

FOREWORD BY THE EDITOR

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Reportings of shortage. Complaints from enterprises of labour shortage have become more frequent and the number of vacancies reported to the employment service as well as the shortage recorded in the enterprise surveys have been increasing in Hungary since 2013. Hungary is one of leading countries in Europe at present in terms of complaints about shortage.

Nevertheless, reportings of labour shortage should be treated with caution, since complaints are driven by interests. It is of no consequence for enterprises if they report recruitment intentions that do not materialise later. The type of questions such as “How many persons are lacking at your company?” do not specify the wage levels firms are willing to pay for the lacking people. Reportings of shortage are oversensitive: their values change to an extremely large extent as a result of minor changes in labour demand. Growing recruitment difficulties are accompanied by a faster labour turnover; complaints multiply and appear at several points of the vacancy chain. In spite of these distortions, complaints about recruitment difficulties remain an important social fact.

Shortage and unemployment. In the labour market it is natural to have unemployment and vacancies at the same time. The market does not even reach an ideal state in a (dynamic) balance: it may level off at high unemployment levels with a large number of vacancies. This “bad” balance may be attributable to a number of factors: agreements preventing the adaptation of wages, government intervention, legal restrictions, high transaction costs, insufficient transport infrastructure, an underdeveloped rental market, mistaken education and welfare policy and insufficient support in taking up employment. Thus the study of shortage necessarily involves investigating market adaptation and the factors influencing it.

While reportings of shortage have increased, the proportion of unskilled workers without a real job has remained high. The number of the registered unemployed decreased from nearly 600 thousand to slightly more than 300 thousand between 2010 and 2016; however, their total number together with public works participants exceeds 500 thousand, which is higher than any time between the so-called Bokros package in 1995 and the 2008 global economic crisis. This indicates structural tensions and conflicts. Hungary is not the only one having this problem – Ireland, Sweden and Slovenia had similar tendencies of vacancies and unemployment.

The impact of demographic replacement. As a result of demographic replacement, the total active age population will decrease by about 6 per cent between 2011 and 2020 but the level of educational attainment of the active age population will significantly improve. The biggest decrease, estimated at more than 500 thousand, is expected in the number of those with a lower secondary education in the period of 2010–2020, accompanied by a similar increase in the number of graduates. Demographic replacement will reduce the number of vocational school graduates by about 200 thousand, while changes in the number of upper-secondary qualification (Matura) holders will not exceed some tens of thousands.

Demographic impacts on the employment structure are somewhat different. Movements between education and employment as well as employment and retirement between 2006 and 2010 resulted in a loss in all sectors except service occupations and other intellectual professions. The most dramatic loss was seen in the number of unskilled and semi-skilled workers, in spite of an increased number of entrants from lower-secondary education due to the massive growth of public works after 2011. However, a stronger impact resulted from the large groups of unskilled labourers reaching retirement age or losing their capacity to work. It is not confirmed by data that demographic replacement or the difference in the educational attainment level of entrants and those exiting would endanger the skilled labour supply. Entries and exits were in balance in this sector between 2010 and 2015, while demographic replacement caused losses even in graduate and other intellectual work.

Employment abroad. According to data from the Labour Force Survey (LFS) corrected using mirror data, nearly 350 thousand Hungarians worked abroad in 2016. We estimate that somewhat more than 2 per cent of employees over 18 and not in retirement went abroad to work on average annually between 2011 and 2016 but nearly half of them returned to Hungarian jobs; therefore, the net proportion of the workers missing due to working abroad is estimated at more than 1 per cent on average annually. This rate was only below 0.6 per cent on average between 2006 and 2010. Employees also working a year before the survey went abroad to work to an extent below average but those studying a year before the survey went to a very high extent and those unemployed a year before also opted for employment abroad in high proportions. Among those returning to Hungarian jobs, the proportion of those being unemployed a year before the survey is also high, which implies that for them both employment abroad and in Hungary involves short-term, uncertain jobs.

The greatest proportion of those leaving to go abroad was from catering related jobs (cooks, waiters): the proportion of those exiting between 2011 and 2016 was nearly 5 per cent on average annually, while net workforce migration was 4 per cent annually. An estimated annual average of nearly 4.5 per

cent from the construction industry and 3.5 per cent from building services, engineering and installation took up employment abroad but in these jobs the proportion of returnees is also high. A great proportion of drivers also got a job abroad and – with a relatively small proportion of returnees – the net workforce migration results in a nearly 1.5 per cent annual potential workforce decrease on average. In spite of reportings of labour shortage in trade, our estimate indicated that the proportion of workers quitting from trade jobs is below average; however, the proportion taking up employment abroad showed the largest increase in these occupations between 2006 and 2010.

Who complains? There is a difference in scale between the number of companies complaining of a labour shortage (it is more than eighty per cent in the industry) and the proportion of vacancies reported by them (barely two per cent). Complaints of shortage often come from companies paying wages below the market rate, but probably also a lot of investment and market openings fail because of low quality labour supply in spite of higher wages.

It is mainly more successful companies that report difficulties in recruiting and retaining staff, which is partly due to an increased demand in order to fulfil an increased volume of orders.

Manifest shortage, when a company is unable to fill an already existing vacancy or completely utilise existing capacities because of labour shortage, is a different case. While complaining of labour shortage as an obstacle to development is more characteristic of successful companies, manifest shortages mainly occur at companies operating under adverse market conditions and primarily in relation to skilled staff. Companies in good financial health tend to ward off serious shortages.

A sign of shortage of unskilled labour was only seen in the manufacturing industry: manifest shortages are more frequent in industrial mass production, where a higher than average proportion of unskilled workers is employed and capacity is more difficult to match to changing labour market conditions than in services or the construction industry.

Shortages occur more often among companies paying wages below the market rate but remarkable shortages are only seen among companies paying their *skilled* staff wages below the market rate. If the average wage at a company is one standard deviation below the market rate, it increases the likelihood of under-utilization of capacity due to labour shortage by about 3.5 percentage points (16 per cent on average in the study sample).

Shortage and wage growth. The presence and proportion of persisting vacancies and the under-utilization of capacity due to shortage of skilled labour had a significant impact on the 2016 wage increase *plans*. However, the impacts are weak: companies reporting vacancies in 2015 planned only 0.7

percentage point faster wage increases for 2016 than companies not complaining of shortages. However, complaints of shortage did not result in faster *actual* wage increase in any of the cases, compared to companies not reporting shortages. It is partly due to the fact that scheduled and actual wage increase had a positive but loose relationship: a planned wage increase of one per cent was likely to result in an actual wage increase of only one-third of a per cent.

Some of the companies facing recruitment difficulties try to overcome their labour shortage through means other than wage increase. Less productive companies, unable to raise wages, are easily prompted by lack of prospects to find grey, unlawful solutions outside the market. With the increase in labour shortage, this unlawful behaviour is likely to increase in the less productive segments of the economy.

Shortage and relative wages. Data from a large sample and long period on relative wages do not indicate that labour shortage would play a decisive role in the fast wage growth of recent years. Point estimates reveal rising wages among young professionals, skilled workers, graduates and in industry and they also show faster wage increase at companies more affected by demographic replacement, labour turnover and outward migration. However, hardly any of the changes are statistically significant and the point estimates themselves tend to indicate longer-term trends instead of a sharp break in the years of worsening labour shortages. Although there have been several cases (e.g. in large shopping centres) of significant pay rises resulting from increasingly severe recruitment difficulties, these did not alter the Hungarian wage hierarchy until 2016.

Consequences on education policy. Complaints about labour shortage have a strong impact on education policy, especially on upper-secondary vocational education and training. In order to interpret the complaints, changes in the structure of vocational education and training and in the labour market of vocational school graduates in the past two decades must also be considered. Upper-secondary vocational education and training did not diminish after the political changeover of the 90s: vocational training receded to the same extent as vocational education combined with a Matura expanded, and as a result of the two trends the proportion of young persons in an age-group entering the labour market with upper-secondary qualification has been roughly stable over the past twenty years. At the same time, the occupational composition of graduates from vocational training, which does not provide a Matura, has changed dramatically. Twenty years ago, 27 per cent of these worked in assembly jobs, as operators or in elementary occupations. At present, this is 46 per cent (including public works participants) in the entire economy and 52 per cent (excluding public works participants) at companies

with more than one hundred employees. Thus vocational schools train nearly half of their pupils for unskilled and semi-skilled work and a significant part of the unmet demand is also likely to consist of such jobs.

Even though complaints from manufacturing companies signal that they primarily need vocational school graduates with plenty of practical training experience and not weighed down with the tasks of preparing for a Matura, they value these employees in all physical occupations less than employees from upper-secondary vocational education. Wages and basic skills deteriorate with age in both groups but the rate of deterioration is faster among vocational school graduates than among vocational education graduates with a Matura, which implies that the competences they acquired at school rapidly become obsolete.

The data do not support the concept that the typical Hungarian enterprise would have considerable excess demand for vocational school graduates when filling skilled worker positions. This applies to the workforce trained in the *current* system and to the *current* standards of vocational training, and apparently the corporate sector does not believe in securing better employees from this supply by raising wages. Vocational training reforms will probably increase the supply of vocational school graduates in the short run, trained to the current standards, without forcing enterprises to raise wages but in-depth curricular reforms, updating the skills of teachers and renewing the teaching staff will require a longer time. Even if this takes place, the length of upper-secondary vocational training and education will decrease and the average standards of quality is likely to decline, especially regarding the development of skills needed for resilience, in a lengthy transitional period.

In higher education the government is trying to increase the volume of science and engineering students by administrative measures and financial incentives. However, according to the relevant literature and research, measures should be targeted at a much younger age-group, especially as regards gender differences. A marked difference in career plans between genders develops by the age of 15, and by that time the majority of girls attend schools that decrease the likelihood of further studies in science. When family background and school characteristics are constant, pupils may best be encouraged to choose science or engineering careers by expanding their scientific knowledge, using their computing skills and realising the labour market value of natural sciences. However, while the motivation of boys can clearly be increased by these measures, the motivation of girls only moderately improves (science knowledge and instrumental motivation) or does not improve (computing skills). Gender expectations have an influence on children at a very early age, which then have an impact on their interests and career ideas. Because science and engineering occupations still mainly have a masculine rather than a feminine image, gender segregation in this field is deeply rooted in culturally defined

gender expectations, which leads girls interested in science to choose medical-healthcare instead of science and engineering professions. A significant change in the present situation is not easy to achieve; it is perhaps most feasibly accomplished by early childhood interventions.

Adaptability. Adaptability and the underlying competences play a key role in preventing and overcoming shortage problems. Recent research clearly points to the primary role of non-cognitive skills. The Hungarian specificities (an enduring ‘Prussian’ style education, limited school and teacher autonomy, the narrow profile of vocational training and the extremely low level of involvement of NGOs) do not support the development of communication and social skills, friendliness, conscience, or emotional stability as well as openness to new and different ideas and therefore hinder labour market resilience.

Job mobility is less likely among workers with more job specific skills, acquired either in the formal school system – for example vocational school and higher education graduates –, or in on-the-job training (those who spend more apprenticeship or traineeship time in a job). Low job mobility among higher education graduates is due to receiving mostly profession-specific education from the beginning of their Bachelor studies, which has only been altered to a small extent by the introduction of the Bologna structure. However, the direction of job mobility is different in the case of higher education and vocational school graduates. Vocational school graduates have low mobility but when they switch occupations, they are more likely to move downwards in the occupational hierarchy. This indicates that on the one hand, changing their occupation is not voluntary, and on the other hand that they can only use their transferable skills in lower-level jobs. In other words, the level of their general competences does not enable them to move upwards in the occupational hierarchy.

Adult education, primarily non-formal, is of utmost importance in acquiring skills demanded by the economy, especially for young people with a lower secondary qualification or those dropping out of upper secondary education. According to an international comparative survey, Hungarian adults with low qualification levels came last in 23 activities and last but one in 8 activities out of the 34 spontaneous learning activities included in the survey and they only came first in passive television watching not for learning purposes. It is impossible to decide and is not necessarily a matter to be decided whether it is a cause or effect: whether joblessness restricts social contacts, knowledge accumulation and income, while knowledge deprived of development and poverty restrict employment and building social relationships, which in turn prevents the uptake of the reserve supply of the unemployed by businesses.

Formal adult education also plays a major role in resilience, especially in less employable groups. In the period reviewed, a smaller proportion of the

registered unemployed entered supported retraining programmes than in the first half of the 2000s; however, the proportion of the unqualified increased among the entrants. This is a positive development, since our findings show that training programmes are especially efficient in this group. However, the fact that a total of slightly less than 17 thousand job seekers without an upper-secondary certificate (Matura) entered a retraining programme in 2015–2016, while the figure was nearly 16 thousand *on average annually* between 2012 and 2014 is not good news. Longer training courses do not necessarily yield better results in the medium term (three or four years after entering the training) than shorter courses. The expansion of relatively short programmes, targeted at low-qualified job seekers, may significantly increase employment and alleviate labour shortage in the foreseeable near future (one or two years).