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Improving the capacity to anticipate EU-wide labour

market and skills requirements

Czech Republic

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1.   **Introduction**

In this report, we review the approaches to labour market and skill needs forecasting that are being developed in the Czech Republic. Thus far, there is little macroeconomic modelling available aimed primarily at skills forecasting, but there is more experience with applying the Dutch quantitative approach based on Labour Force Survey (LFS) analysis and on reliable data on the output of the schooling system. An integrated system of typical working positions and employer surveys are also being built and used. Yet, there is so far no major regular and reliable system of forecasting in place and therefore very little application of forecasting in policy formation.

2.   **Looking to 2020**

There are no available forecasts for 2020 and the two shorter term forecasts we mention below are based on forecasting approaches that have not yet been subject to sufficient testing. Overall, it is safe to say that the Czech Republic lags behind other upper-middle-income countries in the share of the population with college diplomas and this is likely to constrain the labour market and the growth potential of the country in the decades to come. While the inflow of foreign labour in recent years has been rapid, with foreigners making up over 3 % of today's population, it has not been sufficiently skills-biased. We also note that retraining (ALMP) programs in the Czech Republic are not significant (in terms of participants and expenditure) and little is known about their effectiveness. Participation in lifelong learning (LLL) in the Czech lands is very low, especially for older, less educated and disadvantaged workers [1]. All of this bodes ill for low-skilled Czech workers and signals excess demand for those with college diplomas.

One of the two available recent forecasts (by the Institute of Education Policy - SVP) on the future match between the supply and demand for skills expects an increase in the number of jobs held by highly skilled workers (ISCO major groups 1 to 3) of over 400 000 by 2016, and a similarly large drop in the number of jobs available for workers without qualifications and craft workers (ISCO major groups 6-9) [2]. Today, both of these large groups contain about 2 million employed workers. The Dutch-style forecasts (by CERGE-EI/RILSA/NVF) also lead one to expect excess

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[1]   See CERGE-EI regular reports for details.
[2]   Internet: http://www.strediskovzdelavacipolitiky.info/download/projekce SVP x IER.pdf

labour demand for college graduates, in five years from today, but mainly for those in technical and natural-science fields with some sluggish demand in social sciences and humanities ([3]).

During the last five years, excess labour demand was observed in almost all professions across all levels and fields of education. Excess demand has been reported for low-skilled blue collar workers in various types of manufacturing industries through middle level to jobs for highly skilled professionals. The demand was driven by a steadily growing economy fostered by numerous large FDI inflows and by the high export potential of many industrial sectors. Much of the demand for low-skilled workers has been satisfied with foreign labour. There is no reliable study, which would shed light on the extent of skills mismatch (including the spatial one). Excess demand has been reflected in available data on vacancies posted at the district labour offices, as well as on the internet. The emerging economic slowdown, driven primarily by external factors, has already hit some sectors and more adverse shocks can be expected during 2009. Temporary agency workers are being rapidly laid off; demand, even for qualified labour, has slowed down. The Czech economy is heavily dependent on car manufacturing and its supply chain. The competitive position of Czech firms is also strongly affected by wide fluctuations in the crown/euro and crown/US dollar exchange rates, which are difficult to predict in the short and longer term. Small and medium-sized businesses have a particularly hard time hedging exchange rate movements.

It is also intrinsically difficult to forecast beyond the horizon of the next ten years, because developments in such a long horizon endogenously depend on educational and employment policies that will be implemented during the next few years. This is particularly the case in respect of the ongoing curricular reform at the level of primary and secondary education and of the thorough reform of tertiary education and the R&D support system, which should be implemented in the near future. Another important factor affecting future labour market outcomes is pension reform, which can substantially affect labour supply in forthcoming decades.

([3])   RILSA - Research Institute for Labour and Social Affairs, NVF - National Training Fund. Internet: http://prognozatrhuprace. vupsv.cz

3. Main instruments for labour market forecasting

There is no macroeconomic model specifically tailored to skills forecasting in the Czech Republic. Skills forecasting requires, as input, forecasts of employment in ten to 15 core sectors of the economy. Therefore, some skills forecasting efforts have to rely on the use of the Hermin or the E3ME macroeconomic sectoral models, which do not provide a sufficiently detailed division of sectors [4]. As an alternative, sectoral forecasts are based on past trends corrected by expert opinions, which may not be sufficient. There are quantitative forecasting efforts in development based primarily on the LFS data. Firstly, the Institute of Education Policy (SVP) approach compares the evolution of industry and occupational structure of employment in EU countries and the US to that in the Czech Republic and takes the age structure and qualification requirements into account to generate 10-year forecasts. The detailed methodology used by SVP is yet to be published. Secondly, the CERGE-EI/RILSA/NVF quantitative approach draws on the 'Dutch methodology' developed by the ROA institute and combines employment-age structure information from the LFS, with education-system production data from the Ministry of Schooling, Youth and Sports (MoS) and with information on the skills structure of the short-term unemployed [5]. Finally, there is ongoing work on an integrated system of typical working positions (ISTP) and there are also some employer surveys of skills demand and sectoral qualitative studies looking five to 15 years ahead (by NTF) [6].

In the Czech Republic, the first initiatives in skills forecasting originated in academia and in EU-funded projects contracted mostly by the Ministry of Labour and Social Affairs (MoL) and the MoS. At this moment, only few institutions and small teams have solid experience of forecasting and know-how to tackle long-term forecasting in this area. This group includes the NTF, CERGE-EI at the Charles University and the Czech Academy of Sciences, RILSA at the MoL, and the Institute of Education Policy (SVP) at the Charles University in Prague.

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[4]   See a recent Cedefop survey (Cedefop, 2008).
[5]   The latest ROA-CERGE-EI projection starts with the E3ME (Cambridge Econometrics) sectoral (expansion) demand model and uses LFS data to forecast replacement demand separately for 27 educational and 32 occupational clusters to indicate shortages and surpluses on a five-year horizon. All the projections are made at the aggregate national level; regional applications are being considered.
[6]   Up to now, three sectoral studies have been carried out: Future skills needs in the energy utility sector (NACE 40) in 2007-2011 (elaborated in 2006, updated in 2008). Future skills needs in ICT services (IT professionals in all economic sectors) in 2008-2018 (elaborated in 2008). Future skills needs in electronics and the electro-engineering industry (NACE 30-33) in 2008-2018 (elaborated in 2008). The studies rely on interviews with 30-40 experts, workshops, Delphi and scenario forecasting.

Numerous technical issues, such as those listed below, emerge from the existing practice of skills needs forecasting.

(a) Collection of data

A great deal of the data one would like to employ in quantitative models is being collected and is available and reliable. On the other hand, data collection thus far is not itself influenced by the need of early identification of skills needs. Specifically, the analysis often suffers from relatively small sample size (LFS samples in particular), such that detailed decomposition by several categories is not possible. Similarly, the information on immigrants is only gradually becoming reliable and wage information needs to be combined from sources other than the LFS. While data on formal educational attainments of the population and fresh school graduates are available and are rather precise, there is little information on the skill content of education. Employer surveys also need to focus more on the skill structure of labour demand.

(b) Reliability of data for anticipating labour market and skills requirements

Forecasting based primarily on an extrapolation of past trends is losing reliability in the face of the swiftly changing structure of tertiary education, growing proportions of young age cohorts obtaining tertiary education, and forthcoming departures of larger cohorts of the senior population, due to retirement. These phenomena have been rather strong in the CR. Economic crises such as the current one also make the past less informative about the future. For example, there is important potential for transferring the labour force from industry to services (especially health and social), but the impact of such structural change on demand for skills cannot be easily forecast, based on past trends.

(c) Use of data at national level and for policy making and implementation

In the Czech Republic, interregional mobility of the labour force remains rather low. Given that the curricula in upper-secondary schools remains highly specialised, aggregate nation-wide forecasts of skills needs are not necessarily relevant for local labour markets with a heterogeneous industrial structure of labour demand. A related point is that a great deal of the control, supervisory, and decision-making agenda in primary and secondary education is managed by regional government (following the transfer of responsibilities from the central level, several years ago). Regional schooling administrators have an important say in terms of structuring upper-secondary education, including the share of general academic,

vocational and apprenticeship programs. While local administrations have better information about the needs of local labour markets and individual employers, they tend to focus on short-term educational goals and are more sensitive to lobbying by influential local employers who have preference for narrowly educated graduates and who frequently discount general skills, which are important in the longer term.

4. Role of labour market institutions

The MoL and MoS have already realised the need for having some information about future skills demands. However, they still play more or less a passive role by collecting and incorporating suggestions in their own projects, rather than preparing strategic concepts for the creation of a system designed for the regular anticipation of skill needs with long-term support from the government. Collaboration between the MoL (focussing primarily on employment, unemployment and retraining issues) and the MoS (focussing primarily on formal education) is very weak and does not foster collaboration on projects, which would simultaneously tackle education generating skills and labour market outcomes. Unfortunately, the Government Council for the Development of Human Resources, which could have played an active role in forming a comprehensive forecasting system, was dissolved in 2006 by the then newly formed government. Regional Councils for the Development of Human Resources still exist, but they are only of minor importance for the creation of a skills need anticipation system at the national level.

5. ESF funding

It can be said that ESF funding is not currently playing a role in Czech skill forecasting. However, there are various smaller regional projects co-funded by the EU, which help in making qualitative and quantitative information about local labour market conditions available on the internet or through district labour offices. However, these projects provide information on the current situation or on past trends and they do not employ reliable prediction methodologies.

6. Improving capacity to anticipate labour market and skills needs

The quantitative approaches mentioned earlier clearly need to be thoroughly tested and further developed. In particular, the current negative shock to automobile production and manufacturing in general, is likely to lead to changes in the forecasting techniques used. The existing models need to be enriched for numerous reasons specific to the Czech economic and schooling environment and data conditions. In particular:

(a)   the growing share of immigrant and foreign labour (and its skills structure) is not sufficiently reflected in existing forecasts;

(b)   the high numbers of low-educated senior workers retiring from the labour force and the steadily increasing proportions of graduates from tertiary level education make it difficult to forecast replacement demand;

(c)   the existing quantitative forecasting should focus also on regional labour markets and should take into account specific interregional migration flows (i.e. the ongoing suburbanisation of major cities) and the higher incidence of commuting along major newly built traffic lines (highways and trains);

(d)   the development of a stylised sectoral macroeconomic model, which would provide sectoral employment forecasts is urgently needed;

(e)   data collection, the LFS in particular, should better reflect the need for early identification of skills needs (specifically, the relatively small size of LFS samples currently limits detailed study by education x occupation x gender x age groups);

(f)   the information on the price of labour (wage data) could be incorporated into the LFS data at least in the case of the last quarterly survey of households (alternatively, data on pay structure in the public sector should be made more easily available for research purposes);

(g)   surveys should be established, which would pair information on educational attainment with information on actual skill content of education for school graduates entering the labour market (this is particularly the case for nation-wide testing of graduates from upper-secondary programs, which is scheduled to commence in 2010);

(h)   there should be a regular employers' survey in place providing information on skill-specific labour demand developments; and

(i)   the information on international mobility of the Czech labour force needs to be enhanced (currently, there is no survey, which could provide information on the extent of the Czech

brain drain; similarly, the existing data on EU nationals working in the CR need to be examined and tested for accuracy).

As is clear from Section 2, there is as yet no state-run and financially and institutionally guaranteed regular, comprehensive skills' forecasting system in place. Hence, the anticipation of skill needs so far does not feed in a major way into policy formation. However, some of the projects briefly outlined above could be developed into a comprehensive institutional system providing regular forecasting and early identification of skills needs. The existing methodological approaches could be usefully combined into a joint methodology. For instance, quantitative forecasts should be regularly confronted with qualitative sectoral studies ([7]). There also needs to be more record keeping of the performance of forecasts. Similarly, existing efforts need to be used more to channel the first available forecasts, together with other pieces of expert information, to relevant stakeholders and users.

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([7])   Efforts to establish such a comprehensive system are underway. The proposal is being prepared by the NTF – NOET under a larger project entitled Institute of Labour Market.

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