



OECD Economics Department Working Papers No. 1007

Matching Skills and Jobs in Estonia

Lilas Demmou

<https://dx.doi.org/10.1787/5k8xb73hhrd3-en>

Unclassified

ECO/WKP(2012)84

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

10-Dec-2012

English - Or. English

ECONOMICS DEPARTMENT

ECO/WKP(2012)84
Unclassified

MATCHING SKILLS AND JOBS IN ESTONIA

ECONOMICS DEPARTMENT WORKING PAPERS No. 1007

By Lilas Demmou

All Economics Department Working Papers are available through OECD's Internet website at
<http://www.oecd.org/eco/Workingpapers>

JT03332478

Complete document available on OLIS in its original format

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

English - Or. English

ABSTRACT/ RÉSUMÉ

Matching skills and jobs in Estonia

The labour market in Estonia is volatile, increasing the risk that groups with some obstacles to enter the labour market (youth, non-Estonian speakers and workers with no upper secondary graduation certificate) may become long-term unemployed, due to the aggravating skills mismatch in the wake of structural change. Avoiding a permanent exit from the labour force makes a multi-pronged strategy necessary, including strengthening activation policies, a better school-to-job transition, improving the co-operation with employers to improve vocational training programmes, stepping up targeting life-long learning support, and improving the access of tertiary studies for students from weak social backgrounds.

This Working Paper relates to the 2012 *OECD Economic Survey of Estonia*, www.oecd.org/eco/surveys/estonia2012.htm.

JEL classification: I21; I22; I28; J18; J24; J64; J68

Key words: Estonia; unemployment; skills mismatch; active labour market policies; life-long learning; vocational education; higher education

* * * * *

Faire coïncider compétences et emplois en Estonie

Le marché du travail en Estonie est volatile ce qui, en raison d'une aggravation des problèmes d'inadéquation des compétences, augmente le risque de chômage de long terme pour certains groupes subissant davantage de barrières à l'entrée sur le marché du travail (les jeunes, la population ne parlant pas estonien et les travailleurs sans diplômes du secondaire). Afin de réduire le risque de sortie définitive du marché du travail une stratégie sur plusieurs fronts est nécessaire, incluant le renforcement des politiques actives du marché du travail, l'amélioration de la transition entre l'école et le marché du travail, l'amélioration des programmes d'enseignement professionnel par le biais d'un renforcement de la coopération avec les employeurs, un meilleur ciblage des aides destinées à l'apprentissage tout au long de la vie, et l'amélioration d'un accès aux études supérieures pour les étudiants socialement défavorisés.

Ce Document de travail se rapporte à l'*Etude économique sur l'Estonie de l'OCDE 2012*, www.oecd.org/eco/etudes/estonie2012.htm.

Classification JEL: I21; I22; I28; J18; J24; J64; J68

Mots clés: Estonie; chômage; inadéquation des qualifications; politiques actives du marché du travail; formation continue; enseignement professionnel; enseignement supérieur

© OECD (2012)

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for commercial use and translation rights should be submitted to rights@oecd.org.

TABLE OF CONTENTS

MATCHING SKILLS AND JOBS IN ESTONIA	5
Overcoming remaining challenges in the labour market.....	6
Despite progress, the overall level of unemployment remains high	6
Sectoral rebalancing comes together with changing skills requirements	7
At-risk groups face specific challenges	8
Long term unemployment is a growing concern	10
Strengthening and better targeting activation measures	10
Making work subsidies more efficient by targeting net hiring and at-risk groups	13
Quality of work practice schemes should be further strengthened	14
Training should be market oriented, targeted toward specific groups and more intensive.....	14
Reinforcing the impact of lifelong learning	17
Improving incentives to engage in lifelong learning	17
Better targeting public support to workers in need	19
Increasing the return from training	21
Improving the quality of vocational education for a successful employment career	22
VET suffers from a high number of drop-outs and a relatively low ability to cope with structural change	23
Strengthening general learning and work practice opportunities.....	25
Providing youth guarantee for drop-outs	27
Insuring good access to tertiary education and reforming its funding	28
The recent reform of higher education will increase the flexibility of the system	29
Ensuring adequate support for low socio-economic background students	30
Bibliography	32

Tables

1. Flows between employment and unemployment in 2008 and 2010	10
2. Overcoming barriers to investment in training: what tool in which country?	18
3. Participation in lifelong learning increased mainly in professional conferences and seminars and hobby-related training	21
4. Earning premium relative to basic education	25
5. Level of investment by firms in VET programmes across OECD countries	26

Figures

1. A high level of job destruction during the crisis	6
2. Despite strong recovery labour market has not fully recovered	7
3. Recovery is accompanied by a strong reallocation of labour	8

4. Unemployed-to-vacancy ratio	8
5. Ethnic non-Estonians were strongly hurt during the crisis.....	9
6. Youth and low educated were strongly hurt during the crisis.....	9
7. Long term unemployment rate is high.....	10
8. Expenditures on active labour market policies are low.....	11
9. Job mediation counsellors' caseload is still high in many counties.....	13
10. The distribution of activation programmes is skewed towards training and wage subsidies.....	13
11. Impact of training on employment rate	15
12. At-risk groups in the labour market engage less in lifelong learning.....	20
13. Small firms invest less in lifelong learning	21
14. Participation in lifelong learning became skewed to very short courses.....	22
15. Teacher salaries remain one of the lowest of the OECD.....	23
16. Completion rate in education could be improved.....	24
17. Youth with vocational education perform weakly relative to those with general education.....	25
18. Tertiary education attainment is high in Estonia, but the dynamic has stalled and the return from education is low.....	29
19. Participation in tertiary education is low for students with weak socio-economic backgrounds.....	30

Boxes

Box 1. Main reforms regarding the provision of labour market services.....	12
Box 2. Impact of training on labour market performance: overview of international experience	17
Box 3. Who should pay for training? A brief overview of lifelong training theories	19
Box 4. Net cost of training and subsidies: lessons from international experience.....	26
Box 5. Main recommendation on labour market and education policies	31

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

MATCHING SKILLS AND JOBS IN ESTONIA

By Lilas Demmou¹

Despite a strong recovery in the labour market in 2010 and 2011, scars from the last economic crisis have not fully healed. The number of employed persons in the first quarter of 2012 was 5% lower than in the first quarter of 2008, when the employment rate reached its peak. The adjustment of the labour market during the crisis fell disproportionately on the youth, the low educated and ethnic non-Estonian, all groups that had benefited from strong employment growth in the construction sector during the period 2000-07. Mobility from job-to-job has been low during the crisis, thereby increasing the risk of skill mismatches in the economy (Masso and Krillo, 2011). Overall, matching skills and jobs is becoming a growing concern in Estonia; unemployed skills are not demanded in the labour market, while the education system faces challenges in providing the right skills, hampering school to job transition.

Beyond the good framework conditions in Estonia provided by the current institutional arrangements in labour and product markets, more efforts are needed to tackle high unemployment rates of at-risk groups, in particular by improving their skills to match labour market needs. While the change in labour demand by sector and by type of occupation implies a rise in skill requirement, skill shortages might compromise future growth if they reduce the rate at which more efficient technology and organizational changes can be adopted and hence the opportunity to climb the value chain (Price and Wörgötter, 2009).

Against this background, this chapter analyzes important aspects of current education and labour market policies and aims at identifying the measures that would help to make the most of the potential of Estonian people, by acting simultaneously on the skills of the jobless, workers and students. Areas of action include: *i*) increasing activation, in particular directed at risk-groups; *ii*) improving the general level of skills of workers and their fit with labour market needs; *iii*) strengthening the school to job transition in reformed vocational education; and *iv*) improving access to and the functioning of tertiary education.

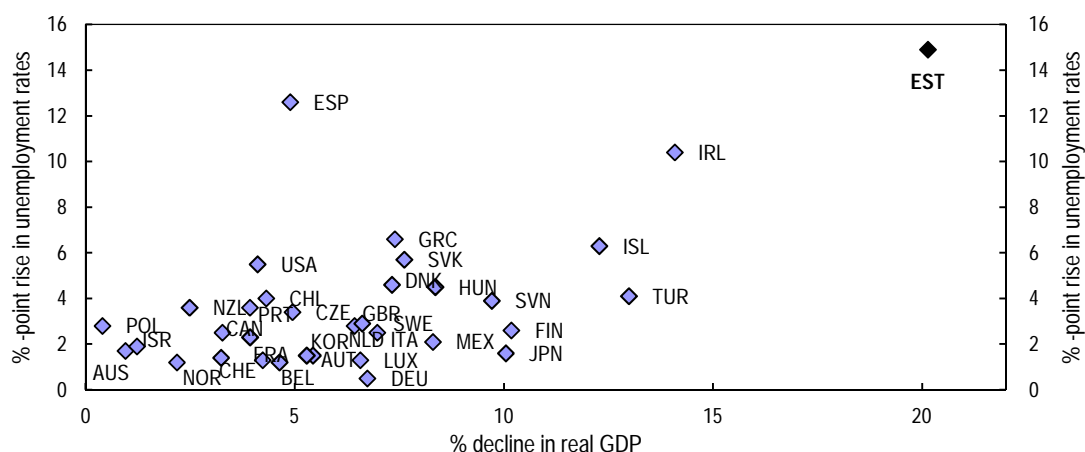
1. Lilas Demmou is economist in the Economics Department of the OECD. This paper was originally produced for the *2012 OECD Economic Survey of Estonia* and published in October 2012 under the authority of the Economic and Development Review Committee (EDRC) of the OECD (OECD, 2012). The author would like to thank the Estonian authorities, as well as Andrew Dean, Bob Ford, Andreas Wörgötter, Artur Radziwill and members of the EDRC for helpful comments and discussions. The author is also grateful to Glenda Quintini, Kathrin Hoeckel, Malgorzata Kuczera, Miranda Veerle, and Bogdan Zaman for their suggestions. Thanks are also due to Seung-Hee Koh, Corinne Chanteloup and Margaret Morgan for statistical assistance and Josiane Gutierrez and Pascal Halim for secretarial assistance.

Overcoming remaining challenges in the labour market

Despite progress, the overall level of unemployment remains high

Market-friendly institutional arrangements have increased the resilience of the economy (Gianella *et al.*, 2008; Duval *et al.*, 2007; OECD, 2009b; OECD, 2012d). They have allowed a rapid adjustment in the labour market in response to the very profound structural change in the economy in the wake of the crisis (Brixiova, 2009). The adjustment was characterized by a high level of job destruction, especially in the construction sector, and a rapid increase of employment afterwards. Dismissals were the main adjustment mechanism in the downturn even though the increase in part-time work, from 7.2% to 10.5%, softened the extent of job destruction (Masso and Krillo, 2011). The separation rate increased from 17% to 27% between 2008 and 2010 (Table 1). The high job losses were also reflected in the high correlation between the decline of GDP and changes in unemployment (Figure 1). The ratio between the decline of employment and the decline of output rates was 71% in 2009 compared with 43% in the old EU member countries (Masso and Krillo, 2011).

Figure 1. A high level of job destruction during the crisis



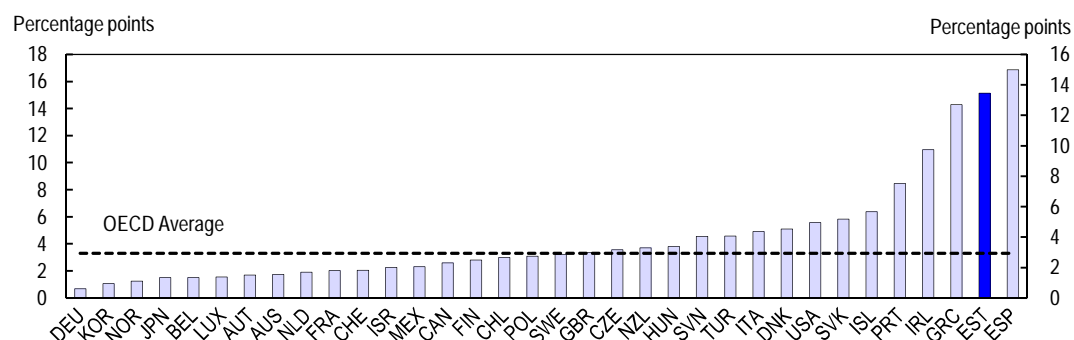
Note: Cyclical impacts are calculated using percentage-point increase from pre-crisis trough to peak for unemployment rates and percentage declines from pre-crisis peak to trough for real GDP. Trough (peak) dates are defined as the start of the longest spell of consecutive increase (decrease) of the quarterly OECD harmonised unemployment rates since 2006 Q1.

Source: OECD (2011), *Employment Outlook*, Figure 1.3.A.

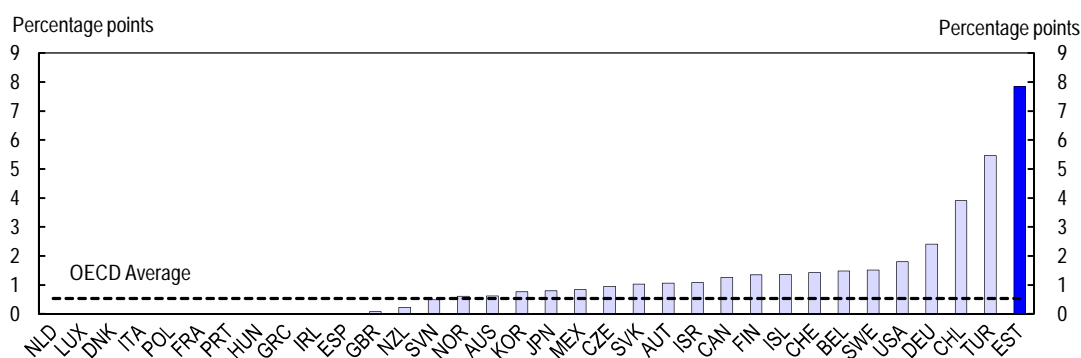
Employment has risen by about 12% since the first quarter of 2010 when the employment rate was at its lowest level. While the high degree of flexibility in product and labour markets has posed no obstacle for immediately reducing employment as demand fell, it permitted rapid hiring of workers in the recovery. A non-binding level of the minimum wage (for only 3% of workers) has facilitated the hiring of workers at lower wages. Despite this strong bounce-back, Estonia remains far from its pre-crisis labour market performance (Figure 2), likely because of a mismatch between available and required skills.

Figure 2. Despite strong recovery labour market has not fully recovered**A. Deep recession**

Difference between the peak and the pre-crisis trough unemployment rates

**B. Strong recovery**

Difference between the peak and the latest unemployment rates

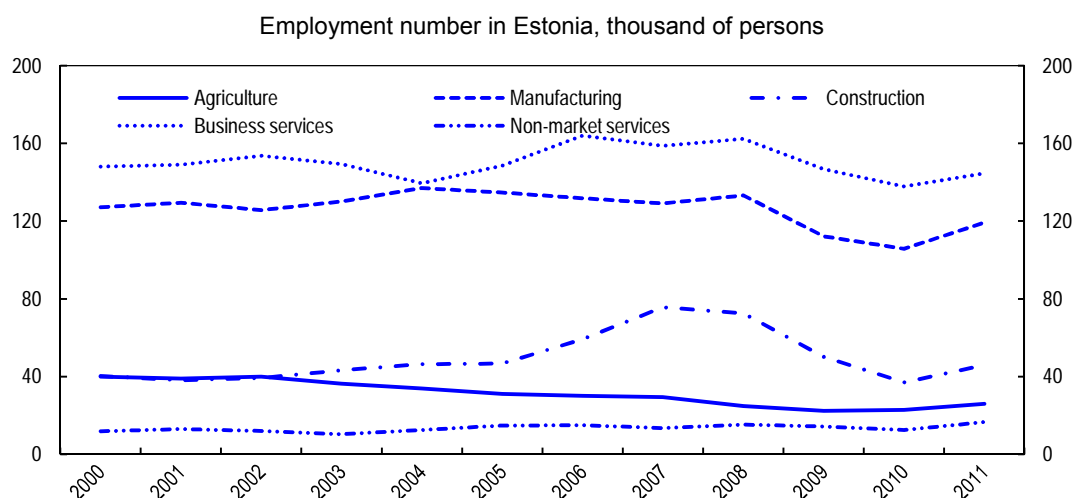


Note: Data refers to the period 2006Q1 to 2012Q2 or 2012Q1.

Source: OECD (2011), *Employment Outlook and Labour Force Statistics database*.

Sectoral rebalancing comes together with changing skills requirements

The rise of employment accompanying output recovery could stall because available stock of skills that were employed during the pre-crisis period is different from the skills demanded after the crisis. This is likely to be the case given the strong sectoral shift away from construction, which lost 41% of its employment (Figure 3; OECD, 2011a). Those job losses are unlikely to be recovered. It is difficult for the unemployed who were laid off from shrinking sectors to re-enter employment without requalification. The increasing employment opportunities in manufacturing offer a positive outlook in this respect, to the extent that available workers are retrained when necessary to acquire the skills needed by firms.

Figure 3. Recovery is accompanied by a strong reallocation of labour

Note: Business services are: Wholesale and retail trade; Hotels and restaurants; Transport, storage and communication; Financial intermediation; and Real estate, renting and business activities. Non-market services include: Public administration and defence; Social Security; Education; Health and social work; and Other economic activities.

Source: Eurostat.

The difficulties for the unemployed to find a job in the same occupation as before the crisis vary across occupation categories. Overall, the adjustment of the economy following the boom and bust period has resulted in stronger needs for technology-related jobs including professional technicians, health and education specialists, and a lower demand for unskilled, craft and related workers (Figure 4).

Figure 4. Unemployed-to-vacancy ratio

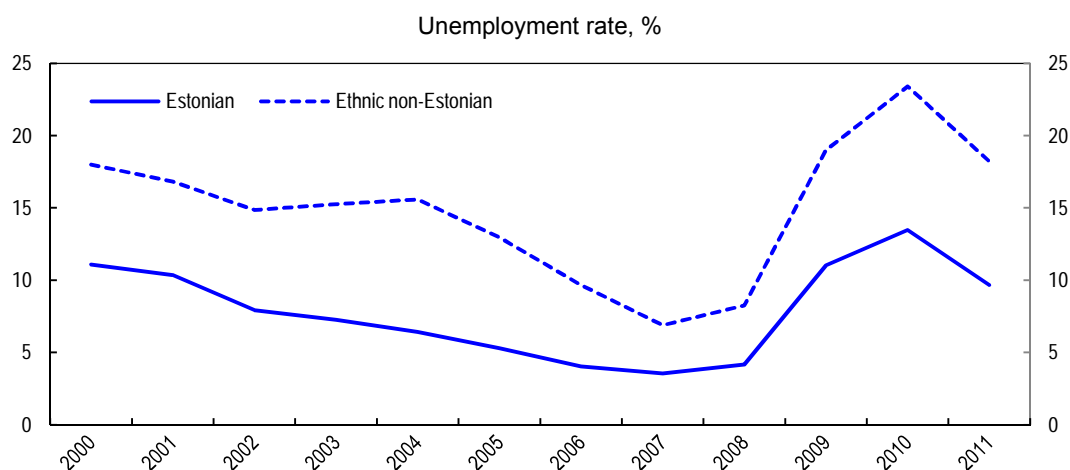
Source: Estonian authorities

At-risk groups face specific challenges

Labour market performance of non-Estonian speakers, youth and the low educated was affected particularly strongly during the boom and bust. Ethnic non-Estonian were the most hurt during the crisis; their unemployment rate was higher than the Estonians rate by almost 9 percentage points in 2011, while this difference was only around 3 percentage points in 2007 (Figure 5). The Northeastern region, which is mainly populated by ethnic non Estonians, has suffered the most from unemployment, which in 2011 was

almost twice as high as the average. However, the increase of unemployment is also related to the concentration of manufacturing activities, which lost 20% of jobs during the crisis. Even if youth benefited the most from the boom, with an unemployment rate which decreased from 16% in 2005 to 10% in 2007, their performance in the labour market was still particularly weak when compared with the 5% average unemployment rate in 2007. This reflects the difficulties of absorbing the large cohort born at the end of the 1980s. In the crisis, the situation deteriorated as the youth unemployment rate peaked at 35%, more than twice as high as the average (Figure 6).

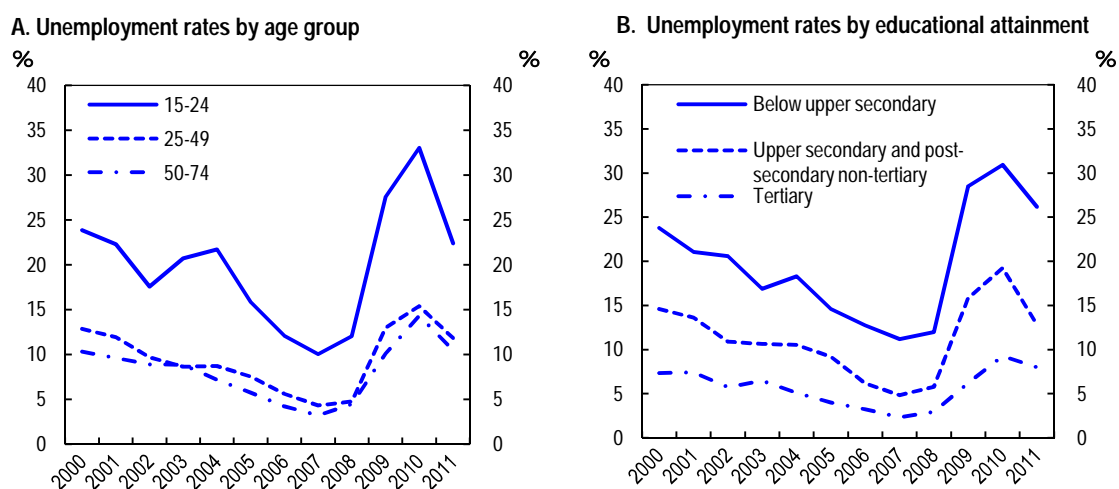
Figure 5. Ethnic non-Estonians were strongly hurt during the crisis



Source: Statistics Estonia.

Education appears to be the best protection against unemployment (Figure 6), even among youth and ethnic non-Estonians. Comparing to international benchmarks, Estonia stands out with an unemployment rate of people with basic education and secondary education about two times higher than the EU average, while the rate is similar when it comes to those with a higher level of education. Individuals with higher education levels and Estonian language speakers were found to exit unemployment more quickly during the crisis (Merikull, 2011). In contrast, low educated people who benefited strongly from the previous construction boom now have difficulties to find a new job. Also, the difference between female and male unemployment, which reached almost 10 percentage points in 2010 in favour of women, corresponds to the higher level of education of women (Masso and Krillo, 2011).

Figure 6. Youth and low educated were strongly hurt during the crisis



Source: Statistics Estonia.

Long term unemployment is a growing concern

The exit rate from unemployment to employment deteriorated in the crisis, from 50% of unemployed finding a job in 2008 to only 25% in 2010 (Table 1). In 2011, almost 60% of unemployed were looking for a job for more than one year against 30% in 2008, with 7% of the working age population being long-term unemployed. The share of long term unemployed is at one of the highest levels among OECD countries (Figure 7). Youth, low educated and ethnic non-Estonian have been found to have the lowest probability to exit unemployment during the crisis and have accordingly a higher probability of long term unemployment (Merikull, 2011). Following the 1998 Russian crisis, it took more time for the youth unemployment rate to return to the pre-crisis level (seven years) than for prime age workers (four years).

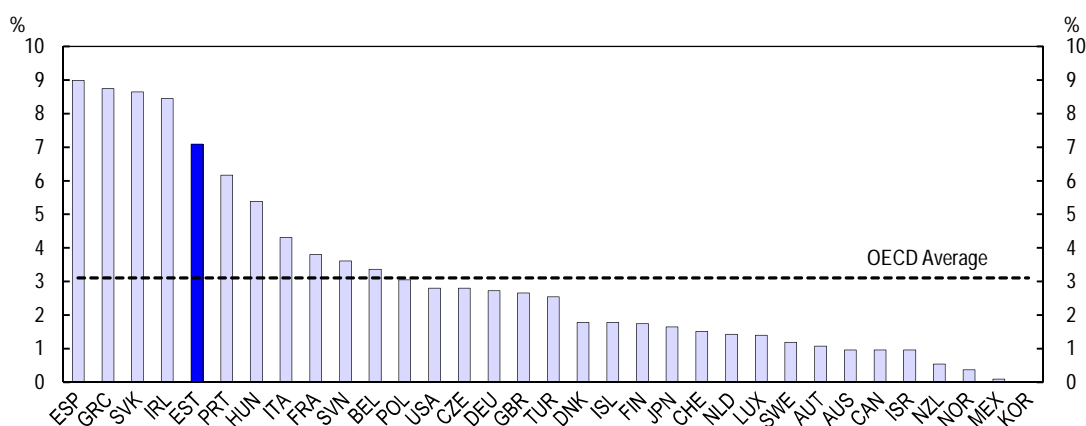
Table 1. Flows between employment and unemployment in 2008 and 2010

Year	Job-to-job mobility	Flow from employment to unemployment	Flow from unemployment to employment	Separation rate	Hiring rate
2008	7.5%	2.1%	49.8%	16.8%	17.0%
2010	6.3%	10.3%	25.7%	26.6%	16.3%

Note: The first column denotes the share of employees who moved from one job to another job (EE). The second column refers to movement from employment to unemployment (EU) and the third column from unemployment to employment (UE), divided by the level of employment in t-1. The separation rate is defined as the overall flows from employment towards unemployment (EU), inactivity (EI) and from job-to-job (EE), divided by the overall level of employment in t-1, $(EE+EI+EU)/E(t-1)$. Symmetrically, the hiring rate is calculated as the sum of flows towards employment from unemployment (UE), inactivity (IE) and from job-to-job (EE), divided by the level of employment in t-1, $(EE+IE+UE)/E(t-1)$.

Source: Masso and Krillo (2011).

Figure 7. Long term unemployment rate is high

Long term unemployment rate¹, 2011

1. Persons unemployed for one year or more.

Source: OECD, Labour Force Statistics database and Economic Outlook database.

Strengthening and better targeting activation measures

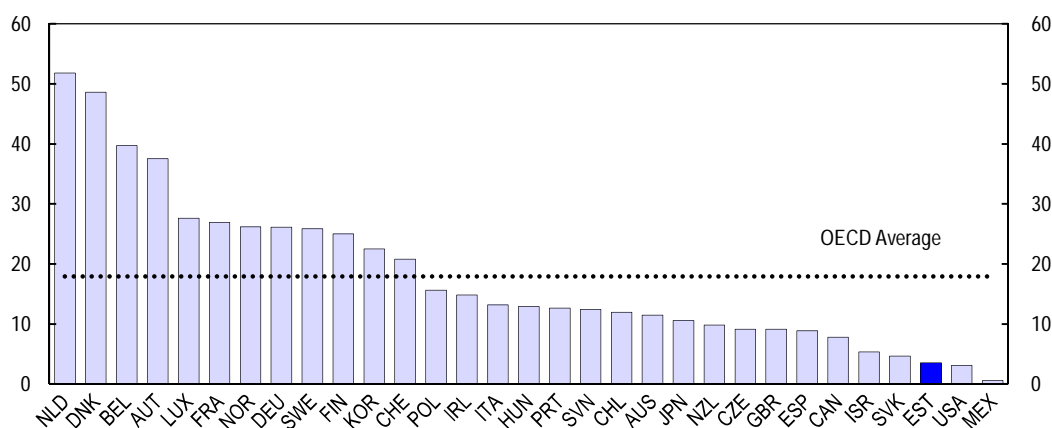
The high level of unemployment and the associated risk in terms of long-term unemployment require strong activation policies to minimize the increase in structural unemployment. Even though the generosity of unemployment benefits in Estonia is low and entitlement strict compared to other OECD countries (Venn, 2012; Vork, 2009, Chapter 2), there is evidence that benefits tend to increase the duration of

unemployment due to a disincentive effect and a longer job-search process (Lauringson, 2010, 2011). In response, the authorities scaled up activation measures aimed at bringing back jobless to the labour market from 0.05% in 2005 to 0.24% of GDP in 2010. Despite this increase, the level of spending on active labour market policies (ALMP) remains low, and it is unlikely to be sufficient to tackle the unemployment problem (Figure 8). A further increase in expenditures would require finding other sources of funding given the decline in European Structural Fund (ESF), from 62% of spending in 2011 to 25% in 2012. Estonia has started addressing this challenge by financing ALMP from unemployment insurance contributions, and increasing the contribution rate to the Unemployment Insurance Fund (UIF).

Other challenges discussed in the next paragraphs include improving the cost-efficiency of each programme through better targeting the early personalized interview, training courses and wage subsidies to at-risk groups. Such targeting at those in greatest need should be implemented while maintaining strong conditionality and job search requirements for all unemployed, in a so called “mixed strategy” (Gueron and Hamilton, 2002; Brixiova and Egert, 2012).

Figure 8. Expenditures on active labour market policies are low

Active labour market policies per unemployed, % of GDP per capita, 2010¹



1. 2007 for Switzerland and Norway; 2009 for the United Kingdom; 2011 for Estonia.

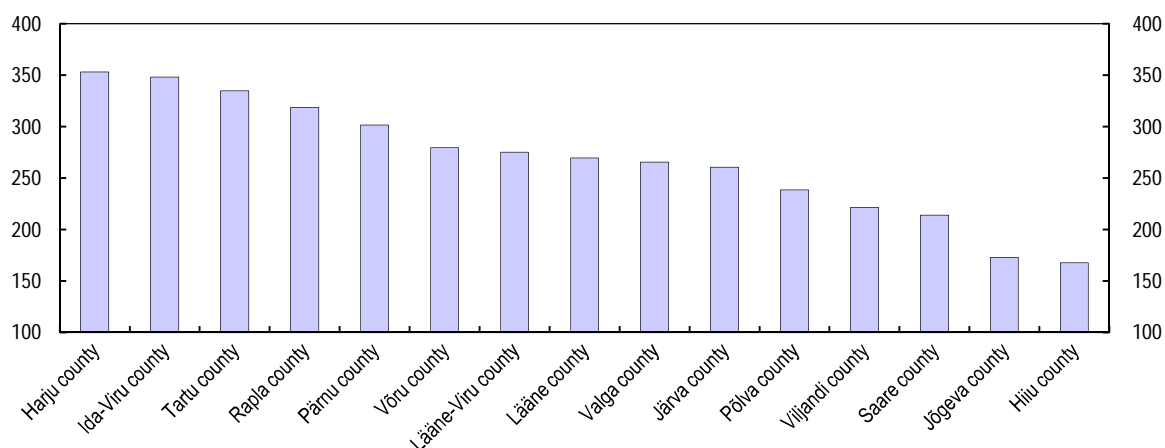
Source: OECD, *National Account database* and *Labour Force Statistics database*; Estonian Unemployment Insurance Fund.

The changes in the Labour Market Service and Benefit Act, implemented in May 2011 (Box 1), have likely improved the efficiency of job search by strengthening the requirement that benefit recipients engage in active job search and participate in activation programmes, in exchange for receiving efficient employment services and benefit payment (“mutual obligation” requirement). Registered unemployed are henceforth required to participate in labour market services identified as necessary, with gradual sanctions applied otherwise. The main requirements include: *i*) to comply with measures in the Individual Action Plan agreed during the first month of unemployment; *ii*) to contact the UIF every thirty days after the preparation of the Individual Action Plan; *iii*) to accept a suitable work offer and to promptly commence work; and *iv*) to seek employment independently. Job-search requirement is consistent with successful international experience suggesting that employment services can contribute to improving the labour market performance. Job search reporting, regular interviews, and monitoring of benefits have been found to increase the probability of being hired. Overall, it is considered that a full programme of public employment service intervention might increase the unemployment exit rate by 30% to 50% (Martin and Grubb, 2001).

Box 1. Main reforms regarding the provision of labour market services

- The Labour Market Board and the UIF were merged in 2009. This was to consolidate the management of benefits and the provision of employment services to improve the effectiveness of public employment services, increase the resources, and share responsibility with social partners. The supervisory board of the new institution includes representatives of the employers, trade unions and the government.
- Using insurance premiums to finance employment services was allowed in 2010 to secure funding, especially when it turned out that the amounts from the European Structural Fund and State Budget would be insufficient.
- The changes in the Labour Market Services and Benefits Act were implemented in May 2011 and established the general objectives, the targets, and the main labour market services provided. In addition, a temporary Employment Programme finances the labour market services and benefits according to current labour market needs (e.g. introduction of additional services, widening the range of clients of public employment services and benefit recipients).
- Since May 2011, public employment services are required to provide an individual action plan to each unemployed person within 30 days of registration, compared to 7 days prior to the change. This allows freeing up some resources to monitor more closely jobseeker with specific difficulties while putting less emphasis on newly registered unemployed.
- The development of IT tools has been promoted for many years and already includes several major services: *i)* the registration and job-search plan module since autumn 2009; *ii)* the automatic job and skills matching module since July 2010; *iii)* the availability of job vacancies through online database since January 2011; and *iv)* the provision of all the services/measures (referrals, contract administrations, related payments, monitoring etc.) by the end of 2012.

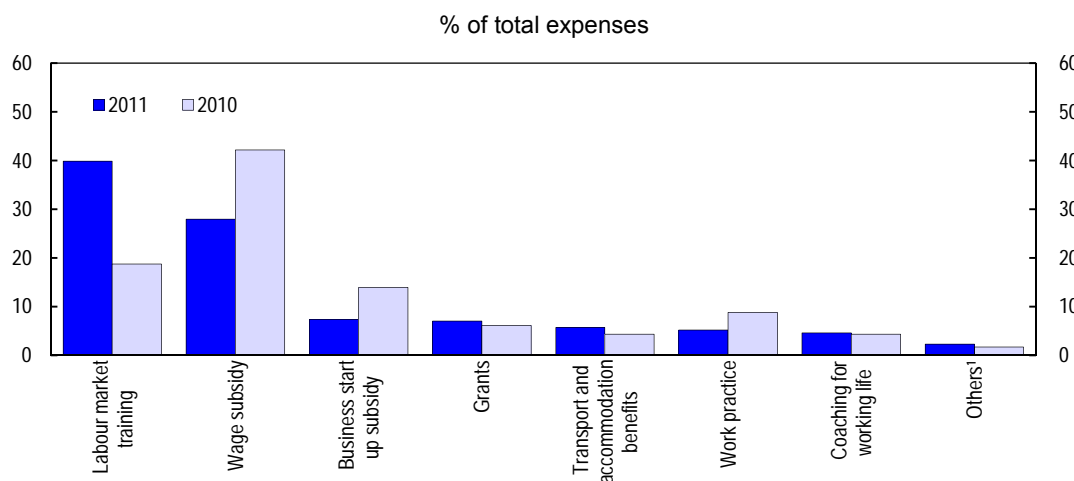
An adequate staff/unemployed ratio is crucial for the efficiency of public employment services. While this ratio has been reduced when compared with the peak of the crisis, from 407 unemployed by job mediation counsellor in 2010 to 275 in 2011, there are still regions where the number of unemployed by counsellor is higher than 250 (Figure 9). The requirement to provide an individual action plan to each unemployed person within 30 days of registration might overburden public employment services staff that should focus on at-risk groups. Some resources could be freed up by promoting early electronic registration of the unemployed and delaying the “face-to-face” discussion of the Individual Action Plan. There is some scope to delay the Individual Action Plan when comparing to most OECD where staff-intensive activities are generally postponed until three months of unemployment spell (OECD, 2010a). Resources could then be redeployed for deeper and more frequent interviews with at-risk groups. Such reform would be in line with the additional flexibility introduced in 2011 regarding the obligation to appear every thirty days after the preparation of the Individual Action Plan; this can now be done by phone or through an online system. Such saving of resources could be especially welcome in counties where the caseload per counsellor is high (Figure 9). Electronic registration of the initial action plan would be a step in further broadening the use of IT tools in public employment services (Box 1).

Figure 9. Job mediation counsellors' caseload is still high in many counties

Source: Estonian Unemployment Insurance Fund.

Making work subsidies more efficient by targeting net hiring and at-risk groups

Wage subsidies, which were the largest programme during the crisis, have been scaled back in 2011. Under the wage subsidy scheme, 50% of the salary of a long term unemployed can be reimbursed for a 6-month period, up to a limit of the minimum monthly wage. Wage subsidies have been particularly accessible during the crisis when eligibility conditions were softened: the criterion of unemployment duration was lowered from 6 to 3 months for young people in 2010, while for other groups it was brought down from 12 to 6 months. As a result, wage subsidies accounted for more than 40% of active labour market spending in 2010. The restoration of the 6 and 12 months unemployment duration contributed to reducing the size of the program to 28% of ALMP spending in 2011 (Figure 10).

Figure 10. The distribution of activation programmes is skewed towards training and wage subsidies

1. Others include: Counselling; Substitute care-giving; Other measures; Special aids and equipment; Adaptation of premises and equipments; Communication support at interviews.

Source: Estonian Unemployment Insurance Fund.

While wage subsidies are effective at bringing people into employment (Kluve, 2010), the economic literature points out the risk that hiring could have occurred even without the subsidy (deadweight losses) or could have crowded out other jobs, resulting in only small net employment increase (Martin and Grubb,

2001; Boone and van Ours, 2004). Targeting subsidies at groups facing difficulties would minimize these risks because the cost advantage is granted to the unemployed who would not be employed otherwise given their low level of productivity (Orszag and Snower, 2003). The efficiency of the wage subsidies schemes could also be further strengthened by ensuring that it supports the creation of additional jobs at the firm level. By ensuring, for instance, that the new employee does not replace someone who was dismissed, the risk of crowding-out is reduced. However, this kind of scheme could be difficult to administer effectively and Estonia could take inspiration from recent experience in Belgium, Finland or Ireland that implemented subsidies to net hiring (OECD, 2010b). The net hiring requirement tends to favour small firms that have a higher tendency to hire new employees than large firms. For instance, the schemes implemented in Belgium and Finland explicitly aim at helping small firms to grow by subsidizing the first and second employees (OECD, 2010b).

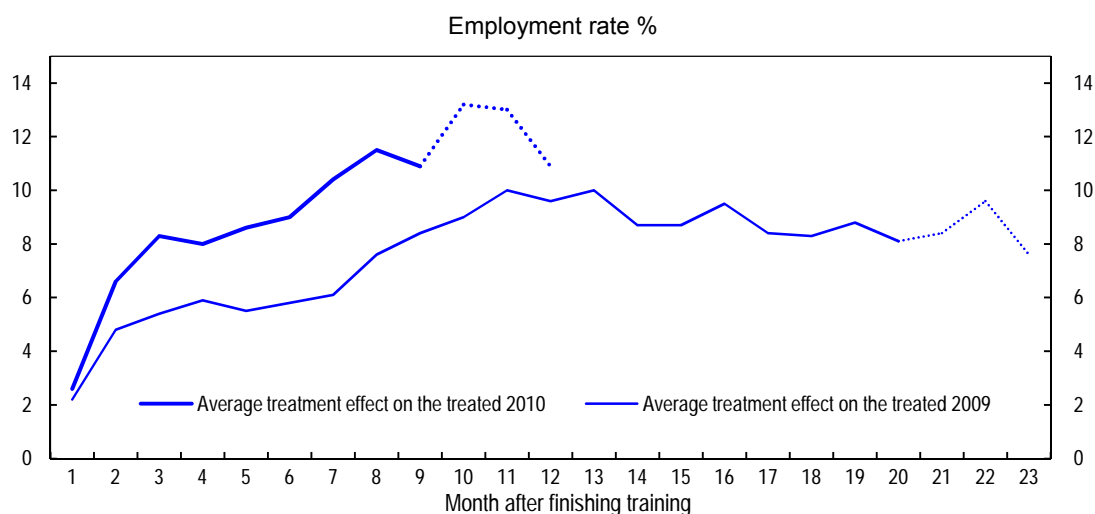
Quality of work practice schemes should be further strengthened

Work practice (internship) schemes, which improve the labour market performance of participants by increasing their skills through practical on-work training, have been found to be particularly successful in Estonia. Forty per cent of participants got a job after participating in the programme in 2009 and 49% in 2010 (Leetmaa and Nurmela, 2010). This programme therefore appears well suited to reducing the skills mismatch by allowing employers to train potential employees according to company specific needs, and to provide youth a first job experience. To support participation in this programme, training grants and transport compensation have been increased since the third quarter of 2009.

Although internship increases the probability of employment, an unattractive characteristic of this scheme in Estonia has been the low quality of training and the instability of the jobs created. During the economic crisis these schemes were often used especially to keep people in temporary unpaid employment (up to four months), while no substantive training was provided (Jurgenson *et al.*, 2010). In that context, authorities should ensure a better monitoring of post-internships employment performance, while increasing employers' compensation for the cost of supervision and instruction. However, there is a balance to be found between the close monitoring of employers and the associated administrative burden which reduces the willingness of employers to participate in such measures.

Training should be market oriented, targeted toward specific groups and more intensive

Current rebalancing of spending toward training programmes, from 20% in 2010 to 40% in 2011, appears justified given the importance of skill mismatches and empirical evidence that those programmes are effective at bringing individuals into employment. Training increases the probability to be employed by around 7% (15%) one year (two years) after completing the training (Leetmaa *et al.*, 2003). The impact is slightly higher (around 10% after one year) in a more recent analysis carried out by the UIF (Figure 11). A positive effect on the wage of participants has also been found (Lauringson *et al.*, 2011). While other studies in Estonia found similar effects (Centar, 2012), international experience suggests that positive effects of training may take a longer time to materialize (Box 2).

Figure 11. Impact of training on employment rate

Note: Average treatment effect is the difference in the unemployment rate between the participants of labour market training and a control group. The dotted line marks estimations based on many fewer observations (hence less reliable).

Source: Lauringson *et al.* (2011).

Training courses, like other labour market services in Estonia, are currently offered according to the individual needs of the unemployed, but they are not explicitly targeted at specific risk-groups. This system appears *a priori* well suited to covering at-risk categories as reflected in the higher participation of long term unemployed in training programmes: in 2011 two thirds of long-term unemployed participated in training compared with one fifth among registered unemployed. However, there may be a case for better targeting. There is evidence that participation in training is biased towards relatively highly educated individuals: the share of participants with the lowest level of education turns out to be lower than their share in overall unemployment (Centar, 2012). It would be useful to target training programmes more explicitly toward this group. More specific attention should also be given to youth who, because they are generally not entitled to unemployment benefits, tend to have fewer contacts with the UIF whereas they have stronger needs for training: 60% of youth unemployed are not contacting the UIF against 47% on average in Estonia (Statistics Estonia website).

Based on international experience, successful characteristics that could be better reflected in the design of training programmes in Estonia include:

- strong market-orientation, ideally through training in a real workplace (Martin and Grubb, 2001);
- targeting programmes at specific skill needs (Meager, 2009);
- favouring an intensive approach, with high cost per head, rather than extensive approach that covers a large share of unemployed with low intensity (Meager, 2009; Martin and Grubb, 2001);
- formal certification (Pope *et al.*, 2003).

In the Estonian case, strengthening the link between training and labour market needs could be particularly challenging due to the weakness of social partners (Masso and Krillo, 2011). Measures giving incentives to firms for creating workplace training, such as subsidies, should be strengthened. Regarding the quality of training, the recent increase in the level of support of training vouchers, from EUR 959 up to EUR 2 500 should contribute to improving the access to intensive training courses leading to certifications. However, procurement rules prevent authorities from discriminating explicitly among providers based on their past cooperation, resulting sometimes in low quality courses (Centar, 2012). The quality of training

courses cannot be observed in advance and the only consequences of a negative outcome of *ex post* monitoring and evaluation is the threat of discontinuing procurement. The UIF should be granted more flexibility to procure training courses by allowing it to choose providers based on course quality, in addition to price. Post-training employment performance evaluation could be used as a tool to judge course quality. The choice of training courses should also directly involve employers, for example through chambers of commerce and employer surveys and, where appropriate, contacts with individual firms. From an operational point of view, Estonia could also get inspiration from the specific professional skills and technique (SPST) training programme in Germany, which includes workplace experience, which ends up most often with a certificate, and which has been found to improve the employment rate by about ten percentage points a year after the beginning of the programme (Meager, 2009).

Box 2. Impact of training on labour market performance: overview of international experience

While training programmes are less effective at increasing employment in the short term than job search or wage subsidies, they have positive effects over longer time periods, provided that they are well designed.

- Training may decrease labour market performance in the short-term because of the lock-in effect: the trained unemployed is devoting less time to job search, while it takes time for human capital accumulated to materialize in labour market outcomes (OECD, 2006, 2007a; and Card *et al.*, 2010).
- Positive outcomes appear when looking at a time period longer than one year and at post-unemployment earnings (Meager, 2009), while a first strand of papers in the 1980s and 1990s found only modest positive effects of training on employment performance in the short term.
- At the macro level, training reduces unemployment and increases employment (Boone and van Ours, 2004). There is also strong evidence at the international level of a positive relationship between the level of initial education and employment (OECD, 2005a).

Reinforcing the impact of lifelong learning

Skills mismatch has become a growing concern in Estonia following the last boom and bust episode which lead to a sharp reallocation of labour between sectors and a change in the kind of skills needed by firms. 22% of workers self-reported as under-skilled in Estonia in 2010 which is one of the highest levels of skill shortage among the OECD countries (*European Working Condition Survey*, 2010). Comparing the level of qualification of a worker and the occupation code of her job gives the same picture (Quintini, 2011). The prevalence of under-skilling and under-qualification in Estonia might reflect the large share of the workforce (32%) who left education without any professional education (*i.e.* without vocational or higher education). This might also be related to the rapid structural change characterizing a catching-up economy like Estonia, which could result in rapid skill obsolescence, especially for older workers.

Participation in lifelong learning increased strongly in Estonia, from 6.3% in 2000 to 12% in 2011, which should contribute to improving the overall level of skills, less skill shortage, and better employment prospects. A 10% increase in time spent by an adult on education or training is associated on average with an increase in the probability of being active of almost 0.4% and a decrease in the probability of being unemployed by 0.2% (OECD, 2004; Bassanini, 2004). As the number of participants in lifelong learning is already above the EU average, Estonia should consider giving less importance to quantitative objectives such as those identified in the National Programme of Reform (government of Estonia, 2012) according to which Estonia should reach 15% (20%) of adults participating in lifelong learning by 2015 (2020). More attention should be given to developing more sustainable financing sources and raising quality.

Funding of lifelong learning is a source of concern. Sixty per cent of small firms (10-49 employees), which constitute a big share in Estonia, engage workers in continuous vocational training, relative to almost 100% of large firms (Statistics Estonia website). The dependency on EU funds is high, Estonia having received EUR 130 million for lifelong learning programmes over the period 2008-13 (NAO, 2011). In the context of the development of a new Plan for Adult Education that expires in 2013, challenges for the future discussed in the next paragraphs include improving incentives to invest in training for firms and workers, targeting public support, and increasing the quality of training.

Improving incentives to engage in lifelong learning

While lifelong learning improves employment performance and productivity, there are reasons to assume that market failures, such as the fears of poaching the trained worker by other firms, or credit

constraints, prevent firms and workers to invest sufficiently in this area (Ok and Tergeist, 2003; Box 3). International experience suggests different practices to stimulate investment (Table 2). A recent reform, excluding employers' spending on employees' work-related studies from the fringe benefit tax, is likely to stimulate spending. Corporate tax-based schemes that deduct part of the cost of training from firms' profits have proved to be quite effective at raising investment in training in OECD countries (OECD, 2005b), but they are not well-suited for Estonia where only distributed dividends are taxed. Compulsory contribution (payroll taxes or contribution to individual learning accounts) would increase firms' investment in training but would add to the tax wedge.

Table 2. Overcoming barriers to investment in training: what tool in which country?

Main tools	Example of countries where tools are implemented
<i>Income tax deduction</i>	Austria, Denmark, Germany, the Netherlands
<i>Payroll tax-based training grants</i>	Japan, Korea, Spain
<i>Individual learning account</i>	Canada, the Netherlands, Spain, the United Kingdom and the United States
<i>Vouchers or allowance</i>	Austria, Germany, Italy
<i>Individual loans</i>	Korea, New Zealand, Norway, United Kingdom
<i>Regulatory measures (e.g. apprenticeships contracts, pay-back clauses, loan guarantees for employees)</i>	Most countries institute these kinds of measures through collective agreements

Source: *Promoting Adult Education*, OECD, 2005b.

Good practices, specific to the Estonian economy, should be developed progressively by implementing some pilot projects. Estonia could extend the training voucher scheme towards employees and finance them through employers and employees' contributions, but also by direct public support in areas where there is evidence of underinvestment. Some regulatory measures could also be strengthened; pay-back clauses would reduce the risk of free-riding among firms, thereby stimulating firms' investment, by specifying a period during which future employers and trained adults are obliged to pay back training costs after voluntary quits. This kind of measures does exist already, but on a limited scale, and should be further promoted. Another tool is training loans guaranteed by the government. In this respect, the plan to make study loans also accessible to part-time students could be a stimulus to adult learning.

Coordination between social partners is also a way to promote lifelong learning by aligning training courses with labour market needs and coordinating firms and employees' incentives to invest. The Adult Education Council provides advice to the government and brings together key partners of adult education: the UIF, the employers, the trade unions confederation, the providers of adult education, and the ministries of Education and Research, Social Affairs, Economy and Communication, and Finance. This is a useful institution but it should be complemented by similar institutions at the local level aiming at matching lifelong learning system with local needs of employers. The weakness of social partners in Estonia (Masso and Krillo, 2011) and the resulting difficulties in coordination could however be a source of concern.

Box 3. Who should pay for training? A brief overview of lifelong training theories

- According to traditional human capital theory, based on the assumption of a perfectly competitive labour market and efficient capital markets without liquidity constraints, a worker should pay for general training because he could sell the newly acquired skills. However, credit rationing may prevent him from investing optimally.
- Specific training, valuable for specific firms, should be financed by a sharing mechanism involving employers and employees, which would ensure that both parties have an interest to maintain the employment relationship after training.
- The “new training literature”, based on oligopsonistic wage-setting, puts emphasis on the fact that return to employees of general training appears lower than gains in productivity. Firms may therefore find it profitable to pay for it. This approach is more consistent with practice: firms are the main funders of training, workers don't generally bear a wage cut during training, but bear indirectly part of the costs when courses are organized outside the working hours.
- There is a case for direct public funding when the private return (at the firm or the worker level) is lower than the social return. Firms under-invest when training leads to generic knowledge or in case of complementarities between innovation and human capital. Regulatory measures could be insufficient to resolve these market failures and these might have to be complemented by subsidies.
- Specific support could be devoted to low educated workers, older workers and workers from small firms whose employers can expect to capture only a low share of the total social return, resulting in underinvestment.

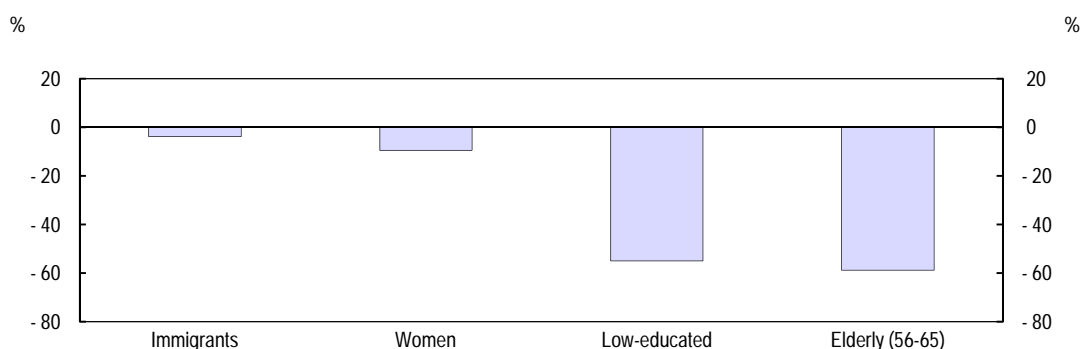
Source: Bassanini *et al.*, 2005; Ok and Tergeist, 2003.

Better targeting public support to workers in need

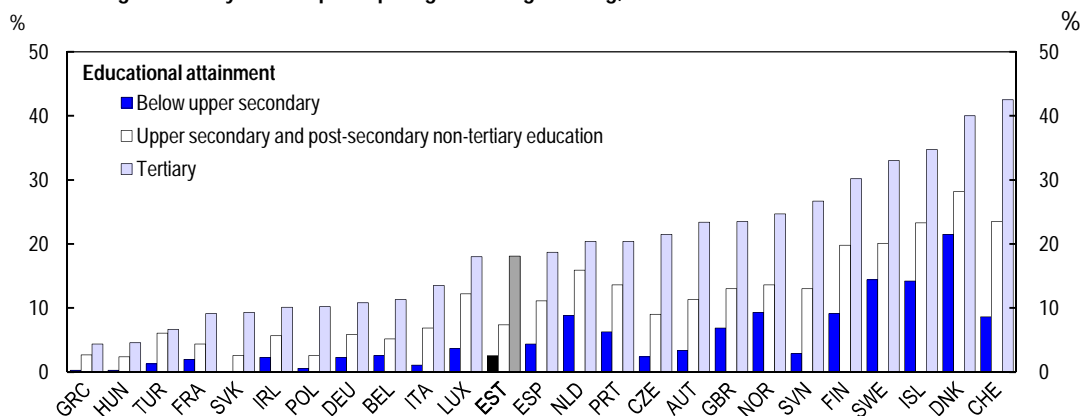
While studies based on international data associate positive labour market outcomes to lifelong learning irrespective of the initial level of education (Ok and Tergeist, 2003), participation in training is skewed toward the better educated in Estonia. Only 2.6% of adults with an education level below upper secondary engage in lifelong learning, against 18.1% of those with tertiary education (Figure 12). The positive outcomes of training can be realized through a wage premium or greater employment security. The latter is mainly observed for low qualified and older worker who are more likely to be subject to skills obsolescence in a world of rapid structural change. Lifelong learning would enable low productivity workers to improve their skills and hence to maintain employment (Bassanini *et al.*, 2005; OECD, 2004). However, firms may find it less profitable to train the low qualified workers (because of the need for general education before acquiring firms' specific competencies) or older workers (because of approaching retirement). Among measures already taken to improve participation of low-educated adults to lifelong learning, the government has extended their access to local counselling centres, which was previously restricted to the unemployed. It has also extended the KUTSE programme which aims at helping drop-outs from vocational education to resume their studies, to adults without any professional education or qualification by establishing specific study groups for adult learners in vocational institutions. The authorities could go beyond these measures by offering training vouchers targeted at low productivity workers. In Austria, adult courses are subsidized by vouchers whose amount varies according to the location and other characteristics of adults, with poorly educated adults being favoured (OECD, 2005b).

Figure 12. At-risk groups in the labour market engage less in lifelong learning

A. Percentage differences between average hours of education and training for selected groups^{1,2}



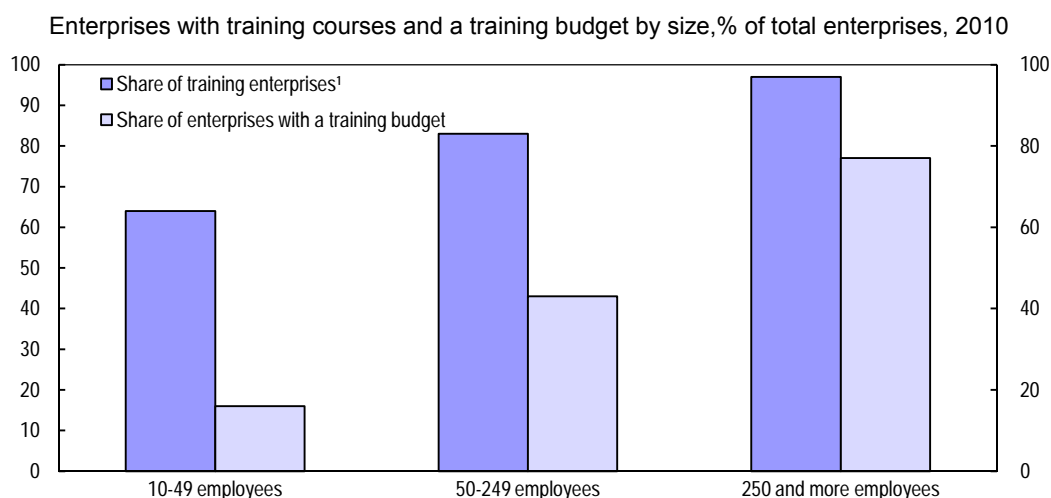
B. Percentage of 25-74 year-olds participating in lifelong learning, 2011



1. Persons aged 26 to 65, excluding those in full-time education or retired.
2. Weighted average for Australia, Belgium (Flanders only), Canada, the Czech Republic, Denmark, Finland, Hungary, Ireland, Italy, the Netherlands, New Zealand, Norway, Poland, Switzerland, the United Kingdom, and the United States.

Source: OECD (2006), *Employment Outlook*, Figure 3.16; Eurostat.

Participation in training activities is significantly lower in SMEs than in large firms. Seventy-seven per cent of large enterprises, but only 16% of small enterprises (10-49 employees), devote a specific budget to training (Figure 13). As a result, the share of small firms providing continual vocational training programmes is lower relative to large firms (60% against almost 100%). This might be related to practical difficulties, such as the lack of resources to replace the missing worker or the lack of customized training (OECD, 2012b, 2012c). Specific support could hence be targeted at small firms.

Figure 13. Small firms invest less in lifelong learning

1. Enterprises providing continuing vocational training (CVT).

Source: Statistics Estonia.

Increasing the return from training

Training participation increased by 4 percentage points between 2007 and 2010 (Table 3). However this might not directly reflect an overall increase in workers' productivity given the type and the length of courses which contributed the most to this increase. While the Plan for Estonian Adult Education aimed at promoting participation in formal education, notably by allowing adults to enter institutions or universities on the basis of professional competencies, formal education increased only by 0.6 percentage points between 2007 and 2010. The participation of adults in training programmes aimed at developing skills needed by the worker in his current job (in-service training) or needed to take a job in another area (retraining) also rose by only one percentage point. In contrast, more than half of the total increase in training participation (2.5 percentage point) was due to participation in professional conference and hobby-related training. These programmes accounted for 3.9% out of a total of 11.5% of workers involved in adult training in 2010, and might not yield specific professional skills (NAO, 2011). This is in line with another observation that very short courses increased over the period: 75% of courses for adults training were shorter than one week in 2010 against 42% in 2000 (Figure 14).

Table 3. Participation in lifelong learning increased mainly in professional conferences and seminars and hobby-related training

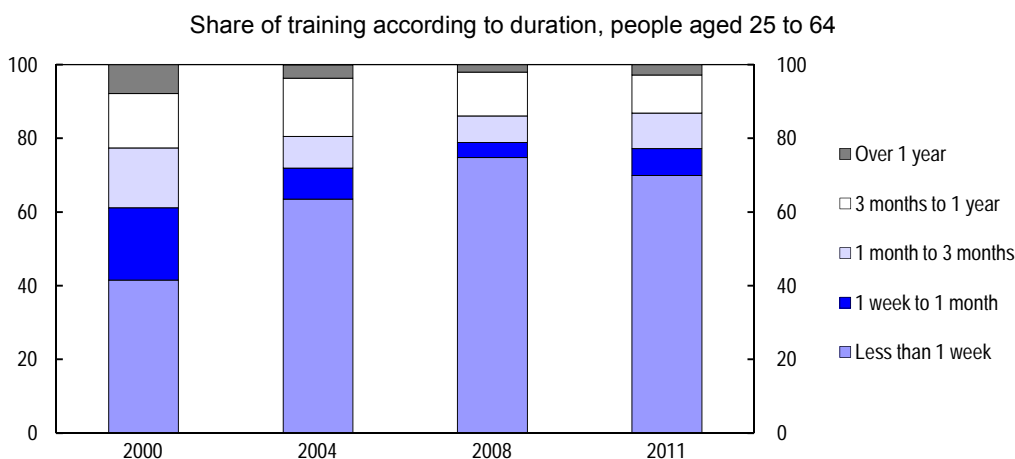
	2007	2010
Participating in formal education		
<i>general education or vocational education</i>	0.5	0.5
<i>institution or higher education</i>	3.1	3.7
Participating in training		
<i>professional in-service training or retraining</i>	2.4	3.4
<i>professional conference, hobby-related training and other training</i>	1.4	3.9
Total	7.4	11.5

Note: People aged 25-64. The sum of participant is higher than what usually reported (11.5% in 2010 instead of 10.9%) because the table reports the participation in each programme and not the number of participant.

Source: Statistics Estonia.

Another related issue is the low proportion of training courses which end up with a professional examination (NAO, 2010, 2011). This may generate inefficiency by reducing job-to-job mobility if it increases the uncertainty for employers to predict skills of the candidates for a job. In this context, devoting more resources to longer courses ending with professional examination, or at least certification would contribute to improving skills matching.

Figure 14. Participation in lifelong learning became skewed to very short courses



Source: Statistics Estonia.

Improving the quality of vocational education for a successful employment career

While youth unemployment deserves special attention, with 22% of youth being unemployed in 2011, tackling this problem is not an easy task. International experience suggests that the most efficient way to avoid youth unemployment is through a timely and sustained intervention to reduce early drop-out from education and to provide competencies and skills recognized by employers (Grubb, 1999). Strong emphasis needs to be devoted to programmes having an appropriate mix of academic education, occupational skills and on the job training.

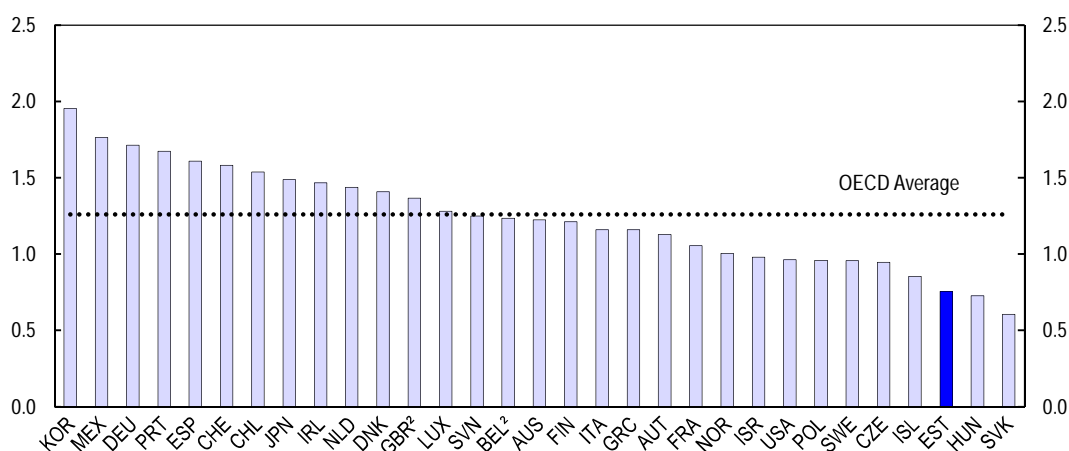
Demographic trends add to the sense of urgency, as Estonia cannot afford to waste the potential of youth given the prospects of its shrinking workforce and the expected decline in the number of new job market entrants (OECD, 2009a). Since 2000, the number of persons enrolled in education decreased by about 70 000, or by 22%. The decline has so far mainly taken place in general education, where the number of students has fallen by 34% while it has decreased by only 10% in vocational education, also thanks to an increase of adults entering formal education in VET and obtaining professional qualification. However, according to the authorities' forecasts, the declining trend is expected to affect the whole education system. Streamlining and merging educational institutions should therefore be continued as well as efforts to attract more adults in formal education to obtain professional qualification.

Recent national surveys of vocational schools graduates 6 months after graduation suggest that the reformed VET education system offers improved job perspectives. In 2011, 10.8% of vocational secondary school graduates and only 8.3% of post-secondary vocational graduates were unemployed six months after graduation. The main concerns with regard to the quality of vocational education are the high number of drop-outs and the higher unemployment rate of secondary vocational education graduates relative to general education graduates (Figure 17). VET graduates are quite successful in getting a first job with a wage, which is increasingly similar to what is paid on jobs occupied by general education graduates. However, VET graduates face problems to cope with structural change and find it more difficult to find a new job after having become unemployed. This amounts to a failed opportunity to build upon the success

of basic education, as reflected in high PISA scores among all social groups (OECD, 2011b). Measures to improve the quality of vocational education institutions have been taken and include the adoption of the new Vocational Education Institutions Act to be implemented in 2013. This encompasses measures for improving teachers training by requiring minimal industry experience; for improving the quality of tuition and VET curricula, especially by strengthening work-based parts of it; and for increasing the financing of vocational education, currently 20% lower per student than spending on general education. A related issue is the level of teacher salaries (relative to GDP per capita), which is among the lowest in OECD countries, making teaching unattractive (Figure 15). Other challenges, discussed in the next paragraphs, include the strengthening of key competencies (like numeracy and literacy) in the curricula, the promotion of workplace training, and the need for a commitment by the authorities to offer youngsters not in education, employment or training an apprenticeship until the age of 18.

Figure 15. Teacher salaries remain one of the lowest of the OECD

Ratio of salaries¹ after 15 years of experience to GDP per capita , 2009



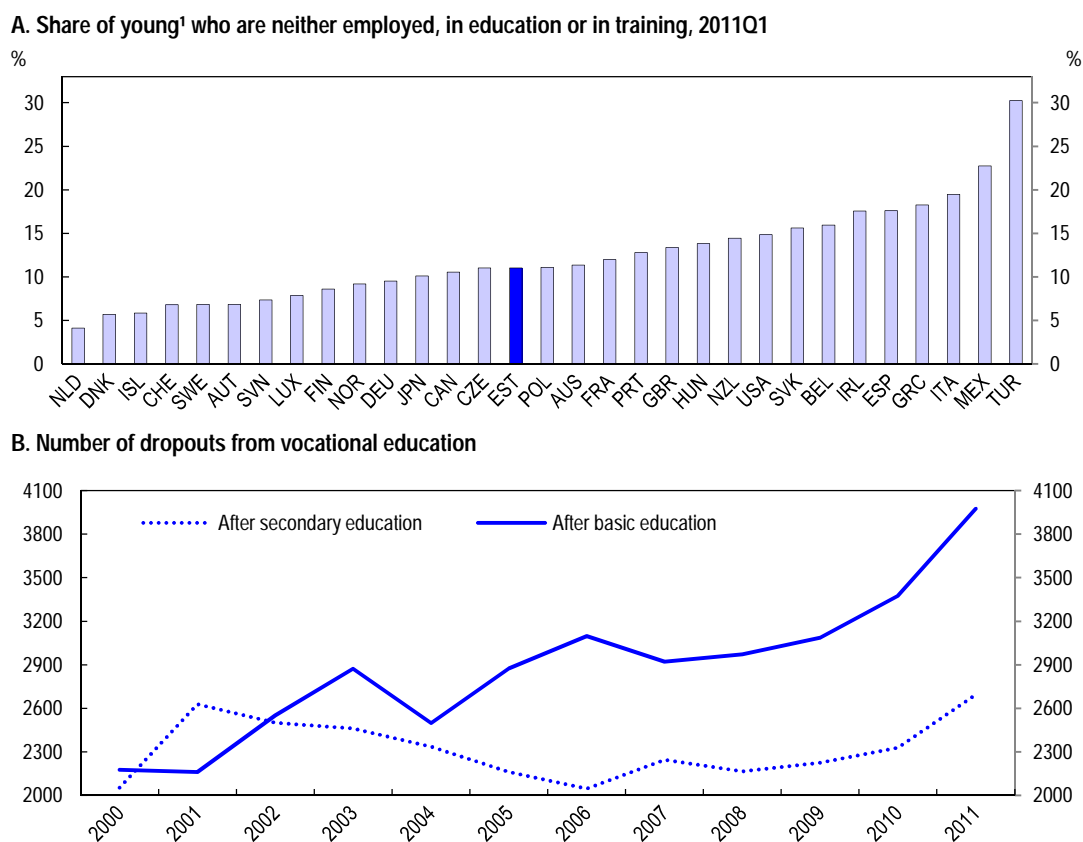
1. Ratio of salaries after 15 years of experience to GDP per capita; Salaries after 11 years of experience for Switzerland; Actual salaries for Ireland, Scotland, Finland, Norway, United States, Sweden and Hungary.
2. Average of the salaries of two regions for the United Kingdom (Scotland and England) and Belgium (Flemish and French regions).

Source: OECD (2011), *Education at a Glance*, Chart C_D3.3.

VET suffers from a high number of drop-outs and a relatively low ability to cope with structural change

With 11.6% (in 2010) of youth, who haven't reached at least secondary education, early school leaving is a source of concern for the authorities. Early dropouts are costly, as they contribute to a permanent loss of productivity. The rate of return on an additional year of schooling is estimated at around 10% (Card, 1999). Reducing by half the numbers of early drop-out in Estonia would entail a gain estimated to 0.7% of GDP (Anspal *et al.*, 2012). While the dropout phenomenon is also noteworthy in the third stage of basic school studies, the majority of drop-outs occur in secondary vocational education (Figure 16; government of Estonia, 2012). Reasons behind that could be the weak preparedness of basic school graduates for vocational studies and future job career, as well as an

insufficient support for successful completion of studies. Consequently, Estonia performs better than the OECD average when looking at the completion rate in secondary general education but not in secondary vocational education (OECD, 2011b).

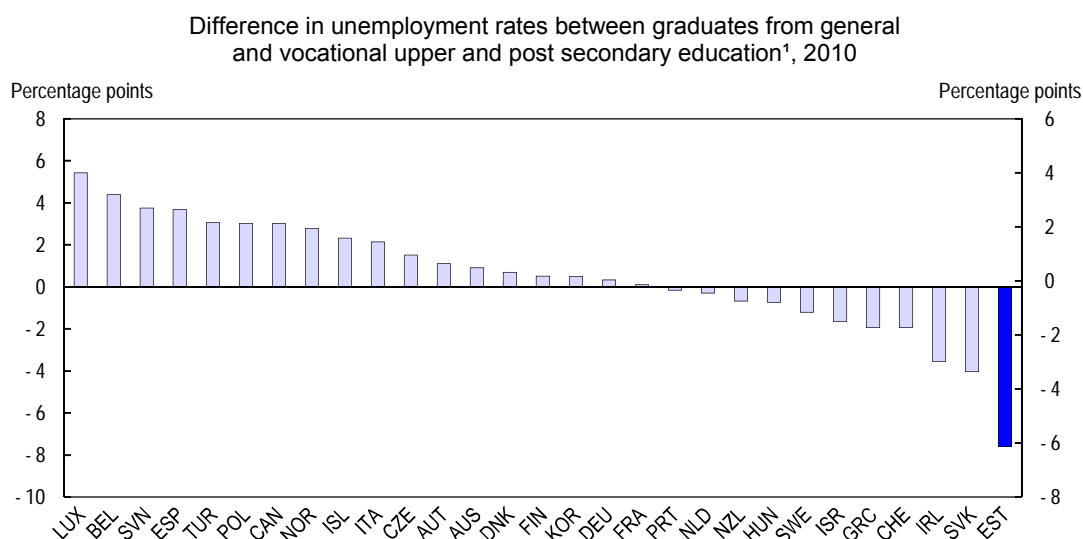
Figure 16. Completion rate in education could be improved

1. Population aged 15 to 24.

Source: OECD (2012), *Employment Outlook*, Table C4.3; Statistics Estonia.

Although vocational education offers good possibilities to gain secondary education and qualification for jobs, this field of education needs improvement especially regarding job perspectives for its graduates. The unemployment rate of 25-34 years-old graduating from secondary vocational education is higher than those with secondary general education (Figure 17), and the gap has remained sizeable at 6.8 percentage points in 2011. Previous studies have shown that the probability of finding a job within a year is significantly higher for unemployed with secondary general education compared with those with secondary vocational education (0.62 vs. 0.39) (Saar and Helemäe, 2006).

Part of the lower performance of graduates from vocational education might come from a congestion effect as fewer graduates from general secondary education go directly into the labour market relative to graduates from vocational education (43% versus 79%). Therefore the difference in unemployment rates between graduates from vocational and general education appears much lower when considering the general population (15-74 years old) rather than the young population (25-34 years old). The gap tends also to be cyclical; people with upper vocational secondary education suffered more during the crisis whereas they have more strongly benefited from the recovery (Statistics Estonia). Part of the gap can be also explained by the fact that some of the general secondary education graduates gained additional years in higher and post-secondary institutions. However, the most important reason for this gap seems to be that VET graduates face difficulties to find a job for which they have not been trained. A similar phenomenon is also observed in other countries, even with successful school-to-job transition programmes like Germany (OECD 2012d, Annex Table D).

Figure 17. Youth with vocational education perform weakly relative to those with general education

1. Population aged 25 to 34, ISCED (3/4).

Source: NEAC database on Labour force status by National Educational Attainment Categories (NEAC), developed by the OECD Education Directorate.

An analysis of net salaries between 2005 and 2009 does lead to the conclusion that the relative performance of vocational education in terms of compensation catches up to general education (Table 4). Wages are higher for individuals with secondary vocational education than for those with basic education. They are still lower than for graduates from general secondary education, but the wage premium for vocational education graduates has increased faster than for other graduates. This means that jobs for VET graduates have an increasingly similar quality as for general education graduates. The challenge therefore is after getting a job, keeping it, or if it is lost in the course of structural change, to find a new job, even outside the original profession.

Table 4. Earning premium relative to basic education

	2005	2006	2007	2008	2009
Master's degree or PhD	66.5	65.8	66.8	62.2	61.5
Higher education	48.2	46.0	42.7	42.4	46.6
General secondary education	12.9	10.0	14.7	12.6	12.2
Vocational secondary education	7.9	6.1	11.6	9.6	10.7

Note: Based on a regression analysis. Percentage increase in income relative to basic education. Vocational secondary education refers here to professional secondary education obtained after basic education.

Source: Nestor (2011).

Strengthening general learning and work practice opportunities

While the authorities are preparing a curricula reform of vocational education and training, some lessons could be drawn from OECD reviews in this area (OECD, 2010c). Among characteristics identified as a source of success in the building of vocational education is the strong foundation of basic and transferable skills (like numeracy and literacy). The current plan for better integrating basic knowledge into professional studies goes in the right direction. However, the bridge between secondary vocational education and higher education still needs to be strengthened, allowing good students to pursue higher

studies if they wish. In this respect, the use of an extra year of general studies for those graduates from vocational education who want to go on to university should be further promoted.

Vocational programmes should include an essential element of workplace training to provide labour market experience for students, to obtain better signals about firms needs and to facilitate the transition from school to job. Workplace training amounts currently to 25% of curriculum (20 weeks during three years of studies in vocational secondary programmes). However, the success of practical training elements will depend on close cooperation with employers (see Table 5) and strict quality assurance.

Table 5. Level of investment by firms in VET programmes across OECD countries

Share of upper secondary students enrolled in VET with a work-based component	Importance of investment by firms in upper secondary VET		
	LOW	MEDIUM	HIGH
High (>30%)	Czech Republic, Denmark, Estonia	Austria	Germany, Switzerland
Medium (6-30%)	Australia, Finland, Iceland, Norway, the Slovak Republic	France, Hungary, Luxembourg, the Netherlands, the Russian Federation, the United Kingdom	
Low (<6%)	Belgium, Brazil, Canada, Chile, Greece, Ireland, Israel, Italy, Japan, Korea, Mexico, New Zealand, Poland, Portugal, Slovenia, Spain, Sweden, Turkey and the United States		

1. The importance of investment by firms is an index that reflects the time that trainees spend in the workplace, the intensity of training (weekly instruction time) in the workplace, and public expenditure.

Source: *Education at a Glance*, 2011.

The challenge to promote workplace training is to find a balance among the productive work in workplace training, the wage paid to the trainee and the level of subsidies (Box 4). The proper balance may change from one sector to another. Estonia should consider promoting a system where subsidies provided to firms are accompanied by quality control ensuring that part of the time spent in firms is devoted to instruction and not only productive work. To the extent that apprenticeships are used by firms to secure their future recruitment (Westergaard-Nielsen and Rasmussen, 1999), other accompanying measures include granting training companies the right to hire first the trainee. In this case, the non-training companies would be forced to pay back part of the training cost if they poach (OECD, 2010c).

Box 4. Net cost of training and subsidies: lessons from international experience

The decision to create workplace training is most often determined by the willingness to secure future hiring of workers with adapted skills, especially when the sector suffers from skill shortage. However, enterprises still consider the net cost of training which includes the wage paid, subsidies and productive work. The contribution of apprentices to the production depends on the firm's size (Fougere and Shwert, 2002).

Impact of subsidies and wage: lessons from Denmark

In Denmark, the government guarantees that apprentices who cannot be placed in a firm would be trained at a vocational school. However, this training is more costly and measures were taken to stimulate more workplace training. Subsidies and grants for a trainee in a vocational school were financed by a tax levied on all employers. The main lessons from Denmark's experience include (Westergaard-Nielsen and Rasmussen, 1999):

- Subsidies are an efficient way to promote apprenticeships at firms. The result depends on the industry. The highest effect is found in the sectors of offices, followed by manufacturing and trade, while it seems insignificant in other industries.
- The wage paid to a trainee doesn't seem to impact the demand for apprenticeships except for the sector of restaurants, probably because of the higher substitutability between apprentices and unskilled workers in that case. In other industries, apprenticeship seems to be used as a way to secure the recruitment of the future skilled workforce and to screen future employees.
- The major determinants for creating apprenticeships are the actual hiring rate in the company (the demand for apprentices is positively related to the entry rate of employees), the number of skilled workers and the size of the plant.

The role of productive work: lessons from Switzerland and Germany

The net cost of apprenticeships is higher in Germany than in Switzerland, despite higher wages in the latter. The main explanations are (Dionisius *et al.*, 2009):

- Swiss apprentices spend more days per year in firms, so that the share of time devoted to productive activities is much higher than in German firms (where time for instruction is higher). Swiss apprentices had spent 468 days at the workplace with 83% of productive tasks, while German ones had spent 415 days with 57% of their time devoted to productive tasks.
- Outcomes appear comparable in terms of learning as the productivity of apprentices performing skilled work increased by the same amount in both countries.

International experience suggests that an efficient vocational education system is generally associated with strong coordination between social partners, who contribute collectively to the identification of future needs in the labour market and investments in specific skills. Involvement of employers can be achieved by various institutional arrangements; in the United States, for example, through the certification provided by the chambers of commerce. Advisory councils for vocational education, bringing together employers, associations and national authorities may also promote a better cooperation between social partners and schools. While such a council exists in Estonia at the national level, involving different ministries and aiming at discussing the overall structure of the education system, it could be worth extending this institutional set up to the local/school level. Parents, employers, union employees and local politicians would benchmark employment performances of post-vocational studies and present an action plan for promoting skills adapted to local labour market needs. Initiatives of school management are essential for maintaining close, day-to-day contacts with the local business community that result in higher employers' involvement, while performance evaluation should promote such initiatives as much as possible (OECD, 2008). The involvement of employers into schools would also allow feeding career guidance and counselling services with up-to-date labour market information. Providing high quality information in that area is useful for all students, notably in VET, preparing their future career decision (Watts, 2009). An interesting initiative, so-called "inspiring the future", has been developed recently in the United Kingdom and connects volunteers from industry and schools to help the young achieving their potential. Good practices, specific to the Estonian economy, should be developed by implementing some pilot projects. In this context, a VET review by the OECD could be helpful.

Providing youth guarantee for drop-outs

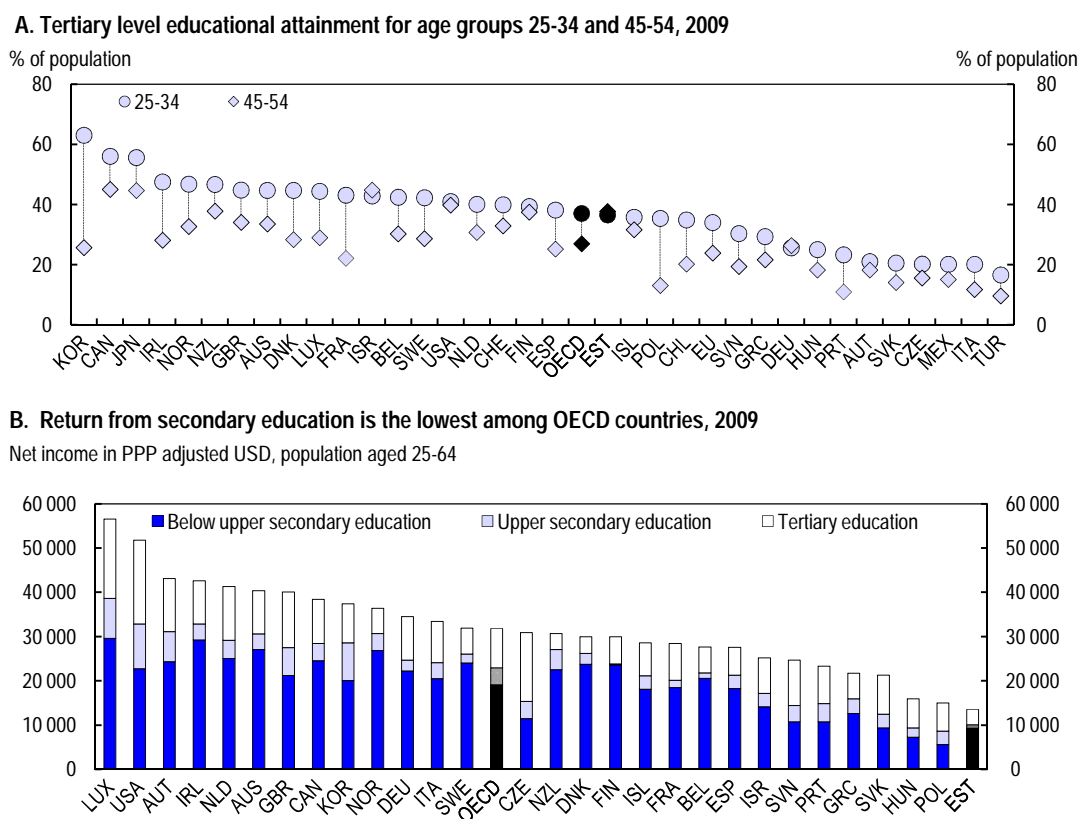
Tackling the problem of school drop-outs Estonia should consider moving towards a model similar to those implemented in the United Kingdom, the Netherlands, Austria and Finland, which require the employment office to offer formal education or apprenticeships to youth not in employment, education or training, at least until the age of 18. Such measures could be combined with financial incentives given to

employers for developing apprenticeship places which has proven to be efficient in Denmark (Westergaard-Nielsen and Rasmussen, 1999). Another step to be considered in the future would be an education reform making learning compulsory until the age of 18 like in the Netherlands and the United-Kingdom. The rationale for such a measure is the need to upgrade the overall level of skills in the economy while reducing school drop-outs. Making learning compulsory does not necessarily imply formal education, with apprenticeship being an alternative. This kind of measure would be accompanied by counselling to cope with the specific needs of drop-outs, including lack of study habits and other problems hindering their performance in standard courses. International experience suggests that more demanding programmes have higher completion rates and that students in need should be put in advanced programmes and that their specific needs, such as recuperation and tutoring courses, be accommodated (Lyche, 2010). The Job Corps programmes for disadvantaged youth in the United States, which provides overall the equivalent of one additional year in school, has been found to increase educational attainment and increase post-programme earning (Schochet *et al.*, 2008).

Insuring good access to tertiary education and reforming its funding

Estonia performs well regarding higher education. Higher education has been characterized by good governance, with a strong autonomy in terms of managing staff and funding. With 33% of the working age population holding a tertiary education degree, enrolment rates are significantly above the OECD average (OECD, 2011b). But while low unemployment of graduates suggests that their qualifications are well recognized by employers, the return to tertiary education in terms of wage premium is low in international comparison (Figure 18). Also, the share of the tertiary educated among the young is similar to older cohorts, unlike most other OECD countries where this share has grown strongly between generations (Figure 18). The next paragraphs focus on two problems of higher education system: a lack of flexibility regarding the allocation of funding, as well as by a lack of equity in the access to higher education. These two problems have been acknowledged in the recent reform of higher education.

Figure 18. Tertiary education attainment is high in Estonia, but the dynamic has stalled and the return from education is low



Source: OECD (2012), *Going for Growth*, Figure 3.23B; OECD (2012); *Education at a Glance*, Chart A10.6.

The recent reform of higher education will increase the flexibility of the system

In the so-called state-commissioned system, the distribution of funds among different fields of education was based on a complex and rigid system of 34 coefficients. The provision of funding from the budget to individual education institutions relied on an explicit contract where the government purchased a certain number of graduations and the higher education institutions provided them after receiving funding (OECD, 2007b). Eligible students studied for free. However, institutions could also accept fee-paying students in addition to those contracted with the government. The aim of the state-commissioned system was twofold: encourage access to higher education, and ensuring that higher education institutions provide a sufficient number of students in areas viewed as strategic for labour market needs. However, this system had the disadvantage of distorting students' choice by offering free places in fields where they were initially not willing to study, increasing the risk that they will not work in that field after completing their studies. Also, it was characterized by an inadequate recognition of the mixed set of skills needed in a knowledge based economy by focusing excessively on hard disciplines, such as science and technology (OECD, 2007b).

Recent reform of higher education, which suppressed the state-commissioned place system and made all full-time study tuition free, should contribute to improving the flexibility of higher education and strengthen the link with the labour market. The choices regarding the allocation of places between fields of study will be under the responsibility of higher education institutions. This should enable institutions to better adjust to students' choices, which have been proven to be sensitive to labour market signals, including expected wages (Rosen and Ryoo, 2004). In the new system, universities will be financed on the basis of a contract covering a period of three years including indicators of performances such as the

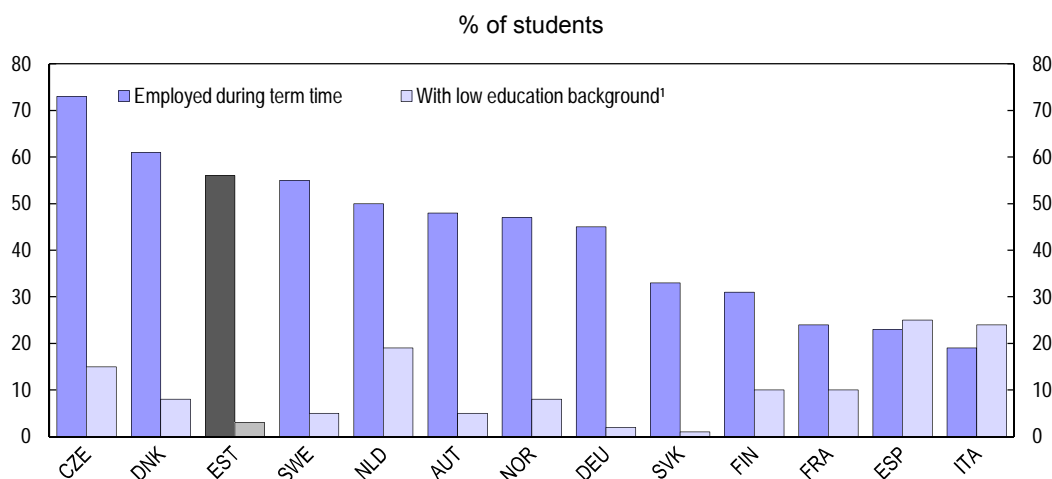
number of graduates, the quality of education, and accessibility of counselling services for students. However, the indicators, reflecting the quality of education, are difficult to identify in practice, which is likely to raise issues regarding the monitoring of these institutions (NAO, 2011). Some inspiration could be taken in this respect from the United Kingdom which has implemented a quality monitoring system for higher education with the so-called Quality Assurance Agency for Higher Education that publishes the UK Quality Code for Higher Education. Further efforts in this direction are under way in Austria and the Netherlands, both of which use performance contracts with higher education institutions to steer the provision of high quality, labour market relevant tertiary education.

Ensuring adequate support for low socio-economic background students

Free student places in the state commissioned system were allocated only on the basis of performance on an entry exam, contributing to weak access by low socio-economic background students (Figure 19). Some grants were available but they were mostly restricted to students in state-commissioned places, and only a small fraction of these grants was means-tested. Hence, students who didn't meet the performance criteria in the entrance exams had to carry the full cost of studies (fees plus cost of living) without any support, and often had to work full-time. Work was also often necessary for student with free study places who could not afford the cost of living.

The recent reform makes all full-time study places free. It also introduces for the first time a system of means-tested income support. However, full time study is required to maintain the free study place as the institutions have the right to demand that students compensate part of the study cost if all curriculum requirements are not met. Such a scheme has the advantage of linking funding and graduation, and in this way increases incentives to complete studies in time. However, students with low socio-economic background might not be able to maintain their initial right to study for free if the means-tested grant aimed at supporting their cost of living is too small. The proposed value of euro 135 for the mean-tested grant is likely to require students without parental support to work to support themselves while studying.

Figure 19. Participation in tertiary education is low for students with weak socio-economic backgrounds



1. Students whose parents have obtained at most a lower secondary level of education (ISCED 0-2).

Source: Orr *et al.* (2011), *Social and Economic Conditions of Student Life in Europe, Synopsis of indicators*, Final report, Eurostudent IV 2008–2011, Figures 3.4 and 6.5.

The current student loan scheme has both advantages and some unattractive characteristics. Loans are provided by financial institutions at a subsidised interest rate of 5%. Government provides guarantees to the relevant financial institution against the risk of default. Loans are repayable only after completing studies. Among negative characteristics is the fact that loans are targeted only to students who are studying full-time and who can provide two guarantors or other assets as collateral. This can directly reduce the

access to credit to low socio-economic background students. Also, while banks take few risks because they benefit from the state-guarantee, the students are not protected as re-payment is not contingent on income. This could contribute to reducing the enrolment of low socio-economic background students, who may have a higher aversion to debt. While authorities plan to reform the student loan scheme, the main possible areas of improvement include opening access to part-time students, increasing the maximum amount that the student can borrow so that it actually covers full costs of living during the whole study period, and eventually making repayment contingent on incomes.

Making all study places free raises some cost-efficiency issues. As students without credit constraints could and would pay for their studies, given high returns from such investment, universally free higher education entails large dead-weight losses. Given tight fiscal constraints, public support to education should therefore be used mainly to address educational underinvestment, primarily among students with low socio-economic backgrounds. Consistent with international experience, cost-efficient equity of access to education would be best achieved in a mixed system of loans and means-tested grants available to students for covering tuition fees and the cost of living, with only a moderate reliance on work and family support (OECD, 2012b, 2012c).

Box 5. Main recommendation on labour market and education policies

Increasing the resilience of the labour market by increasing size, efficiency and targeting of ALMPs

- Increase spending on active labour market policy, and better target spending, while ensuring stronger cooperation among local governments, education institutions and the Unemployment Insurance Fund.
- Increase the effectiveness of activation programmes by allowing public procurement to take greater account of the quality of training courses, encouraging greater involvement of employers, and by targeting hiring subsidies to firms committed to net hiring.
- Develop electronic registration of the initial action plan in their first month of unemployment while delaying the face-to-face part of the Individual Action Plan to after 3 months for the large share of unemployed. Meanwhile devote more resources to at-risk groups from the first month.
- Monitor the quality of work practice schemes while increasing employers' compensation for the cost of the supervision and instruction. Measures given to firms for creating workplace training, such as subsidies, should be strengthened.

Reducing skills mismatches in the labour market through lifelong learning

- Increase the financial incentives of employers to invest in lifelong learning. Target public co-financing toward low educated and older workers, as well as toward employees in SMEs.
- Make lifelong learning more attractive for adults by insuring that training leads to the acquisition of qualification and by providing information about the return from different programmes.

Improving the school-to-job transition

- Consider establishing an obligation to offer learning opportunities through formal education, workplace training or apprenticeships until the age of 18 for youth neither in education, employment or training.
- Further strengthen cooperation with employers and consider giving subsidies for offering apprenticeship places for youth in vocational education. Increase the permeability between different educational levels.

- Develop quality assurance for apprenticeship places and ensure that the time for instruction is sufficient relative to the productive work and reduce the funding gap between vocational and general education.
- Strengthen student counselling by providing high quality information about labour market needs on every educational level.

Improving access to tertiary education and reforming its funding

- Ensure that the new means-tested support is sufficient, and expand the student loan scheme so that students with weaker socio-economic background can stop working during study.

Bibliography

Anspal, S. *et al.* (2012), *The cost of school failure in Estonia*, Centar Technical Report.

Bassanini, A. (2004), "Improving Skills for More and Better Jobs: The quest for Efficient Policies to Promote Adult Education and Training", *European Economy: Special Reports*, 3.

Bassanini, A. *et al.* (2005), "Workplace Training in Europe", *IZA Discussion Papers*, No. 1640.

Brixiova, Z. (2009) "Labour market flexibility in Estonia: what more can be done?", *Economics Department Working Papers*, No.697, OECD Publishing.

Brixiova, Z and Egert B. (2012), "Labour Market Reforms and Outcomes in Estonia," *Comparative Economic Studies*, Vol. 54(1).

Boone, J. and J. C. van Ours (2004), "Effective Active Labour Market Policies", *IZA Discussion Papers*, No. 1335.

Card, D. (1999), "The causal effect of Education on earnings", in Ashenfelter, O. and D. Card (ed.), *Handbook of Labor Economics*, Elsevier, edition 1, 3(3), <http://ideas.repec.org/b/eee/labhes/3.html>.

Card D., J. Kluve and A. Weber, (2010), "Active labour market analysis policy evaluations: a meta analysis", *Economic Journal*, 120(548).

Centar (2012), *Interim evaluation of wages subsidies and labour market training*, Centar Report.

Duval, R., J. Elmeskov and L. Vogel (2007), "Structural Policies and Economic Resilience to Shocks", *Economics Department Working Papers*, No. 567, OECD Publishing.

Dionisius, R. *et al.* (2009), "Cost and Benefits of Apprenticeships Training: A comparison of Germany and Switzerland", *Applied Economics Quarterly*, 55(1).

Fougere, D. and W. Schwert (2002), "Are Apprenticeships Productive?", *Konjunkturpolitik*, 48 (3-4).

- Gueron J.M. and G. Hamilton, (2002), “The role of Education and training in Welfare Reform”, *The Brookings Institution Policy Brief*, No. 20.
- Gianella, C. *et al.* (2008), “What Drives the NAIRU? Evidence from a Panel of OECD Countries”, *Economics Department Working Papers*, No. 649, OECD Publishing.
- Government of Estonia, (2012), *National Reform Programme, ESTONIA 2020*, government of Estonia, Tallinn.
- Grubb, D. (1999), “Lessons from Education and training for youth: five precepts”, in *Preparing Youth for the 21st Century: the Transition from Education to the Labour Market*, OECD Publishing.
- IMF (2011), “Republic of Estonia 2011 Article IV Consultation”, *IMF Country Report*, No. 11/333.
- Jürgenson A., L. Kirss and K. Nurmela, (2010), “The Evaluation of Business Start-up Subsidy, Work practice and Coaching for working life”, *Praxis Center for Policy Studies Report*.
- Kogan, I. and M. Unt (2008), “The Role of Vocational Specificity of Educational Credentials for Labour Market Entry in Estonia and Slovenia”, *International Sociology*, 23(3).
- Kluve, J. (2010), “The effectiveness of European active labour market programs”, *Labour Economics*, 17.
- Lauringson, A. (2010), “Disincentive Effects of Unemployment Insurance Benefits: Maximum Benefit Duration Versus Benefit Level”, *University of Tartu Working Papers*.
- Lauringson, A. (2011), “Unemployment benefits in the period of crisis: the effect on unemployment duration”, *University of Tartu Working Papers*.
- Lauringson, A. *et al.* (2011), *Tooturukoolituse Mojuanalüüs, Koostaja: Eesti Töötukassa analüüsisiosakond*, EUIF Report.
- Lyche, C. (2010), “Taking on the Completion Challenge: a Literature Review on Policies to Prevent Dropout and Early School Leaving”, *Education Working Papers*, No. 53, OECD Publishing.
- Leetmaa, R. *et al.* (2003), “Evaluation of Active Labour Market Programmes in Estonia”, *Praxis Center for Policy Studies*.
- Leetmaa, R. and K. Nurmla (2010), “Youth People Entering labour market in Estonia”, *Praxis Center for Policy Studies Report*.
- Masso, J. and K. Krillo, (2011), “Labour market in the Baltics during the crisis 2008-2009: the effect on different labour market groups”, *University of Tartu Working Papers*.
- Martin, J. and D. Grubb, (2001), “What work and for whom: a review of OECD countries ‘experiences with active labour market policies’”, *Institute for Labour Market Policy Evaluation Working Papers*, No. 14, IFAU.
- Meager, N. (2009), “The role of training and skills development in active labour market policies”, *International Journal of Training and Development*, 13(1).
- Merikull, J., (2011), “Labour market Mobility during a recession: the case of Estonia”, *Eesti Pank Working Papers*, No. 1.

- NAO (2011), “Overview of use and preservation of state assets in 2010”, *Report of the National Audit Office for the Riigikogu*, NAO, Tallinn.
- NAO (2010), “In-service training and retraining of adults”, *Report of the National Audit Office to the Riigikogu*, NAO, Tallinn.
- Nestor, M. (2012), “*Kutseõppeasutuste vilistlaste uuring*”, *Centar Report*, Executive summary in English: www.praxis.ee/fileadmin/tarmo/Projektid/Haridus/kutseõppeasutuste_vilistlaste_uuring.pdf.
- OECD (2004), *OECD Employment Outlook*, “Improving Skills for More and Better Jobs: Does training make a Difference?”, OECD Publishing.
- OECD (2005a), *OECD Employment Outlook*, “Labour Market Programmes and Activation Strategies: evaluating the Impacts”, OECD Publishing.
- OECD (2005b), *Promoting Adult Learning*, OECD Publishing.
- OECD (2006), *OECD Employment Outlook*, “General policies to improve employment Opportunities for all”, OECD Publishing.
- OECD (2007a), *OECD Employment Outlook*, “Activating the Unemployed: What countries do?”, OECD Publishing.
- OECD (2007b), *OECD Reviews of Tertiary Education: Estonia*, OECD Publishing.
- OECD (2008), *Improving School Leadership*, OECD Publishing.
- OECD (2009a), *OECD Economic Surveys: Estonia*, OECD Publishing.
- OECD (2009b), *Going for Growth 2009*, OECD Publishing.
- OECD (2010a), *OECD Reviews of Labour Market and Social Policies: Estonia*, OECD Publishing.
- OECD (2010b), “Moving beyond Jobs”, in *Employment Outlook 2010*, OECD Publishing.
- OECD (2010c), *Learning for Jobs*, OECD Publishing.
- OECD (2011a), *OECD Economic Surveys: Estonia*, OECD Publishing.
- OECD (2011b), *OECD Education at a Glance*, OECD Publishing.
- OECD (2012a), *OECD Economic Surveys: Estonia*, OECD Publishing.
- OECD (2012b), *Towards an OECD Skills Strategy*, OECD Publishing, *mimeo*.
- OECD (2012c), “Trends in Job Skill Demands in OECD countries”, OECD Publishing, *mimeo*.
- OECD (2012d), *OECD Employment Outlook*, OECD Publishing.
- OK and Tergeist, (2003), “Improving Workers’ skills: analytical evidence and the role of social partners”, *Social, Employment and Migration Working Papers*, No. 10, OECD Publishing.

- Orr, D., Gwosc C., Netz N. (2011), *Social and Economic Conditions of Student Life in Europe, Synopsis of indicators, Final Report*, Eurostudent IV 2008–2011.
- Orszag, J.M. and D.J. Snower (2003), “Designing employment subsidies”, *Labour Economics*, 10(5).
- Poppe, N., Strawn J., and K. Martinson (2003), “Whose Job Is It? Creating Opportunities for Advancement”, in Giloth, R.P. (ed.), *Workforce Intermediaries in the 21st Century*.
- Price, R. and Wörgötter A. (2009), “Estonia: making the most of globalisation”, *Economics Department Working Papers*, No. 876, OECD Publishing.
- Quintini, G. (2011), “Right for the Job: over-qualified or under-skilled”, *Social, Employment and Migration Working Papers*, No. 120, OECD Publishing.
- Rosen, S. and J. Ryoo (2004), “The engineering Labor Market”, *Journal of Political Economy*, 112(1).
- Saar, E. and L. Helemäe (2006) “Kutsekeskharidus Eestis” (Secondary vocational education in Estonia), in Heidments, M. (ed.) *Eesti Inimarengu Aruanne* (Estonian Human Development Report 2006), Ühiskondliku Leppe Sihtasutus, Tallinn.
- Schochet, P., J. Burghart and S. McConnel, (2008), “Does Job Corp Work? Impact Fundings from the National Job Corp Study”, *American Economic Review*, 98(5).
- Statistics Estonia (2011), *Statistics Yearbook of Estonia*, Statistics Estonia, Tallinn.
- Venn, D. (2012), “Eligibility Criteria for Unemployment Benefits: Quantitative Indicators for OECD and EU Countries”, *Social, Employment and Migration Working Papers*, No. 131, OECD Publishing.
- Vörk, A. (2009), “Labour Supply Incentives and Income Support Systems in Estonia”, *Institute for Labour Market Policy Evaluation Working Papers*, No. 31, IFAU.
- Watts, A.G. (2009), *Learning for Jobs: The Relationship of Career Guidance to VET*, OECD Publishing.
- Westergaard-Nielsen, N. and A.R. Rasmussen (1999), “The Impact of subsidies on the number of Apprenticeships”, *Research in labor economics*, 18.

WORKING PAPERS

The full series of Economics Department Working Papers can be consulted at www.oecd.org/eco/workingpapers/

1006. *Debt and macroeconomic stability: An overview of the literature and some empirics*
(December 2012) by Douglas Sutherland and Peter Hoeller
1005. *Debt and macroeconomic stability: Debt and the business cycle*
(December 2012) by Volker Ziemann
1004. *Debt and macroeconomic stability: Case studies*
(December 2012) by Rossana Merola
1003. *Debt and macroeconomic stability*
(December 2012) by Douglas Sutherland, Peter Hoeller, Rossana Merola and Volker Ziemann
1002. *Reducing greenhouse gas emissions in a cost effective way in Switzerland.*
(December 2012) by Anita Wölfl and Patrizio Sicari
1001. *Strengthening innovation in the United States*
(November 2012) by David Carey, Christopher Hill and Brian Kahin
1000. *Long-term growth scenarios*
(forthcoming) by Åsa Johansson, Yvan Guillemette, Fabrice Murtin, David Turner, Giuseppe Nicoletti, Christine de la Maisonneuve, Philip Bagnoli, Guillaume Bousquet and Francesca Spinelli
999. *Selected aspects of household savings in Germany – evidence from micro-data*
(November 2012) by Christina Kolerus, Isabell Koske and Felix Hüfner
998. *Improving the tax system in Indonesia*
(November 2012) by Jens Arnold
997. *Unleashing business innovation in Canada*
(November 2012) by Alexandra Bibbee
996. *Public policy and resource allocation: evidence from firms in OECD countries*
(October 2012) by Dan Andrews and Federico Cingano
995. *Promoting SME development in Indonesia*
(October 2012) by Annabelle Mourougane
994. *Portugal: Rebalancing the economy and returning to growth through job creation and better capital allocation.*
(October 2012) by Álvaro Pina and Ildeberta Abreu
993. *Public debt, economic growth and nonlinear effects: Myth or reality?*
(October 2012) by Balázs Égert

992. *Choosing the pace of fiscal consolidation*
(September 2012) by Lukasz Rawdanowicz
991. *Tertiary education developing skills for innovation and long-term growth in Canada*
(September 2012) by Calista Cheung, Yvan Guillemette and Shahrzad Mobasher-Fard
990. *Trade and product market policies in upstream sectors and productivity in downstream sectors: firm-level evidence from China*
(September 2012) by Maria Bas and Orsetta Causa
989. *Intangible assets, resource allocation and growth: a framework for analysis*
(September 2012) by Dan Andrews and Alain de Serres
988. *Current account benchmarks for Turkey*
(September 2012) by Oliver Röhn
987. *Structural reforms to boost Turkey's long-term growth*
(September 2012) by Rauf Gönenç, Oliver Röhn, Vincent Koen and Şeref Saygili
986. *Tackling Turkey's external and domestic macroeconomic imbalances*
(September 2012) by Oliver Röhn, Rauf Gönenç, Vincent Koen and Ramazan Karaşahin
985. *Portugal: Solid foundations for a sustainable fiscal consolidation*
(September 2012) by David Haugh and Stéphane Sorbe
984. *Portugal: Assessing the risks around the speed of fiscal consolidation in an uncertain environment*
(September 2012) by Stéphane Sorbe
983. *The German labour market: preparing for the future*
(September 2012) by Felix Hüfner and Caroline Klein
982. *Climate change policies in Germany: make ambition pay*
(September 2012) by Caroline Klein
981. *Restarting the growth engine in Finland*
(September 2012) by Henrik Braconier
980. *Import Competition, Domestic Regulation and Firm-Level Productivity Growth in the OECD*
(September 2012) by Sarra Ben Yahmed and Sean Dougherty
979. *Non-Parametric Stochastic Simulations to Investigate Uncertainty around the OECD Indicator Model Forecasts*
(August 2012) by Elena Rusticelli
978. *Measuring GDP Forecast Uncertainty using Quantile Regressions*
(July 2012) by Thomas Laurent and Tomasz Kozluk
977. *Implications of output gap uncertainty in times of crisis*
(July 2012) by Romain Bouis, Boris Cournède and Ane Kathrine Christensen