

# Endogenous Growth of Small Open Economies in New Europe under Global Imbalance

Tatyana Boikova

**Abstract**—The strong international competition as the factor of rising economic development efficiency should not turn into destructive force for models of social orientation. What result Europe received from the accelerated integration without a long transition period of the accepted countries. Correlative relationship between the research and development expenditure and labor productivity, inflation and the rate economy's growth of the USA and the euro zone, employment and gross value added between Old and New Europe is analyzed in this article. The article estimates the differences in economic growth of Old and New Europe. Correlation rate between cycles of the euro area and the countries of Central and the Eastern Europe very much differs, though some of these countries have high correlation as members of the Economic and Monetary Union. Besides, the majority of the countries of Central and the Eastern Europe does not correspond to criteria of an optimum currency area.

**Keywords**—endogenous economic growth, sustainability, competitiveness, economic development

## I. INTRODUCTION

IN system of the international economic interdependence long-run dynamic equilibrium and effect of a competition will depend on ability of national economy to self-organization, adaptation to external conditions, to constantly renewal and progress. All strategy of the industrial society, the extended reproduction and life style is based on a category of the progress connected with economic freedom. Therefore, under the conditions of globalization the modern economy can become effective, if will create possibilities for forming the new markets, the new economic interrelations, new types of the enterprises and will lead to social well-being and enhancing rivalry for leadership in world system. Notice that creation of conditions for continuous acquiring new knowledge will have here paramount significance. The science can become an imperative of qualitative changes of economy development, if allocated means for it will exceed a critical minimum of the resources input, necessary for carrying out of technological breakthrough and realization of new complex productions. Hence, high degree of selectivity is necessary under working out of priority long-term scientific and technical programs. Under the conditions of acute scarcity of resources the selective actions should be directed to building of strong foundation for considerably advanced R&D, forming of one's "niche" in the world market and securing scientific and technical leadership. It is advisable to concentrate investment for development of key technologies, i.e. "growth

points" of new reproduction structure that is forming in world economy in 2010-2015. Industrial base at the beginning of 21<sup>st</sup> century is determined by the technologies which have arisen 15-20 years ago: electronic-beam, laser, impulse, membrane, super high pressures, technology of obtaining microcrystals, technology of laser welding, a method of ionic implantation into metals and alloys, technology of thermal treatment, precision and biotechnologies, the nanotechnologies allowing to create self-reproducing systems with artificial intelligence. However, the whole spectrum of new technological processes is not completely controlled for the present that there bear dangerous phenomena for a industrial society, doing its more vulnerable.

The countries that have formed "a strong core" of the EU should fulfil consolidating role and advance the European economy to the leading positions in the world market. On the other hand, crisis changes in cyclic dynamics of development of these countries can result in a chaos state of the European economy. When in the European economy constantly it is required to support inertia of progressive movement the theory of a drawing out from recession by one country all the rest does not work. For example, in the seventies Japan, carrying out the offensive policy of the outstripping development, tried to achieve 7% growth rate of Gross National Product and to undertake an initiative role in world economy activation. However, subsequently this policy has not brought a positive effect and even was at the bottom of budget deficit. With aggravation of the rivalry between the EU, the USA and the Asian region the European economy needs more and more in balanced and interconnected development. Here it is necessary progress in a quality of development and synergism effect which will be determined by economic potential of one or another Member State of the EU and not by an initiative role of the countries leaders. Moreover, for them it is extremely wastefully and suppression of the self regulating principle will cause changes of dynamic stability of the European economy as holistic system. Therefore, for strengthening its integrity and competitive advantages expansion of the regional market and pooling resources are a necessary condition, but at the same time insufficient. The European economy competitiveness will determine by a sustained high rate of productivity growth, the performance of industry, especially its capability for structural adjustment based on technical and administrative innovations.

## II. ECONOMIC SECURITY AND ENDOGENOUS SHOCKS

Regarding the role of macro imbalances, IMF observes 'that the global economy has been operating well above a cyclically neutral level', with advanced countries 'operating at somewhat

Tatyana Boikova is with Baltic International Academy, Riga, LV-1003 Latvia (phone: (371) 28294266; fax: (371) 67100575; e-mail: tatjana.boikova@bsa.edu.lv).

below' the level, but emerging economies 'growing faster than trend until recently' and still experiencing high pressures on capacity [1]. Rakshit [2] shows that since adjustments in output and employment are relatively slow, while prices of financial assets adjust instantaneously, the aforementioned expectations would immediately cause a crash in prices of bonds, shares and derivative products way ahead of any significant downturn in the real sector. It is for this reason that the timing or the magnitude of the stress in money and capital markets does not suggest the primacy of financial factors in the crisis or provide a clue to its resolution. Although the economy, left on its own, eventually moves towards non-accelerating inflation rate of unemployment (NAIRU), business cycles entail considerable welfare loss as fluctuations in consumption and employment make their intertemporal distribution grossly suboptimal. Hence it is deemed advisable for central banks to smoothen the cycle, lowering interest rates when the output gap is positive and raising the rate when output exceeds NAIRU.

The global competition and increasing imbalance of world economy have predetermined priorities of development, by which became economic security and growing an openness of national economies. But what factors will determine level of efficiency of open economy if with most involving into the world market its vulnerability increases? It is advisable to pick out actively influencing factors — recession in the American economy, inflow of investment, information for deepening of industrial specialization and cooperation, a technological transfer, using comparative advantages and export structure, growth of competition between the home producers, stimulated by a competition in the world market. It is notable that for the European economy that constantly correlates with changes in economic development of the USA, influence of the American recession is more sensitive than in Asian-Pacific region. Mortgage crisis in the USA, expectations of consumers and investors, weakening dollar, increasing the American export on the one hand, can consider as the key external factors raising risks for the European industry. Such factors noticeably influence short run conjuncture fluctuations that are closely interconnected with business cycles. On the other hand, weakening dollar promotes reduction of prices of import of raw materials and partial cutting down of the global disbalances considerably strengthening risk for the European economy.

Let us take into consideration the theory of decoupling which has caused a special interest when economic turbulence in the USA has not led to adequate decline of rates of economic growth in Asia, first of all in China. Though since 2002 the large correlation between rates of economic growth in Asia and in the USA was not observed and even there was its decreasing nevertheless, export from Asia has considerably reduced owing to recession in the USA and slump in demand. Slacking growth of trade deliveries has been connected, mainly, with the high technological goods that are most sensitive to consumer demand fluctuations. But export reduction cannot have strong influence on macroeconomic dynamics if the export value in growth of GDP is rather insignificant that is peculiar to economy of China and India.

Whether the European economy that became the largest trade partner of many Asian countries can develop independently of recessions or booms of business activity in the USA owing to using internal resources? Factors of positive dynamics of the industry development, growth of real wages and internal consumption can reduce influence of external risks. At the same time, if growth of internal demand strongly correlated with export volumes then decreasing export incomes will lead to reduction of internal consumption. Under these conditions where problems in the crediting market are obvious the countries with small open economies are especially vulnerable. Therefore, long run economic growth will be determined first of all by internal factors and investment into development of an innovative infrastructure and knowledge driven business and renewable energy technologies. It can compensate reduction of export and become a constant component of long run sustainable economic growth when the production system provides equilibrium distribution of economic gains of efficiency growth between production and consumption.

From the point of view of potential threats of economic security it is advisable to define the endogenous shocks destabilizing national economy:

- i. Disharmony in development of production, investment and financial systems. The disproportions in transformation of saving into investment, low degree of investment protection can become apparent not only in cyclic but also in the cumulative form.
- ii. The crisis processes caused by incapability of institutional structure of economic system adequately to respond to innovative changes of its functioning. Roland [3] notes that so little attention was given to institutional changes in orthodox models of economic reforms.
- iii. Imbalance of branch structure, low degree of integration of the regional markets and breach of the economic system integrity.
- iv. Increasing social and economic costs of an openness of the small economies, caused by growth of dependence upon export import transactions and external financial sources, conjuncture fluctuations in the world financial and commodity markets. The employment level, national currency, currency and financial reserves, strategically important branches growth rates, and GDP are most vulnerable. Such tendency is most evident for the countries with the developing financial markets, which achieved the large rates of economic growth in the period of a high world conjuncture but at the same time, their vulnerability increases to external shocks during world crises. Hausmann [4] specifies this regularity which is characteristic for developing countries that insufficient development of economic institutes and dependence of foreign trade of the country upon the limited number of the export goods, causes their vulnerability to the exogenous threats presenting danger not only for economy but also for political system.

- v. Inadequacy of the purposes and tools of economic policy of demanded adaptation of national economy to structural transformations, both internal and external shocks
- vi. Property differentiation, the social destabilization intensifying an economic crisis
- vii. Weakening the sovereignty of the economic policy, breaking stable development of national economy.

Proceeding from the classification of potential threats of economic security, it should be noted that vulnerability of small open economy to a considerable extent will depend on accumulation of internal structural disproportions and influence of external negative factors that causes danger of loss of the vitally important sources of economic growth. The system can evolve in different directions. It is noteworthy that the system evolution can discontinue not only because of redundancy of the cumulative quantitative and qualitative changes (breach of internal interrelation of the system processes, arising deviations from macroeconomic equilibrium and lowering stability) but also owing to their lack (the orderliness which has reached of the internal limit). Under rapid worsening of indicators of economic security the system loses stability or is close to this unsteady state. The sharp recession is possible, causing chaos in the system when reserves and production possibilities of sustainable development are exhausted. Considerable fluctuations in functioning the economic system occur under its structural changes connected with nonequilibrium phase transitions which inevitably lead to crisis. Increasing uncertainty or a chaotic state of behavior of the system in consequence of uneven transition from one equilibrium state to another can turn into long run risk factor and become a source of potential threat of economic security. Being a key indication of balanced national economic system, economic security should be defined as viability of the system in realization of the public interests as well as both its stability to the endogenous, exogenous factors and adaptability to new conditions of functioning. Ability of the economic system to the self organization creating possibility of its recovery and development can become the precondition of reaction of the system to the crisis phenomena and their overcoming. The more reserve possible deviations of macroeconomic parameters within keeping integrity of the economic system, the system is more stable. The self organising economic system assumes a structural stability through transition from less ordered state to the extremely complex but more ordered dynamics, i.e. through nonequilibrium phase transition. Nonequilibrium processes underlie transition to the new state differing higher order. Just they generate "an order from chaos" according to Prigogine's terminology [5]. For achieving qualitative growth of national economy management of economic security should include:

- i. Defining admissible threshold values of parameters of stable functioning economic system and its transformation on the basis of the analysis of the world markets development dynamics and revealing factors of financial and currency risks

- ii. Monitoring of real changeable macroeconomic processes and forecasting potential consequences of structural crisis, its dynamics and duration
- iii. Estimation of internal stability breach probability and entropy as measure of uncertainty and a chaotic state of the system
- iv. Revealing trends in development of knowledge-driven and innovation business and changes in structure of aggregate demand
- v. The analysis of a technological level and competitiveness of branches with the purpose of effective structural changes
- vi. Timely adjustment of strategy of the long run economic development depending on interindustry and external economic disproportions, and conjuncture fluctuations in the world markets.

Based on Cable's [6] conceptual approach, stability of economic development, the long run growth and the international competitiveness (at industry and macroeconomic levels) it is necessary to show as the components of economic security. However, under the conjuncture analysis of new economy dynamics the system relationship including outside and inside lags of interaction between the parameters determining macroeconomic stability (level of saving, discount rate, price level, cyclical unemployment rate, budget balance and balance of payments) and indicators of gross private domestic fixed investment and labor productivity, which estimate steady endogenous economic processes is not considered.

### III. POSSIBILITIES OF INNOVATIVE DEVELOPMENT OF SMALL ECONOMIES OF NEW EUROPE

Taking into account cyclic recurrence of real economic dynamics as uneven process under the conditions of the uncertainty, small innovative and venture business must receive primary development owing to allocation of preferential long term credits and credit guarantees for a covering investment and enterprise risk in a phase of recession of economies of New Europe. Undoubtedly, expansion of the regional market and concentration of resources that is based oneself on the integration idea is required for enhancing competitiveness of European economy. But differences in quality of economic growth and level of social development of the countries of Old and New Europe where GDP per capita has 58% from an average mean in EU, inevitably aggravate institutional decision-making and integration processes. This key factor can reduce real effect and competitive positions of the European economy as global actor in the world market. Considering that the world economy has entered the fifth long wave cycle of its development, the long run economic boom will depend on commercialization of powerful innovation potential and efficiency of structural transformations. Therefore, a system role in forming new technical and economic structure, its innovative configuration can be carried into effect by the science intensive branches and the resources saving high technology productions enabling to have competitive advantages to the countries the first created new branch of high technology and superprofit. At the same time,

slump in efficiency of traditional branches can cause rapid slowing down of innovation macroprocess, and consequently, and structural shifts in the industry. Accordingly, financial support must strengthen a role of R&D not only in high technological branches but also traditional, especially sensing necessity in modernization of the industrial machinery. Besides, it is necessary synchronization of the production cycles constituting structure of a long wave of the European economy, a scientific and technical cycle and a cycle of satiation and the changes of the needs satisfied at the given stage of industrial development.

The aspiration to momentary benefit directly contradicts long-term interests of a society. The technical risk of consequences is too big and therefore, decision-making is inadmissible, proceeding only from the probability of event. The choice of those priority scientific and technical directions that not only concern prospective, determining the innovative policy but also are effective in the long run becomes the fundamental task. Forming these directions is notable for mainly heuristic character through high uncertainty of the initial information. Under the conditions of essential stochasticity of consequences of their realization continuous correction of system of ranking directions of innovative development is necessary within the frameworks of the common European policy. Such policy should be focused on creation of scientific and technical potential and equal possibilities in the sphere of innovative business for small economies of New Europe. With this purpose the databases describing economic results of innovative and financial development of economies of these countries should be added by:

- i. Analysis of the real state and the forecast of the main tendencies of development of a science and technique
- ii. Evaluation of efficiency of using investment in scientific and technical sphere, in particular, stable financing fundamental and applied researches not only in separate areas of scientific knowledge but also large interdisciplinary researches
- iii. Analysis of alternative decisions on structural changes and forming new production structures. It requires turning mainly financial support foremost to introduction and the first commercial approbation of the radical innovations changing an industrial profile of economy and allowing to compete in the world markets. These innovations are always risky because they are connected with realization in absolutely unknown market. As innovative ability (ability to spread new technologies and products on the scale of all economy) directly does not depend on quantity of scientific production and level of its novelty it is necessary the evaluation of such factors influencing process of diffusion as the taxation, providing with resources, venture financing, long run investing, and institutional adaptability
- iv. Evaluation of the public innovation programs realized in strategic spheres of economy. As the instrument of

regulation of innovation activity it is expedient to consider the state orders for working out and production of innovative production.

- v. Complex evaluation of a social and economic condition and the forecast of a sustainable development for the long run.

But what does mean sustainability? Innovation there is the key to growth. The problem of sustainability is exacerbated because of lethargy of innovation. But why innovation does not happen? Mehra [7] notes a culture of success at all costs leads to short-termism and atrophies experimentation and innovation. It prevents organizations to leverage synergies that are so essential to solve increasingly complex nature of the conundrums we face. As Dar [8] emphasises, a review of the literature on sustainable development clearly shows the crucial question what is it that needs to be done to restore the balance between human activities and natural capital remains unanswered. In Singh's [9] view information and knowledge are replacing capital and energy as the primary wealth-creating assets. In the knowledge economy, organizations must replace old hierarchical models with ones that can adapt to rapidly changing, complex corporate environments, with an approach that looks at the long-term organizational ethos. Knowledge-based organisations are increasingly expected to adopt a leadership style and approach that creates conditions and environment where knowledge is created, diffused and maximized in a way that is commercially successful. If organisations want to encourage knowledge and creativity then they also need to be prepared to be challenged. Among the important factors promoting sustainable development which Thapar [10] calls it is necessary observed that government should ensure that any their environmental or developmental policies shouldn't cause any damage to the environment and environmental protection should be the ultimate goal. Corporates and Government should cooperate to strengthen endogenous capacity, improve their scientific and technological knowledge and enhancing the development, adoption, diffusion and transfer of technologies including innovative techniques. Strategy "Environmentally Socially Governance Companies Investing" should be adopted by investors. The success of social investing as an investment discipline has increasingly been recognized by individual investors and institutions alike.

Institutional investors have now committed more than \$3.6 trillion to social investing strategies globally and more than \$2.25 trillion in US alone. According to Davidson [11] cost and other factors may cause developing nations to address energy needs with more carbon-intensive than sources of energy generation in the developed world that will be more expensive in the long-term to retrofit to lower carbon intensity. Global energy demand is expected to be 40% higher than it was in 2007 – and 90% of that increase will come from non OECD nations. The Coalition for Green Capital working on a proposal for an International Green Bank, supports leveraging investments in retrofit projects as well as conventional clean energy technologies such as wind, solar, biomass and natural gas, to achieve the most effective stimulation of immediate job

creation in pre-existing industries. Chaturvedi [12] underlines that investing about one and a quarter percent of global gross domestic product (GDP) each year in energy efficiency and renewable energies could cut global primary energy demand by 9% by 2020 and to 40% by 2050. Savings of capital and fuel costs in power generation would average US\$ 760 billion a year between 2010 and 2050. Energy efficiency is a winning strategy. Social outcomes, too, improve under a Green Economy scenario: employment levels in the energy sector would be one-fifth higher than under a business-as-usual scenario, as renewable energy takes significant share of primary global energy demand by mid-century. Sustainable development presents organisations and business with opportunities to modernise and innovate thus enabling them to be more competitive and enhance value for their shareholders. Strengthening technological power of the European economy and its positions in rivalry with the USA and Japan demands intensive integration of intellectual resources, scientific and technical communications and industrial transformations of the countries of New Europe. For coordinated developments of scientific and industrial spheres it is necessary to set priorities of Common European innovative system:

- i. Realization of large interindustry scientific projects with simultaneous scale concentration of resources. Here advanced researches, especially in the field of electronics and the scientific instrument making, new materials, telecommunications, information technologies, biotechnologies, genetics, artificial intelligence will assume ever greater importance
- ii. Incentives of carrying out of interdisciplinary joint researches on development of technologies of the new industrial structure adapting the European economy to internal and external factors of the fifth long wave cycle dynamics
- iii. Transforming radical scientific and technical innovations into cluster of the large innovations, creating possibility of mass commercialization. Appearing in the science intensive branches, cluster will become a starting point of forming optimum technological paths and will generate progressive changes in all technical system
- iv. Diffusion of the radical innovations is technologically determined their cluster under condition of institutional changes. Hence, it is important to equalize a flow of innovations in time and to ensure integrity and a continuity of the whole innovation cycle (scientific and life cycle of innovations) for increasing economic efficiency of consecutive innovative investment in scientific and industrial projects
- v. Transformation of a technological core of the economy, providing balanced development of traditional and newest high technology productions
- vi. Cooperation on introduction, spreading and management of the innovations, providing coordination of interests of industrial firms and the scientific organizations on the basis of an exchange of the scientific and technical information, technical and

commercial collaboration at stages of innovative production R&D, a benchmarking and forming marketing strategy

- vii. Development of an innovation infrastructure in the countries of New Europe and a technological transfer. The content of "package" of a technological transfer for the EU new members having the big need in power and resources saving technologies and the efficient equipment should change considerably. For industrial development of these countries influence of engineering services will exceed commercial effect, in particular engineering of innovations, crisis reengineering and the development reengineering focused on all business process and a qualitative leap.

As in this paper countries with small open economies are analyzed, it is necessary to take into account the Mundell-Fleming model. According to this model can describe equilibrium in the goods market

$$Y = C(Y - T) + I(r) + G + NX(e) \quad (1)$$

For the goods market to be in equilibrium, output  $Y$  must be equal to sum of consumption which depends on disposable income,  $Y-T$ , investment  $I$  depending negatively on the real interest rate,  $r$ , government spending,  $G$ , and net exports  $NX$ , depends on exchange rate,  $e$ .

The real interest rate is determined by world interest rate,  $r^*$ :

$$r = r^* \quad (2)$$

Let us use macroeconomic production function:

$$Q_t = Ae^{\lambda t} \cdot K_t^\alpha \cdot L_t^{1-\alpha} \quad (3)$$

where  $Ae^{\lambda t}$  - function reflecting impact of technological progress,  $\alpha$  - coefficient of elasticity of production on capital,  $1-\alpha$  - coefficient of elasticity of production on labor,  $L$ .

Taking into account  $r(t)$ , can express fixed capital:

$$K_t = e^{-Ar(t)} \int_{-\infty}^t \frac{\Delta K}{\Delta Q} \quad (4)$$

Then

$$Q_t = Ae^{\lambda t} \cdot e^{-Ar(t)} \cdot K_t^\alpha \cdot L_t^{1-\alpha} \quad (5)$$

after differentiation (5)

$$(e^{-Ar(t)})' = -e^{-Ar(t)} \cdot r'(t) \quad (6)$$

can find influence of rate of  $r$  change on rate of  $Q$  change and, using (6), for aggregate output in small open economy obtain:

$$Q_t = Ae^{\lambda t} \cdot K \cdot e^{-Ar(t)} \cdot L_t^{1-\alpha} \quad (7)$$

#### IV. ASYNCHRONOUS DEVELOPMENT OF EUROPEAN ECONOMY

The economy is more dynamical the more its competitiveness depends on innovations and demand for

innovations constantly grows. Such requirement creates possibility of mass commercialization of high technologies that are at early stages of their development. Ability quicker the competitors to reveal the needs giving possibility of widespread introduction of innovative production became the fundamental precondition of competitive advantages. This tendency is typical more to the American firms than to the European and Japanese firms. Since commercialization of know-how determines prospects of technologies, the driving factor of economy development it is advisable to consider not effective branch or even national innovation system, but the new need of which scale can correspond to the increased rate of growth of labor productivity in comparison with a historical trend. Notice that three quarters of economic growth in the USA are provided with a consumer demand [13]. Intensive commercialization of R&D results connected with telecommunication, network technique and information technology has caused shifts in dynamics of labor productivity and has changed structure of needs and manufacturing. Fig. 1 shows relationship between gross domestic expenditure on R&D (GERD) and labor productivity. Carried out on the base of Eurostat data [14], correlation analysis has allowed to reveal that there is significant positive relationship between these indicators for the USA ( $R = 0.612$ ,  $t$ -statistic = 2.188), Latvia ( $R = 0.686$ ,  $t$ -statistic = 3.04), absolute positive relationship for Estonia ( $R = 0.953$ ,  $t$ -statistic = 9.977), positive insignificant relationship for the euro zone ( $R = 0.205$ ,  $t$ -statistic = 0.754), Hungary ( $R = 0.415$ ,  $t$ -statistic = 1.642), significant negative relationship for Czech Republic ( $R = 0.585$ ,  $t$ -statistic = -2.603), Lithuania ( $R = 0.622$ ,  $t$ -statistic = -2.249), absolute significant negative relationship for Poland ( $R = 0.73$ ,  $t$ -statistic = -3.846), Romania ( $R = 0.908$ ,  $t$ -statistic = -6.516). Among the new European countries can observe significant correlation between R&D and labor productivity only in Latvia and Estonia.

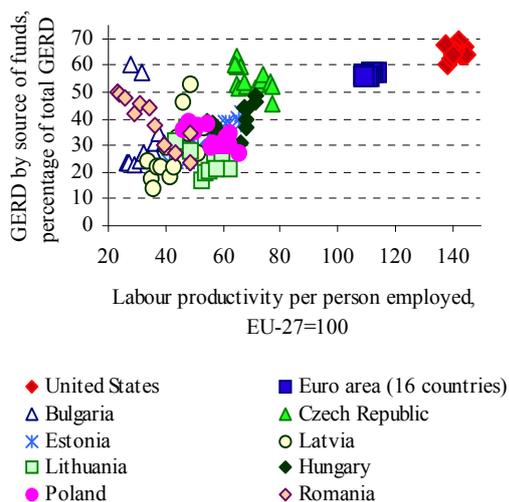


Fig. 1 R&D and labor productivity, 1995-2009

Doubling growth of labor productivity in comparison with a historical trend in the USA in the 1990s has reflected technological changes in production process and new type of economic growth. Moreover, economic boom in the period 2003-2005 has been provided not by a financial overheat, but growth of labor productivity, which was considerably above level of the 1990s. But under the conditions of conjuncture and cyclical fluctuations there arises a question, whether this boom of economy is a consequence of time and casual favorable circumstances or it bases oneself upon the constant factors increasing rates of growth of labor productivity [15]. According to traditional economic conception, under simultaneous growth of economy and decreasing unemployment below “natural rate” inflation will rise. From the point of view of the “new economy” conception widely disseminated in the USA, dependence between growth of economy and inflation considerably changes under the conditions of increasing number of the companies, diffusion of new and cheaper technologies. Fig. 2(a) and 2(b) reflect both trends in dynamics of harmonised indices of consumer prices (HICPs) and changes of GDP per capita in purchasing power standards (PPS) according to Eurostat data [14]. This relationship for the euro zone and USA is insignificant, for the euro zone  $R = 0.166$ ,  $t$ -statistic = -0.584,  $p = 0.57$ , for the USA  $R = 0.265$ ,  $t$ -statistic = 0.989,  $p = 0.341$ .

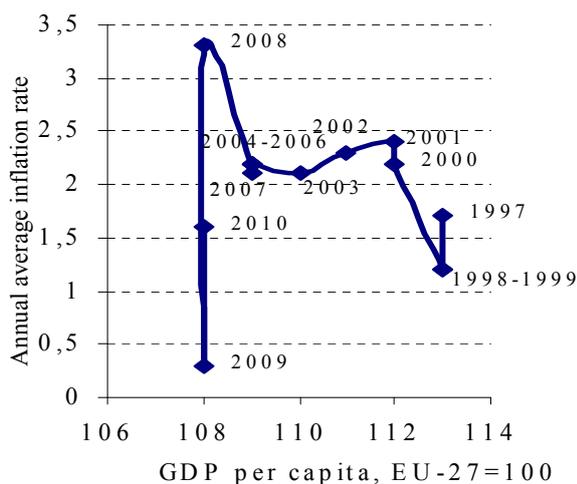


Fig. 2(a) Inflation rate and GDP per capita, the euro zone (17 countries)

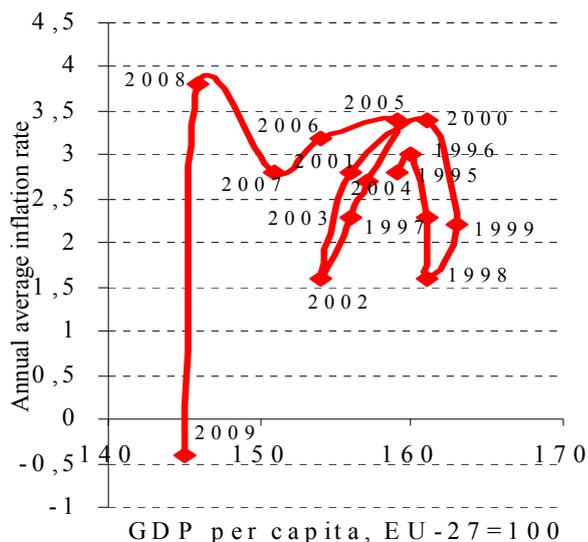


Fig. 2(b) Inflation rate and GDP per capita, the USA

In the euro zone economic growth connected more with weak currency, low interest rates and high world demand, was more cyclical. Using information technologies, administrative innovations in business has much more reduced a production cycle and has raised a labor productivity level allowed to provide noninflation economic growth. As consequence, the qualitative structural changes restricting rates noninflation of growth of economy of the USA have led to not ordinary reiterative decrease of discount rate that stimulated inflow of investment and steady growth of stock market. It is important to note that under the conditions of cyclic recurrence of development support of high rates of growth, for example, 7-8 % especially on a recession wave is wasteful for economy. It is necessary to add that based on high potential of labor productivity under low inflation and unemployment, qualitatively new type of economic growth has caused changes in monetary regulation. In particular, approach of Federal Reserve to the monetary policy in period of boom was non standard. Despite high rates of investment activity and economic growth discount rate repeatedly decreased contrary to demanded monetary contraction. For example, if Federal Reserve of the USA during the periods of boom reduced 11 times discount rate from 6.50 to 1.75 % the European Central Bank has lowered its only 4 times from 4.5 % till 3.25 [16]. But here it is important not just effective regulation of dynamics of discount rate and monetary aggregates M1, M2 and M3, but first of all creation highly liquid the money market and the capital market. Notice that the European capital market considerably yields to American market on liquidity and diversification. According to Hankel, [17] monetary economy should serve real sector of economy and not predominate over it. Besides, the European financial system in contrast to the American one is notable for lesser role of stock and bonds as sources of financing and forms of saving and the single currency can favour the development of stock market. At the same time, weakening of euro as factor of stabilization of the European economy has negative

consequences. It first of all, rise in prices for the import goods, increasing consumer prices and growing inflation, the restrictive monetary policy which is inevitable under the conditions of high liquidity of bank system.

Following the theory of optimum currency areas, which became a basis for realization of the European Economic and Monetary Union, the countries receive economic gains from carrying out the common monetary and currency policies if business cycles of these countries have high correlation. However, in consequence of considerable differences in industrial structures and used instruments of smoothing over arising asymmetric shocks correlation between business cycles of the EU countries cannot be absolute. Considering influence of supply and demand shock pressures on business cycles, Fidrmic and Korhonen [18] have shown that correlation degree between cycles of the euro zone and Central and Eastern European countries very much differs, though some of these countries have high correlation as well as members of the European Economic and Monetary Union. Positive correlation on the demand shocks is observed with Hungary, Czech Republic and Slovenia whereas negative correlation is revealed with Latvia and Lithuania. The given paper on Eurostat data [14] investigates rank order correlation of the euro zone (17 countries) with other new European countries for real DGP growth rate, which is insignificant. This tendency complicates both attracting foreign direct investment to new countries of the EU and active foreign trade interaction with the euro zone. Fig. 3 (a) and (b) plots the cyclical part of real DGP for these countries. According to estimations of rank order correlation, the highest correlation on supply shocks there is between Czech Republic and Bulgaria, Latvia and Bulgaria, Romania and Bulgaria, Latvia and Czech Republic, Romania and Czech Republic, Latvia and Lithuania, least correlation on this indicator there is between Hungary and Bulgaria, Lithuania and Czech Republic, Romania and Latvia, Hungary and Latvia.

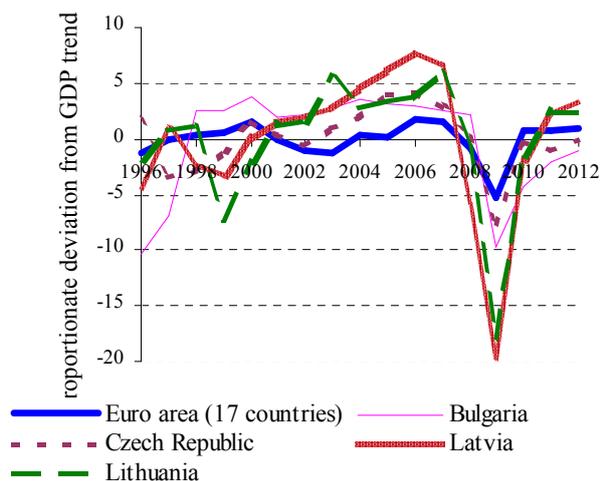


Fig. 3(a) Cyclical behavior of Real GDP

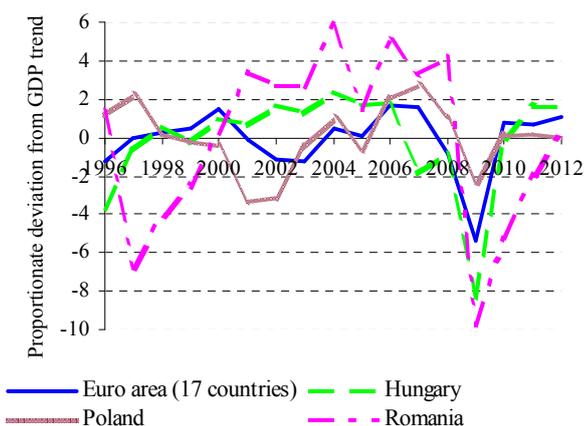


Fig. 3(b) Cyclical behavior of Real GDP

Substantial problem for the European economy as holistic system is its asynchronous development that is caused by specific features of proceeding business cycles in national economies. In spite of the fact that dynamics of a business cycle of the EU began to form a trend of development of economy of the new European countries, gap between the euro zone and these countries remains in level of correlation of cycles and shock influences. Moreover, structural imbalance and internal price instability of the EU countries which do not concern the core of the European Economic and Monetary Union countries (Germany, France, Belgium, Netherlands, Denmark) hampers achieving the general macroeconomic equilibrium and realization of strategy of the common monetary policy. Its main objective — correspondence of national consumer price indices to the harmonized index of consumer prices of the euro zone — below 2 % a year. However, if in the countries with high rates of inflation increasing interest rates is required, but in the countries with low inflation it is necessary they decreasing, then it is impossible to support during the long run the single interest rate for all countries of the European Economic and Monetary Union and simultaneously to require observance of rigid budget discipline. This internal discrepancy becomes apparent in insufficient flexibility of the monetary policy of the European Central Bank in comparison with Federal Reserve of the USA.

With transition to common regulators of the monetary and currency policies possibilities of flexible decision making at national level for overcoming of macroeconomic instability are limited. Under these conditions reduction of discount rate in a phase of recession for the purpose of recovery of business activity can create danger of “spiral of deflation” and to lead to a reverse effect. Although price stability in the euro zone has been achieved and budget deficits correspond to criteria of convergence, nevertheless the problem of growth sustainability and creation of the most dynamical and competitive European economy remains opened. Then the question is natural, what advantages have received the EU countries from macroeconomic and currency coordination to enhance balancing the European economy and its competitiveness? It is

noteworthy, that economic growth in the euro zone countries turned out less steady than in other developed countries. For example, as fig. 4 displays according to Eurostat data [14], in such countries of the euro zone as Greece, Estonia, Slovakia, Ireland, Italy, and Malta the indicator of employment rate is much worse than in the advanced countries-outsiders, in particular, in the United Kingdom, Denmark, and Sweden. Among countries of the euro zone only Austria, Finland, Portugal, and Slovenia have employment rate over European average mean. This indicator is the best in Iceland and Netherlands. At the same time, Cyprus, Germany, France, and Luxembourg exceed European average mean on both employment rate and gross value added.

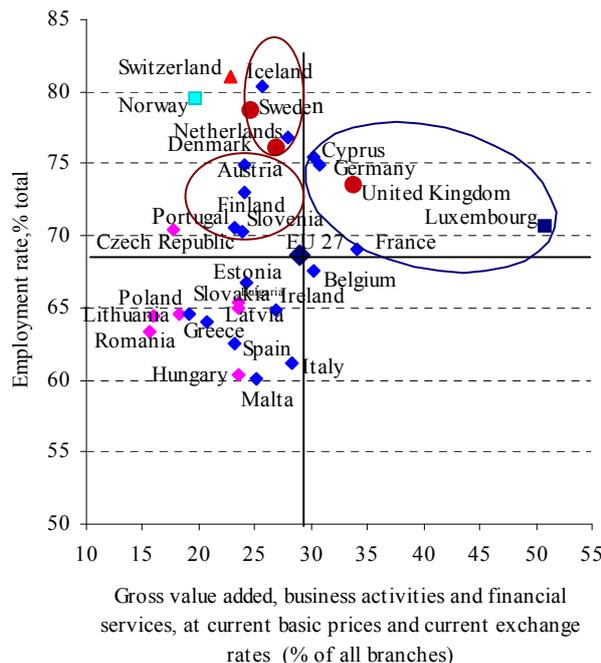


Fig. 4 Employment rate and gross value added, 2010

Possibility of sharp correction of the American stock market, which can worsen a world economic conjuncture, reduce external demand and volume of the European export should be considered as risk factors for economic growth in the euro zone. Notice that the share of the export as a percentage of GDP shows not quite adequately changes of an economy openness degree. Here is necessary the estimation not only relative volumes of foreign trade but also its structure. The more the share of intermediate goods in structure of the foreign trade turnover the deeper participation of the country in the international division of labor and dependence on world economy is stronger.

V. CONCLUSION

The long run prospects of economic development of Europe are advisable to connect with the conception of "new economy". But what possibilities of new type of economic growth in Europe taking into account on the one hand, diffusion of the innovative technologies approved in the USA,

and on the other hand, expansion of the EU owing to the countries Central and Eastern Europe, which majority does not correspond to criteria of an optimum currency areas, excepting Hungary, Estonia and Slovenia. Among the factors hindering intensive development of the new economy model, mainly knowledge-driven economy can emphasize insufficient correlation of business cycles not only between the countries of Old and New Europe but also among new European countries, structural imbalance, lesser significance of stocks and bonds as sources of financing and forms of saving in comparison with the USA, low elasticity of the markets, the heavy tax burden that hamper attraction of large investment.

Obviously, prospects of new economy will be determined by a productivity trend in the future. The strong fluctuations are peculiar to this indicator, connected with changes of the employees' quantity. If in the American economy labor productivity growth is observed under increasing employment and low inflation, in the European economy such tendency does not become apparent.

#### REFERENCES

- [1] IMF World Economic Outlook (2008), Financial Stress, Downturns, and Recoveries, Washington, DC, October.
- [2] M. Rakshit, 'The IMF on the global crisis and its resolution', *Development and Change*, vol.40(6), November, 2009, pp.1293-1307.
- [3] G. Ronald, *Transition Economics: Politics, Markets and Firms*. Cambridge, 2000, Ch.13.
- [4] R. Hausmann, Will Volatility Kill Market Democracy? *Foreign Policy*, Fall 1997, pp.54, 67.
- [5] I. Prigogine, I. Stengers, *Order out of Chaos*, Heinemann, 1984, L.
- [6] V. Cable, 'What is international economic security?', *International Affairs*, vol. 71(3), April, 1995, pp. 305-324.
- [7] M. Mehra, *Sustainability Strategy. The Centrality of Transparency*. London:WFCFCG, 2010, p.8.
- [8] U. Dar, "PROACTIVATE—Powering A New Economy", *Governance for Climate Security Business Innovation, Social Change and National Security*, World Environment Foundation, India, 2009, pp.120–128.
- [9] V. Singh, "Leadership Characteristics and Competencies Framework for the Knowledge Economy", *Governance for Climate Security Business Innovation, Social Change and National Security*, World Environment Foundation, India, 2009, pp. 308–317.
- [10] S. Thapar, "Green Investments—Strategies for a Sustainable Future", *Governance for Climate Security Business Innovation, Social Change and National Security*, World Environment Foundation, India, 2009, pp. 364–373.
- [11] S. Davidson, "The Case for an International Green Bank", *Turn Your Business into a Cause*, World Council for Corporate Governance, London, 2010, pp.126–133.
- [12] P. Chaturvedi, "Environmental Opportunities and Competitive Advantage", *Quality Times, A Journal of the Institute of Directors*, Vol. XVI, No.6, pp.12–16, June 2011.
- [13] V. Marcinkevich, 'Contemporary tendencies in reproductive process of USA', *World Economy and International Relationships*, No.1, 2005, pp. 55-65.
- [14] Eurostat, *Economy and finance, Science and technology*.
- [15] L.H. Meyer, 'A term at the fed – an insider's view', N.Y., 2004.
- [16] *International Financial Statistics*, November, 2004.
- [17] W. Hankel, 'Prospects of the European monetary integration and Ukraine. What is happening to Euro?', *Center for Monetary Policy within NBU Council. Newsletter vol.1*, 2002, pp.31-35.
- [18] Fidrmic, J. and Korhonen, L. (2001). 'Similarity of supply and demand shocks between the Euro area and the CEEC's'. *BOFIT Discussion Papers No.14*, pp.13-25.