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# Influence Of Labour Migration On Latvia's Labour Market

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## **Abstract**

*This paper shows system dynamic model of labour market and labour migration in Latvia. The hypothesis of the research is: 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 to migrate. Statistics on the labour market in Latvia are not complete; there is also no common view of experts on determinant processes. In such circumstances market forecasting with quantitative methods is problematic. One approach is to simulate indicators and to estimate their influence on national economy. The model has three parts: growth (expansion) of labour force, division and migration sub models. The sub model for growth of labour force is based on division of population in various categories during transition to a working age population. Division by level of education is further used in labour market analysis in which worker groups are formed according to the education level. The paper represents mutual interaction of groups of workers as well as labour migration. The results show sensitivity of the model factors to propensity of personnel for labour migration.*

After entering the European Union (EU) Latvia faced new possibilities in international labour market. In 2004 several member 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 migration process has a significant influence on the labour market in Latvia: on the one hand it reduced the amount of unemployed, but, on the other hand, it caused workforce deficit in certain professions, as well as substantially influenced the level of salaries in the whole economy. These processes will also influence the future development of Latvia; therefore the research of these issues is very topical for Latvia. It is also important internationally, because in other countries, especially in the new EU member states, similar processes take place, and it is possible to elaborate a common EU labour force migration model by consolidating migration data of particular member states. Common EU labour force migration model would also be suitable for developed EU member states, in order to estimate the incoming flow of labour force and its influence on the development of national economy.

Taking into account the topicality, the aim of this paper is to investigate the influence of labour migration on the labour market in Latvia. In order to reach the aim, several tasks are set:

- to determine and to investigate the factors influencing labour market and labour migration;
- to consolidate influencing factors in a common system and to form labour market and labour migration system dynamic explanatory and forecasting model, based on it.
- to forecast the most important parameters of labour migration and labour market in Latvia.

To simplify research, it is limited and reviews a simplified migration model. It means that migration of workers takes place not in a certain EU country, but in one non-certain, abstract state. Consequently, the model of migration is the model of two countries, one of which is Latvia. As a prototype of the abstract state Great Britain was used, its labour market data are shown in this paper. From the point of view of the author this limitation has no influence on research quality.

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. These factors will be examined separately.

First of all the main indicators of Latvia's labour market, represented in table 1, will be analyzed.

table 1

The main indicators of Latvia's labour market 2004-2007 [1, 2]

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

n/a – no data available.

From table 1 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. Unfortunately, data for complete year 2008, which might represent the influence of crises on the labour market in Latvia, were not available during the research period. Nevertheless, data show that the number of employees has increased almost by 10% during the period analyzed, the number of unemployed persons decreased by 40%. This does not automatically mean that previously unemployed people have moved to the group of employed ones. However, employed and unemployed people in total form labour force. During the period under examination the amount of labour force in Latvia decreased by 5%, which is the factor, influencing labour market.

Decrease in labour force in Latvia may be connected with the negative natural increase of population as well as migration processes. Indirect calculations using LR

CSB data [2], 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 16 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 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 395 thousand persons between working age population and labour force and the decrease of labour force by 53 thousand persons.

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. 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 [3, 5 p.] have emigrated from Latvia, other estimations show that totally about 100 thousand [4] or even 110 thousand [5] 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.

The first step was to analyze the internal environment of Latvia, which influences labour migration. 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 2.

table 2

Comparison of Latvia's and foreign labour market from 2004-2007

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

n/a – no data available.

As table 2 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 2, 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 [3]. Taking it into account, as a welfare standard more simplified indicator – wages is used. It is necessary to mark, that in table 2 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 2 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 1 and 2 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 [6] and 40% of population have at least once considered the possibility to leave Latvia [7]. Data of actual migration and propensity to migrate are shown below.

As it was shown before, statistics on the labour market in Latvia are not complete; there is also no common view of experts about determinant processes. In such circumstances forecasting of market development with quantitative methods is problematic. One approach is to simulate lacking or doubtful indicators and to estimate their influence on development of national economy. The author has other finished researches, which simulate population and labour force dynamics [8; 9], therefore they are not shown in detail here. Further growth (expansion) of labour force, division and migration model is examined.

Firstly, labour force expansion sub model is based on division of population in various categories during transition to a working age population. The first of them become employed (or unemployed) persons, others improve their professional skills and study for a certain time. When reaching the working age, studies delay the transition of people into the category of employees. This labour force expansion sub model is represented in figure 1.

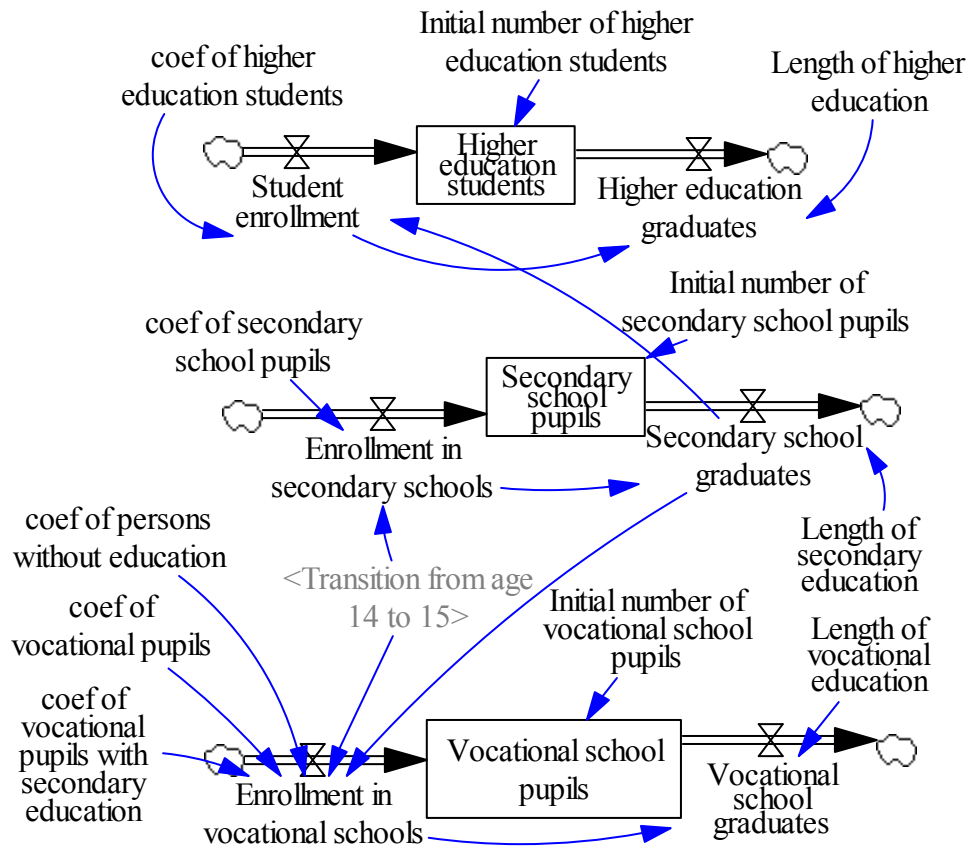


Figure1. *Labour force expansion model*

From Figure 1 it is evident that „transition from age 14 to 15” indicator, which is taken from the population sub model, is in the central position (starting point). In researches it is considered to be the beginning of working age. This indicator is not a modeling or forecasting object, it is obtained from statistical data for following 14 years. Most frequently 15 years old young people continue to study in secondary or vocational schools. Figure 1 shows that „enrollment in secondary schools” depends on how many persons reached the age of 15 and on a regression coefficient „coef of secondary school pupils”. Regression coefficients divide 15 year old youths into secondary or vocational school pupils. Certainly, a small part of 15-year olds does not go to study and remain outside the sub model.

After the study time (length of secondary education) the enrolled pupils leave the number of secondary school pupils and become graduates. Identical model is adjusted to vocational school pupils and students of higher education. They differ in regression coefficients and in length of studies.

Secondary school graduates can enter the labour market, but can also continue to study in a vocational school or in a higher education establishment, which is shown in Figure 1. Division by level of education is further used in labour market analysis, in which worker groups are formed according to the education level. The relations analysed in all worker groups are identical, and their general scheme is represented in Figure 2.

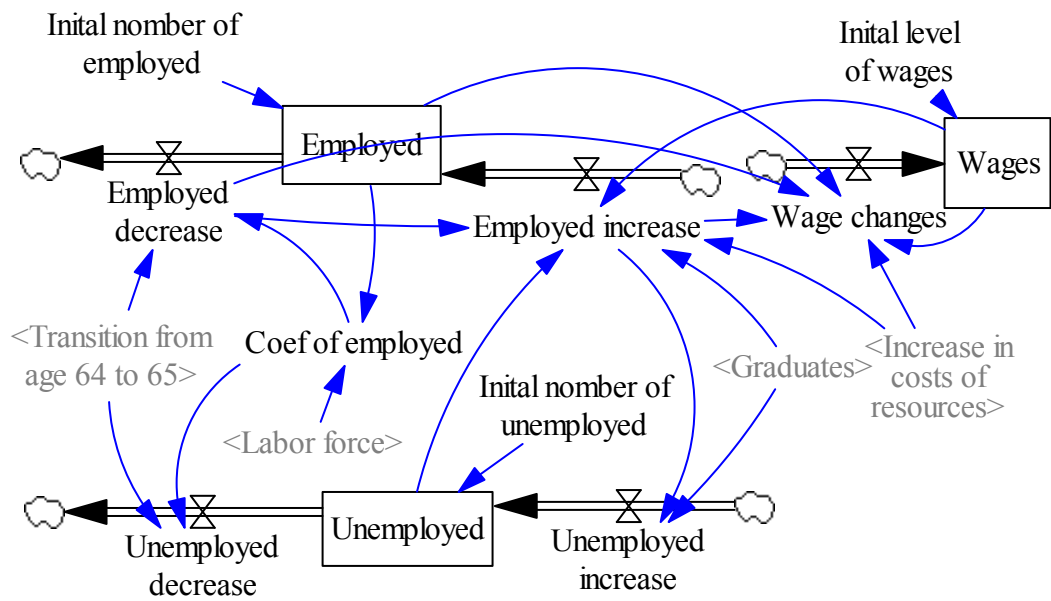


Figure 2. *Labour market analysis model*

Analysis of Figure 2 shows that the main elements of labour market are employed, unemployed persons and wages. The number of employed and unemployed persons can change, decrease and increase. Decrease is influenced by natural increase of aging population, which is marked as „transition from age 64 to 65” in the model. Employment coefficient divides natural labour force decrease in employed and unemployed persons. Increase is possible because of graduates (students). If the number of employees decreases, graduates supplement the lacking amount of employees, if decrease is not sufficient, then graduates supplement the amount of unemployed persons. The lacking amount of employed can be also attracted from unemployed persons. „Increase in costs of resources” allow to invite additional workers, in other words, to pay for additional work places in case of economic growth. If it is negative, the amount of employees will decrease.

Wages, on the one hand, represent increase in costs of labour resources in the system. On the other hand, it serves as an indicator of workers’ deficit. If the amount of workers decreases faster than increases, wages grow. This is foreseen in the model represented in Figure 2. Previously only an abstract working group was examined. In the research the labour market in Latvia is divided into three parts: employees with the higher education, professional workers, and workers with low professional skills or labourers. Thus the number of employed and unemployed persons and wages is calculated separately for all groups. But the previously described model is applicable to all groups.

It is clear that all groups interact with each other. During a protracted unemployment period workers with the higher education lose their skills, they pass into the group of professional workers and so on. Mutual interaction of groups of workers as well as labour migration is represented in Figure 3.

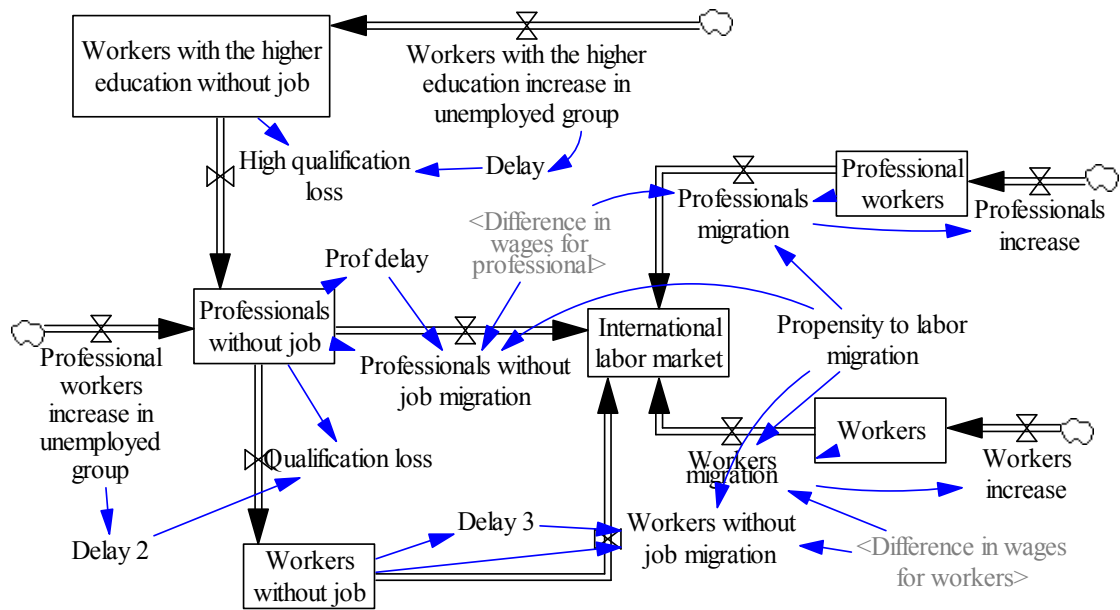


Figure 3. *Labour migration model*

Figure 3 shows that as the result of the protracted unemployment after a certain time, which is marked as “delay” in the model, workers lose qualification and pass to a smaller wage group. Lowering of qualification is possible for workers with the higher education and professional workers, but not possible for labourers. Figure 3 also represents labour migration possibilities.

In the research employed and unemployed persons with the higher education do not take part in labour migration process. This assumption has an objective justification: today the majority of persons migrating from Latvia are persons with low social status. Unemployed persons emigrate most frequently. Personal propensity to participate in labour migration is determined by the labour migration coefficient. This coefficient is not known and will be simulated later. A coefficient is applicable both for employed and unemployed persons. For unemployed persons it is magnified by unemployment time. The longer it takes to find a job, the higher the propensity to migrate.

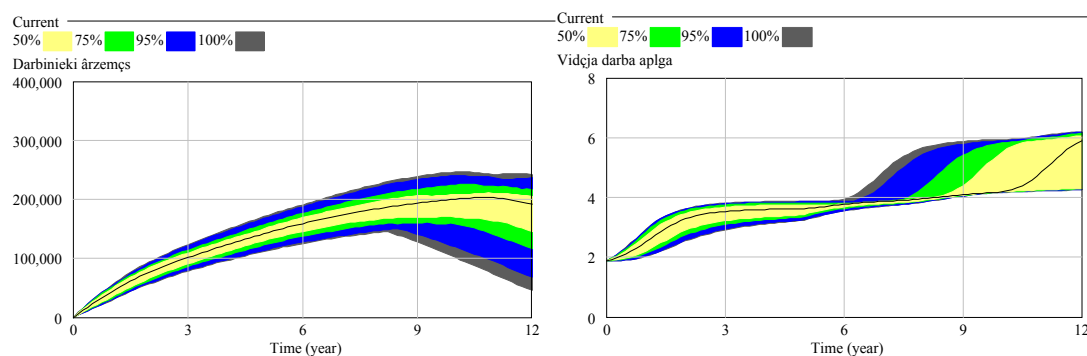
Propensity to migrate is not enough for migration to take place. Other labour migration influencing factors are the number of vacancies and difference in wages. It was explained earlier that it is possible for all Latvian workers to find work places in the developed EU countries; therefore this limitation is not entered in the model. Wage difference in Latvia and abroad is represented in Figure 3 as wage ratio coefficient (separately for professional workers and labourers). And it is calculated in the other sub model.

Wage ratio coefficient is just a division of foreign wages by Latvian wages. Therefore this calculation is not shown in the model description. It is necessary to note that also wage system of different groups of workers is not described in detail. According to this system, substantial increase of wages in one group of workers also increases wages in other groups. This situation is evident in the labour market; wages grow simultaneously in all profession groups, but in different proportions. Unified wages



sub model is not represented in the research, because its role is more technical than informative.

With this the model review is completed and further experiments carried out with the model are described. Before the presentation of results of experiments it is necessary to underline that the number of unemployed persons in Latvia is questionable, but it is certain that there can be from 71 thousand (official statistics) to 155 thousand (persons in working age except employed and theoretically determined voluntary unemployed persons), but the average level is 113 thousand. From the calculations of experts it is determined that labour migration, and consequently propensity coefficient can be from 4.47% to 9.84% from working age population, and the average level is 7.16%. During the execution of experiments the basic forecasts obtained correspond to average sizes of indicators, but levels estimated by experts show the limits of these indicators. Latvia's labour market is simulated for the next 12 years, and its forecasts are represented in Figure 4.



4.1. Labour migration, pers. 4.2. Average wage in Latvia, EUR/h.

#### 4. att. Results of the labour migration model.

Figure 4 presents the main model indicators schematically: labour migration and average wage. Because of the limitations of the paper volume, it is not possible to show complete results of the model, including employment and unemployment by groups, also wages by separate worker groups and so on. From the results represented it is evident that according to the previously mentioned conditions, labour migration can be from 150 thousand to 240 thousand and the data give average migration 202,6 thousand people, which is near the highest limit of labour migration. Migration at the maximum limit 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.

The elaborated model and the results represented in this paper show that separate processes in national economy such as employment, unemployment and wages can be connected not with economic situation, but with the equalization processes in the EU.

Under these circumstances it could be inefficient to fight with the increase of wages in Latvia, also to decrease wages, because in the long-term it can cause more severe problems in the development of national economy.

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