**Forecasts on the demand for skilled and unskilled physical labour**

**Executive Summary**

***The present state of labour-market forecasts***

Although nearly every developed country carries out some sort of labour-market forecasting activity today, the methods and procedures used may vary substantially, and there are significant differences regarding the frequency, regularity, scope and level of detail of forecasts as well as the participants involved in the work and its users. Experts admit that EU-level skill demand and supply forecasting is in its early phase. The primary aim is to test and improve the methods that may be effective in providing policy makers with more accurate and subtle information. Hungary has issued forecasts and prepared forecast methodologies as well, see for example the *Labour Market Surveys (*eds.Borbély, Tibor Bors – Fülöp, Edit) published by the National Employment and Social Office and *The Methods of Forecasting Demand, Guidelines* by the researchers of Corvinus University, Dr Andrea Gelei and Dr Imre Dobos, commissioned by the Apponyi Albert Program. However, it seems necessary to develop a better methodology making use of foreign experience, with the help of which labour-demand, or more precisely anticipated demand for skilled and unskilled physical labour may be defined more accurately, forecasted and linked with labour supply.

***Recommendation to adapt international methodology***

In Hungary, country-level, quantitative, model-based projections have the greatest significance, but due to differences between labour demand and supply in the different employment sectors and substantial regional inequalities, a breakdown across sectors and regions is necessary. This can contribute to advance warning if labour-mobility related measures are necessary. The primary target groups of the forecasts are the government, the local governments and the national and regional level employment offices, which use the

information obtained this way to make policy decisions of wider significance as well as to provide services.

The government has to play an important role in financing labour-market forecasts and conducting regular surveys involving households and employers as well as in making the databases of the above mentioned surveys electronically and widely accessible. Furthermore, it has to ensure regular support for the establishment and further development of economic modelling, as well as the financing of incidental further forecast activities.

The calculation of future labour demand is a multistage process. The first stage is to estimate economic characteristics (e.g. growth, productivity) using macroeconomic or econometric forecasts from which it is possible to estimate the rate of sectoral employment. It is common to use complex structural models in these cases, which reveal economic correlations between the major macro level variables of the economy with the help of behavioural equations (cause and effect relationships) and identities (definitions, summaries). The data output of this first stage is the value added by a particular industry or the employment level (possibly its rate of growth) of particular industries during the forecast period. The second stage in the forecast model is the further breakdown and forecast of employment within the different industries across trades/ professions. The third stage is the further breakdown of the people employed in the individual industries and identified by trade/ profession across the trainings used in the profession, taking the direction and level of training into consideration.

The lack of data necessary for estimates as well as the need to forecast significant future shifts may compel forecasters to assess – with the help of monitoring and professional consultations – the breakdown of employment within individual industries by profession, their specific tensions and the anticipated future demand. For the base period, one needs to draw up two correlation matrices: industry × profession and profession × qualification. The steps so far will give the estimate for growth-related expansion demand.

The calculation of replacement demand with given conditions is the calculation or estimation of the part of the outflow from employment that is replaced by the employers. The factors behind the outflow are retirement, mortality, disability, withdrawal from work due to childcare, net interprofessional mobility, and net geographical migration, distinguished by various features, such as profession, qualification, age, gender etc.

The total labour-requirement (in other words the net number of new job openings or the demand for newcomers) for the target year or the forecast period is the sum of expansion demand and replacement demand.

Supply-side modelling is far from being the mirror-image of the comprehensive, structural assessment of the demand side. Future job seekers (the supply) have a substantially smaller number of attributes than the workplaces looking for them. On the supply side, people wishing to work in the future or entering the labour market at the time usually know what qualifications they possess or will/ want to obtain in the future, but they do not know which industry or often even what specific trade /profession they want to work in. A lot of professions today have people with a wide range of qualifications working in them (the older ones usually with fewer formal qualifications but more experience, the younger ones the other way round), therefore it is difficult to estimate the supply for a particular profession based on the qualifications of the workers available.

The supply-side model estimates the labour-supply for the given period based on demographic processes, the flow of people into and out of education, the flow of unemployed people into the labour market and the number of those leaving the labour market, differentiated by education or vocational training as well as by age and gender. (Based on experience, only the short-term unemployed can be taken into account as possible resource in calculations.) The sum of inflows and outflows gives the total number of people looking for jobs, differentiated by qualifications and/or occupations in the given period.

When organizing forecast activities aspects to be taken into consideration are their regularity, how long the target term is, what basic dimensions they cover and who the forecasts are carried out and financed by. This study proposes that due to the rapidly changing environment and conditions, regular comprehensive forecasts are needed annually, but to prepare for not anticipated contingencies opportunity must be provided for exceptional forecasts.

Forecasting activities must be conducted by research institutes and research universities. Forecasting is a rather complex task requiring a wide range of competencies, therefore it is necessary to allow the division of tasks between the institutions.

The lack of detailed and reliable data is a recurrent problem of the labour market. As a result, a constant improvement of the methods is necessary, and the expansion and efficient use of available data is a permanent aim when improving quantitative forecasting. Of the data used in forecasts, industrial classification complies most fully with the internationally accepted

classification standard (NACE), therefore it is advisable to apply that in Hungary as well. In determining levels of qualification we must follow the internationally accepted nomenclatures (ISCED).

It seems more necessary than ever to take into consideration skills when determining the content and features of occupations and partly when forecasting labour-market demand and supply as well. At the same time, the clarification of concepts – widespread agreement in this issue most certainly will take time – measuring, data uploading and updating and operationalization in general also require further efforts.

One of the barriers of the early researches in labour market forecasting was the often unstated supposition that certain professions and qualifications correspond directly with one another. However, experience shows it is not the case. The same occupation may be pursued by holders of different formal qualifications and certain formal qualifications enable their holders to pursue a wide range of professions. This overlap applies not only to the area of qualification but often to its level as well. However, according to research findings, certain training types that are close to each other because they may substitute one another, form clusters that extend over training areas and levels and that we have to take into consideration as well.

Active substitution occurs as a result of anticipated discrepancies in demand and supply on the markets of given training programs. On the other hand, passive substitution takes place between two or more different training types that are connected and can potentially substitute or be pressured to substitute one another due to of the spillover effect of shortage or surplus in one of the training markets. In substitution demand the parameters of the substitutability of individual qualifications are defined by the distribution of qualifications in the given employment category during the previous time period. The quantified adjustment scheme is the following: it is necessary to examine the rate of workers with appropriate qualifications for the occupation and the rate of workers with other qualifications within individual employment groups. This flexibility matrix indicates a certain extent of possibility for substitutability (defined by profession and qualification).

Labour-market forecasts usually produce a broad mass of data, categorized according to certain basic criteria. In order to make the results more informative for the users, experts have come up with different indicators. While the shift-share analysis is utilized in macro-level

 examinations primarily, the analysis of anticipated imbalances will prove helpful for the users of forecasts at both macro and micro levels.

In the case of labour market forecasts, shift-share analysis is used for the in-depth analysis of the results first and foremost, but occasionally for the projection of future changes as well. Its bottom line is that employment forecasts regarding individual professions comprise three elements: general growth effect and effects regarding industries and occupations. In this context, it has to be taken into consideration that a forecast has to take into account the developments of overall economic changes, economic recession, crisis or boom.

In forecasting models the anticipated future structural balance of the labour market is the result of the comparison of the estimates for demand and supply. It may show deficit or surplus, and breaking it down further, it may show deficit in one given adjacent category of qualification and/ or occupation and surplus in the other. The evaluation of estimated balance requires the utmost care. Because of the nearly unforeseeable reactions to imbalance it is therefore more appropriate to regard model-based estimates of demand, supply and imbalance as projections under the given circumstances rather than the forecasts for the future. In the practice of forecasting, regardless of the multitude of approaches, the generally accepted view is that in the long term major imbalances are significantly reduced by adjustment processes. Substitution processes are initiated on both the demand and the supply sides, which may expand (on the appropriate side) to production targets, technologies applied, individual professions as well as to training directions and levels. Wages, as well as emigration and immigration present important adjustment channels.

***Further labour-forecast-related recommendations***

The government should commission the professionally most suitable organization or organizations to adapt the recommended labour-market forecast methodology, work out the details, put it to test and following that to provide regular forecasts. It should also ensure the sustainable funding that is required.

Measures are required to improve the accuracy and reliability of the initial data service required for preparing the forecast. These should include continuous monitoring regarding the efficiency of the activities of development and training commissions.

The responsiveness, flexibility and efficiency of the vocational training, adult education and labour-market training systems are also in need of improvement. Special attention must be

paid to allow the financing of the induction-style training of unskilled physical labour within the framework of adult education and its rapid implementation should demand arise.

Measures should be introduced to increase labour mobility within the country.

***Summary***

It is to be anticipated that the methodology outlined here will make labour forecasts more accurate. However, it must be made clear that while a good methodology may contribute to the more accurate prognosis of the two simultaneous problems in the Hungarian labour market at present, unemployment and skills shortages, it can only serve as a helping hand to diminish them.

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