](#footnote-ref-1)