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Strengthening Skill use and School-to-work Transitions in the Czech Republic

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By Sónia Araújo and Petr Maleček

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ABSTRACT/RÉSUMÉ

STRENGTHENING SKILL USE AND SCHOOL-TO-WORK TRANSITIONS IN THE CZECH REPUBLIC

The education system has reacted slowly to changes in labour market needs, leading to an increasing number of school leavers without sufficient qualification. In addition, declining PISA scores and a rising share of low achievers are raising concerns about the quality of the future labour force. These factors play a role in the stalled income convergence process. Indeed, practices such as early tracking, streaming and low transferability between academic tracks hamper employability, human capital accumulation and social mobility. In the vocational education and training system, resources continue to be allocated on a historical basis. A more endogenous adjustment of the system to better align students' qualifications with labour market needs requires active participation of social partners, students and education institutions. The rapid expansion of tertiary education without a corresponding increase in resources has led to fears about declining quality. Quality in tertiary education can be fostered by modifying the accreditation system, introducing student fees, strengthening the links with the private sector and foreign research networks and publicising information on labour market outcomes by field of study and higher education institution. Measures to better balance family and work lives can improve career options for women and therefore reduce the current tensions between having children and full time labour market participation of younger women. This could also ease the coming labour shortages associated with population ageing. This Working Paper relates to the 2014 *OECD Economic Review of the Czech Republic* (www.oecd.org/eco/surveys/economic-survey-czech-republic.htm).

JEL classification codes: I20, I23, I24, I28, J21, J24.

Keywords: Czech Republic, labour market, youth unemployment, female labour market participation, skills, early childhood education and care, vocational education and training, tertiary education, PISA

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RENFORCER L'UTILISATION DES COMPÉTENCES ET FACILITER LE PASSAGE DE L'ECOLE À LA VIE ACTIVE DANS LA RÉPUBLIQUE TCHÈQUE

Le système éducatif a réagi lentement aux changements des besoins du marché du travail, ce qui a conduit à une augmentation du nombre de jeunes quittant l'enseignement sans qualification suffisante. En outre, la baisse des résultats PISA et la proportion croissante d'élèves avec une faible performance soulèvent des inquiétudes quant à la qualité de la main-d'œuvre future. Ces facteurs jouent un rôle dans le processus stagnant de convergence des revenus. En effet, des pratiques telles que l'orientation précoce des élèves, le regroupement par aptitude et l'insuffisance de passerelles entre les voies scolaires entravent l'employabilité, l'accumulation de capital humain et la mobilité sociale. Dans le système d'enseignement et formation professionnels, les ressources continuent d'être allouées sur une base historique. Un ajustement plus endogène du système afin de mieux harmoniser les qualifications des étudiants avec les besoins du marché du travail exige la participation active des partenaires sociaux, des étudiants et des établissements d'enseignement. L'expansion rapide de l'enseignement supérieur sans l'augmentation correspondante des ressources a conduit à des craintes de baisse de la qualité. La qualité dans l'enseignement supérieur peut être favorisée par la modification du système d'accréditation, l'introduction de frais de scolarité, le renforcement des liens avec le secteur privé et les réseaux de recherche étrangers et la publication d'informations sur le marché du travail par domaine d'études et établissement d'enseignement supérieur. Des mesures pour trouver un meilleur équilibre entre la vie de famille et le travail peuvent améliorer les options de carrière pour les femmes et réduire les tensions actuelles entre le choix d'avoir des enfants et la participation à temps pleins au marché du travail des jeunes femmes. Ceci pourrait également soulager la pénurie de main-d'œuvre à venir liée au vieillissement de la population. Ce document de travail se rapporte à l'Étude Économique de l'OCDE de la République Tchèque 2014 (www.oecd.org/fr/eco/etudes/etude-economique-republique-tcheque.htm).

Classification JEL: I20, I23, I24, I28, J21, J24.

Mots clefs : République Tchèque, marché du travail, chômage des jeunes, participation au marché du travail des femmes, compétences, éducation et accueil des jeunes enfants, enseignement et formation professionnels, enseignement supérieur, PISA

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STRENGTHENING SKILL USE AND SCHOOL-TO-WORK TRANSITIONS IN THE CZECH REPUBLIC

By Sónia Araújo and Petr Maleček[1]

1. The Czech labour market has undergone marked changes in recent years as the structure of the economy and labour demand, in terms of occupations and skill requirements within specific occupations, have continued to evolve as has been the case since transition started. The service sector has expanded and manufacturing has become tightly integrated into global value chains, changing the skill set needed in the labour market. However, public education has not kept pace. Streaming and early tracking hampers social mobility and human capital accumulation, vocational training has reacted slowly to the changing needs of the labour market, and there is little workplace training.

2. Pockets of underutilised resources have arisen and convergence, productivity and real wages have slowed. Long term unemployment is high among low skilled workers, in part reflecting low labour mobility, and the crisis has pushed up youth unemployment. Also, elements of the tax and benefit system discourage female labour market participation, which is low and declining, representing a waste of human capital when the economy is facing an ageing labour force.

3. This paper looks at the labour market and makes recommendations to increase skill use in the economy through higher employment rates, including by strengthening school-to-work transitions. By assessing skill development over citizens' lifetime, aiming at strengthening the links between the education system and the labour market and putting existing skills to effective use, this paper follows the OECD strategic approach to skills policies (OECD, 2012a).

The integration in the global-value chain has changed the skill set needed in the labour market

4. In the past decade, as since transition started, employment continued to decline in agriculture while rising in the service sector, particularly in business services (Figure 1, panel A). In manufacturing, important job losses occurred in some industries – such as food, beverages and tobacco, textiles, leather and apparel, metallurgy and mineral products – while the integration in global value chains led to the strong expansion of motor vehicles and electronics, computer and optics industries (Table 1). Changes in the sectoral composition of output and employment steered important changes in the occupation structure of the labour force, with an increase in the share of professionals and technicians relative to total employment. This process also increased the share of workers with tertiary education in total employment by more than 7 percentage points and reduced the share of workers with upper secondary vocational graduation by a similar amount, while employment opportunities for unskilled workers declined less (Figure 1, panel B).

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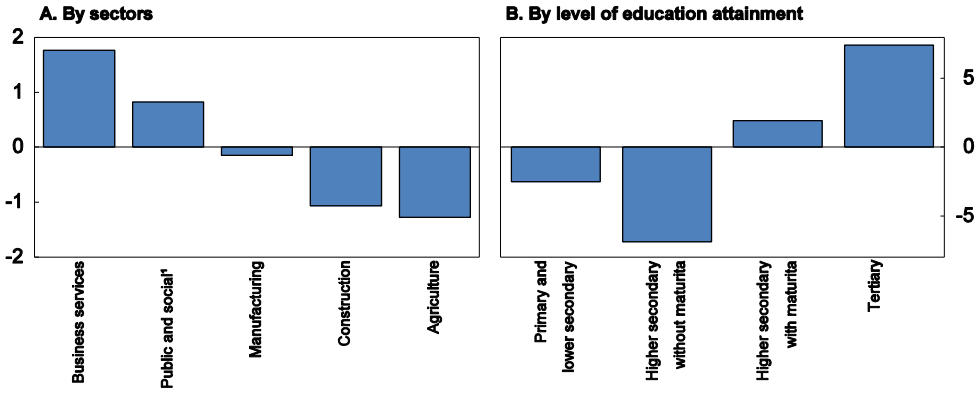
1. Sónia Araújo is an economist in the Economics Department of the OECD and Petr Maleček is an economist working at the Ministry of Finance of the Czech Republic. This paper was originally produced and published as a chapter of the 2014 OECD Economic Survey of the Czech Republic published in March 2014 under the authority of the Economic and Development Review Committee (EDRC). The authors are grateful to Andrew Dean, Robert Ford, Andreas Wörgötter, Jens Høj, Ana Pons, Adam Krcal, Paulo Santiago and several Czech government officials for valuable discussions, comments and suggestions on earlier drafts. Special thanks are due to Béatrice Guerard for statistical assistance and Josiane Gutierrez for technical preparation.

Figure 1. Structural change has led to an increase in the skill content of employment

Change 2003-12 in shares of employment, in percentage points



1. Public administration and defence; compulsory social security; education; human health and social work activities.

Source: Eurostat and Czech Statistical Office.

Table 1. Employment in manufacturing

	Shares in total employment (%)	
Sectors	**2003**	**2012**
Food, beverages, tobacco	3.0	2.3
Textiles, leather and apparel	2.7	1.2
Paper, coke, petroleum, rubber, plastics	2.2	2.1
Chemicals, pharmaceuticals	0.9	1.1
Metallurgy and mineral products	6.9	6.2
Electronics, computer, optics	2.6	3.7
Motor vehicles	1.8	3.5
Total manufacturing	27.8	27.6

Source: Eurostat.

5. The Czech Republic has a well-educated labour force, with 92% of the working age population having attained at least upper secondary education, compared to the OECD average of 76% (OECD, 2013a). Education attainment is associated with good labour market outcomes (Table 2). Employment rates are particularly low for those with less than upper secondary education and increase with the level of education. The unemployment rate is closely linked to educational attainment with those having less than upper secondary education (a small fraction of the labour force) having particularly high unemployment.

Table 2. Labour market outcomes by educational attainment

Persons aged 25-64, 2012, %

	Unemployment rate	Employment rate	Share of labour force	Share of registered unemployed[1]
Primary and lower secondary education	28.8	21.1	5.6	29.3
Upper secondary education:	6.5	71.8	74.6	64.9
Apprenticeships	8.0	72.6	37.6	41.5
Technical vocational training	5.0	71.0	36.8	21.2
Gymnasia	7.4	51.5	0.2	2.2
Tertiary education	2.9	81.1	19.8	5.8
Total	**7.0**	**66.5**	**100**	**100**

1. As of Q4/2012. These figures reflect unemployed persons registered at employment offices, as opposed to the self-reported unemployed by the *Labour Force Survey*.

Source: OECD; LSO Network (Labour market, economic and social outcomes of learning), *Labour Force Survey*.

6. Real wages have increased as part of the income convergence process, rising from 40% of the average in Euro area countries in 1995 to almost 80% in 2012. However, the transformation in employment patterns has not been accompanied by changes in relative wages across occupations or by a dispersion of wages within occupations, reflecting the fact that wage increases tend to be very similar for all workers, with the exception of managers (Figure 2). As a consequence, relative wages constitute poor signals to students when they choose their studies, with the exception of the high net private returns for tertiary education. Against this background, relative demand for skills is reflected more through lower unemployment rates for the more skilled rather than wage developments.

7. This is a somewhat surprising outcome as wage determination seems to be quite decentralised, with collective bargaining taking place at the company or sector level and covering only around 40% of employees, although involving a great majority of large firms (Box 1; Visser, 2013). However, in recent years the bargained minimum wage has risen well above the statutory minimum wage, and was 25% higher by 2012, reducing the signalling effect of wages and thus not stimulating demand for unskilled labour (Box 1).

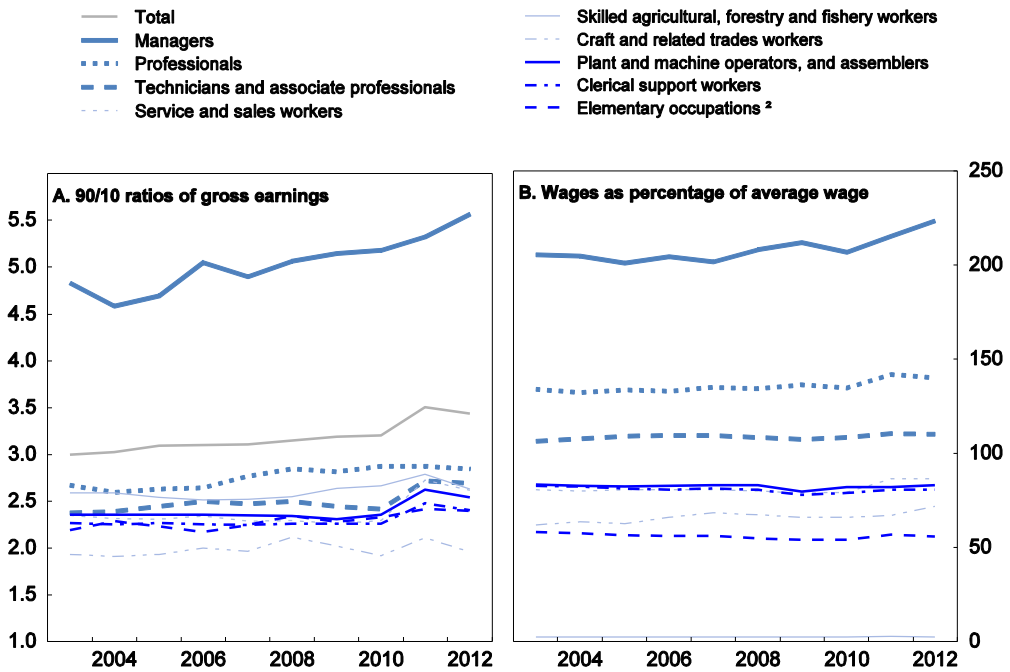
8. The government influences wage bargaining by providing the institutional framework of consultation and information exchange and by extending private sectoral agreements to cover the whole sector in question. Nevertheless, tripartite negotiations between the government and social partners typically do not extend to norms for wages increases. In the past years, government intervention in wage setting has been largely limited to determining the statutory minimum wage, which was kept constant from January 2007 until July 2013, when it increased from CZK 8 000/month to CZK 8 500/month, representing 38% of the median wage, one of the lowest ratios among OECD countries. With effect from 1 January 2013, the government abolished the youth minimum wage, which consisted of two differentiated levels, corresponding to 80% and 90% of the statutory minimum wage for those less than 18 and those between 18 and 21 years old, respectively. This measure is likely to have had a small negative effect on youth employment, as only around 4.5% of workers aged between 15-21 years old were receiving compensation at or close to the youth minimum wage (Czech Statistical Office, 2012; Laporšek, 2013).

9. There may be informal wage coordination, as a frequent survey by the Ministry of Labour and Social Affairs (MoLSA) and the Czech Statistical Office provides human resource departments with valuable information on wage levels for different occupations. In addition, the largest and most influential

trade union, the Czech-Moravian Confederation of Trade Unions (ČMKOS) also makes regular recommendations on wage increases based on its inflation forecast and expected economic developments.

Figure 2. The wage distribution has not followed changes in the structure of employment

By occupations (ISCO) [1]



1. A change in the classification of occupations from ISCO-88 to ISCO-08 precludes meaningful comparisons of changes in the occupation structure of employment from 2011 onwards relative to previous years.
2. "Elementary occupations" is the title of major group 9 in the ILO classification system of occupations. It comprises, inter alia, street vendors, shoe cleaners, domestic helpers, building caretakers, messengers, doorkeepers, garbage collectors, hand labourers, etc.

Source: Czech Statistical Office.

Box 1. Wage formation in the Czech Republic

The Czech wage bargaining system is quite decentralised, with collective bargaining covering a minor part of employees and taking place at a company or industry level. The government determines the general legal framework, and its direct interventions are mostly limited to the setting of the statutory minimum wage. Similar bargaining systems are found in Slovakia, Hungary and France (Visser, 2013). Wage growth is often settled in terms of wage tariffs, with a possibility to differentiate between employees (Brádler et al., 2010). Non-member companies are not covered, unless requested by an employer association or trade union and approved by MoLSA - a process that has been used since 2005. There has been a steady decline in unionization, from 64.4% of employees in 1993 to 30% in 1999 and then to 17.3% in 2009 (Myant, 2010; Visser, 2013). However, the percentage of employees covered by collective bargaining is higher, estimated to be at least 30% but possibly as much as 41% (Myant, 2013; Visser, 2013).

Slightly more than half of collective agreements consider increases in nominal wages, while agreements involving real wage increases are relatively uncommon (Table 3). Nominal wage increases achieved through collective bargaining agreements have broadly mirrored aggregate wage growth in the business sector since 2010 (Table 4). On the other hand, bargained real wages were significantly higher as compared to the aggregate, but with a limited impact on the economy due to their small prevalence. Notably, collective agreements have allowed for a gradual rise of the bargained minimum wage to a level that is about ¼ higher than the statutory minimum wage. The percentage of collective agreements that specify details of uneven working hours has been rising quite substantially. This measure was largely inspired by German companies and allows for flexible working hours depending on employers' fluctuation

in demand (Myant, 2013). According to the Labour Code, working hours can be distributed in such a way that average working hours have to be reached within a maximum of 52 consecutive weeks.

Table 3. Main characteristics of wage bargaining in the business sector

	2007	2008	2009	2010	2011	2012	2013
Bargained minimum wage as a % of statutory	109.6	116.6	118.9	121.5	122.8	125.6	120.5
Pay increases considered (% of collective agreements), of which:[1]	66.4	74.0	56.2	42.4	56.1	59.7	59.4
increase in wage tariffs	19.7	28.0	20.9	12.5	18.4	20.8	20.4
increase in nominal wages	41.9	41.3	26.1	15.6	21.7	22.8	22.1
increase in real wages	3.4	4.0	1.9	1.4	1.9	1.9	1.7
Limits for agency workers (% of collective agreements)	0.9	1.7	1.5	2.1	1.8	2.2	2.2
Specification of uneven working hours (% of collective agreements)	23.6	30.6	31.0	35.9	36.8	40.8	39.4

1. The table shows the most common types of collective agreements.

Source: Ministry of Labour and Social Affairs, Working Conditions Information System Surveys, 2007-2013.

Table 4. Outcome of wage bargaining in the business sector (%)

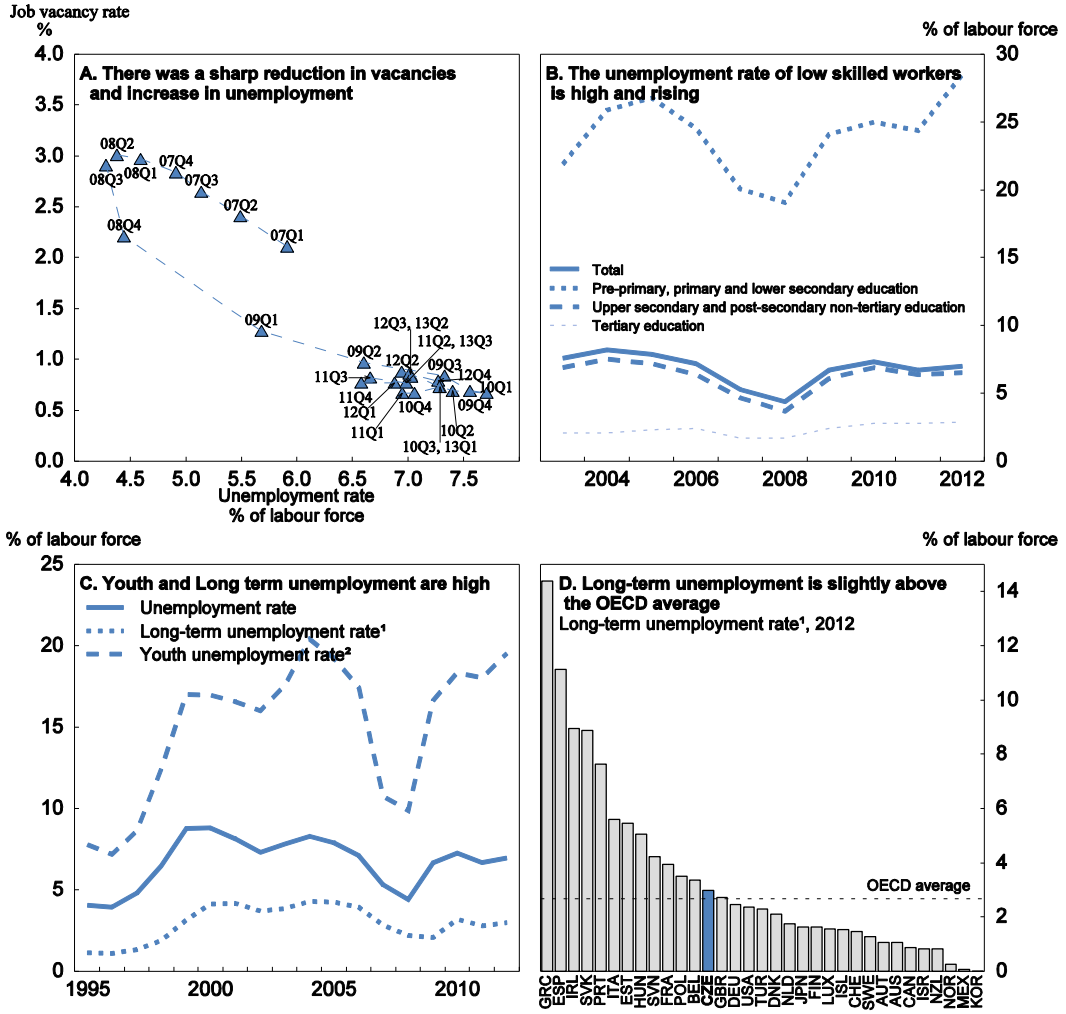
	2007	2008	2009	2010	2011	2012
Bargained nominal wage growth	4.2	5.4	4.4	3.1	2.9	2.8
Actual nominal wage growth	7.4	8.6	3.0	2.7	3.0	2.8
Bargained real wage growth	2.4	2.2	2.4	2.2	2.3	2.0
Actual real wage growth	4.5	2.2	2.0	1.2	1.1	-0.5

Source: Ministry of Labour and Social Affairs*, Working Conditions Information System surveys*, 2007-2012, Czech Statistical Office.

The deterioration in the labour market revealed underlying structural problems

10. The economic crisis revealed underlying structural problems arising from the change in labour demand towards a more qualified labour force with only a slow reaction in the education system to this change. Vacancies dropped and the unemployment rate rose to historically high levels, affecting disproportionately low-skilled workers and youth (Figure 3, panels A, B and C; OECD, 2013b). The youth unemployment rate (15-24 years old) rose to 20% in 2012, against a national average of 7%. Although youth unemployment is linked to developments in the business cycle, there has been a structural change in the composition of youth unemployment in the past decade, which has been driven by the continuous increase in tertiary education enrolment rates, leading to a decrease in youth labour force participation. Workers with low qualifications are less demanded in the labour market, hence also contributing to high youth unemployment rates.

Figure 3. The labour market has deteriorated since the onset of the economic crisis



1. Long-term unemployment rate refers to unemployment of one year and over.

2. Youth unemployment rate is the proportion of unemployed aged 15-24 in the labour force aged 15-24.

Source: Czech Statistical Office; Ministry of Labour and Social Affairs; *OECD Economic Outlook database* and *OECD Labour Force Statistics database*.

11. The government plans to implement a youth guarantee in 2014 to reduce the youth unemployment rate. The Employment Office will be in charge of implementing the programme, which entails: smoother mechanisms for young people with low or no qualifications to return to formal education; better career guidance; improved provision of information about local labour market conditions; and facilitation of participation in active labour market policies (ALMPs) involving workplace training (see below). As it stands, the proposal includes many key elements of successful youth guarantees, the most relevant being its comprehensiveness, covering both skills upgrading and work experience for low skilled youth, as evidence from Austria suggests that formal qualifications are important to secure stable jobs for young people. However, there is scope to improve other elements of the guarantee, such as the provision of information on labour market developments which is currently rather narrow and should be widened to regional and national levels. The programme should put stronger emphasis on monitoring implementation and defining outcomes with clear objectives and identifiable targets. For example, the stated objective of improving cooperation between employers and schools is a welcome measure given the difficulties in

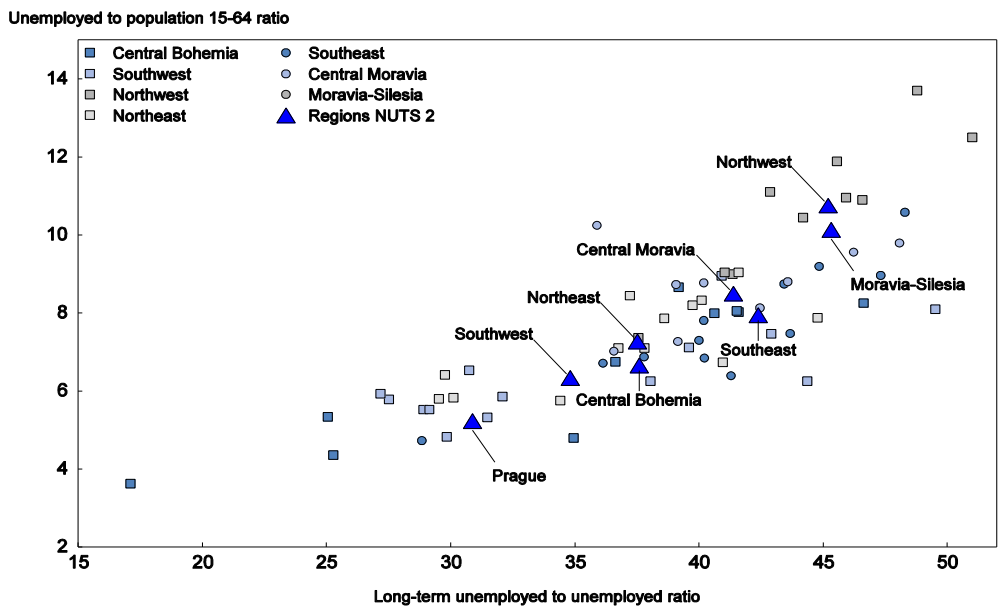
vocational educational and training (VET) to respond to labour market needs. This is considered to be key for a well-functioning youth guarantee scheme, but regrettably the Czech youth guarantee has no explicit target outcomes against which performance can be assessed (ILO, 2013).

12. The persistently high long-term unemployment rate has increased during the crisis to a level slightly above the OECD average (Figure 3, panels C and D). In 2012, more than 40% of the unemployed had been without a job for longer than 12 months. Long-term unemployment has an important regional dimension, as regions experiencing above average unemployment also register a higher share of long-term unemployment (Figure 4). The concentration of long-term unemployment in regions such as the North-West and Moravia-Silesia reflects the loss of heavy industries during transition and their high proportion of low-skilled workers.

13. The economic crisis has reversed the trend towards an equalisation of labour market outcomes observed during the boom years (Figure 5). Low-skilled workers fail to take jobs even in cities within commuting distance. Examples of such pairs include Kladno-Praha (40 minutes by bus), Kolín-Praha (40 minutes by train), Ústí nad Labem-Děčín (15 minutes by train), and Brno-city and the Brno-Country district (30 minutes by train). The coincidence of registered unemployed and vacancies with similar skill requirements in nearby cities occurs only for those with a low level of education attainment, suggesting that commuting costs may be too high for low-income earners to search for jobs in neighbouring areas. As an example, public transport costs from Kladno to Praha amount to 7% of the minimum wage, as compared with average passenger transportation spending by rail and road of 1.3% for all households, as measured in the 2013 Czech HICP basket.

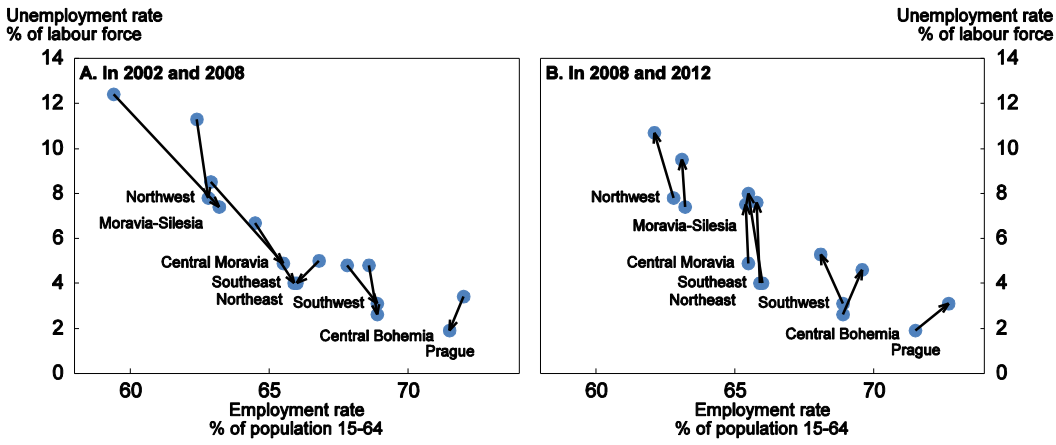
Figure 4. Regions with high unemployment also have higher incidence of long-term unemployment

Q3 2013, in percentages



Source: Ministry of Labour and Social Affairs.

Figure 5. Differences in employment and unemployment rates across regions have widened



Source: Eurostat.

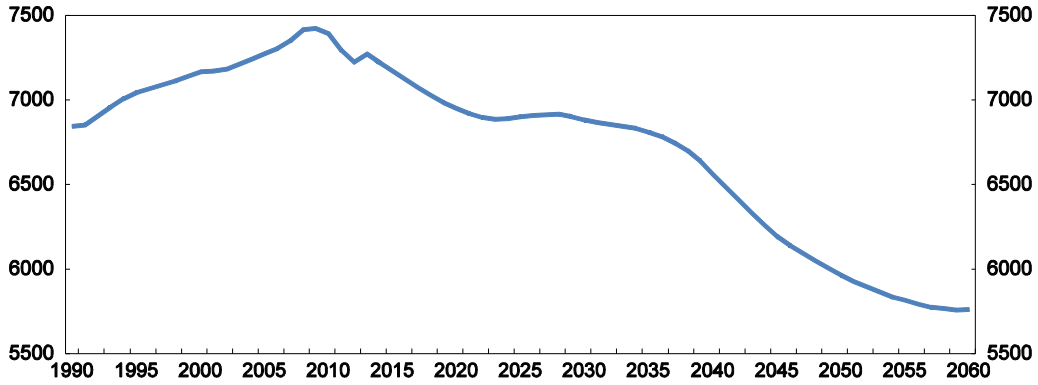
Spending on active labour policies is low and is not adequately well-targeted or monitored

14. Looking ahead, an emerging labour market problem is an ageing labour force, which further compromises income convergence via higher employment (Figure 6). Utilising remaining pockets of under-used resources will thus become increasingly important. Active labour market policies (ALMPs) can help to raise the employability of low-skilled workers and youth who left the education system without the skills needed in the labour market. In the current situation of a prolonged economic downturn and weak recovery, ALMPs can also be instrumental to prevent human capital losses and unemployment becoming structural. In this respect, youth unemployment is particularly worrisome and should be given priority, not only because of its immediate negative impact, but also because, on top of progressively losing competencies learnt while in the education system, young people are deprived of accumulating relevant on-the-job skills, increasing the probability of unemployment throughout most of their career (Schmillen and Umkehrer, 2013). Over the medium term, increasing young people's employment prospects requires smoothing the transition from school to the workplace, making sure that the education system effectively equips youth with the set of skills required by the business sector, thereby supporting the rise in long-run productivity and income convergence.

15. Spending on ALMPs is one of the lowest in the OECD and has been decreasing since the onset of the crisis, in spite of rising unemployment (Figure 7, panel A). This situation reflects not only a low level of spending per participant, but also a low participation of those unemployed, even though there is evidence that participation in activation programmes increases the likelihood of leaving unemployment (Figure 7, panel B; Sirovátka and Hora, 2012). The Employment Office targets the groups most affected by unemployment, i.e., the young, older-workers and the long-term unemployed as well as at-risk groups identified as being young mothers and workers with disabilities, with the latter absorbing more than half of ALMP spending. A recent assessment has also found that the use of ALMPs differs across these well-identified targets, as unskilled and older workers (50+ year olds) are under-represented in activation programmes (Sirovátka and Hora, 2012).

Figure 6. Working age population is projected to shrink

Population aged 15-64 year-old, thousand persons

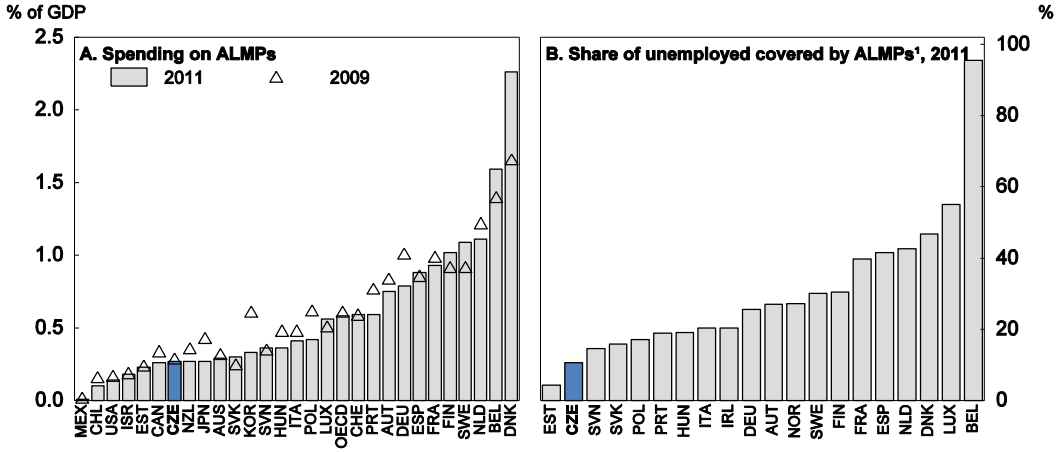


Source: OECD Population Statistics Database.

16. Research shows that favouring an intensive approach, with high cost per head, is more likely to succeed in bringing the unemployed back to the labour market than an extensive approach that covers a large share of the unemployed with low intensity (Martin and Grubb, 2001; Meager, 2009). Changes in the Employment Act in 2009, imposing detailed Individual Action Plans (IAP), have not surprisingly had little impact in raising employability, as an overly burdened staff in regional offices has reduced contact with each individual jobseeker, also as more time is spent in more bureaucratic activities such as the disbursement of social benefits, which became part of the responsibilities of regional employment offices in 2011 (Váňová, 2010).[2] As a result, the share of the unemployed who found work with the help of employment offices decreased from 12% in September 2010 to 8.5% in September 2013. In early 2010, the number of clients per full-time advisor ranged from 237 to 2 877, which appears relatively high as not fully compatible data from Germany and France indicate a caseload at least 40% lower than the minimum number of cases held by placement officers in the Czech Republic (Váňová, 2010). Also, the wide variation in caseloads suggests that resources are not adequately distributed across local employment offices. In view of the weak labour market, the new government has announced a significant increase in ALMP spending and enhancing the capacity of the Employment Office will be a priority over the next four years. The latter should privilege more direct contact with the unemployed, as well as a more balanced share of caseloads.

2. An IAP is a mutual agreement between the job seeker and the Employment Office detailing a timetable of measures to be followed by the jobseeker. Non-compliance by the job seeker leads to exclusion from the register for at least 6-months and loss of unemployment benefits.

Figure 7. Spending and participation in active labour market policies is low



1. Except Public Employment Services (PES) and administration programmes.

Source: OECD, Public expenditure on labour market programmes Database; and Eurostat.

17. To curb the effects of the economic crisis on the labour market, the Employment Office is putting in place a number of programmes intended to increase the exposure of the unemployed, including young people, to professional experiences through internships, using the financial aid of the European Social Fund (ESF). The introduction of company internships is aligned with best practices, as research shows that programmes with a strong market orientation, encompassing training in the workplace, are more likely to raise employability (Martin and Grubb, 2001). However, the many projects proposing company internships sometimes overlap in their target group while others have wide objectives, which in the absence of coordination risks programme-hopping by job seekers, dispersing valuable resources and compromising the success of these initiatives.[3]

18. Very little is known about the labour market impact of activation programmes, including success rates by targeted groups. One of the few assessments finds that participation in ALMP programmes increases the chance of leaving unemployment, but the time horizon of the study, one to eighteen months after termination of ALMP programmes, did not allow for a more informed appraisal of their lasting effects on employment levels, which should also consider the stability of jobs created (Sirovátka and Hora, 2012). It is crucial to monitor systematically and more thoroughly labour market developments and the impact of activation measures so that early interventions can be designed and programmes can be adjusted. Data collection should include information on the characteristics of the unemployed in order to evaluate programmes' success in overcoming the weaknesses of vulnerable groups (e.g. age, gender, detailed level of educational attainment, occupation, socio-economic background, disabilities and unemployment spells). Reliable information on existing vacancies eases the placement of job seekers and allows for a better matching of supply and demand in activation programmes. In this regard, the 2012 decision to discontinue the obligation to report vacancies to employment offices needs to be closely monitored, as the unavailability of reliable information on the number and distribution of vacancies hinders the quality of job

3. Examples of overlaps include two projects, launched in 2012, “Company Internships - Education through Experience” and “Internships for Young Job Seekers”, the first one targeting all job-seekers and the second focusing on future school-leavers and young graduates entering the labour market for the first time. Yet, another programme targeting the latter group - “Professional Experience up to 30 years” - was initiated on 1 July 2013. These programmes are additions to the “Educate Yourself for Growth!” project focusing on retraining and open to all job seekers.

search assistance and counselling. Indeed, there is evidence that job search assistance has a relatively large positive impact on labour market outcomes, and it was previously identified as one of the strengths of the Czech Public Employment Service (Boeri and Burda, 1996; OECD, 2005a; Kluve, 2010).

The current pool of labour market activation projects could be reconsidered and rationalized by focusing on: *i)* clearly identified target groups; and *ii)* specific skill needs of both job seekers and employers, as international experience of training interventions shows that these are criteria for ALMPs to succeed in raising employment (Meager, 2009). In this respect, internships in companies should last long enough to allow the trainee to master fully the competencies learned. A certificate acknowledging the completion of the traineeship programme should be issued to increase employability outside the firm. Setting specific performance targets would help to maintain focus on primary groups, ensuring that each is well-covered, and could in turn lead to efficiency gains as policy actions are prioritised and tailored to match the needs of these disadvantaged groups. Adoption of more sophisticated support software could also help the Employment Office to reap efficiency gains, namely by supporting profiling and better data collection, in turn freeing time for staff in regional employment offices to undertake direct contact with the registered unemployed.

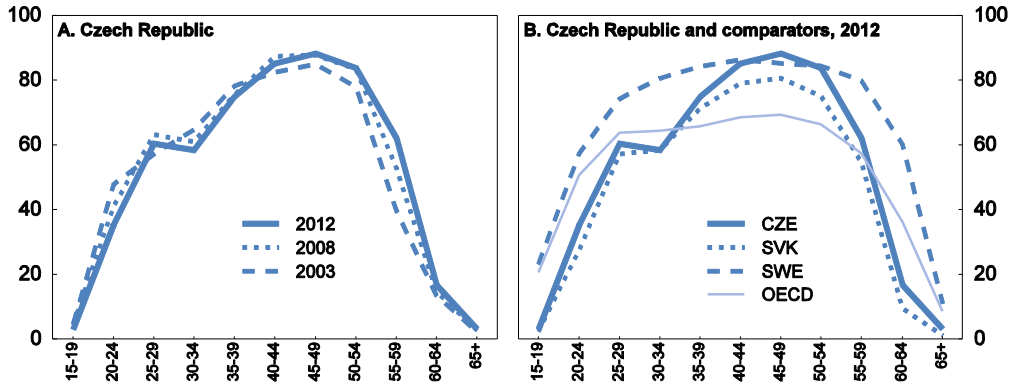
Moving beyond the current crisis-related mechanisms to support employment, a more permanent way to incentivise employers to provide training to young unskilled workers would be to provide tax subsidies or a targeted reduction in employers' social security contributions which, at 25.4% of labour costs, is the third highest rate in the OECD (OECD, 2013c). Lowering taxation on labour could be financed by raising less distortive environmental and real estate taxes. Indeed, recurrent taxes on immovable property are at 0.2% of GDP, compared to 1.1% of GDP on average in the OECD (OECD 2012b, Revenue Statistics Database). To support low-skilled unemployed workers resuming work, it should be investigated whether employment offices could temporarily make more use of mobility support measures. Looking ahead, if the statutory minimum wage increases sufficiently, an additional measure could be the introduction of a reduced youth minimum wage linked to training, as is the current practice in several countries. For instance, in France, the minimum wage for apprentices depends on their age as well as the year of training they are in, starting at 25% of the national minimum wage for an 18-year-old in her first year and rising to 93% for those aged-21+ in their 4th year. In Germany, a "training allowance" is agreed upon by the social partners, which also varies by the apprentice's age and experience with the firm (OECD, 2014).

Female labour market participation is low

Women constitute untapped human capital. Also, making it more attractive for women to participate in economic activity can have important well-being advantages. Female employment rates are low at both ends of the age spectrum and well below the OECD average and countries with high female employment rates such as Iceland, Norway, Switzerland and Sweden (Figure 8). Older age female employment rates have been increasing in the last decade, reflecting, *inter alia*, changes in pension rules. In contrast, younger women employment rates have decreased, reflecting both delayed entry to the labour market as they pursue higher education studies and exit from the labour market for child caring reasons. Although tertiary education attainment rates are similar for men and women, there is a sizeable gap in employment between genders: in 2011, tertiary educated women employment rate stood at 74%, below the OECD average of 79% and that of tertiary educated Czech men of 92% (OECD, 2013a). OECD estimates show that closing the gender employment gap by 2030 would increase the annual growth rate of GDP per capita by 0.5 percentage points (OECD, 2011a).

Figure 8. Women employment rates are low at both ends of the age distribution

In percentage of the population

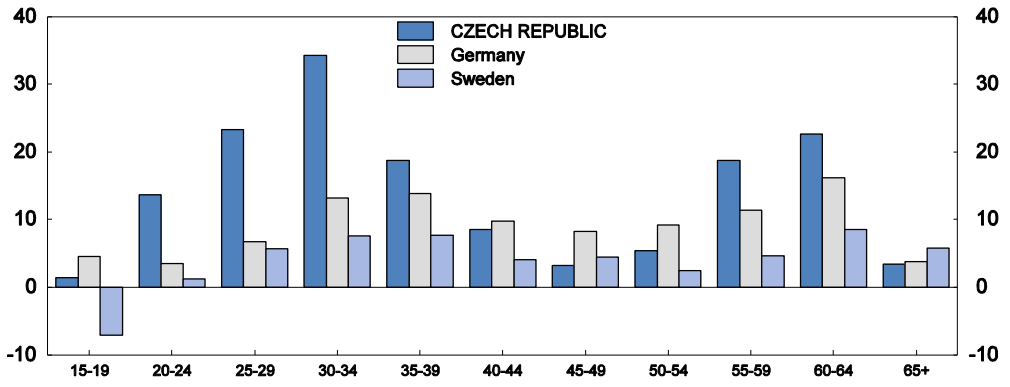


Source: OECD, Labour Force Statistics Database.

Gender employment differentials are especially large for the age group 30-34 and reflect large work disincentives for mothers with young children, as discussed in the *2010 Economic Survey* (Hrdlička et al., 2010; OECD, 2010a) as well as in numerous studies (Figure 9; Galuščák and Pavel, 2007; Pavel, 2009; Kalíšková and Münich, 2012). From an economic point of view, this is particularly worrisome as long absences from the labour market lead to a deterioration in skills and productivity, with negative impacts on female career paths, the gender pay gap and the pay-as-you-go pension pillar, as mothers on parental leave do not pay social security contributions but have their parental leave period credited in their pension entitlement. As a consequence, an increase in the labour market participation by women aged 20-40 years could decrease the deficit in the defined benefit pension pillar by CZK 10 billion per year (0.26% of GDP) or more than one third of the estimated annual deficit in the next 20 to 30 years (Münich, 2010).

Figure 9. There are large differences in gender employment rates among younger age groups

In percentage of the population, 2012



Note: Differences in gender employment rates are calculated as the difference between male and female employment rates in the relevant age groups.

Source: OECD, Labour Force Statistics Database.

Declining employment rates of women in childbearing age have been accompanied by a sharp reduction in childcare facilities from more than 1 000 crèches in 1990 to less than 50 two decades later

(Paloncyová, 2013). There are currently more higher education institutions than crèches in the Czech Republic. This situation reflects generous parental leave conditions and the transfer of pre-school childcare to municipalities without an equivalent fiscal transfer from the central government. Also, the previous classification of crèches as healthcare facilities, which have stringent health and safety rules, raised operational costs, contributing to lower service provision, including private sector provision.[4] Municipalities are free to set entry rules and pricing policy. Even though fees account for only 15 to 20% of the total costs of running a crèche, they represent a significant share of household's income, varying between CZK 1 000 to 7 000 a month, which corresponds to between 5 and 36% of the female median wage. Most schools also require an additional contribution towards food expenses. Private crèches can be up to nearly three times more costly. An additional hurdle for parents wishing to conciliate working and family life is that opening hours in pre-school facilities have not followed the changes in the working habits that accompanied the economic transition.

As a result, enrolment in formal childcare for children under the age of three is one of the lowest in the OECD (in countries for which data are available) and has been decreasing over time (Figure 10, panel A; OECD, 2013a). Enrolment in kindergartens is higher, as they are more widely available and fees charged are much lower, limited to CZE 800 and free of charge in the last year (Figure 10, panel B). Nonetheless, there is evidence of bottlenecks in the provision of pre-school care for children between 3 and 6 years old as kindergartens are not distributed evenly, and larger cities face significant capacity constraints. Hence, the number of rejected applications is increasing quite fast. For most mothers the only realistic option to resume work is to have child care provided by other family members, severely constraining work and family choices. Not surprisingly, the gap in employment rates between women with children and those without is among the largest in the EU (Figure 11).

Another barrier inhibiting young mothers' employment is that parental leave rules do not incentivise resuming work. Spending on maternity and parental leave is the highest among OECD countries, reflecting a public policy preference for home care over formal childcare, as argued in the *2010 Economic Survey* (Figure 12; Hrdlička et al., 2010; OECD, 2010a). After an initial 6 months of maternity leave with benefits based on the mother's wage, parents are entitled to a lump sum (equal to nearly half of an average annual income) which they can choose to have paid out in equal instalments for a minimum of 19 months and a maximum of 42 months (corresponding to the child completing 4 years of age). By selecting the period of support, parents also select the amount of the monthly parental allowance. As of 2004, parents can work without loosing their entitlement to the parental allowance. However, doing so before the child is two years and attend a pre-school facility for more than 46 hours/month prevent parents from receiving the full amount Combined with the lack of children, this has let most working mothers to rely on family provided childcare.

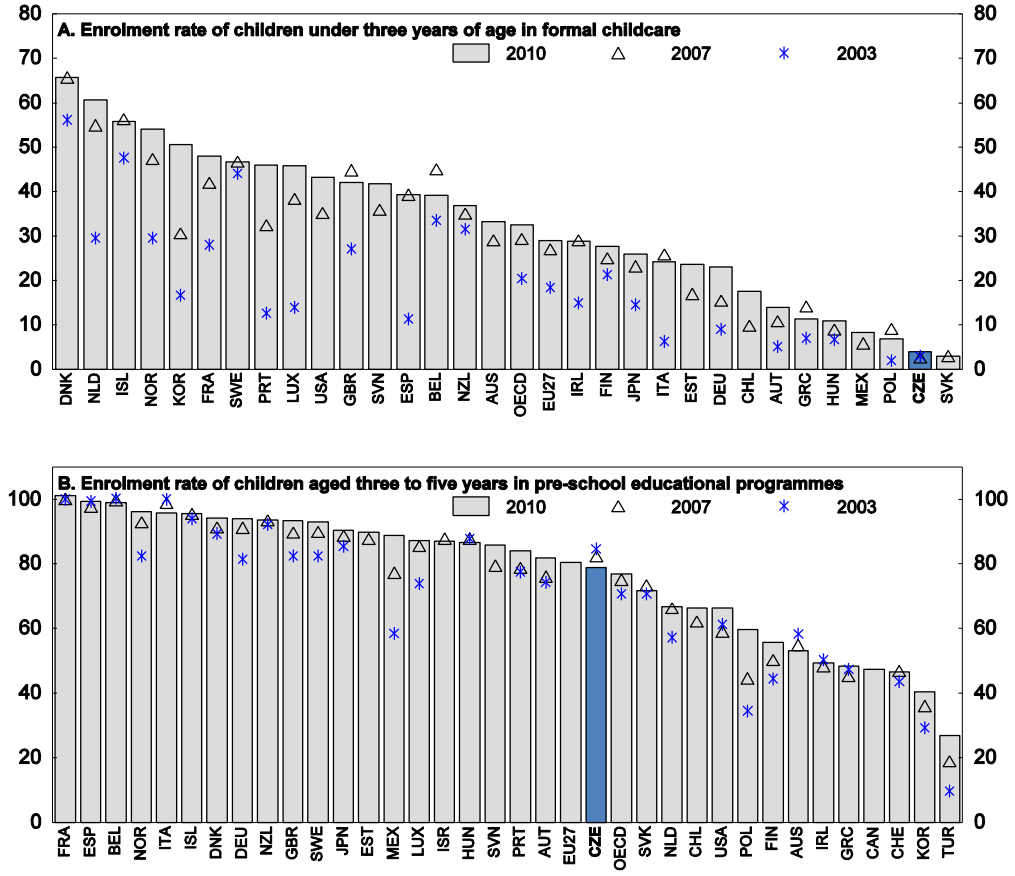
A further hindrance for mothers resuming work is that together with the parental leave, other elements of the tax and benefit system produce high effective tax rates. The favourable fiscal treatment of families with children implies that, when cash benefits are taken into account, the tax burden for the average one-earner married couple with two children becomes negative because cash benefits exceed the income tax and social security payments otherwise due. Lower wage single parents with two children also face a negative tax burden for similar reasons (OECD, 2013c). This results in a high implicit tax on returning to work, due to the income tax and social contributions that would have to be paid, the elimination of the parental allowance and other income related benefits such as the housing allowance for low-wage earners,

4. Although legislation did not stipulate in binding terms staff qualifications, methodological guidelines by the Ministry of Health recommended that children under the age of 3 in crèches should be under the care of nurses. Strict health and safety rules have also discouraged private sector provision of both crèches and kindergartens (Kuchařová et al., 2009).

and the childcare fees that would have to be paid in the unlikely event that a place in a crèche is available (Figure 13, panels A and B).

Figure 10. Enrolment in formal childcare is low

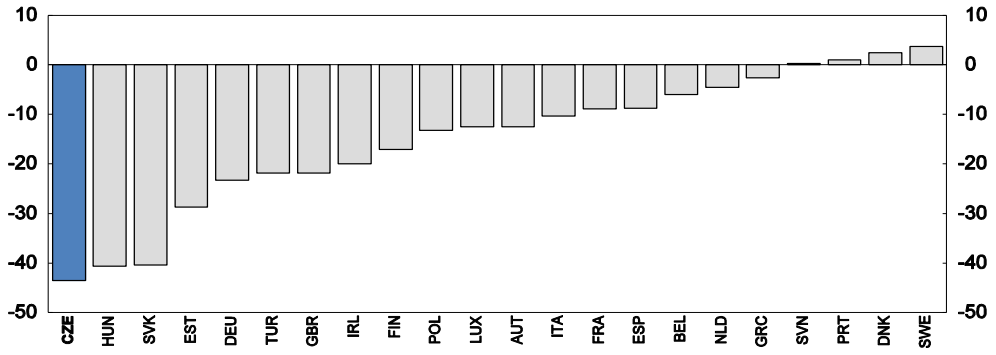
Average, in percentage



Source: *OECD Family Statistics Database*.

Figure 11. The impact of motherhood on employment is very high

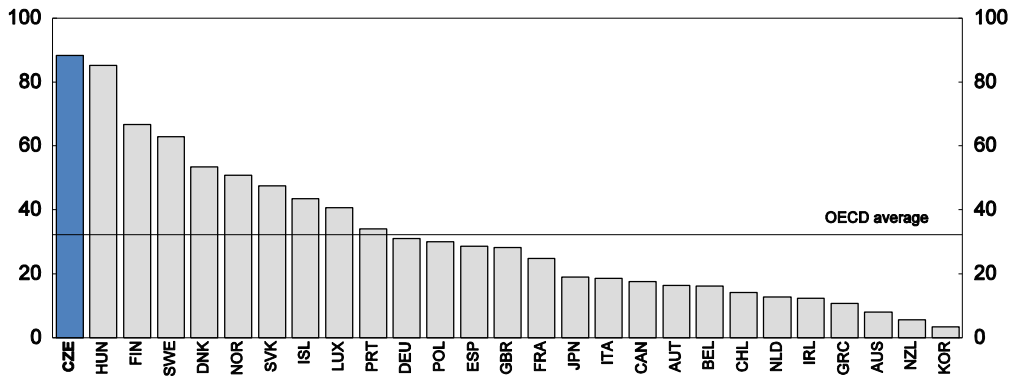
Difference between employment rates of women aged 20-49 with children up to 6 years old, and without children, 2012, percentage point difference



Source: Eurostat.

Figure 12. Spending on maternity and parental leave is the highest among OECD countries

Spending on maternity and parental leave payments per child, as percentage of GDP per capita, 2009



Source: OECD, Family Statistics Database.

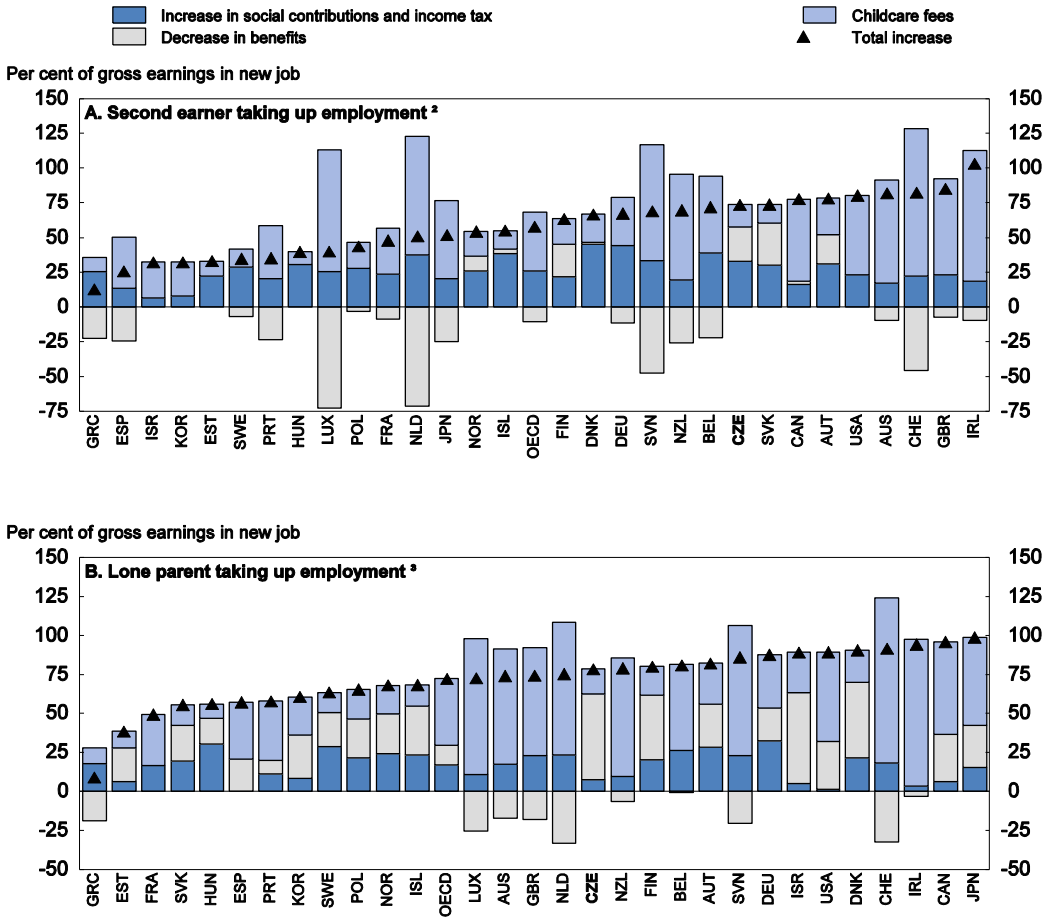
The tax and benefit system should be made more neutral to support the choice of women resuming work, instead of favouring labour-force withdrawal. One way would be to gradually reduce the duration of the parental allowance so as to limit the combined maternity and parental leave period. In many other OECD countries with high female labour market participation the combined maternity and paternity leave period is around one year (OECD, 2012b). The practice of withdrawing childcare benefits if working mothers use (public) childcare facilities should be discontinued. To reduce the existing bias towards women taking parental leave - less than 3% of Czech fathers take parental leave (Moss, 2011) - a share of the parental allowance could be made conditional on fathers taking part of the parental leave, as it is the case in Germany and Austria. After one year, the amount spent on the parental allowance could be transformed into a voucher for purchasing childcare services, which could stimulate private sector provision of childcare (OECD, 2007). The reduction in the parental leave combined with good quality early childcare education could benefit the child as well. Indeed, OECD evidence suggests that child development benefits from full-time personal care for at least 6-12 months, but the latter is not necessarily synonymous with maternal care (OECD, 2007). Cognitive development of a child is enhanced by good-quality formal care and interaction with peers from around two years of age. Some studies indicate that there are significant and lasting effects in student performance and socio-emotional competence even

when the child enrols in formal care during the second year of life (Andersson, 1992). In addition, child development may also benefit from a more balanced share of time spent with each of the parents (OECD, 2007).

Gradually reducing the duration of the parental allowance needs to be accompanied by an adequate supply of affordable and high quality early childcare facilities, as is the current practice in many OECD countries with high female labour market participation. Recent legislation eliminates the classification of crèches as institutions providing healthcare, which will reduce staff qualification requirements and lower operating costs. In January 2014, the government adopted the Act on Child Group, which should significantly decrease obstacles to the establishment of not-for-profit public and private providers (employers, regions, municipalities, universities and NGOs), contributing to the expansion and diversification of childcare provision as recommended in the *2010 Economic Survey* (Hrdlička et al., 2010; OECD, 2010a). The Act, which constitutes a good step forward, awaits to be approved by the parliament in the autumn of 2014. Measures to promote greater flexibility in working hours were introduced in the labour code in early 2012, as recommended by the *2010 Economic Survey* (Hrdlička et al., 2010; OECD, 2010a). To support a better balance of work and family life for parents with young children, flexibility in working hours needs to be accompanied by the extension of opening hours of early childhood education and care (ECEC) facilities. Finally, given the very low number of crèches, expanding the availability of places in kindergartens for children less than 3-year old should be considered.

Figure 13. There are high implicit taxes on returning to work

Net transfers and childcare fees for households with two children aged 2 and 3, 2008 [1]



Note: The OECD average excludes Chile, Estonia, Israel, Italy, Mexico, Turkey and Slovenia.

1. The 2012 update is currently under-way but the changes in benefits and taxation in the Czech Republic are expected to leave implicit taxes on returning to work broadly unchanged.
2. Second earner taking up employment at 67% of average wage and the first earner earns 100% of average wage.
3. Lone parent taking up employment at 67% of average wage.

Source: OECD (2012), *Benefits and Wages Database*.

Strengthening the education system to improve school-to-work transitions

The Czech Republic has a highly educated labour force, with about three quarters of the population having attained upper-secondary education, the highest share among OECD countries (OECD, 2013a). By contrast, tertiary education attainment is low by international comparison, as only 25% of 25-34 year olds has attained tertiary education, compared with the OECD average of 39%. The situation is however gradually improving, as enrolment rates have been increasing in the past decade.

Education, which is compulsory for those from 6 to 15 years old, is highly differentiated. Tracking into prestigious general education pathways in multi-year grammar schools (gymnasium) occurs very early, at age 11/12, when students can apply for a long academic track, the 8-year gymnasium. A second

tracking stage occurs at age 13/14 (6-year gymnasium). Around 13% of students in the relevant age group are enrolled in 4-year gymnasiums (Straková et al., 2011). Students are selected into the different pathways by admission examinations and aptitude tests, and those with the strongest academic performance usually opt for general tracks such as gymnasium and lyceum. The majority of students move from basic schools (*základní škola*) to upper secondary education at the age of 15, either into the general track or the technical track, attended by 50% of the age cohort, both leading to a school-leaving examination necessary for transition into tertiary education (the maturita exam). Students may also opt for a vocational track which leads to an apprenticeship certificate (*výuční list)*, preparing them directly for the labour market, without direct access to tertiary education. Apprentice graduates may then take two year follow-up courses that lead to the maturita exam. A key feature of the Vocational Education and Training (VET) system in the Czech Republic is that students graduate without real workplace experience. In the last decade, enrolment in apprenticeship programmes has fallen to around 25% of students in the relevant age group, and the share of students in programmes with the maturita exam has been increasing.

The system is quite decentralised: pre-primary (for children between 3 and 6 years old) and basic schools (typically ages 6 to 15) are administered by municipalities, while secondary schools are administered by regions (Box 2). In an effort to bring harmonisation of students' performance in a decentralised system that lacks school benchmarking, the Ministry of Education, Youth and Sports (MoEYS) has recently introduced targeted standards against which the performance of students in particular grades should be assessed, as well as standardised tests in grades 5 and 9 (OECD, 2012c). With the same aim, MoEYS has introduced standardised tests covering the practical component of apprenticeships programmes in upper secondary education in the academic year of 2009/10, and plans to make them compulsory from 2014/15 onwards. MoEYS is also planning to introduce standardised tests in the technical track. Public schools are dominant, enrolling nearly 99% of students in basic education and 84% in secondary education. Public spending in education is relatively low. The Czech Republic ranks among the countries with the lowest amount of public resources devoted to basic, secondary, and tertiary education, which in 2010 represented respectively about 50%, 70% and 56% of the OECD average (Figure 14).

Box 2. Institutional characteristics of the Czech education system

The central government determines the national education policy. It defines long term objectives of the system at all educational levels every four years and a curricular framework, in accordance with which schools are expected to design their own education programmes, taking also into account the needs of the local community. Fourteen regional governments (corresponding to NUTS 3 regions) steer education and its objectives within their region for upper secondary and tertiary professional schools. Higher education institutions are autonomous.

Funding to schools occurs via two funding streams: capital and operating expenditures are financed by regions and municipalities using regional/municipal budgets (from general tax allocation to regions and municipalities and grants received from the MoEYS) and are strongly earmarked; staff costs and learning material are covered by the State Budget via the regional administration. Private schools can receive state subsidies for teachers and running costs of up to 100% for pre-primary and primary schools and up to 90% for secondary schools. There is little private funding for vocational education and training programmes.

Schools can receive extra national funding for students with special needs on a per-student basis, and they can apply for grants for socio-economically disadvantaged students or additional funding for extra materials or personnel. School principals are responsible for schools' financial management. School principals receive initial management training, have administrative and some pedagogical responsibilities, including appointing and dismissing teachers, defining and organising teacher training and proposing salary bonuses.

Public higher education institutions receive funding directly from the national government in the form of a subsidy for education and research.

Other institutions shaping education policy include:

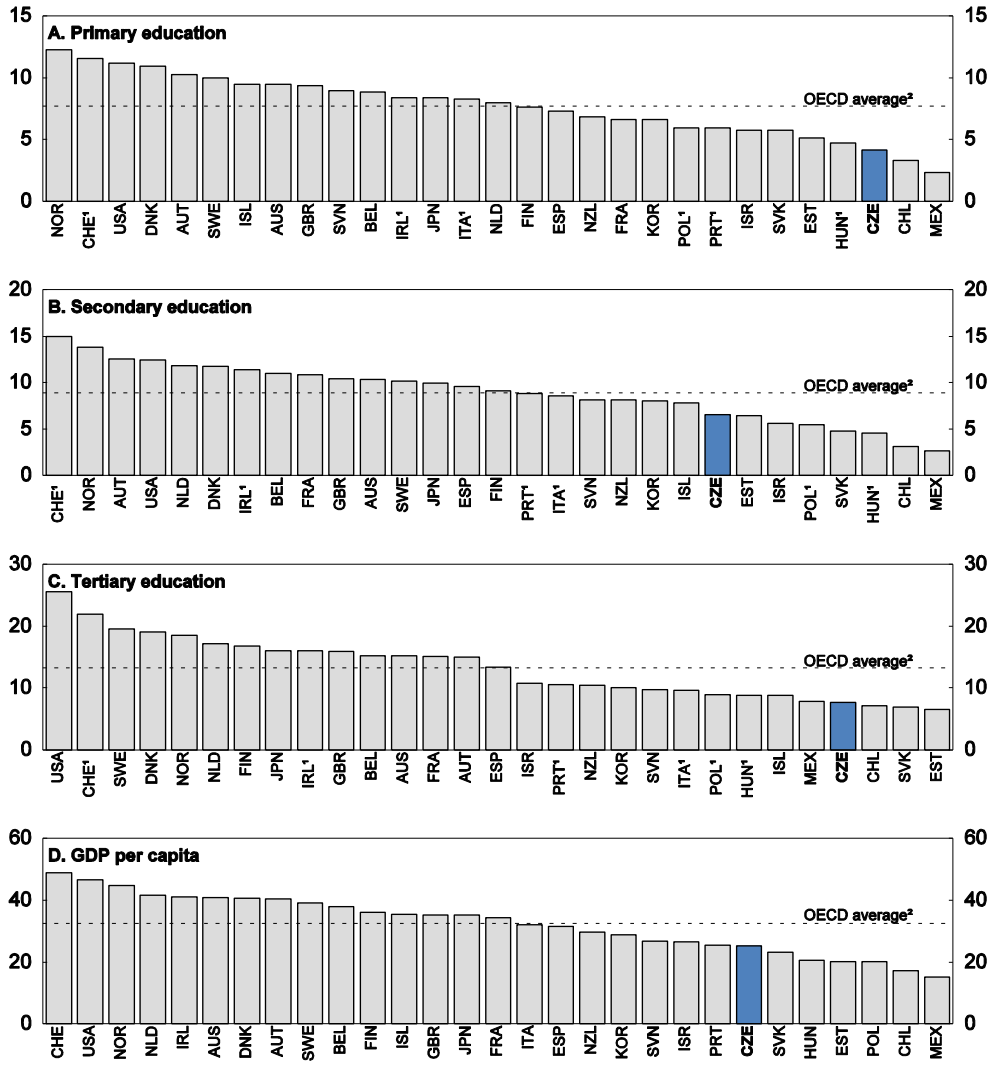
- The Czech School Inspectorate (CSI) monitors and analyses the primary and secondary education system and its quality.
- The National Institute of Education (NUV) is responsible for developing information on issues pertaining to pre-primary up to upper secondary education, including VET, guidance and counselling. It is also responsible for formulating system frameworks and guiding individual schools' programmes.
- The National Institute for Further Education focuses on in-service teacher training.
- The Centre for Higher Education Studies develops policy and strategy for higher education.
- Other ministries, such as MoLSA, collaborate with MoEYS on issues of labour market and vocational guidance.

Consultation with advisory bodies (e.g. teachers' professional associations and employers' associations) is required for certain actions, such as negotiation of the national educational programme, the framework of educational programmes, and also on long-term policy objectives at national and regional levels.

Source: OECD (2010b, 2012c); Straková et al. (2011).

Figure 14. Annual expenditure per student in education services is low

In thousand equivalent USD converted using PPPs, based on full-time equivalents, 2010

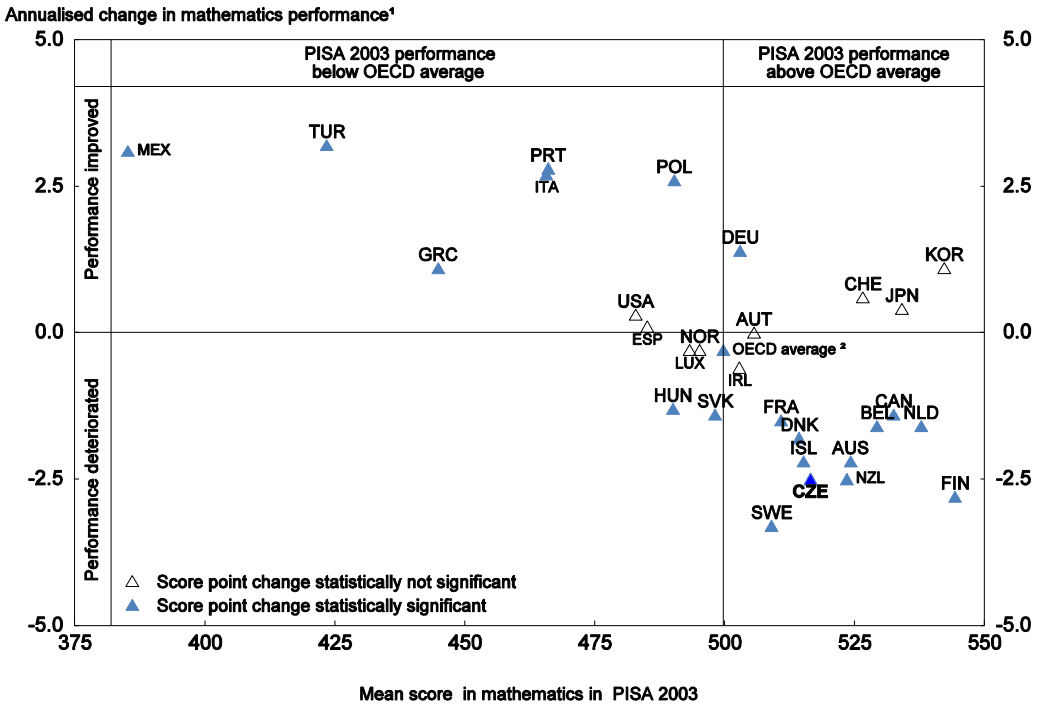


1. Public institutions only (for Canada, in tertiary education only; for Italy, except in tertiary education).
2. OECD average computed excluding Luxembourg and Turkey.

Source: OECD (2013), Education at a Glance 2013, Chart B1.2 and Table X2.1.

Student learning outcomes in the Czech Republic are around the OECD average, depending on the skills assessed. Czech students performed below the OECD average in reading literacy in PISA 2009, which assessed specifically this skill. More worryingly, reading literacy results declined significantly relative to 2000, the year of the first PISA study, which also had a special focus on reading literacy. The PISA 2012 survey focused on mathematics and Czech students performed around the OECD average but performance deteriorated with respect to PISA 2003, when this skill was last assessed in detail (Figure 15). Another indicator of declining performance is the share of low achievers (defined as the proportion of students who failed to reach Level 2, at the lower end of the proficiency scale), which increased both in reading literacy as well as in mathematics proficiency.

Figure 15. Student performance in mathematics in PISA 2012 has deteriorated



1. The annualised change is the average annual change in PISA score points from a country/economy's earliest participation in PISA to PISA 2012. It is calculated taking into account all countries/economies participation in PISA.

2. OECD average considers only those countries with comparable data since PISA 2003.

Source: OECD, PISA 2012 Database, Table I.2.3b.

Strong selectivity in the education system hampers a solid skill foundation of the labour force

Declining student performance raises concerns about skill formation of the labour force as more than 20% of Czech students are shown to be lacking basic skills in PISA 2009 and 2012. These students are likely to struggle to continue studying, facing a higher risk of dropping out of school and entering the labour force with low skills, which not only penalises these students for life, but also imposes a high burden on the economy as a whole, hampering productivity, including through the difficulty to adapt to new technologies and innovations. The challenge ahead is thus to raise overall student performance to boost productivity, by reducing the high proportion of underperforming students.

There is plenty of evidence that declining performance in PISA is associated with practices in the education system that reinforce students' socio-economic background, such as early tracking, streaming and low transferability between educational tracks (Koucký et al., 2004; Münich, 2005; OECD, 2013d and e). Such practices lead to student performance being more strongly influenced in the Czech Republic by school's socio-economic status than in most other OECD countries (OECD, 2010c; OECD, 2013d, f), hindering learning progress and leaving behind many Czech students without raising average performance (Straková et al., 2011; OECD, 2012d; OECD 2013e).

Moreover, the recent OECD Adult Skills Outlook shows that, in contrast to the average among OECD countries, the relationship between the socio-economic background and literacy proficiency (also known as the socio-economic gradient) is stronger among young adults than the overall adult population, indicating a

declining ability of the educational system to offer the vast majority of students the opportunity to attain high levels of skills regardless of their socio-economic circumstances (OECD, 2013g). These problems are preventing students from fulfilling their educational potential, which have negative effects on their labour market prospects and human capital accumulation (OECD, 2010b).

Early tracking and streaming into special schools largely reflect students' economic background, hindering intergenerational mobility. In 2009, 54% of students in gymnasiums in the final year of compulsory education had at least one parent with ISCED 5A tertiary education whereas the figure was only 16% among basic school students. Research indeed shows that family background matters more than academic ability in explaining access to a 6-year or 8-year gymnasium course (Koucký et al., 2004; Münich, 2005). Moreover, a large proportion of students without learning disabilities have been streamed into special schools, where admission is based on learning difficulties and not learning disabilities (OECD, 2012c). Some children have even been streamed into special schools without prior assessment. These are typically children from disadvantaged backgrounds, such as Roma children, who disproportionately attend special schools relative to their share in the population, notwithstanding the decision to progressively integrate disadvantaged students into mainstream schools (Box 3). Since special schools offer reduced curricula and there is very little opportunity to transfer to mainstream schools, future learning opportunities of misplaced children are severely impaired and they struggle to pursue education, holding back mobility and human capital accumulation. More recently, streaming into special schools is gradually been replaced by greater integration in mainstream schools, where streaming into special classes with a reduced curricula is nevertheless taking place.

Box 3. Learning outcomes of Roma students

The number of Roma students in Czech schools is not known with certainty but it is estimated they account for 1.5% to 3% of the school age population (Straková et al., 2011). Roma constitute the most socially and culturally disadvantaged ethnic minority in the Czech Republic. Unemployment is pervasive across all age groups and a feature of young Roma social background, (GAC, 2009) and those Roma who work have a pay gap *vis-à-vis* the non-Roma population of 39% to 45% of average earnings (World Bank, 2010).

Roma children receive less pre-primary education in kindergartens and in the form of preparatory classes, despite the fact that those who have attended kindergartens are more successful in their education paths (GAC, 2009). An estimated 40% of Roma children attend kindergartens in the last school year, against a national average of around 90%. Moreover, in the current context of shortages of places in kindergartens, there is evidence that children of unemployed parents with younger siblings, which is frequently the case of Roma families, have very little chance of being admitted (Straková et al., 2011).

Between 40% and 70% of Roma children are educated outside mainstream education, either in special schools or classrooms with reduced curricula, and are thus deprived of the chance even to start their primary education in school classes teaching a normal curriculum (European Commission, 2007). This situation often reflects the fact that Roma children start preparatory classes in special schools and usually continue in the same special school with only very few moving to mainstream education.

The streaming into special schools or classrooms has reflected the fact that schools were entitled for higher funding for disabled students but not for socially disadvantaged students, leading to 35% of Roma children being classified as mentally retarded, an outcome deemed as discriminatory by the Czech School Inspectorate. Moreover, many Roma students were recommended to practical schools by counselling centres without a diagnosis of mental retardation or any other disorder. In addition, the education programmes in 80% of the special schools were not in accordance with the Framework Education Programme (Straková et al., 2011). Since mid-2011, schools can also have higher funding for students from socially disadvantaged backgrounds. However, Roma children are often being taught in separate classes with a reduced "practical" curricula, which may reflect higher funding being for children diagnosed as requiring to study a reduced curriculum (Amnesty International, 2013).

The performance of Roma children in basic education has been declining and absences have been increasing (GAC, 2009). Students educated in the reduced curricula are entitled to continue their studies at upper secondary levels, but the ones that do struggle in following the curricula due to their ill preparation in basic education. As a result, Roma children often leave upper secondary education early, failing to acquire the necessary skills to integrate the

labour market (Trhlíková and Úlovcová, 2010). One quarter of Roma pupils do not receive any learning support from their parents although this is considered a key element of any education system (GAC, 2009; Straková et al., 2011). Additionally, a significant share of Roma pupils report facing difficulties in mastering the Czech language in the first years of compulsory schooling while difficulties in math are felt in later years.

To raise overall student performance, early tracking at the age of 11 should be abolished and the school system should permit more transferability between education tracks. International experience shows that high quality early childhood education is essential for ensuring equitable access to learning opportunities later in school, reducing the impact of socio-economic background and improving skill accumulation, employment prospects and earnings later in life (Cunha et al., 2005; Almond and Currie, 2011; Heckman et al., 2013). Children who attended pre-primary education perform better at school and achieve higher PISA results (GAC, 2009; OECD, 2013f). Hence, the government plans to expand ECEC are welcome and efforts should be made to ensure that children from disadvantaged backgrounds are included in this expansion. Increasing ECEC provision should also be accompanied by improved quality standards, which can be achieved by developing a common framework covering the whole ECEC age range, designing curriculums with age-appropriate content and practical tools to incentivise their effective implementation, and assessing the latter, as recommended in the OECD Review of Early Childhood Education and Care in the Czech Republic (OECD, 2012e).

Improving the quality of teaching can make a difference in schools with a disproportionate share of students from low socio-economic backgrounds (OECD, 2012d). The *2006 Economic Survey* identified poor management tools as a problem and recommended that school principals should be given more opportunities to reward individual efforts as well as being rewarded themselves for improving the quality of teaching (Goglio, 2006; OECD, 2006). Rewarding good quality teaching requires a transparent evaluation system. Incentives, including financial, could be provided to attract and retain good teachers in disadvantaged schools, as is the current practice in many OECD countries and recommended by the OECD's Education Directorate in its recent report on how to achieve equity and quality in education in the Czech Republic (OECD, 2013e). The same report also recommends additional support and incentives to school leaders and teachers in the form of special training, improved working conditions and strong induction, coaching and mentoring of new teachers. Additionally, the recently introduced standardised tests in grades 5 and 9 should be used to introduce school benchmarking, linking performance with student characteristics and school management policies, thereby identifying which schools are more successful in raising attainment and performance of students, including those of low socio-economic background.

Vocational education has become increasingly unlinked from the labour market

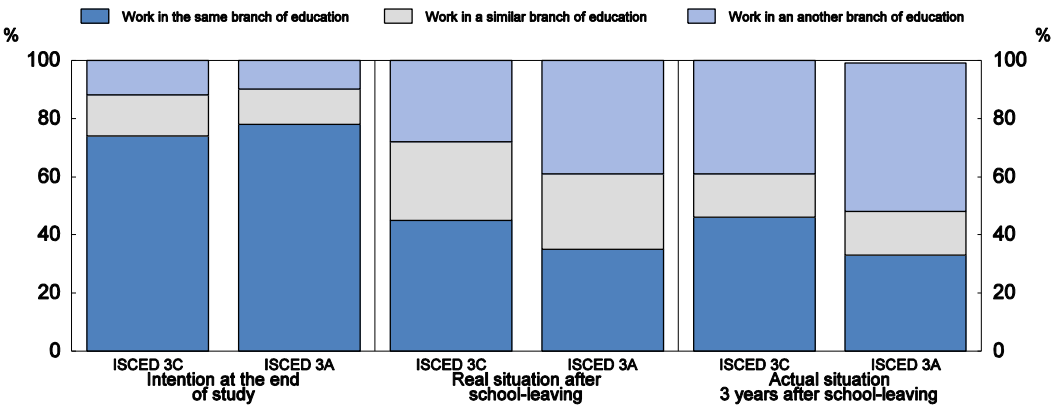
About three out of four 25 to 64 year olds have followed VET programmes and today 73% of upper secondary students are enrolled in VET programmes, the highest share among OECD countries (OECD, 2013a). Upper secondary VET comprises two main programmes: technical education (ISCED 3A) and apprenticeship education (ISCED 3C). Technical education (*střední odborné školy* - SOS) are four year vocational programmes preparing the student either for the labour market or tertiary education. Apprenticeship programmes (*střední odborné učiliště* - SOU) are available in 18 specialisations and generally last three years.

Apprenticeship graduates are struggling in the labour market as they comprise a disproportionate share of the unemployed relative to the economically active population. More worryingly, for those who are employed, a recent survey reveals a serious occupation mismatch, both for those in apprenticeships and those following technical education programmes. Three years after having left school, only 33% of graduates in technical education programmes (ISCED 3A) and 46% of apprenticeship graduates (ISCED 3C) were working in an occupation directly related to their field of study (Figure 16).

Furthermore, research has also found that students who opted for the apprenticeship track do not feel well prepared for the labour market, a sign of skill mismatches (OECD, 2013d).

Figure 16. The occupation mismatch among VET school-leavers is severe

Match between fields of study and branch of work, 2012



Source: National Institute for Education.

These findings suggest that the VET education system has not followed the pace of labour market developments and is neither providing the occupations demanded by the labour market nor the right set of skills within individual occupations, raising the risk of on-going and even worsening skill shortages. Indeed, a frequent complaint among employers is that graduates have not acquired the necessary skills to perform well their job tasks, indicating under-skilling (OECD, 2013d; Trhlíková, 2013). Some firms even prefer to have their own VET schools, to ensure students work with up-to-date machinery. Moreover, poor qualitative labour market outcomes, like earnings and career prospects, especially among those with apprenticeships, are sending important signals to students, discouraging them from enrolling in these programmes. Unsurprisingly, students' educational decisions in the past decade have moved away from apprenticeships towards technical programmes which, albeit academically weaker relative to gymnasium, grant access to tertiary education after completion of the school leaving exam (maturita) (OECD, 2010b; OECD, 2012c). However, the supply in education tracks with direct access to tertiary education has not followed the pace of demand. Streaming into vocational training does not always reflect pupils' choices, contributing to the higher dropout rates of poorly motivated students.

The system of quotas imposed on the maximum number of places offered in educational programmes and fields of study (e.g. hairdressing, construction, mechanics, tourism) does not support students' preferences and it is also unclear how well it responds to changes in labour market needs (OECD, 2010b). The fields of study on offer reflect historical developments in human resources and physical equipment available in each school with regional authorities tending to adjust them only marginally. The maximum number of students permitted in any particular field of study in a particular school is fixed in the National Register of School and School Facilities. At the request of each school, regions evaluate proposed changes in the maximum and approved changes are then sent to MoEYS, which normally adopts them unless there are flaws in the administrative procedure. However, the criteria determining changes to these maximum by regional authorities are not always transparent and it has occurred that a school was not permitted to open a programme for an occupation with low unemployment (OECD, 2010b). Failure to react to labour market needs by adjusting quotas in specific fields of study has been most likely hampered by the fact that a substantial part of practical training is provided in schools, and changes in provision impose extra costs on schools (related to the cost of new equipment and physical infrastructure).

Information on labour market outcomes influences student choice in many countries (OECD, 2010b). Therefore, to increase the flexibility of VET programmes to adapt to students' demands and also to labour market needs, more weight should be given to students' preferences in choosing fields of study by linking part of school financing directly to students. In such a system, students would make the decision of where and what to study, i.e. the choice of the particular VET programme (technical VET or apprenticeship) and the field of study, following which the school would be given the corresponding amount to finance her studies. In such a system of financing, students would exert pressure on VET schools by avoiding programmes of low quality or programmes with low employability prospects, thereby allowing a more endogenous adjustment of the supply of education. Providing regular information to basic schools and to the wider public on employment, unemployment trends and work compensation by field of study at the local, regional and national level would support better informed decisions.

Workplace training is an important element to ensure that students acquire the relevant skills demanded by the business sector. In the Czech Republic, training occurs far from the actual working environment, as only about 30% of VET students have practical training in companies (OECD, 2013a). An older study estimates that 35% of students in apprenticeship programmes benefit from workplace training, while in four year technical programmes around 90% of students receive training in companies, albeit the majority of work placements do not last more than three weeks (Czesaná et al., 2007). Workplace training is being hindered by an inadequate co-operation between schools and the business sector (OECD, 2010b). Schools cite lack of commitment by employers as one of the main obstacles to more efficient collaboration. In addition, legal obstacles and lack of funds to employers providing training to students may also contribute to companies' poor engagement (NOUV, 2008). On the other hand, employers complain about the poor preparation of graduates and ask for better training and closer co-operation.

Developing workplace training should get high priority as the skills set acquired in school are often not following developments in the labour market. A particular concern is that low investment in equipment in some VET schools and a flat career system with compressed wages do not provide teachers with the incentives to update their knowledge, disconnecting them from technological developments, new production processes and working practices. Hence, moving the vocational content of VET programmes to the workplace would also facilitate the adjustment of the specialisations offered within VET to the labour market needs, as schools would not need to invest in acquiring new/different equipment. To encourage employers to engage more actively in VET, the government has amended the law on corporate taxation, with effect from 1 January 2014, introducing two new tax deductible items: *i)* for training in the workplace (CZK 200/person/hour); and *ii)* for assets purchased and used for training (up to 110% of acquisition costs according to the rate of utilisation for training purposes).

Expanding workplace training requires the development of binding standards, including rules defining how training is provided in terms of content, duration, requirements for trainers' qualifications and assessment criteria. Setting national rules would help to ensure that skills are transferable to other companies, while bearing in mind the importance of consensus building by including the private sector, trade unions as well as experts from VET schools, as recommended in the OECD Review of the Czech Republic's Vocational Education and Training (OECD, 2010b). Currently there are three separate channels at the national level through which employers and trade unions can communicate with the government on VET policy and three others at the regional level. These bodies are connected very loosely and informally, leaving the system as a whole fragmented (OECD, 2010b). Improving the communication with employers could be achieved by simplifying the institutional framework and making sure there are no overlapping responsibilities between the different bodies governing VET policies.

Given the very low level of workplace training, additional subsides incentivising firms to accept students with difficulties securing training could be considered. Subsidies can either be directly linked to apprenticeships or indirectly via tax credits and social security rebates. Box 4 provides examples of

different policy alternatives in OECD countries aiming at encouraging employers to take on apprentices. In the Czech context, perhaps direct subsidies would be the way forward, as they can be directly linked to the formal apprenticeship contract. In turn, trainees should receive compensation to increase their sense of responsibility and encourage learning. This should be formalised by replacing the contracts between the schools and firms with training contracts between the apprentice and the employer, as is the case in many OECD countries (Austria, Denmark, Germany, Netherlands, Norway and Switzerland).

Box 4. Providing subsidies to encourage apprenticeships - examples from OECD countries

Direct subsidies

Several countries use direct subsidies to encourage employers to take on apprentices. In the United Kingdom, the National Apprenticeship Service provides Apprenticeship grants with a value of GBP 1 500 to employers with up to 1 000 employees per each 16-24 year-old recruited. Eligible employers are those who have never employed an apprentice before, or those who have not recruited one in the last 12 months. Up to ten grants can be made to any one employer. In Austria, companies are financially rewarded for every additional apprentice hired over and above the number hired in the previous year, or if they return to hiring apprentices after having taken a break. The Australian Apprenticeships Incentives Programme provides a wide range of employer incentives and benefits, which are larger if the apprenticeship place is created in a trade experiencing a skills shortage. Australia also provides additional incentives (AUD 3 350) for hiring young apprentices (under the age of 20). An evaluation of these subsidies (Deloitte, 2012) found that they had a significant effect on commencements, although more needs to be done to retain apprentices and prevent them from dropping out.

Tax credits and social security rebates

Another form of subsidising the provision of apprenticeship places is to grant tax credits and/or social security rebates. In France, certain firms receive a tax credit of EUR 1 600 per apprentice taken on, increasing to EUR 2 200 if the apprentice has a disability or is considered disadvantaged. Some firms are also exempt from social security contributions for the apprentices they take on. On top of this, each region in the country provides additional subsidies for the hiring of apprentices. In Canada, employers can claim up to CAD 2 000 per year for each eligible apprentice under the Apprenticeship Job Creation Tax Credit.

Source: OECD (2014), *Investing in Youth: Brazil* (references are listed in this source).

Improving the quality of teaching general skills in apprenticeships programmes can contribute to reducing dropout rates and increasing graduates' success in the labour market as they are deemed crucial in guiding students to self-reliance, independent and critical thinking (OECD, 2010b). Strong general skills are also considered a very important element in supporting lifelong learning, addressing the needs of apprenticeship graduates to adapt to new technologies and innovations throughout their careers. Strengthening the general education component in apprenticeships does not necessarily require more time for instruction but rather more effective ways of teaching. Teaching of abstract concepts should be combined with practical applications, as connections between theoretical and practical learning are not strong enough even in technical programmes (NÚOV, 2008). Innovative practices should be explored, such as the approach developed in the United States by the National Research Center for Career and Technical Education, which adapted math concepts to the curricula of different VET courses which has proved successful in raising students' ability (OECD, 2010b).

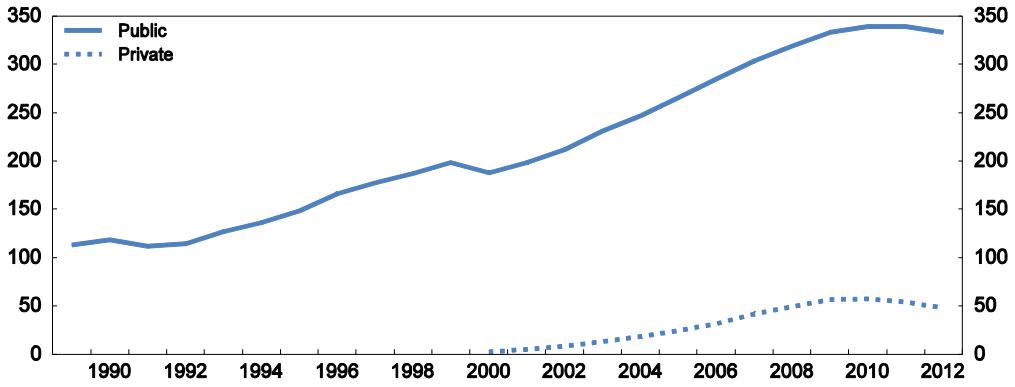
There has been a rapid expansion of tertiary education

One of the most immediate consequences of the collapse of the communist system was an increase in the demand for higher education. The number of students enrolled in tertiary education has been rising steadily since the early 1990s, from little more than 100 000 in 1990 to almost 400 000 in 2012. The expansion of tertiary education has accelerated in the past decade, not least due to the emergence of several

private higher education institutions (HEI), which have increased their intake from around 2 000 students to around 48 000 in 2012. In turn, the number of students enrolled in public institutions nearly doubled, constituting almost 90% of all students in higher education (Figure 17). Student enrolment has been dropping since the academic year of 2011/12, reflecting the demographic decline in the relevant age group. The expansion in tertiary education has been characterised by a rising share of students enrolled in humanities and social sciences, while the increase in enrolment in technical sciences, law and pedagogy courses has been more modest. As a consequence, the share of tertiary education graduates in technical fields has been shrinking over time and a concern is that they will not suffice to satisfy expected increases in demand in the coming years, although this has so far not been reflected in a higher wage premia.

Figure 17. Expansion in tertiary education has been provided mainly by the public sector

Number of students enrolled in tertiary education, in thousands



Source: Ministry of Education, Youth and Sports.

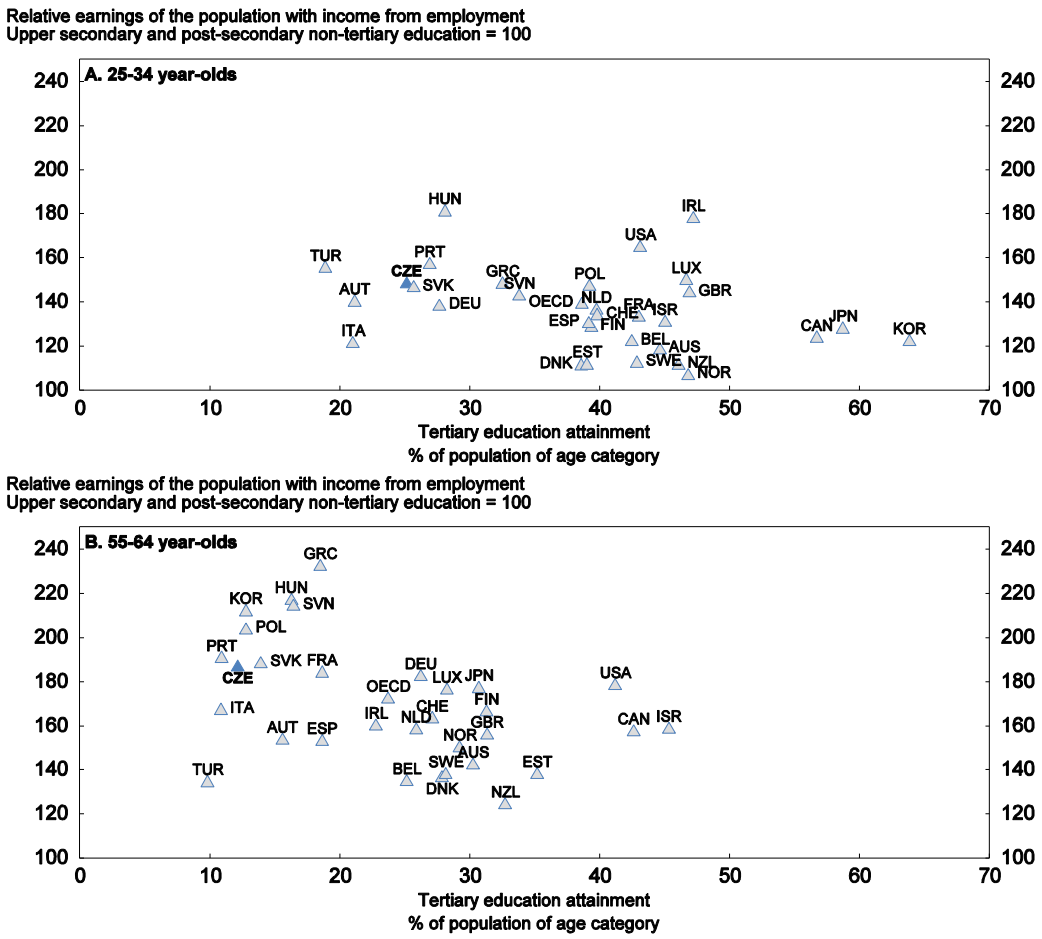
In spite of the expansion in tertiary education, attainment rates are still below the OECD average (Figure 18). Tertiary education graduates enjoy a favourable position in the labour market, not only in terms of their high employability prospects, but also in terms of job security and satisfaction, and higher income (Ryška and Zelanka, 2010). The high earnings premium from tertiary education also indicates that high enrolment rates are likely to continue or even rise further, and the concern is how to secure quality in an expanding tertiary education system, guaranteeing that graduates' skills address the business sector needs and contribute to raise productivity and accelerate economic convergence. Quality concerns are motivated by the fact that public funding has not gathered pace along with enrolment rates, which increased by 32% while expenditure only rose by 6% between 2005 and 2010 (OECD, 2013d). Tertiary education is reliant on public resources, as the share of private spending in tertiary education is 21% compared with an OECD average of 33%. As there is not much scope for a sustained growth given existing pressures on the Czech budget, the challenge that lies ahead is bringing more private resources into the system; in spite of the effort to raise public resources in tertiary education, expenditure per student is still below the OECD average. The involvement of private institutions in the expansion of tertiary education has created additional quality concerns, in terms of diverging standards between private and public HE institutions (OECD, 2009). At the same time, the higher intake in public institutions has neither increased connections with the private sector nor with international research networks, and they remain inward looking with a high level of inbreeding in the academic career. This also raises quality concerns *vis-à-vis* international standards.

Quality concerns can be addressed by strengthening the governance of tertiary education. Quality assurance is carried out by the Accreditation Commission for Higher Education Institutions (AC/HEI), and the Accreditation Commission for Tertiary Professional Schools, which advise the MoEYS on the

accreditation of study programmes of higher education institutions and tertiary professional schools. In particular, the role of the AC/HEI needs to be focused and structured around a narrower set of activities, focused on quality issues. The technical and financial resources of the AC/HEI did not reflect the rapid expansion of tertiary education, in terms of the increase in the number of institutions and in the programmes of study despite the legal framework obliging the AC/HEI to evaluate every single study program, on top of its other responsibilities such as recommending to MoEYS the procedures for the appointment of professors. With respect to the former, capacity constraints have led in practice to formal assessment (a check list of generic input criteria) rather than a content based review of study programmes, which in turn has generated a very uniform tertiary education system, with underdeveloped professionally-oriented bachelor degrees relative to more research-intensive programmes (OECD, 2009). Quality and diversity of tertiary education programmes can be better supported by supplementing input based criteria (such as library collections, computers, the number of faculty publications and rank) with output-based criteria, such as graduation rates and students' labour market outcomes as recommended in the OECD Review of Tertiary Education (OECD, 2009).

Figure 18. Tertiary education attainment is rising but the earnings premium is still high

2011



Source: OECD, Education at a Glance 2013, Tables A1.3a and A6.1.

As part of the input-based quality assessment, the accreditation system puts great emphasis on the numbers of senior academic staff - full and associate professors. In combination with low faculty

compensation and a career system with long and strenuous career requirements based on the habilitation procedure, the accreditation system has created a structural imbalance between demand and supply of senior academics, which has led to many professors holding multiple appointments (the so-called phenomenon of "flying professors").[5] In particular, this practice has hampered the links with the private sector as it does not offer adequate compensation to its professionals, who remain in the positions of assistants with low financial remuneration, and has retarded the development of an academic staff that is fully engaged in and committed to the development of professionally-oriented bachelor degree education (OECD, 2009). Moreover, it also discourages foreign academics, thereby limiting the integration of Czech academic institutions in international research networks. Therefore, the system should allow for a more diverse academic career structure, and this can be achieved by re-structuring career progression based on teaching and research results, granting appropriate compensation, advancement, and status.

In 2013, the MoEYS prepared an amendment to the Higher Education Act which included the combination of input- and output-based accreditation criteria, as well as the introduction of a new academic position - "professor extraordinary" - which would enable HEIs to hire highly experienced foreign academics as well as professionals from the private sector by offering more attractive compensation and without them having to undergo complicated legal procedures. The amendment would not solve the structural mismatch between demand and supply of senior academics, but it would contribute to better integrating HEIs in international research networks, to approximate teaching and research from the private sector needs, as well as enhancing professionally-oriented bachelor degrees. The new government should reform higher education building on this proposal.

Countries which use more of a mix of public and private resources are in a better position to expand tertiary education and maintain or improve teaching quality, research and innovation than those that rely solely on public resources to fund their systems (OECD, 2009). Moreover, the high private returns to tertiary education and the willingness to pay for tertiary education, confirmed by the rapid expansion of private HE institutions, justifies the introduction of an element of cost sharing by students. Introducing fees for tertiary studies at public institutions will also force students to pay more attention to the economic consequences of their study choices, contributing to avoiding potential mismatches between fields of study and the needs of the labour market. To guarantee equity in access to tertiary education, a mixed system of means-tested grants and income-contingent repayment loans needs to be introduced (OECD, 2008). To support students making informed choices about study programmes, information about labour market outcomes by field of study and HEI should be made available to prospective students and the wider public. Furthermore, such a regular monitoring of the labour market outcomes of graduates could also assist the MoEYS in using information on labour market outcomes in its accreditation system.

Lifelong learning is not well developed

Lifelong learning is crucial for a catching-up economy to adapt efficiently to changing technologies and avoid skill mismatches due to structural changes in the labour market. Lifelong learning can also improve the employment prospects of the low skilled unemployed and early school leavers (OECD, 2011b).The Czech Republic scores well in adult skills. According to the OECD Skills Outlook (OECD, 2013g), the mean proficiency of 16-65 year olds is around the OECD average in literacy and problem solving, and significantly above the average in numeracy. Younger adults (adjusted for age effects) score higher than older cohorts, which is related to the fact that a higher share of younger adults has attended

5. The aim of the habilitation procedure ("*venia docendi*"), which is common in Central Europe, is to confirm the scholarly, scientific or artistic qualifications of the applicant. For associate professors, the procedure involves the delivery and defence of a habilitation thesis, other scholarly, scientific, specialist or artistic work, and the applicant's competence as a teacher, based on a habilitation lecture and previous teaching experience.

tertiary education. Country differences in average skill profile suggest that socio-economic factors affect the strength of the relationship between age and skills. Indeed, the onset of age-related skills loss occurs at the age of 33, the earliest in the countries covered in the survey.

Less than 30% of the adult population participates in further education and only 1.4% of the adult population participates in formal education at schools (Ministry of Education, Youth and Sports, 2007). Participation in non-formal education, such as foreign languages, and attendance at seminars and conferences, is low by international standards, both in terms of the participation rate and the number of hours per participant (OECD, 2011c). Recent increases from below 7% to 11.5% in adult education have occurred due to extensive European Social Fund funding as an anti-crisis measure targeting the unemployment and those with jobs at risk, and steps need to be taken to ensure lifelong learning persists in a continuous basis as the economy improves (CEDEFOP, 2012).

Most of the adult training is provided by employers and investment by individuals in their own education is much lower, in particular for low-skilled and older workers (CEDEFOP, 2012). As a result, adult learning is more common among employed than unemployed persons. Experience in other OECD countries indicates that individual learning accounts (used in Canada, the Netherlands, Spain, the United Kingdom and the United States) and grants (e.g. allowances and vouchers, as in Austria, Denmark, Germany, Switzerland among others) can be effective in facilitating adult learning for the low-skilled. Income tax deduction schemes are less likely to help these groups, due to the fact that they often pay little in income tax or none at all (OECD, 2005b).

Box 5. Main recommendations to strengthen skill use and school-to-work ransitions

Promote youth and low-skilled employment

- Encourage employers to provide training to young unskilled workers through tax subsidies or targeted reductions in social security contributions. Looking ahead, if the statutory minimum wage increases sufficiently, an additional measure could be the introduction of a youth minimum wage linked to training.
- Foster the employability of trainees by ensuring sufficiently long work place training to secure strong skills acquisition and by providing a certificate acknowledging competencies learnt.
- Increase the effectiveness of active labour market policies by focusing resources on clearly identified target groups and establish performance targets. Improve monitoring of active labour market programmes.

Boost female labour market participation by supporting choice in reconciling family and working life

- Provide an adequate supply of affordable and high quality early childcare facilities.
- Conditional on this development, reduce the maximum duration of the parental leave and replace part of the parental allowance with a system of childcare vouchers. Make a share of the parental allowance conditional on fathers taking part of the parental leave.
- Create legislation to facilitate the set-up of not-for-profit early childcare education and care facilities.
- Increase opening hours of early childhood and care facilities and expand the number of places in kindergartens for children less than 3 years old.

Provide a solid skill foundation by avoiding selectivity in education

- Expand access to early childhood education, including for children from disadvantaged backgrounds and develop good quality standards of service provision.
- Eliminate early tracking, avoid streaming into special needs schools and increase the possibility to transfer between education tracks.

- Improve teaching quality by providing school principals with more opportunities to reward good teaching performance conditional on the existence of a transparent evaluation system, providing new teachers with strong coaching (induction) and mentoring, and creating incentives to attract and retain good teachers in disadvantaged schools through financial rewards and more supportive working conditions.

- Use standardized national tests to introduce school benchmarking, linking student performance and characteristics with school specific policies.

Match vocational education and the needs of the labour market

- Increase participation of private employers in vocational education by simplifying institutional frameworks and governance. Introduce a contractual employment relationship between the apprentice and the employer.
- Expand workplace training by providing subsidies to the participating firms for difficult to place students.
- Improve the quality of general education in apprenticeships to reduce dropout rates and support further education. Modify school financing to ensure a more labour market related change in the supply of VET programmes.

Ensure quality in the expansion of tertiary education

- Raise quality and support diversity of provision of tertiary education by introducing output based accreditation criteria.
- Introduce student fees to increase resources for the provision of public tertiary education, accompanied by a mixed system of means-tested grants and income-contingent repayment loans.
- Strengthen the links with the private sector and foreign research networks.
- Support student choices by publicising information on labour market outcomes by field of study and higher education institution. Use this information as an outcome indicator in the accreditation process.

Expand lifelong learning

- Incentivise participation of low-skilled workers through individual learning accounts or a system of grants.

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