Latvia's incoming in European Union economic effect estimation

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2010

LATVIA'S INCOMING IN EUROPEAN UNION ECONOMIC EFFECT ESTIMATION

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Abstract. Joining the European Union big opportunities in the international markets have opened for Latvia. Paper purpose is to investigate influence of international integration processes on development of economy of Latvia. In the paper Latvian economic indicators before and after entering the EU are compeered. Latvia's incoming in EU increased the amount of received means from structural and cohesion funds, removed the trading barriers, increases foreign investments, reduced unemployment, increased labor migration, and increased prices and population purchasing power.

Keywords: economic growth, international market integration, globalization, investments, unemployment, labor migration, inflation.

1. Introduction

International integration is one of the most important factors contributing to the economic development in our century. Latvian international integration process received a strong impetus to the development after Latvia's entering the European Union (EU) in 2004. Since then it has accumulated enough statistical data about integration process, but is still lacks research, which could indicate the main parameters of development, which could quantitatively estimate Latvia's gains and losses from incoming in the EU.

In the paper researched problem is related to the external (international) economic part of Latvian economy estimation.

Novelty element relates with the integration and globalization process quantitative estimation, using the system's principles. Most often, when estimated Latvia's entering in EU, only certain sectors of economy, such as international finances or foreign trade sectors are analyzed. Any of economy sectors are inseparable from whole economy, so some sector estimation does not reflect the effects of the integration process. On the other hand, estimating the common economic indicators, such as gross domestic product, it is possible to see common situation. But this kind of analysis does not show change influential factors. It is necessary to find the optimum balance between the detail level of process analysis and amount of system describing elements that can be done using a systems approach.

The object of research is the Latvian economic integration in the EU and the international economy. The research subject is the Latvian economy changes as result from Latvia entering to the EU.

The paper aim is to comprehensively analyze the effects of international integration process of the Latvian economy.

To achieve this aim the following tasks are set:

- To evaluate received EU funds direct influence on the economic development in Latvia;
- To evaluate free trade influence on export and domestic production in Latvia;
- To evaluate special role of free capital movement in Latvian economy;
- To evaluate employment in Latvia and job opportunities in other EU states;
- To evaluate price and population purchasing power growth in Latvia after joining the EU.

The study shall use both traditional mathematical, statistical, economic and econometric analysis methods, such as time-series trends, regression method, and specific modeling method - system dynamics method.

As the information base of study is used LR CSB, European Communities, Eurostat and LR Financial and Capital Market Commission (FCMC) data. Some materials are taken from experts, news agencies, newspapers and the Internet. The base of research is LAS Institute of Economics, LR President's Strategic Analysis Commission, LR Ministry of Foreign Affairs and LR Ministry of Welfare completed researches. Methodological basis of research based on the Latvian and world's top scientists works: international economic theory - MacConell C. and S. Brue (2003), Latvia EU integration processes - Karnite R. (2007), I. Brivers (2008), system dynamics - Sterman J. (2000).

2. Latvia's entering the EU direct financial effect

For Latvia, joining in the EU, the new financial contributions were formed. Contributions are directed to the EU's budget. Also, from the EU received funds significantly increase. The difference between received funds and contributions increased national income, which is the direct benefit of the Latvia's accession to the EU. Latvia's received funds and contributions are shown in Table 1.

Table 1. Latvia's entering in the EU direct financial effect, million Euro (Source: Author's calculations based on European Communities data)

	2000	2002	2004	2006	2008
Contributions to the EU budget					
VAT-based own resources payments at uniform rate	-	-	8	25	35
GNI-based own resources payments	-	-	45	96	132
UK rebate / UK correction	-	-	6	12	19
Traditional own resources (TOR)	-	-	8	22	29
- Agricultural duties	-	-	*0*	*1*	*2*
- Sugar levies	-	-	*0*	*0*	*1*
- Customs duties	-	-	*10*	*28*	*36*
- Amounts retained as TOR collection costs	-	-	*-3*	*-8*	*-10*
Total contributions	-	-	**67**	**155**	**216**
Received from the EU budget					
Agriculture (including rural develop.) // from 2007 - Natural resources	-	-	33	137	190
Structural actions // from 2007 - Competitiveness and Cohesion	-	-	65	141	400
Internal policies // from 2007 - Freedom, security, justice and Citizenship	1	4	37	62	9
External action // from 2007 - The EU as a global player	0	0	-	-	4
Pre-accession strategy	49	49	104	52	-
Administration	1	1	7	8	8
Compensations	-	-	22	4	-
Total received	**51**	**54**	**267**	**403**	**610**
Difference (received - contributions)	51	54	200	248	395
Difference's ratio in national income, %	...	...	1,81	1,64	1,80

where: - - Magnitude zero; 0 - Less than half of the unit employed, ... - Data not available or too uncertain for presentation.

The first, what is visible from the Table 1, is the fact that Latvia received funds from the EU before joining the EU and majority of them were related to the EU realizable strategy, working with prospective EU members. After joining the EU, according to EU principles, Latvia contributed to the EU budget, and founds were received from the EU budget to promote structural reforms in Latvia. In 2007 the EU budget principles are changed, which reflects Table 1.

Let's look at the EU's budgetary principles and their impact on the Latvian economy in detail.

The budget of the EU is financed by own resources and other revenue. Own resources can be defined as revenue accruing automatically to the EU in order to finance its budget without the need for any subsequent decision by national authorities. The overall amount of own resources needed to finance the budget is determined by total expenditure less other revenue. Own resources can be divided into the following categories: the VAT-based own resource; the GNI-based own resource, UK rebate, traditional own resources (TOR).

The VAT-based own resource's and The GNI-based own resource's rates are variables and depends on the difference between total expenditure and the sum of all other revenue. The UK rebate corrects the imbalance between the UK's share in payments to the budget and its share of expenditure allocated to the Member States. This imbalance is calculated as the difference between the percentage share of the UK in EU expenditure paid in the Member States and the UK share in total VAT-based and GNI-based own resources payments. The difference in percentage points is multiplied by the total amount of EU expenditure allocated to the Member States. The UK is reimbursed by 66 % of this budgetary imbalance.

TOR are levied on economic operators and collected by Member States on behalf of the EU. TOR payments accrue directly to the EU budget, after deduction of a 25 % compensation retained by the Member States to cover collection costs. TOR consists of agricultural duties, and customs duties, which are levied on imports of agricultural and non-agricultural products from third countries, at rates based on the Common Customs Tariff, as well as from the sugar levies paid by sugar producers to finance the export refunds for sugar.

EU budget funds are used according with the EU priorities. In Table 1 it is visible, that in 2007 the EU's priorities have changed. Before Latvia's incoming in the EU, most of the EU received funding was related to the pre-accession strategy and funding of this phase lasted up to the EU budget restructuring in 2007. After 2004, accession of new Member States is not one of the EU priorities; new priorities of the EU are natural resources, competitiveness and cohesion. For implementation of these programs, Latvia received the biggest part of funds. In short period after Latvia's joining the EU some funds were given for Freedom, security, justice and Citizenship – to strengthen democratic values. These priorities financed decreasing show of Latvia's progress in a given path. For a next perspective, Latvia would have funds for natural resource conservation, to promote the competitiveness of the EU and for cohesion process.

Table 1 shows that big part of Latvian contributions to the EU is based on the national income. Significantly smaller is VAT based contributions, the UK rebate and customs duties. Latvian contributions to the EU limit the domestic consumption: part of VAT contribution, as well as customs duties, increases prices, which is consumption limiting factor; national income part contribution also limits domestic consumption. Contrary, the received EU budget funds promote natural resource conservation and domestic production increase.

From author's point of view, these contributions, grant system does not encourage the development of Latvian economy. To successfully develop the production, demand is necessary. The Latvian market is small; it is not profitable to produce all range of goods in Latvia. For Latvia it is sufficient small producers, but they can not compete with large producers, considering the higher cost per production unit. Problem-solving way might be Latvia's specialization in specific products' production. Latvian specialization is wanted for several years, the priority directions are given to a highly technological and / or natural, environmentally friendly products. By author's opinion, wanted product class may be supplemented with products whose mass production is difficult or output growth does not lead to costs decrease.

3. Influence of free movement of goods and services on the Latvian economy

According to economic theory one of the ways to develop the country's economy, is to increase net exports. One of the Latvia's benefits from incoming the EU is growths of market, the removal of barriers to exports goods to EU. Table 2 analyzes Latvian net exports before and after Latvia's joining the EU.

Table 2. Latvian net exports from 2000 to 2008, by commodity groups, mln. LVL (Source: Author's calculations based on the CSB data)

	2000	2002	2004	2006	2008
TOTAL	-803	-1 089	-1 655	-3 085	-3 099
Live animals and animal products	-17	-41	-36	-25	-38
Vegetable products	-71	-63	-79	-86	-40
Fats and oils	-17	-22	-25	-26	-40
Prepared foodstuffs (including alcoholic and non-alcoholic beverages and tobacco products)	-75	-64	-97	-134	-165
Mineral products	-219	-219	-368	-673	-987
Products of the chemical and allied industries	-133	-180	-227	-308	-361
Plastics and articles thereof; rubber and articles thereof	-76	-102	-144	-222	-230
Raw hides, leather, furskins and articles thereof	1	0	-5	-11	-11
Wood and articles of wood	400	431	541	579	595
Pulp of wood; paper and paperboard	-57	-69	-82	-108	-110
Textiles and textile articles	11	9	13	-28	-61
Footwear, headgear, umbrellas and other articles	-13	-16	-26	-42	-53
Articles of stone, plaster, cement, glassware and ceramic products	-27	-34	-49	-103	-70
Precious, semiprecious stone, precious metals, metals clad with precious metal, articles thereof	0	-2	-6	-20	-23
Base metals and articles of base metals	-11	-25	-85	-119	-36
Machinery and mechanical appliances; electrical equipment	-339	-440	-587	-933	-820
Transport vehicles	-134	-218	-359	-670	-481
Optical instruments and apparatus (inc. medical); clocks and watches; musical instruments	-34	-41	-46	-86	-89
Miscellaneous manufactured articles	7	8	9	-64	-73
other goods	3	3	2	1	13

For Latvian net exports calculation the author uses LR CSB data on exports and imports. Through net exports, exports and imports data analysis using time series (trend) modeling techniques have made conclusion that all three indicators' trends are similar. Considering that net exports reflect the difference between exports and imports, only net exports data are published in the paper.

In Latvia net exports are positive (greater than zero) only for wood and wood products group. In some groups, such as Textiles and textile articles, in some years also have been seen a positive net exports, but these groups have such a low share of net exports, that they may be disregarded in the analysis.

Wood and wood products net exports from 2001 to 2007 grow gradually, with the linear trend. Net export growth in this group was related with gradual development, with previously established cooperative extension. Latvia's accession to the EU had no effect on net exports increased in this group. It can be concluded that with contemporary globalization level, **national independence from various unions and associations can not stay competitive goods exports**. Author's opinion, even more, **incoming into economic union does not encourage competitive exports**, because competitive products would be required not only in union countries, but also in third countries, which can fully use internal potential of exporting country.

It is important to note that in 2008 wood and wood products net exports fell, which is related to the global economic crisis and reduction in foreign trade.

In another key product groups and total net exports were negative. Other groups net exports changes were gradual, with linear trend. Only if the wood and wood products group net exports grew, in the other groups it fell. This would indicate that Latvia is not fully using the opportunities form accession to the EU. Net exports were not expanded, imports dominated in foreign trade.

It is important to note that throughout the test period, exports and imports grew, but imports grew faster than exports, consequently, the net exports decreased. In 2008, with the global economic crisis, imports fell more than exports, which increased net exports. In these cases it can be said that the crisis had a positive impact on Latvian foreign trade balance.

Table 3. Latvian industrial output index, between 2001 to 2009 years, % (Source: Author's calculations based on the CSB data)

	2001	2003	2005	2007	2009
TOTAL INDUSTRY	11%	8%	7%	1%	-16%
Mining and quarrying	2%	6%	18%	13%	-1%
Manufacturing:	11%	9%	8%	0%	-18%
- manufacture of food products	10%	1%	7%	-1%	-13%
- manufacture of beverages	1%	16%	1%	10%	-22%
- manufacture of textiles	11%	2%	13%	4%	-44%
- manufacture of wearing apparel	3%	-7%	5%	-2%	-34%
- manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	7%	26%	4%	-6%	3%
- manufacture of paper and paper products	11%	0%	3%	12%	-10%
- printing and reproduction of recorded media	10%	11%	31%	-8%	-19%
- manufacture of chemicals and chemical products	33%	-2%	14%	-7%	-4%
- manufacture of basic pharmaceutical products and pharmaceutical preparations	8%	-16%	22%	-1%	-16%
- manufacture of rubber and plastic products	14%	36%	21%	14%	-29%
- manufacture of other non-metallic mineral products	40%	10%	21%	-17%	-34%
- manufacture of basic metals	19%	4%	-3%	2%	-6%
- manufacture of fabricated metal products, except machinery and equipment	17%	6%	14%	19%	-38%
- manufacture of computer, electronic and optical products	-19%	110%	-3%	-3%	-26%
- manufacture of electrical equipment	35%	2%	14%	10%	-28%
- manufacture of machinery and equipment n.e.c.	21%	16%	16%	5%	-48%
- manufacture of motor vehicles, trailers and semi-trailers	-19%	32%	83%	34%	-55%
- manufacture of other transport equipment	-9%	-22%	54%	1%	-46%
- manufacture of furniture	25%	7%	20%	-9%	-15%
- other manufacturing	-1%	19%	12%	1%	-14%
- repair and installation of machinery and equipment	9%	-1%	-37%	24%	-27%
Electricity and gas supply	6%	3%	3%	4%	-8%

Net exports are reflecting not only international competitiveness, but also internal production problems. Situation in which net exports are reduced, but exports and domestic production grow (and more faster grow imports), can be considered as favorable, since such circumstances, demand expansion takes place so fast that production can not supply goods and attract imports. In future production growth can replace imports. In Table 2 are estimate net export data, regardless of internal production. Net export data reflect changes in foreign trade after Latvia joined the EU. To estimate impact of foreign trade expansion on domestic production, in Table 3 there are analyzed the industrial output changes.

Table 3 shows, that assumption that accession to the EU promoted Latvian internal production development is called in question. Industrial output growth was at one level between 2001 and 2006. In 2007, a year before the crisis, industrial output growth came to a halt, and since then has seen reduction.

Analyzing separately industrial products groups it is concluded that production growth related with EU accession was not finding in any group. Production increase, which was observed in mining and quarrying industry, in time coinciding with the Latvia' accession to the EU, is related to the construction boom in Latvia at that time. In general, EU accession did not develop Latvian industries.

4. Influence of free capital movement on the Latvian economy

Availability of capital in country can be an economic development factor. Economic theory defines that in closed economic system, availability of capital or investment in the country can be less or equal to savings. Savings that population placed in bank accounts and deposits become available for investment in the form of loans. Small offset from this equilibrium can form banks capital. Bank with its own resources also can participate in the credit market. In theory, after Latvia's accession to the EU, capital can come to Latvia in the loan form or as investments in banks capitals and leave Latvia by placing credits or investments in other countries. Actual capital changes in Latvia before and after joining the EU are visible in Fig. 1.

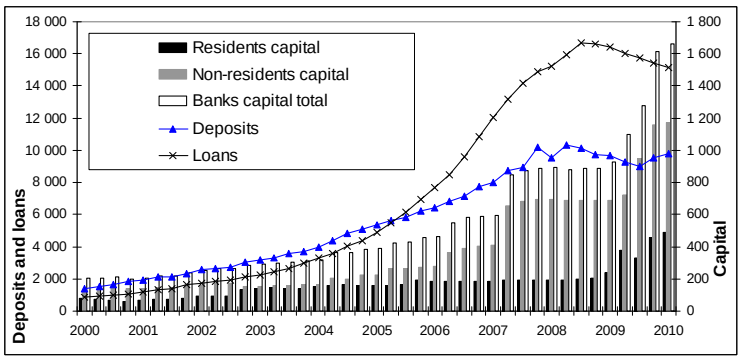


Fig. 1. Banks capital, deposits and loans growth in Latvia, mln. LVL (Source: Author's figure on the basis of FCMC data)

Analyzing banking capital increase in Latvia, we can say that its development was gradual. Analyzing the structure of capital allocated in Latvia, that consists of residents' capital and non- residents' capital, it is evident that capitals have a different dynamic. Residents' capital increased by 46% per year from 2003 to 2008, in this time non-residents' capital increased by 347%. Capital growth rates differ almost 8 times. Total banks capital increase in Latvia is formed with non- residents' capital increase. It can be concluded that the international capital came to Latvia. But to draw conclusions, that it was related with the Latvia's joining the EU, it is not possible.

Before Latvia's accession to the EU foreign (non-residents') capital also have important role. Its share in total banks capital was from 70 % (in 2000) to 51 % (2003), and its minimum (51 %) directly before Latvia's incoming to the EU. Later, foreign capital share in total banks capital grew and reached 78 % (in 2008). Also, to approve the capital flow to Latvia can deposit and loan volumes, which also are shown in Fig 1.

Before Latvia joined the EU savings were more than granted loans about 20-25 %. Local resources were sufficient to cover domestic demand in the capital. A few months after the EU integration credit and deposit ratio started to fall. Granted loans grew faster than growing deposits. In September 2005 loans were balanced with deposits, but since then, granted loans have become significantly greater than deposits. Additional resources for loans banks attract from international capital markets. Latvia's entering the

EU is related with the credit system development and credit boom in Latvia. In contrast, entering the EU did not increase amount of deposit, deposits grew gradually.

The rapid credits growth could trigger economic development, if credits are directed towards to industry. Analyzing credit structure, it is visible that from 30 % (in 2000) to 50 % (in 2010) credits are issued to non-residents, households and for other purposes. Of these credit types, consumer credit growth could contribute to economic development if consumers choose to buy domestically produced goods. As we saw in the previous section, in Latvia production growth was not observed. Consumer loans stimulated import or/and increased prices in the country. Foreign trade growth after Latvia's joining the EU is discussed in the previous section, but prices grow will be discussed later.

Fig. 2 show loans by sectors of the economy for residents (for production needs).

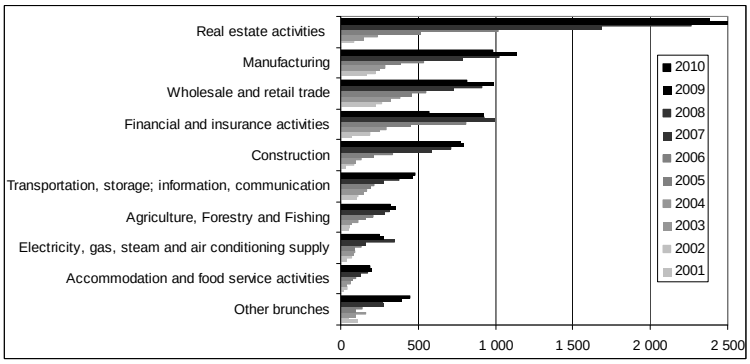


Fig. 2. Loans by economic sector, mil. LVL (Source: Author's figure on the basis of FCMC data)

Loans structure shows that biggest part of loans was directed to the service sectors, including real estate, trade. Only 14 % of loans were allocated in manufacturing, which explains why, despite the loan portfolio growth in Latvia, internal production growth did not happen. Manufacturing is relatively large, complex industry, if distribute credit by subdivisions, for each subdivision will be a small part of credit, for the largest – up to 3.5 %. Some manufacturing subdivisions, such as food production, size and economic effects could be compared with the primary industries. If sector or subsector receives 3-7 % of total credits, its development is a gradual and balanced, if less – development is weak, as was in case of manufacturing. If sector received above 10 % of resources it caused accelerate growth, or boom, which was observed in construction industry. Booms lead to economic development instability cycles. Granting credits to the "air" (Karnite et al 2007), with financial transformation related sectors, does not lead economic development. Thus, capital incoming is not being used to promote positive change in the Latvian economy.

5. Influence of labour free movement on the Latvian economy

In 2004 several EU states opened their labour markets to workers from Latvia. The largest amount of labour force went to Ireland, Great Britain and Sweden. In these countries salaries were substantially higher than in Latvia, which contributed to labour migration from Latvia. The hypothesis of the research is that labour migration is determined primarily by the payment level in the countries under consideration and the indicator derived from it – payment differences in the countries compared; as well as employment level, unemployment level, number of work places (market capacity) and number of vacant work places. Secondary factors influencing migration may be costs connected with labour migration, formal legal barriers to migration and personal propensity for migration. First of all the main indicators of Latvia's labour market, represented in Table 4, will be analyzed.

Table 4. The main indicators of Latvia's labour market 2004-2008 (Source: Author's summary of the CSB and the Eurostat data)

	2004	2005	2006	2007	2008
Average wage, euro per month	403	449	552	719	865
Working age population (in thousands)	1584	1580	1573	1584	1568
Number of employees (in thousands)	1018	1034	1087	1118	1125
Number of vacancies (in thousands)	…	12	19	20	11
Number of unemployed persons (in thousands)	118	101	80	71	91

Where: ... - Data not available

From Table 4 it is evident that since entering the EU, both the average wage and the number of employees in Latvia have grown along with the increase in the number of vacancies. At the same time the number of unemployed persons decreased as well. Data show that the number of employees has increased almost by 10 % during the period analyzed, the number of unemployed persons decreased by 23 %. This does not automatically mean that previously unemployed people have moved to the group of employed ones. Employed and unemployed people in total form labour force. During the period under examination the amount of labour force in Latvia increased by 7 %, but the amount of working age population decreased by 1 %, which is the factor, influencing labour market.

Decrease in working age population in Latvia may be connected with the negative natural increase of population as well as migration processes. Indirect calculations using LR CSB data, taking into account population reaching pension age, increase of young people under working age, as well as death rates in working age, show that the decrease of natural labour force is 20 thousand persons. The number of migrating persons differs in various sources, for example, Eurostat data show that from 2004-2005 on average 981 people a year left Latvia, in 2006 this indicator increased 2.1 times. LR CSB data (CSP) show that the population of Latvia during this time decreased by 4.7 thousand persons. But all these data do not explain the difference of approximately 352 thousand persons between working age population and labour force.

Such large labour force differences can be associated with long-term unemployment, which is excluded from the number of unemployed persons, as well as with migration processes, which are not properly registered and estimated. From the experts point of view, the first reason is increase of the hidden unemployment along with the increase of the number of employees and vacancies (which was in Latvia in 2004-2008). Experts have other thoughts about labour migration process.

Labour migration data are relative and varying, and therefore cannot be exact. Some experts consider that about 50 thousand people (Vīķe–Freiberga 2006) have emigrated from Latvia, other estimations show that totally about 100 thousand (LETA 2008) or even 110 thousand (LETA 2007) job migrants, students and their family members have left Latvia. If data taken from statistical sources are too small and do not show unofficial migration, then the estimations of experts are sometimes unrealistically large, because none of the population groups or total population showed that large decrease. Variation of data indicates that labour migration statistics cannot be applied in such a research, which confirms the importance of this research for development of national economy.

Further it is important to examine migration from another angle, that is, why workers go abroad. The situation in Latvia and in foreign countries is compared in Table 5.

Table 5. Comparison of Latvia's and foreign labour market from 2004-2007 (Source: Author's summary of the CSB and the Eurostat data)

	2004	2005	2006	2007	2008
Ratio of wages					
• in the EU 27 and in Latvia	6,4	6,0	4,4	3,5	3,0
• in Sweden and in Latvia	10,1	9,2	7,7	6,0	5,1
• in Great Britain and in Latvia	9,3	9,0	7,6	6,2	5,3
Ratio of the number of employees					
• in the EU 27 and in Latvia	204	204	198	196	197
• in Sweden and in Latvia	4	4	4	4	4
• in Great Britain and in Latvia	28	28	27	26	26
Number of vacancies in Sweden (in thousands)	38	42	47	55	49
Number of vacancies in Great Britain (in thousands)	629	617	597	656	616

As Table 5 shows, wages in Latvia are much lower compared with the average level of the EU and particular EU member states. At the moment of entering the EU, difference between wages was even 10-fold, but since that the difference is decreasing, as wages in Latvia are increasing. In Table 5, ratio of wages is represented not only as an indicator influencing migration directly, but also as a welfare indicator. In order to evaluate welfare level, it is necessary along with expenditures of employees also to evaluate their wages. Previously conducted researches already underline that the workers of Latvia, working abroad, make savings and transfer money to Latvia more than they are able to earn in Latvia (Vīķe–Freiberga 2006). Taking it into account, as a welfare standard more simplified indicator – wages is used. It is necessary to mark, that in Table 5 average wages are compared, but in reality Latvian workers abroad

are taking low qualification and low-paid jobs. Therefore further real wages in Latvia are compared with minimum wages stated in legislation.

Further analysis of data in Table 5 indicates that the Latvia's labour market forms only half percent of the whole EU labour market and is 26 times smaller than that in Great Britain. Comparison of data in Tables 4 and 5 shows that the number of vacancies in Great Britain exceeds the number of unemployed persons in Latvia more than 9 times. Moreover, vacancies in Great Britain can be filled by more than a half of all Latvian labour force. But these data represent only one developed EU country. In total, it is possible to find a vacancy for each Latvian worker in the developed EU countries with the income at least two times as high as an average level in Latvia. These data show that actually labour migration from Latvia is not limited by employers, as well as that there are no restrictive formal barriers.

From the author's point of view labour migration in Latvia is limited only by propensity to migrate. It is hard to estimate this indicator; however, taking into account population polling results, 19% of Latvia's population is ready to leave (Delfi, 2008) and 40% of population have at least once considered the possibility to leave Latvia (Lotina 2008). To avoid the Latvian labor market statistical incompleteness, as well as to get the missing data and doubtful indicators, the author has developed a system dynamics model of labor migration, which general scheme is reflected in Fig. 3.

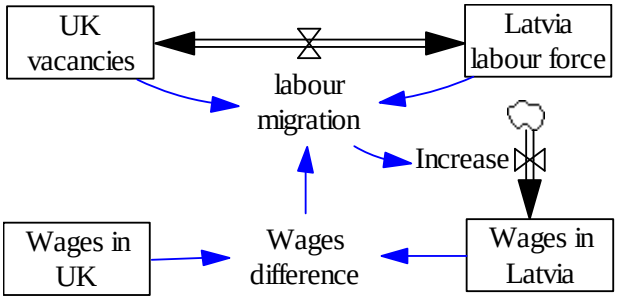
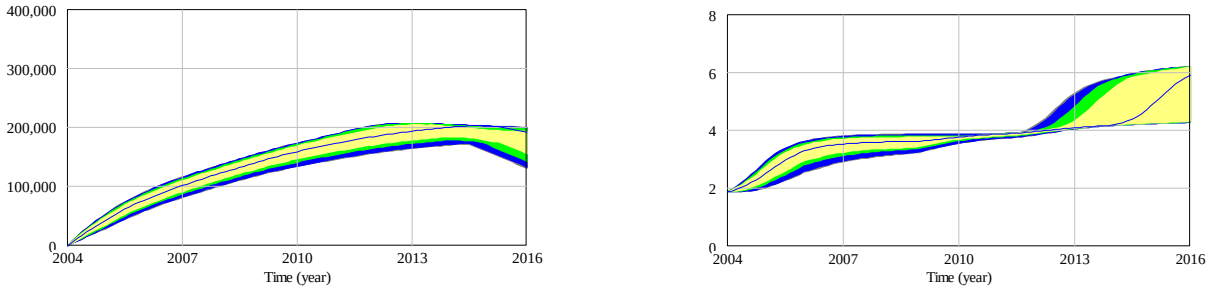


Fig. 3. Labor migration system dynamics model general scheme (Source: Authors' figure)

Model general scheme shows that wages in analyzed countries determine the difference of wages. Taking into account wages difference, migration takes place, but with condition that there are vacancies in the accepting country, but in other country - there are workforce. Labour migration cause reducing of workforce and as result, wages grow. Wages increases reduce migration. This is feedback element, which can be quantitatively researched only with system dynamics method. The author has finished other researches, where simulated population and labour force dynamics (Skribans 2007, 2009a, 2009b, 2009c), therefore they are not shown in detail here, but is shown model's results, see fig. 4.



Labour migration, pers. Average wage in Latvia, EUR/h.

Fig. 4. Results of the labour migration model (Source: Author's figure)

To check the quality of the model, modeling, starting from 2004 and since then it is possible to see the model conformity to the real situation. Before 2007 migration will reach 100 thousand, in 2008 - 122 thousand, which is corresponding to some experts' estimates. During this time, wages increase, and this increase is confirmed by the statistics (Table 4). If this forecast is to continue, then to 2013 migration can be from 177 thousand to 203 thousand and the most probable level - 200 thousand, which is near the highest level of labour migration. After maximum level migration will begin to decrease.

Migration causes labour force decrease in Latvia. Under the circumstances of labour force decrease, it is not possible to maintain high migration level; therefore migration has a calming down character. The second important factor is wage increase because of the labour force decrease. Forecasted increase of average wage can be divided in two stages: in the beginning two year fast increase of 75% from a foreign

minimum (which was in Latvia in 2006-2007). Further stabilization follows approximately during the following 7 years, and further the second two-year rapid increase, after which the minimum wages will be equivalent in the two countries system.

It is possible to conclude that entering the EU cause labor migration and labor force reduction in Latvia. Labor force reduction in the country leads to reduction of unemployment, which is objectively a positive factor. But it's leading to wage increases what from worker point of view is a positive phenomenon. However, from standpoint of international competitiveness, labor cost increases reduced the Latvian exports, which is a negative element of integration.

6. The price and purchasing power changes in Latvia after entering the EU

In the previous chapters it was said a lot about price increase in Latvia after joining the EU. As inflation influential factors both the financial resources flow to Latvia and labor migration were mentioned. Table 6 shows inflation in Latvia.

Table 6. Inflation in Latvia from 2002 to 2009 (Source: SCB data)

	2002	2003	2004	2005	2006	2007	2008	2009
Inflation	2,0%	2,9%	6,2%	6,9%	6,6%	10%	15%	3,3%

Table 6 shows that, at the moment when Latvia entered the EU, inflation rose more than two times and amounted to 15 % by 2008. Previously it was shown that increase both population income and production costs, in Latvia was observed both demand and supply inflation. It is important to know what grew faster – prices or incomes of population. To do this, the author calculated employed purchasing power index with 2003 base (year before joining the EU). Also the author calculated pensioners purchasing power index, but they had no significant difference, and this paper reflects only one of them, employed purchasing power index. This index reflects prices and net wages ratio changes over time. Employed purchasing power index is shown in Table 7.

Table 7. Employed purchasing power index for basic products from 2001 to 2008 (Source: Author's calculations from SCB data)

	2001	2002	2003	2004	2005	2006	2007	2008
Beef	79	85	100	102	103	114	140	147
Pork	77	87	100	104	115	137	168	173
Chicken	72	82	100	107	119	141	149	162
Sausage	70	84	100	109	120	138	166	189
Butter	84	93	100	94	93	106	121	99
Milk	87	90	100	87	87	97	108	103
Sour cream	86	101	100	90	97	111	136	125
Curd	101	95	100	95	91	104	119	115
Eggs	81	99	100	105	125	145	165	161
Rye bread	88	92	100	102	107	110	113	107
White bread	85	92	100	101	108	116	124	112
Sugar	93	94	100	94	108	129	154	191
Potatoes	101	67	100	109	108	89	98	135
Vodka	85	93	100	107	126	137	174	193
Electricity	83	90	100	85	110	129	158	150
Petrol A-95	88	96	100	97	92	105	132	143
Diesel fuel	90	103	100	91	79	91	115	115

Table 7 shows, that in 2004 - year of joining the EU, some products, mainly milk products, purchasing power decreased. For other products, purchasing power growth decreased only for a short time. Within two years purchasing power recovered and after them increased. It can be concluded that the wage growth after entering the EU was higher than the price increase.

7. Conclusions

In the paper comprehensively analysed the effects of international integration process of the Latvian economy in EU, the work purpose it is reached, all planned tasks are reached.

In the paper is defined that Latvia's entering the EU increased net funds from the EU budget. But grant system does not encourage the development of Latvian economy, more stimulating domestic demand.

To satisfy growing demand in underdeveloped domestic production conditions, various goods from other countries are imported in Latvia, thus increasing exports and imports negative balance.

Capital incoming in Latvia is not being used to promote positive change in the Latvian economy, but is focused on the sectors related to financial transformation. In fact, industry has not felt a significant investment growth.

After joining the EU, Latvia exports labour resources. Labor migration decreased unemployment, increased wages and labor costs, which reduced the internal production export potential.

EU grants, capital inflow, wages increase lead to inflation growth in Latvia. Considering that with inflation purchasing power increased, it is possible to conclude that generally welfare level of population grows.

These processes are mostly temporary. Migration would fall under wage increases or/and population resources reductions. Speculative capital flow will be stopped by lack of pledge. It is possible to conclude that temporary processes will be stopped when living standards in the EU and Latvia will be approximately at the same level, i.e., in the end of cohesion process in the EU.

Immune grants and import relation. The grants are intended to reduce the country's dependence on imports, but now it is become vice versa - grants tends to increase import. Latvia is still unable to determine its specialization in the EU and global markets, and thus become depended on the EU grants and international aid. The efficient use of specialization and grants can change situation to promote economic development in Latvia.

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