Getting Skills Right

Financial Incentives for Steering Education and Training

OECD

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OECD
BETTER POLICIES FOR BETTER LIVES

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Foreword

Across countries, substantial changes in skills needs are challenging labour market and training policies and contributing to skill mismatch and shortages. In most countries, large shares of employers complain that they cannot find workers with the skills that their businesses require. At the same time, in many countries, a number of college graduates face difficulties in finding job opportunities matching their qualifications.

In light of these challenges, the OECD has undertaken an ambitious programme of work on how to achieve a better alignment of skill supply and skill demand, with a focus on: i) understanding how countries collect and use information on skills needs; ii) investigating cost-effective training and labour market policies to tackle skill mismatch and shortages; iii) studying the incentives of training providers and participants to respond to changing skills needs; and iv) setting up a database of skills needs indicators.

This work builds on the extensive work of the OECD in the area of skills, including the OECD Skill Strategy and its follow-up national studies, the Survey of Adult Skills (PIAAC) and its rich analytical programme, and several studies in the areas of skills mismatch, vocational education and training, and work-based learning.

The present report examines how governments use financial incentives to promote a better alignment between labour market needs, on the one hand, and the supply of skills, on the other. In doing so, it identifies: i) innovative models that countries may be interested in learning from; ii) best practice in the design and use of financial incentives; iii) framework conditions for their effective use; and iv) limitations and risks in the use of financial incentives. The assessment is based on the results of a set of questionnaires that were sent out to countries, as well as analysis of other relevant information (including an extensive literature review and web searches on government programmes).

The work on this report was carried out by Stijn Broecke in the Employment Analysis and Policy Division of the Directorate for Employment, Labour and Social Affairs, under the supervision of Glenda Quintini (Skills Team Manager) and Mark Keese (Head of the Employment Analysis and Policy Division). Dana Blumin provided statistical assistance. The report benefited from helpful comments provided by the following colleagues from the Directorate for Employment, Labour and Social Affairs: Stefano Scarpetta (Director), Mark Pearson (Deputy Director), Marieke Vandeweyer, Katharine Mullock and Fabio Manca; from the following colleagues from the Directorate for Education: Shane Samuelson and Andrew McQueen; and from Bert Brys and Pierce O'Reilly from the Centre for Tax Policy and Administration. Project assistance was provided by Lukasz Lech. The care and effort taken by respondents to the surveys sent to each country are greatly appreciated, as are the contributions of: the Informal Working Group on Higher Education, the Group of National Experts on Vocational Education and Training, and the Employment, Labour and Social Affairs Committee. Finally, the Secretariat is particularly grateful to Michael Horgan from the European Commission for his considerable contribution to ensuring a successful completion of his project.

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Executive summary

At a time when globalisation, technological progress and demographic change are profoundly altering the types of jobs that are available, as well as how and by whom they are carried out, investing in skills is more important than ever to build resilient and inclusive labour markets that underpin social cohesion and well-being, and promote smart, sustainable and inclusive growth – as emphasised in the Europe 2020 Strategy and the European Semester process.

As a general trend, the demand for skilled workers is increasing and additional investments in formal education as well as in training and retraining for adults are therefore required. But the mega-trends are also driving important structural changes. As a result, it will not be enough just to invest in *more* skills – it will be equally important to invest in the *right type* of skills. In response to these challenges, the European Union has recently launched the New Skills Agenda for Europe, the first pillar of which emphasises the need to improve the quality and relevance of skills formation.

Against this backdrop, the present report explores the role that financial incentives (such as direct subsidies, tax measures and subsidised loans) can play in helping governments promote more and better investments in skills so as to achieve a better match between their supply and demand. Adopting a simple taxonomy which classifies measures depending upon whether they target institutions, individuals, or employers, the report provides an overview of the extent to which, and how, countries use such tools for steering education and training decisions.

The report breaks new ground by exploring a topic which had been relatively under-researched to date. While financial incentives have been widely used to encourage individuals and employers to invest in *more* education and training, no systematic attempt has been made to analyse the extent to which they are used for *steering* decisions. The wealth of examples contained in the present report therefore offers an unprecedented opportunity for policy makers to learn about interesting and promising practice from across OECD and EU countries.

Different approaches exist to address skills needs, and some countries rely more on financial incentives than others. However, every education and training system has built-in financial incentives, whether these have been designed deliberately or not. It is also likely that countries will increasingly rely on financial incentives for steering education and training systems as the importance of cost-sharing and market mechanisms for allocating resources grows.

If designed and used properly, financial incentives can be a useful tool for steering education and training acquisition. However, a key challenge is to foster the effectiveness of programmes and to minimise deadweight loss. Financial incentives are no panacea, and they are only one tool among many in addressing skills shortages and mismatches. Decisions about whether financial incentives are needed and, if so, at

whom they should be targeted, should therefore be based on a careful diagnosis of the skills challenges at hand.

The effectiveness of financial incentives depends on a range of framework conditions being in place – including a number of measures promoted under the other two pillars of the New Skills Agenda for Europe, namely: making skills more visible and comparable; and improving skills intelligence and information for better career choices. Critically, financial incentives can only be as good as the information about skills needs that underpins them, and such information needs to be communicated effectively to individuals and employers if they are to take informed decisions about which skills to invest in. These issues are discussed in more detail in this report's sister publication, *Getting Skills Right: Assessing and Anticipating Changing Skill Needs*.

Key findings

Background and objective

Globalisation, technological progress and demographic change are having a profound impact on the skills needed in the labour market. As a general trend, the demand for skilled workers is increasing and additional investments in formal education as well as in training and retraining for workers are therefore required (European Commission, 2010). But the mega-trends are also driving important structural changes. It will therefore not be enough just to invest in *more* skills – it will be equally important to invest in the *right type* of skills (European Commission, 2016).

A failure to improve the relevance of skills formation is likely to worsen skills mismatch and shortages – both of which bring significant economic costs. Together, they result in higher unemployment and lower GDP growth. According to one estimate, the total cost of field-of-study mismatch across OECD countries could be as high as 0.47% of GDP (Montt, 2015). Another study placed the global cost of talent mismatch at USD 150 billion, which can be broken down into: USD 130 as a result of lost productivity, and a further USD 20 due to higher recruitment costs (PwC, 2014).

The challenge is compounded by the facts that rapid technological change makes skills obsolete more quickly and that workers will be required to stay in the labour force longer to ensure the sustainability of pension systems. Adults will therefore need to regularly maintain their skills, upskill or even reskill in order to stay employed and/or find new employment. Similarly, firms wanting to stay competitive will have to continuously retrain their workforce to ensure that they keep up with new working practices and are able to adopt new technologies.

At the same time, education and training systems are becoming increasingly demand-led as the reliance on market mechanisms for allocating resources grows and the balance of cost-sharing gradually shifts from the tax-payer onto students/graduates and employers. As a result, the ability of governments to influence education and training decisions becomes more limited – particularly in a context where countries are experiencing a squeeze on public finances.

Nevertheless, markets on their own cannot guarantee that the supply and acquisition of skills will align with labour market needs and, therefore, some element of government intervention will continue to be required. Indeed, while competitive skills markets should, in theory, lead to lower skills imbalances as wages and profits act as signals to help the supply of skills adjust to employer demand, in practice, there are many reasons why this may not happen – or may not happen quickly enough.

Against this backdrop, the present report examines how governments use financial incentives to promote a better alignment between labour market needs, on the one hand, and the supply of skills, on the other. Financial incentives (such as subsidies, tax incentives and subsidised loans) have traditionally been used to encourage individuals

and employers to invest in *more* education and training – and this continues to be their primary use. However, they can also be used to *steer* the provision and acquisition of education and training towards areas of skills shortage, and relatively little is known about the extent to which governments use them to that effect, let alone about how effective they are.

The potential scope for using financial incentives to steer education and training decisions is vast. They can be used: in initial as well as in continuing education; from basic skills to PhD training; in vocational as well as in academic education; and for the employed as well as the unemployed/inactive. In addition, they can work either on the supply-side (i.e. measures targeted directly at education and training providers which affect the provision and cost of courses); or on the demand-side (i.e. incentives for individuals and employers to invest in certain types of education and training).

The objective of the present report is therefore not to offer an exhaustive overview of the use of financial incentives in OECD and EU countries, but rather to identify: i) innovative models that other countries may be interested in learning from; ii) best practice in the design and use of financial incentives; iii) framework conditions for their effective use; and iv) limitations and risks in the use of financial incentives. Given the lack of robust evaluation of most existing schemes, the examples cited in this report should not necessarily be taken as examples of what works – but rather as examples of the type of initiatives that policy makers across OECD and EU countries have pursued.

Countries have very different approaches to tackling skills needs, and some models rely more on the use of financial incentives than others. Financial incentives are already used to a greater extent in non-EU countries like Australia, Canada and the United States, where governments are more reliant on the market to determine education and training outcomes. However, every system has built-in financial incentives, whether these have been designed deliberately or not. As a first step in addressing skills challenges, countries should therefore try and understand what incentives institutions, individuals and employers face to provide and invest in certain types of skills – whether these incentives are *explicit* or *implicit*. It is also likely that financial incentives for steering education and training systems will become increasingly important as countries start relying to greater extent on market mechanisms for allocating resources.

The use of financial incentives for steering education and training decisions

Financial incentives for steering education and training decisions can be targeted either at institutions, individuals, or employers. The choice of which group to focus on requires a careful diagnosis of the problem. There is little point providing incentives to institutions to increase the supply of certain courses when the actual problem is low demand from students. Similarly, there is no point giving scholarships to students to take up certain courses in higher education when the key challenge is to increase the supply of qualified young people coming out of the school system. Of course, action on various fronts may be required, particularly given the fact that demand and supply are closely intertwined and sometimes difficult to disentangle.

Supply-side measures

While the provision of education and training generally remains heavily subsidised across the OECD and European Union, the share of private contributions is higher in

some countries, as well as for certain levels and types of education and training. For example, the share of private expenditure on education institutions exceeds 50% in the case of tertiary education in Australia, the United States, Chile, Japan and Korea. In the adult learning market, courses are largely provided by the private sector and receive few government subsidies. That being said, many countries do provide free courses to both the employed and unemployed/inactive for training in basic skills, and short training courses are usually provided free of charge by the public employment service to jobseekers who need to improve their employability.

Even where public funding remains substantial, decisions about how that funding is allocated are often outside the control of governments. For example, in only 5 out of 26 European countries does an authority external to the university decide on the number of state-funded study places. In most other countries there is a negotiation process, while in 8 countries universities have full control over the number of study places.

There are strong reasons for allowing more education and training decisions to be determined by the market. However, doing so also raises concerns that market failures could lead to inefficient skills investments, including a misalignment between the skills that are needed by employers and those that individuals acquire. As a result, governments can and do use funding arrangements for education and training institutions to steer the mix of provision in favour of subjects that are either strategic or face high labour market demand. Several approaches can be taken:

- Governments can *target public subsidies* at particular courses only. In Latvia, for example, the government provides a certain number of free study places in higher education each year, based on labour market forecasts and consultations with social partners and institutions. The government has been gradually increasing the number of publicly financed study places in STEM fields and cutting them in social sciences. In Lithuania, universities can apply for target funding to increase the number of study places in areas of national importance, but which are less popular among students. In Poland, with the Competency Development Programme, the focus is on the provision of transversal skills rather than on specific qualifications.
- Governments can also *vary public subsidies* by field of study. In Australia, for example, states such as Queensland have used variations in subsidy rates for VET provision as a way to steer market forces in strategic directions. “Priority One” qualifications are those which lead to occupations deemed to be critical priorities, and the cost of training for apprentices and trainees in these qualifications is 100% subsidised. By contrast, “Priority Two” (not deemed critical but considered as high priorities) and “Priority Three” (not deemed critical but considered as medium priorities) are 87.5% and 75% subsidised, respectively.
- Another, more indirect way, to encourage institutions to deliver those courses that are in demand in the labour market is to base an element of the funding formula on the employment outcomes of graduates through *performance-based funding*. For example, in Korea, the government provides special funding to the 50 universities with the best performance in terms of: i) graduate employment rates; ii) the proportion of teachers with industry experience; and iii) the proportion of students who took part in internships or fieldwork. From 2017 onwards, Estonia will use a new funding model for higher education which will allocate up to 20% of funds based on performance: one of the six indicators will be the labour market outcomes of graduates.

- A related, but softer approach is to agree with education providers on a number of objectives to be attained through the use of *performance contracts*. These are not always tied to funding and, where they are, tend to reward institutions on the basis of *expected* rather than on *actual* performance. In Denmark, for example, the performance contracts signed between the government and institutions include indicators that measure graduate labour market outcomes 4 to 19 months after graduation. The contracts are not legally binding, but universities must report on their contracts in their annual reports and in the annual audit by the ministry.
- Occasionally, governments provide *one-off (capital) funding* to create the necessary conditions for certain skills to be provided. For example, in the Slovak Republic, capital funding has been made available for the development of university science parks. In Italy, higher technical institutes have been set up in collaboration with the regions to try and provide a rapid response to the skills demands of local economies.
- Governments can also steer the supply of education and training by *regulating the start-up of new programmes*. This can be seen as a financial incentive insofar as a programme's eligibility for public subsidies is conditional on its being approved. Increasingly, countries require evidence that there is a labour market need for new programmes. In Sweden, for example, higher vocational education programmes will not be approved and will not receive any public funding unless there is clear proof of employer demand.
- Finally, governments could steer education and training through *tuition fee* policies – although in practice this is rarely done. One exception is New Zealand where, in response to engineering shortages, the government expanded engineering positions in universities and reduced tuition fees.

To some extent, the choice between these measures will depend on the degree of interventionism that policy makers are comfortable with. However, there are also other trade-offs at play – for example between the extent of steering and the simplicity of a programme. Performance-based funding may be preferred because it gives institutions more say about how resources are allocated. However, performance-based funding is not easy to get right and may lead to perverse incentives – which might help explain why, in practice, the degree of performance-based funding remains small in most countries.

Demand-side measures targeted at individuals

There are many reasons why individuals invest in education and training. However, an important motivation is the expected return in terms of higher future earnings in the labour market. Those returns can be modified by government through the use of financial incentives, and countries have a long history of using such measures to encourage individuals to increase their investments in education and training (as well as to address inequalities in access to, and the quality of, education).

Financial incentives can also be used to steer individuals to acquire certain types of skills. The most commonly used approach is to provide subsidies, including: scholarships, grants, bursaries, allowances, vouchers, training cheques, credits, etc. These are the most direct, as well as a highly flexible, way of providing financial incentives for steering education and training decisions. They can be targeted at various groups:

- *Students participating in initial education*. Many countries have scholarship programmes in place that provide incentives for students to take up certain courses. The vast majority of these programmes focus on science, technology, engineering and mathematics (STEM) courses, with the remaining targeting subjects for which there is unmet labour market demand. In Hungary, for example, scholarships are available for individuals pursuing in-demand VET qualifications, as defined by regional development and training committees.
- *The employed*. Subsidies for training existing employees are most often paid directly to employers since they are best placed to understand their skills needs. However, certain "retention and advancement" programmes target low-skilled workers who are less likely to benefit from employer-sponsored training, and aim to increase their chances of retaining their existing job and/or moving to a higher quality one. In Germany, for example, workers without qualifications and workers who have spent at least four years in a job unrelated to their initial training may receive funds from the government to retrain in an area with good labour market prospects.
- *The unemployed/inactive*. Labour market training plays a critical role in matching labour demand and supply by ensuring that the unemployed/inactive are given the skills that are needed by employers. In Finland, training courses are purchased through public procurement by regional centres of economic development, transport and environment, and the choice of courses to purchase is based on estimated regional labour market needs obtained through the help of various short-, medium-, and long-term skills anticipation tools.

Other financial incentives are used much less commonly for steering the decisions of individuals, but the review nonetheless identified some interesting country practice:

- *Savings and asset building mechanisms* (e.g. individual learning accounts and education savings accounts for parents) provide financial incentives for individuals (or their children) to participate in education and training in the future. Such schemes can be accompanied by "soft" steering through the provision of information, advice and guidance (IAG). Some older experiments in the United States with the Individual Training Accounts showed that take-up of such programmes was higher where counselling was offered, but not when such counselling was mandatory and too directive.
- *Time accounts* allow individuals to save up time (rather than money) which they can subsequently use for training purposes. A particular advantage of such schemes is that they help individuals overcome time constraints (and, therefore, the high cost of foregone earnings) – which are one of the primary obstacles to adults engaging in learning. In France, time saved up through the *Compte personnel de formation* (Individual Training Account) can be used to take up a list of training courses selected by the Regional Councils, the social partners and the professional associations, which often reflect foreseeable economic needs.
- While *tax incentives* are widely used by governments to encourage individuals to invest in education and training, they are not used for steering. In addition, most tax allowances for skill spending are restricted to training which is related to a worker's current employment. Such restrictions do not seem desirable since they exclude training that could allow individuals to change career or occupation. Only the Czech Republic and the Netherlands impose no such restrictions.

- Many governments provide *subsidised loans* for individuals to fund their education and training, either through: interest rate subsidies, state guarantees, income-contingent repayments, student loan remission and/or forgiveness, or a combination of these. Some countries link remission and/or forgiveness to the labour market situation of the graduate. For example, the Government of Canada offers student loan forgiveness to eligible family doctors, residents in family medicine, nurse practitioners and nurses who practice in under-served rural or remote communities.
- Incentives to take up *study/training leave* are used in a number of countries and vary significantly in their design. There are several ways in which study leave arrangements can be used for steering skills acquisition. Belgium, for example, provides longer study leave for individuals who (re)train in areas where labour market shortages exist (*métier en pénurie* / *knelpuntberoep*). In Austria, training choices need to be approved by the PES, which is only done if the course is likely to improve the labour market prospects of the individual in question.

While all of the above-cited measures can, in theory, be used for steering, there are some obvious reasons why, in practice, direct subsidies are used most often for that purpose. For example, while tax incentives present some clear advantages over direct subsidies (they are part of the annual tax return process and therefore easier to access; awareness of tax incentives is likely to be quite high; and the administrative costs of delivering them low), they are also quite difficult to use for steering. This is likely because tax authorities have neither the capacity nor the expertise to verify the type of education and training that is purchased through tax incentives. Tax measures may also be harder to target and may therefore carry higher deadweight effects: they often end up favouring the groups already with the best access to education and training – which is why both the Netherlands and Canada are replacing tax incentives for education and training with direct subsidies.

Demand-side measures targeted at employers

Governments can also target financial incentives at employers to encourage them to invest in training. There are many reasons why investing in the skills of their workforce makes sense for employers, including higher productivity and profits. However, a range of market failures and barriers (e.g. information failures, liquidity constraints and the risk of poaching) mean that actual investments in education and training by employers may be sub-optimal, particularly in the case of SMEs – which is why government intervention may be warranted. In addition, employers do not always know what kind of training they need and/or is available, which could result in the wrong type of investments being made. Employers may also focus disproportionately on firm-specific skills, which are not portable to other employers and, therefore, hinder the efficient re-allocation of labour from low- to high-demand sectors or regions.

The vast majority of incentives for steering the training decisions of employers come in the form of direct subsidies. Most of these remain general and do not target specific skills; instead, they allow for flexibility in the identification of training needs, both on the part of employers and on the part of government. Subsidies for employers can be broadly subdivided into four groups, depending on their objective:

- *Subsidies for work-based learning*. Apprenticeships (or traineeships) offer a useful solution to the problem of labour market steering since provision adjusts more or less

automatically to the (immediate) needs of the labour market. However, there are a range of reasons why the supply of apprenticeship places may be below the socially optimal point, and therefore many countries provide financial incentives for employers to take on apprentices. Australia, for example boasts an elaborate set of financial incentives through its Australian Apprenticeships Incentives Programme, including incentives for occupations listed on the National Skills Needs List as well as for Priority Occupations.

- *Subsidies to hire and train the unemployed*. Some countries have schemes in place whereby employers are subsidised to take on an unemployed person and train her. Because such "training on demand" programmes seek to fill existing skills needs, none of them have an explicit steering component. One such programme is the *brug-WW* in the Netherlands, which compensates employers for the hours individuals spend studying on condition that they guarantee to hire them once the training is complete. In Chile, tax incentives are available to train workers even before they are hired (*Franquia Tributaria: Pre contrato*).

- *Subsidies to train existing workers*. Another set of subsidies helps employers with the training of their existing workforce, and such programmes differ widely in the extent to which they target specific skills. The most common approach is to target specific sectors (rather than skills), which can be done with a number of different objectives in mind: i) supporting structural change; ii) overcoming specific training barriers; or iii) supporting strategic sectors and sectors with growth potential. In Japan, for example, the *Career Keisei Sokushin Joseikin* programme is a general training programme targeted at existing employees, but greater subsidies are provided in priority areas, including: health, social work, ICTs, and environment-related construction and manufacturing.

- *Subsidies for joint employer solutions*. One of the drawbacks of targeting training subsidies at individual employers is that the resulting skills may be too firm-specific and not resolve broader sectoral or even national skills challenges. In addition, there are many other advantages to joint solutions – particularly for small firms. Many countries therefore seek to achieve more collaborative solutions, either by: i) making the award of subsidies for training conditional on collaboration between employers; or ii) using public funding to set up specific bodies that provide a range of training and related services to a group of employers. In Portugal, for example, funding is available to cover between 50% and 85% of training costs in skills that have been identified as in need by a number of companies within a certain activity sector or cluster, and which would help them achieve certain goals (e.g. internationalisation, entrepreneurship).

In addition to direct subsidies, there are a range of other tools that governments sometimes use to encourage employers to invest in training – although less frequently for steering:

- *Tax incentives* are widely used to incentivise employers to invest in training, though "hard" targeting (i.e. for incentivising training in specific areas) is rare. That being said, several countries rely on them to encourage firms to provide apprenticeships and work-based learning. For example, in order to increase the percentage of students training in companies, Spain will encourage employers to sign training and learning contracts by offering reductions in social security contributions.

- *Training levies* are sometimes used as a way to pool resources from employers and earmark them for expenditure on training – although the nature and extent of government intervention varies significantly across countries. The ability of such schemes to increase training and to steer training decisions depends on their design. Labour market needs appear to be best met through levy-grant schemes and those that are sector-based. The Skillnets in Ireland are an interesting example of training networks set up by groups of employers to address skills challenges in a particular region/sector, which are funded through a national payroll levy.
- A newer way of incentivising employers to invest in training that has emerged in recent years is to link the award of *public procurement* contracts to the provision of certain types of training. For example, Switzerland and the United Kingdom already use public procurement policies to encourage firms to provide apprenticeships, while Norway has recently made this approach compulsory in sectors where there is an identified shortage of apprentices.

Finally, while the report also discusses subsidised loans, job rotation schemes and payback clauses, none of these appear to be used explicitly for steering education and training decisions.

Targeting financial incentives at employers rather than individuals has the advantage that any additional training is more likely to meet specific labour market needs. One drawback, however, is that it is more difficult for governments to precisely target interventions on disadvantaged workers without significantly raising administrative costs (and therefore risking lower take-up on the part of employers). In certain circumstances, therefore, it makes more sense to target the subsidy directly at the employee. In particular, many low-skilled workers receive little training and are stuck in poor quality jobs with low earnings, little job security and poor career prospects. By targeting training directly at such workers, governments can help them increase their chances of retaining their existing job and/or moving to a higher quality one.

Incentives for comprehensive solutions

Most programmes target either the demand or the supply side. However, many skills shortages and mismatches need concerted action from all stakeholders in order to be resolved, and several countries have therefore designed programmes that seek to address skills challenges in a holistic manner by encouraging collaboration between education and training providers, employers, unions, as well as government. For example, in the United States, the Trade Adjustment Assistance Community College and Career Training (TAACCCT) competitive grant programme supports community colleges in creating partnerships with employers and industry to develop training programmes that meet needs for in-demand jobs. In Austria, the state subsidises labour foundations, which are social partner initiatives to address structural change through skills enhancement programmes.

Best practice in the design and use of financial incentives

While examples of the use of financial incentives abound across OECD and EU countries, robust evaluations are rare and therefore relatively little is known about what works and what does not. Some consensus has nevertheless emerged from the literature

(based on the few evaluations that do exist, as well as on experience that has not been formally evaluated) on a set of good practice principles to guide the design and use of financial incentives:

- *Minimise administrative burdens*. Checks and balances need to be in place to prevent abuse of financial incentives, and they may also be necessary to target scarce resources at those who need them most. However, administrative procedures which are overly complicated can significantly reduce the take-up and effectiveness of financial incentives, particularly among the low-skilled and SMEs. Several countries are therefore coming up with innovative solutions to reduce administrative burdens, often by embracing new technologies. For example, in Tyrol (Austria), an online application procedure for apprentices has been introduced, which has significantly shortened processing times.

- *Keep it simple*. The incentives that individuals and employers face when deciding to invest in skills are complex, and the risk of market failure arises at many points along that decision-making process. The temptation to address these market failures with a multitude of interventions is large. However, the proliferation of financial incentives can complicate the system even further and could result in a situation where individuals and employers no longer understand the incentives they face, leading to sub-optimal investment decisions. For example, it has been claimed that the system of tax incentives for education and training in the United States has become overly complex, and estimates by the Government Accountability Office suggest that around 14% of families eligible for an education tax benefit failed to claim it, while 40% of filers who used the tuition tax deduction would have been better off claiming one of the tax credits.

- *Build a degree of flexibility in the design and use of financial incentives.* Financial incentives are best designed in such a way as to adapt quickly to new and emerging skills needs, where the latter are allowed to be identified flexibly and in consultation with stakeholders. Such flexibility can often be achieved by allowing skills needs and the policy response to vary at the local/regional level. For example, as part of the Job Fund Agreements in Canada, provinces and territories have the flexibility to design and deliver programmes and services that best meet the needs of their labour market, including initiatives that target certain skills/occupations/sectors.

- *Involve the social partners.* Involving social partners in the identification of skills needs, the design of education and training curricula, and in the design and administration of financial incentives can help promote better skills outcomes. For example, in Austria's VET system, curricula are strongly connected to labour market needs and the social partners play a critical role in defining, adapting and implementing new vocational qualifications.

- *Make the most of the opportunities offered by new technologies*. New technologies can reduce the costs of training and of information, advice and guidance (IAG), and can increase both their availability and accessibility. Innovative examples abound. For example, in the United States, the Department of Commerce's National Institute of Standards and Technology's Manufacturing Extension Partnership (MEP) has developed a cloud-based software diagnostic, called SMARTalent, which allows small manufacturers to capture both their current and future skills needs. This

information is gathered in real time and used by community colleges, apprenticeship programmes and Workforce Investment Boards to identify changes in advanced manufacturing skills demand.

- *Certify learning outcomes and recognise informal and non-formal learning*. Ensuring that informal and non-formal learning are recognised will increase the incentives for individuals to invest in training, and also make it easier for them to retrain in areas of high demand. However, it might be more difficult to convince employers to engage in skills recognition since it makes such skills more portable and, therefore, increases the risk of trained employees being poached. To address this reluctance, the Netherlands offer employers a tax reduction (*Wet vermindering Afdracht Loonbelasting*) of EUR 300 per worker per year if they pay for their employees' recognition of prior learning (*Erkenning Verworven Competenties*).

- *Couple financial incentives with other interventions*. Financial incentives are likely to address only part of the barriers to skills investments that individuals and employers face, and so coupling them with other types of interventions is likely to increase their effectiveness. For example, while Austria provides a wide range of financial incentives for employers to offer, and for individuals to take up, apprenticeships, the effects of these are likely to be strengthened by a host of other support measures provided by the government, including guidance, counselling, care and support services.

- *Ensure regular monitoring and evaluation*. By verifying what works and what does not, for whom and in what circumstances, monitoring and evaluation can contribute to more efficient and effective policy making. Many countries are already taking steps to strengthen the monitoring and evaluation of their programmes. In Turkey, for example, the "e-mezun" web portal collects information on VET graduates' learning and labour market outcomes, which allows the strengths and weaknesses of the VET system to be assessed.

Framework conditions

In addition to the good practice principles for the design and use of financial incentives outlined above, their effective implementation will also depend on a number of framework conditions being in place:

- *Robust systems and tools for assessing and anticipating skills needs*. Incentives for steering education and training will only be as good as the information about skills needs that underpins them. While most OECD and European countries now have systems in place for skills assessment and anticipation, others are still building them. Greece, for example, is currently setting up a mechanism for the identification of labour market needs. Even where such systems are already up and running, however, there are important differences across countries in the quality and coverage of such exercises, as well as in the way that they are used.

- *Good information, advice and guidance.* If individuals and employers are to make well-informed choices about which skills to invest in, then the provision of impartial, accurate and accessible information about labour market needs and the learning on offer (including information on the cost and quality of education and training

opportunities) is essential. The Individual Learning Account programme in England, for example, failed not only because of widespread fraud, but also because participants lacked information on the available learning opportunities: 85% of them did not receive any IAG to assist them with their choice of learning, and 73% had not considered more than one provider before starting their course.

- *Strong qualifications frameworks*. Strong qualifications frameworks help increase the value of qualifications and, thereby, encourage investments in education and training. They also facilitate analysis of how employer needs translate into concrete training needs. Many countries have now implemented qualification frameworks – however, the extent to which they are successful depends on a range of factors, including: the strength of the methodology for allocating qualifications to levels and the extent of key stakeholder support.

- *A high-quality and responsive education and training supply*. Education and training systems should be able to respond flexibly to changing labour market needs, and the quality of provision can be improved through: quality assurance mechanisms; the accreditation of providers; and the involvement of social partners in curriculum development. In some countries, financial incentives exist to try and encourage employers to participate in curriculum design. In the Czech Republic, for example, there are tax advantages for firms co-operating with schools in vocational training. In Spain, employers are compensated for their participation in the State Governing Board of Schools, in the General Council of Vocational Training, as well as for their collaboration in the design of VET qualifications and curricula.

- *Effective public employment services*. The PES can play an important role in helping jobseekers acquire those skills that are in demand in the labour market. To do so effectively, PES need the necessary autonomy to take training decisions based on a robust analysis of labour market needs. To assist them in this task, PES in some countries have their own research bodies, such as the Institute for Employment Research (IAB) in Germany and the Occupational Observatory in Spain.

- *Policy co-ordination and coherence*. Education and training policy is often scattered across different ministries and organisations, which may result not only in conflict of interest and wasteful public expenditure, but also in confusing incentives for potential learners and firms. Policy co-ordination and coherence can be improved by bringing together the various stakeholders, putting in place a coherent strategy, and setting clear targets. Several countries have put in place strategies to address skills needs, including: the Dutch *Techniekpact* and *Masterplan Bèta en Techniek*; the MINT initiative in Austria; the STEM 2012-2020 plan in Flanders; and the *Hochschulpakt* and promotion of MINT university courses in Germany. This is also the spirit of the National Skills Strategies country projects on which the EU works with the OECD in member states wishing to embark on this project.

Limitations and risks

If well designed and implemented, and particularly with the right framework conditions in place, financial incentives can prove a useful tool for steering education and training decisions. However, it is important to realise that they are only one tool among many that governments can use to steer investments in skills – not least because

there are many factors other than financial ones that determine such decisions. The specific role that financial incentives play in steering skills investment will therefore depend on a careful analysis of the barriers that prevent institutions from providing, and individuals and firms from investing in, the right skills.

Another reason to temper expectations around financial incentives for steering education and training decisions is that they tend to represent only a small share of total government expenditure on education and training. The implicit financial incentives which are created by such general government spending are likely to be far more important determinants of course provision by institutions, and of skills acquisition by individuals and employers. For example, when engineering and art history courses are both provided free of charge, regardless of the differences in cost of provision and expected wage returns, then this is likely to have an impact on the decisions of individuals to pursue one course rather than another. Indeed, in this case, there is a financial incentive for students to take the more costly course with the better labour market outcomes. These built-in incentives need to be properly understood for governments to tackle skills mismatches and shortages.

Financial incentives generally only focus on formal learning, but there is mounting evidence that informal and non-formal learning are at least as, if not more, important for workers' skills development. At the same time, it is important for governments to consider the potential negative effects that incentives for formal learning may have on non-formal an informal skills acquisition and, in particular, the risks of crowding out such forms of learning. Accompanying financial incentives with effective mechanisms for the validation of non-formal and informal learning (as recommended above) may help counter some of these effects.

Finally, education and training are not just about improving labour market outcomes. While the latter is a key objective, education and training are also about increasing personal well-being, reducing inequality, promoting social cohesion, preserving culture, strengthening research capacity, supporting innovation, etc. While preferences for such wider outcomes may vary across countries, an increased focus on meeting labour market needs should not come at the expense of meeting these other objectives.

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Chapter 1

Aligning skill supply and skill demand: The challenges

In many countries, the responsibility for aligning skills development with labour market needs is gradually shifting from government to individuals and employers as the importance of cost-sharing and market mechanisms for allocating resources grows. However, an increased reliance on the market also brings a number of risks. In particular, it raises the risk of market failure. In this context, this chapter argues that governments will continue to play an important role in matching skills demand to supply – although the nature of this role is likely to be different. More specifically, this role becomes more indirect and will increasingly consist in "steering" the system and "nudging" institutions, individuals and firms, rather than exercising tight control over the quantity and type of skills that are provided and acquired. While there are many ways in which governments can do this, one key mechanism is the use of financial incentives.

1.1. The demand for skills is changing

Technological progress, globalisation and demographic change are among the main drivers of today's changing skills needs. The latest forecasts for the European Union indicate that, between now and 2025, most new job opportunities (around one quarter) will be for professionals: high level jobs in science, engineering, healthcare, business and education (Cedefop, 2015). And most of these job opportunities are forecast to require high-level qualifications, meaning that a significant effort will be needed to upskill the workforce in most EU countries between now and 2025. Back in 2010, the Europe 2020 Strategy noted that, by 2020, 16 million more jobs would require high qualifications, while the demand for low skills would drop by 12 million (European Commission, 2010).

However, the shift observed is not simply towards higher-level skills. There are also important changes expected across, as well as within, sectors. The same Cedefop forecasts expect that most job growth in the EU will be in business and other services, distribution and transport, and non-marketed (mainly public sector) services, while job losses will continue in the primary sector (Cedefop, 2015). Within the primary sector, jobs in energy production and distribution are likely to increase, while jobs in agriculture will continue to fall. Similarly, within non-marketed services, there are likely to be fewer jobs in public administration, but more in education, health and social services (Cedefop, 2015). The policy focus should therefore not only be on producing more skills, but also on producing the right type of skills.

1.2. Countries are experiencing high levels of mismatch – and are paying a high price for it

If education and training systems are not able to respond quickly and flexibly to changing skills needs, shortages and mismatches are likely to arise. In fact, there is plenty of evidence that this is already the case in many countries. For example, despite the recent crisis and high levels of unemployment, around a third of employers in OECD countries that participated in the ManPower Group's 2015 Talent Shortage Survey indicated that they faced difficulties filling jobs. At the same time, there is evidence of high levels of skills mismatch. Across the European Union, nearly half of workers self-reported as being either over- or under-skilled (with the former being more than twice as common as the latter) (OECD, 2016a). There is also evidence of significant field-of-study mismatch. Recent estimates show that, across the 22 OECD countries that participated in the Survey of Adult Skills (PIAAC, 2012), 39% of workers were working in a field that is different from their field of study (Montt, 2015).

Some degree of misalignment between the supply and demand for skills is inevitable, particularly in the short run. However, the costs of persistent mismatches and shortages are substantial. For individuals, skills mismatch has a negative impact on job satisfaction and wages. For firms, it reduces productivity and increases on-the-job search and turnover, while shortages increase the cost of hiring and hinder the adoption of new technologies. At the macroeconomic level, mismatch increases equilibrium unemployment and reduces GDP growth via the misallocation of human capital and/or the reduction in productivity it generates, while skills shortages have equally adverse effects on labour productivity. Montt (2015) estimated that the total cost of field-of-study mismatch across OECD countries may be as high as 0.47% of GDP.

1.3. Individuals will need to update and upgrade their skills throughout their careers

To address rapidly changing skills needs, young people going through initial education will need to acquire the right level and type of skill. However, 85% of Europe's workforce in 2025 is already in the workforce today, which highlights the importance of designing high-quality lifelong learning systems which are responsive to labour market needs. Rapid technological change makes skills obsolete more quickly and workers will be required to stay in the labour force longer to ensure the sustainability of pension systems in light of population ageing (Stone, 2012). Adults will therefore need to regularly update, upgrade, and sometimes even acquire completely new knowledge, skills and competences in order to stay employed and/or find new employment (Cedefop, 2012). Similarly, firms will have to continuously retrain their workforce to ensure that they keep up with new working practices and are able to adopt new technologies, thereby boosting productivity and competitiveness.

1.4. Employers and individuals are increasingly responsible for skills acquisition

In many countries, there has been a gradual shift from supply- to demand-side management of the education and training system. Traditionally, the state has held the main responsibility for aligning skills development with labour market needs. Education and training were primarily publicly provided, with budgets allocated to institutions based on historical and/or administrative factors, and with individuals having, at best, a choice among options that had been decided elsewhere. However, as public finances have been squeezed, many countries have started expecting a greater contribution from individuals and employers towards the costs of education and training. In Finland, for example, crisis-induced austerity recently led to large budget cuts in education and training. Such trends are particularly marked in tertiary education, with more and more countries shifting the balance of cost-sharing for education from the tax payer to individual households and employers (OECD, 2016b). But even at lower levels of education such trends can be observed: between 2008 and 2013, private sources of expenditure on primary, secondary and post-secondary non-tertiary educational institutions increased by 16%, while public sources increased by only 6% on average across OECD countries (OECD, 2016b).

Such cost-sharing makes sense given the large private benefits attached to many investments in skills. Moreover, there is a sense that individuals and employers, as long as they are well-informed, are best placed to understand their needs and to invest in the kind of education and training that will bring the highest returns. Many governments are therefore also making greater use of demand-side tools (like vouchers) for financing education and training, where public money is channelled through individuals and employers who are expected to act as consumers in a market for skills. A recent example of this trend is the reform of higher education in England, where block grants for universities were removed for nearly all subjects and were replaced by graduate contributions in the form of repayments on subsidised loans from governments (Box 1.1). Similarly, in Chile (VET), the funding of institutions is voucher-based so that funding follows the student, and in the Slovak Republic (HE), the funding of institutions is partly voucher-based. These trends are gradually shifting decision-making about what and how much education and training to acquire away from government, and placing it within the hands of individuals and employers.

Box 1.1. Reforms of higher education in England

In 2012, there was a significant shift in the way that universities and colleges were funded in England. The reforms aimed to put "students at the heart of the system" and expected them to meet a much larger share of the cost of their education themselves. Taxpayer support for teaching in the arts, humanities and social sciences was abolished, and replaced by publicly funded loans for students to pay for fees which could reach GBP 9 000 per year. These changes were accompanied by a progressive deregulation of funded full-time undergraduate places so that the cap on the number of students that institutions could take on would eventually be removed. There was also an attempt to provide more and better information for prospective students so that they could make informed decisions about their higher education choices.

Despite these changes, some important non-market features remained, including: a cap on the maximum fee that could be charged; limited price competition (with most universities charging the full GBP 9 000 fee); and restrictions on entry to the market (access to degree awarding powers and university status). Further reforms are now planned. In a recently published white paper ("Success as Knowledge Economy"), the government announced its intention to simplify the process through which new institutions are given degree-awarding powers and the title of university. There are also plans to allow institutions to charge more than GBP 9 000 per year in fees, as long as they meet certain teaching quality standards, which would be measured against a new Teaching Excellence Framework. Finally, the government intends to further improve the information that is available to students about teaching standards and job prospects.

1.5. The supply of skills has become more responsive to demand

Demand-led financing of education and training can only work if the supply-side is responsive to the needs of individuals and employers and, in many countries, steps have been taken in that direction. For example, there has been a clear trend across many countries towards greater institutional autonomy (de Boer et al., 2015) and more competition between providers. Markets have been opened up to private providers, funding increasingly follows learners, and there has been a general increase in the use of competitive grants and contracts (Jongbloed, 2010). In Australia, recent reforms of the higher education funding system have encouraged institutions to become more responsive to demand (Box 1.2). That being said, there is still wide divergence across OECD countries in the governance arrangements of education and training systems, with more "laissez-faire systems" co-existing alongside systems with greater government intervention.

Box 1.2. Australia's demand-driven funding system for higher education

Prior to 2012, the number of undergraduate places on each course in Australian public universities had been "capped" under a "supply-driven" system where government allocated student places to each university. While helping to contain costs and protecting institutions and courses from large swings in demand, these caps reduced the capacity and incentives of institutions to respond to the changing demands of students and the economy, and also inhibited competition. Moreover, they led to a large reservoir of "unmet demand": individuals who would have liked to go to university, but were denied a place.

Under the new "demand-driven" system, the government agreed to fund every (domestic) undergraduate student admitted to a public university, without restriction on the number of students by either institution or course (except medicine). Institutions were henceforth allowed to freely admit students according to their own criteria and to obtain subsidies and capped fees (student contributions) for these additional students. The move to the new system occurred smoothly over a number of years, during which the limits on student numbers were gradually relaxed.

Box 1.2. Australia's demand-driven funding system for higher education *(cont.)*

An independent review of the reform (Kemp and Norton, 2014) found that the demand-driven system not only resulted in a large increase in student numbers, but also that increased competition between institutions encouraged innovation and diversification, with new courses being created, online and technology-based provision expanding, and new institutional partnerships forming. The authors also found that the system fuelled increases in both quality and efficiency.

Importantly from the perspective of this report, the review found that the demand-driven system was more reliably adapting to skills shortages than the previous system. The demand for most fields of study leading to shortage occupations increased, and institutions were responsive to this demand, resulting in a better fit between the needs of the labour market and the skills supplied by the university system.

Source: Kemp, D. and A. Norton (2014), *Review of the Demand Driven Funding System*.

1.6. With a greater use of market mechanisms comes a greater risk of market failure

Governments are increasingly relying on market mechanisms for matching skills supply to demand. However, despite the advantages that these are meant to bring in terms of improved efficiency and quality, an increased reliance on the market also brings a number of risks. In particular, it raises the risk of market failure – i.e. situations where market forces result in an inefficient allocation of resources. In the education and training market, there are a number of market failures that could arise:

- *Information failures*. There are a number of information failures that may arise in the education and training market which may lead to an under-investment in learning. First, individuals and employers may have *imperfect knowledge* of the costs and benefits of education and training – particularly since many of the benefits occur in the distant future and may not therefore be fully recognised by individuals and firms who are "myopic" and focus primarily on the short term. In this sense, education and training can be classified as *merit goods* – i.e. goods that are likely to be under-consumed and which ought to be subsidised or provided free of charge so that consumption does not depend on the ability or willingness of the individual to pay. Second, there may be a problem of *asymmetric information* when one of the parties to a transaction has relevant information which the other does not. In the education and training market, it is often difficult for learners to assess the quality of education and training (and/or to specify such quality in a contract which is verifiable by third parties such as tribunals) – a situation which is likely to drive high-quality providers out of the market, and lead to a general fall in the quality of education and training on offer.

  Another kind of information failure relates to the types of skills that are most needed in the labour market. Indeed, individuals may not have reliable information on the types of courses that lead to the best labour market outcomes and may instead base their decisions on outdated advice from parents or teachers. There is therefore a need for government to provide up-to-date and reliable labour market information so that prospective students can make informed decisions about which skills to invest in. Similarly, employers may not always be aware of their training needs, the training options that exist, and how these would benefit their business – again calling for governments to intervene in this area. Such information failures may in some cases be further exacerbated by the speed of change in the kinds of skills required in the

economy. Indeed, while technological change may threaten some jobs, it also offers the opportunity for the creation of new jobs. However, taking advantage of this opportunity means making sure that the market adjusts quickly enough to changes in demand.

- *Risk and uncertainty*. Even if individuals and firms are fully aware of the costs and benefits of investments in education and training, there may be a lot of uncertainty about these (and about the benefits in particular, which materialise mostly in the future). For individuals, acquiring a qualification may not necessarily lead to a better job, a promotion, or higher wages. For firms, there is the risk that the employee leaves and goes to another firm. Assuming risk aversion, such risks reduce the value of the expected benefits of education and training and may therefore result in under-investment. For firms, this explains why they may invest in firm-specific, but not in general training. When an employer invests in firm-specific training, he/she does not have to raise the wage in line with increased productivity and hence is able to obtain a return on his/her investment. However, in the case of general training, the firm may not be able to recoup its investment. This is because the benefits of general training are shared (i.e. the added productivity makes workers more valuable inside and outside the firm) and firms therefore have an incentive to free-ride on the contributions of others. If the employer attempts to obtain a return on his/her investment by not increasing the wage immediately and fully, there is a risk that the worker will be poached by another employer willing to pay the market rate. This therefore results in an under-investment in education and training.
- *The hold-up problem* (Klein et al., 1978). A related problem and reason for under-investment is that training gives workers increased bargaining power because, if they leave, the employer loses part of the investment in training. Wary of this "hold-up" risk, the employer therefore becomes reluctant to make the investment, leading to sub-optimal investments in training. While the hold-up problem assumes a high degree of selfishness in the relationship between employers and their staff, experimental research in economics has shown that, in reality, people tend to be more altruistic than economic theory assumes (Oosterbeek, 2013).
- *Liquidity constraints and capital market imperfections*. The concept of risk and uncertainty extends to the functioning of capital markets. Individuals (and in particular young people and those from disadvantaged backgrounds) often lack the resources to make upfront investments in education and training (i.e. they face liquidity constraints). However, because human capital is not separable from the individual (unlike physical capital) and financial institutions do not tend to accept the promise of future earnings as collateral, it will be difficult for these individuals to obtain a loan. A similar situation can arise in the case of small and medium enterprises that may lack the collateral or credit history to borrow for the purpose of training. Again, such market failure would result in sub-optimal investments in skills.
- *Externalities*. When deciding whether or not to invest in skills (or choosing which skills to invest in), individuals and employers are likely to consider only those costs and benefits that accrue to them. However, skills investments will have wider costs and benefits to society as well. If these are not taken into account, skills acquisition is likely to result in a socially sub-optimal level (or mix) of skills. In particular, individuals and employers may under-invest in certain types of skills which give

little private benefit but which, from society's point of view, may be strategically important.

- *Equity*. Although not a market failure as such, an additional risk attached to an increased reliance on market forces for skills acquisition is that it results in widening disparities between the skilled and unskilled (as well as between the lucky, whose skills investments turn out to be successful, and the unlucky). In particular, capital, education and training market failures are likely to reduce disproportionately the chances of upskilling for individuals from disadvantaged backgrounds and low-educated workers. Given the high returns attached to education and skills (including the increased probability of being in employment), such inequalities in skills acquisition are likely to result in greater inequalities in labour market outcomes and earnings.

In line with these potential risks, the European Commission has on several occasions in the past expressed concerns about inefficiently low levels of adult education across Europe. Through the European Agenda for Adult Learning, the EC is working with its member countries to try and increase participation in adult learning of all kinds. As part of its Education and Training 2020 Strategy, the EC has set a target that at least 15% of adults should participate in lifelong learning. The EC is also concerned about the labour market relevance of skills being produced and its current skills agenda (*A New Skills Agenda for Europe*) is seeking to improve both the quality and the relevance of skills formation across the European Union.

1.7. Governments will continue to play an important role in "steering" skills acquisition

The increased reliance on markets for matching skills demand to supply does not, therefore, reduce the role of government – rather it changes the nature of it. More specifically, this role becomes more indirect and increasingly consists in "steering" the system and "nudging" institutions, individuals and firms, rather than exercising tight control over the quantity and type of skills that are provided and acquired.

While there are many ways in which governments can do this (including, for example, through the provision of information, advice and guidance, and through changes to the curriculum), one key mechanism is the use of financial incentives. Indeed, an important motivation for individuals to invest in education and training is the expected return in terms of higher future earnings in the labour market. Similarly, a key reason why firms invest in training is to increase productivity and profitability. The financial return to an investment in education and training will depend on both the costs and the future stream of benefits – and both of these can be affected by government policy. Similarly, while institutions are often free to decide on the mix of provision, governments can influence these choices through a range of financial incentives.

While the remainder of this report will discuss the use of such financial incentives for steering education and training acquisition, it is important to stress that countries have different approaches to addressing skills needs, and that some of these rely to a greater extent on financial incentives than others (see Box 1.3).

Box 1.3. Alternative approaches to steering education and training

Financial incentives for steering education and training decisions appear to make more sense in environments where private contributions are significant. However, it is important to realise that, even in countries where education and training are largely provided free of charge, implicit incentives are built into the system which will influence the behaviour of institutions, individuals and employers. For example, when engineering and art history courses are both provided free of charge, regardless of the differences in cost of provision and expected wage returns, then this is likely to have an impact on the decisions of individuals to pursue one course rather than another. It is therefore important that such implicit financial incentives are well understood if policy makers want to ensure that the supply of skills meets labour market demand. A mapping and analysis of such implicit incentives could also highlight areas where more explicit financial incentives might be needed in order to correct skills imbalances.

In some countries, explicit steering by the government is deliberately avoided because it is believed that such interference in the system may worsen skills imbalances rather than correct them. Of course, it is true that one of the risks of using financial incentives (particularly where they are poorly designed or based on weak labour market information) is that they may distort the choices of institutions, individuals and employers – and this will be discussed in further detail in Chapter 3 of this report. However, once again, it is important to stress that the lack of explicit financial incentives does not mean that no implicit financial incentives are present in the system which could have a similar, distorting effect on behaviour. A proper understanding of these built-in incentives is critical if skills imbalances are to be properly addressed.

It has also been argued that financial incentives for steering education and training decisions may be less relevant in countries with highly developed apprenticeship systems. Indeed, the assumption in such systems is that labour market needs are met directly because employers only offer training places in those areas where they experience concrete skills needs. This seems to preclude the need for financial incentives. However, while employers may be well-placed to identify their immediate skills needs, they may be much less good at assessing what skills will be required in the future. Even in these countries, therefore, there might be an argument for governments to intervene through the use of financial incentives to steer education and training decisions to ensure that skills needs in growing sectors or in areas of strategic importance are met.

Countries also differ in the extent to which social partners are engaged in the education and training system. In some countries, employer organisations and trade unions have traditionally played a very important role in skills policies, frequently taking the lead in finding solutions. This not only reduces the need for government intervention, but may also make such intervention much more difficult. However, while social partner involvement is important and frequently leads to better skills outcomes, there are times when government intervention may still be needed, including through the use of financial incentives. Such intervention may be particularly important where employer and employee organisations lack representativeness. Indeed, small firms and low-skilled employees frequently encounter greater difficulties in getting their voices heard.

Finally, it is worth highlighting that some countries rely more on a system of compulsion rather than incentives for steering. For example, in countries with large elements of active labour market policies, including mandatory participation in training programmes (in line with the mutual obligation principle for unemployment and other benefit recipients), there might be less need for financial incentives than in countries relying more on general and voluntary adult training.

1.8. Objectives, methodology and scope

The purpose of the present report is to provide an overview of the extent to which countries use financial incentives to steer education and training decisions, as well as to identify promising policy examples and best practices in the use of such incentives.

The report adopts a broad classification of financial incentives for education and training acquisition and distinguishes between: i) supply-side measures (i.e. incentives targeted at education and training providers to alter the mix of provision); and ii) demand-side measures (i.e. incentives targeted at individuals and employers to

invest in education and training). The supply-side measures covered include: public subsidies for education and training institutions, performance-based funding, performance contracts, capital funding, the regulation of new programmes, and tuition fee policy. On the demand-side, the type of measures covered include: subsidies, tax incentives, loans, savings and asset building mechanisms, time accounts, study/training leave, training levies/funds, and public procurement mechanisms.

Data on country practice were collected through three different channels: a thorough literature review; internet searches on current government programmes; and purpose-designed questionnaires which the OECD Secretariat sent out to its member countries. One of these questionnaires was sent to Ministries of Labour[1] and aimed to collect information primarily on financial incentives for individuals to invest in adult learning and for firms to invest in training. This questionnaire received responses from 22 countries (15 from the EU).[2] Two more questionnaires were sent to Ministries of Education which aimed primarily to collect information on incentives targeted at HE and VET institutions, respectively. Fourteen countries responded to the HE questionnaire (ten from the EU)[3] and seven to the VET one (four from the EU).[4] In total, this data collection exercise resulted in new information on the use of financial incentives for steering education and training acquisition from 30 OECD countries (of which 20 are EU members). Through the literature review, examples of interesting practice were also collected for some non-OECD EU countries.

It is important to point out that most of the examples collected through these questionnaires are national-level initiatives. In many countries, however, interesting practice occurs at the regional/local level and, in order to capture such initiatives, the questionnaire should have been extended to sub-national entities. Only in the cases of Australia, Austria, Belgium and Canada was some local/regional information collected.[5] In other countries where local government has significant discretion in aligning education and training systems with local labour market demand, such initiatives will, unfortunately, not be captured.

The scope of data collection was simultaneously broad and narrow. On the one hand, a general overview of incentives for steering education and training had already been given in a series of EC publications on "Skills Governance in the EU Member States" (European Commission, 2015). The purpose of the present project was therefore to focus more narrowly on financial incentives (although some information on other tools was also collected).[6] At the same time, because this is a relatively new area of investigation, the scope was left relatively broad and information was gathered on: initial as well as continuing education and training; programmes ranging from basic skills all the way to PhD study; vocational as well as academic education; and initiatives aimed at both the employed and unemployed/inactive. Because of this, it would be unrealistic to hope that an exhaustive list of measures used by countries could be collected. Instead, the ambition of the present report was more modest – i.e. to offer an initial classification of financial incentives for education and training acquisition, as well as some idea of how commonly they are used by countries, and to highlight some examples of interesting practice.

Notes

1. The questionnaire was sent to Ministries of Labour, with the instruction to share it as widely as possible across government. The responses received were primarily from Ministries of Labour as well as from Ministries of Education. Few responses were received from other ministries (e.g. Finance), which means that there is an under-reporting of some measures, like tax incentives. Where this was the case, information was gathered from other sources, if possible.
2. Australia, Austria, Belgium, Canada, Czech Republic, Estonia, Finland, France, Greece, Hungary, Israel, Italy, Japan, Korea, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Sweden, United States.
3. Austria, Belgium (Flanders), Canada, Czech Republic, Denmark, Estonia, Germany, Korea, Latvia, Luxembourg, Mexico, Norway, Poland, Slovak Republic.
4. Australia, Austria, Chile, the Czech Republic, Germany, Spain and Turkey.
5. In collaboration with the Australian authorities, the VET questionnaire was extended to the states and territories (responses were received from South Australia, New South Wales and Queensland). Each of the Belgian regions responded separately to the Ministry of Labour questionnaire and, in the case of Austria (Tyrol, Vienna, Upper Austria, Salzburg and Styria) and Canada (Ontario), the respondents themselves captured initiatives at the regional level. Finally, Canada collected information through the HE questionnaire from each of the provinces.
6. In this context, it is worth mentioning another OECD project which explores a range of tools (financial and other) that may be used to increase the labour market relevance of higher education systems (OECD, 2017b).

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Chapter 2

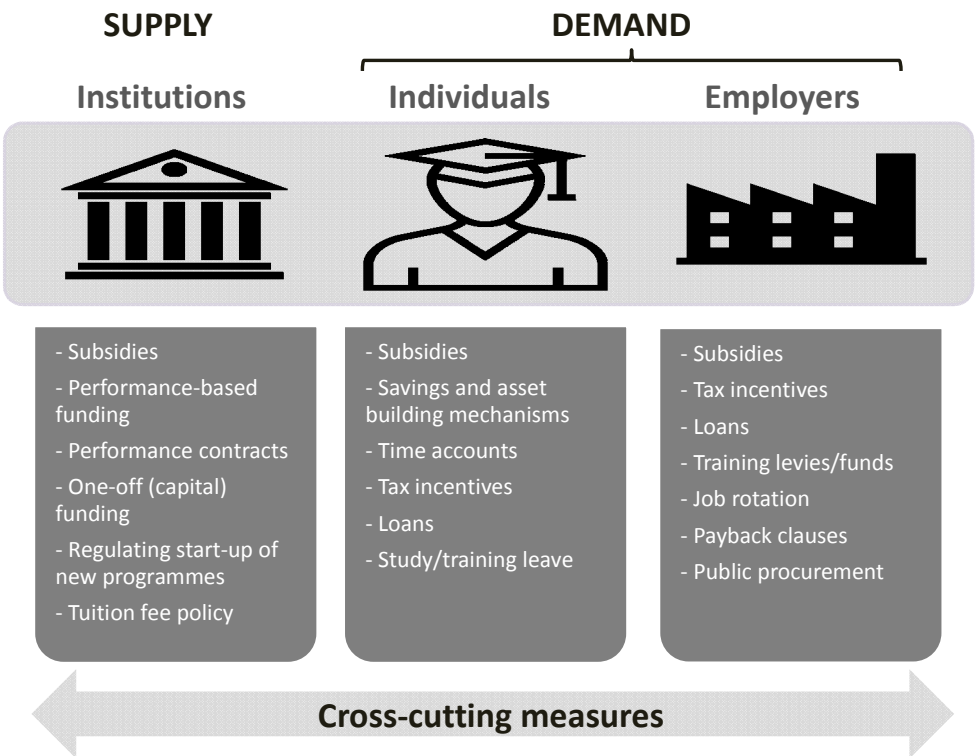
Financial incentives for steering education and training

This chapter documents the use of financial incentives for steering education and training in OECD and non-OECD EU countries, providing a wealth of country examples. Following a simple taxonomy, financial incentives are classified into supply- and demand-side measures, with a further breakdown of the latter into measures targeted at individuals and those targeted at employers. Although this taxonomy is attractive, it is not always straightforward to classify measures neatly given that demand- and supply-side effects are closely intertwined. In addition, many programmes offer more comprehensive solutions which target skills supply and demand simultaneously.

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.

This chapter provides a detailed discussion of the extent to which countries use financial incentives to steer education and training decisions, providing a wealth of country examples identified through the questionnaires, literature review, and internet searches. The discussion is split up into four sub-sections, following a simple taxonomy which was used to classify the various measures identified throughout the research (Figure 2.1). The first sub-section looks at supply-side measures – i.e. steering tools that focus on education and training providers. The second and third sub-sections focus on demand-side measures targeted at individuals and employers, respectively. And the final sub-section covers more comprehensive measures which seek to achieve concerted action between multiple stakeholders covering both the demand- and supply-side. While this classification has been chosen to frame the discussion, it is important to stress that not all measures can be easily classified along these lines – in particular because measures which are designed to alter the behaviour on the supply-side often have knock-on effects on the demand-side, and vice versa.

Figure 2.1. A simple taxonomy of financial incentives for steering education and training acquisition



2.1. Supply-side measures

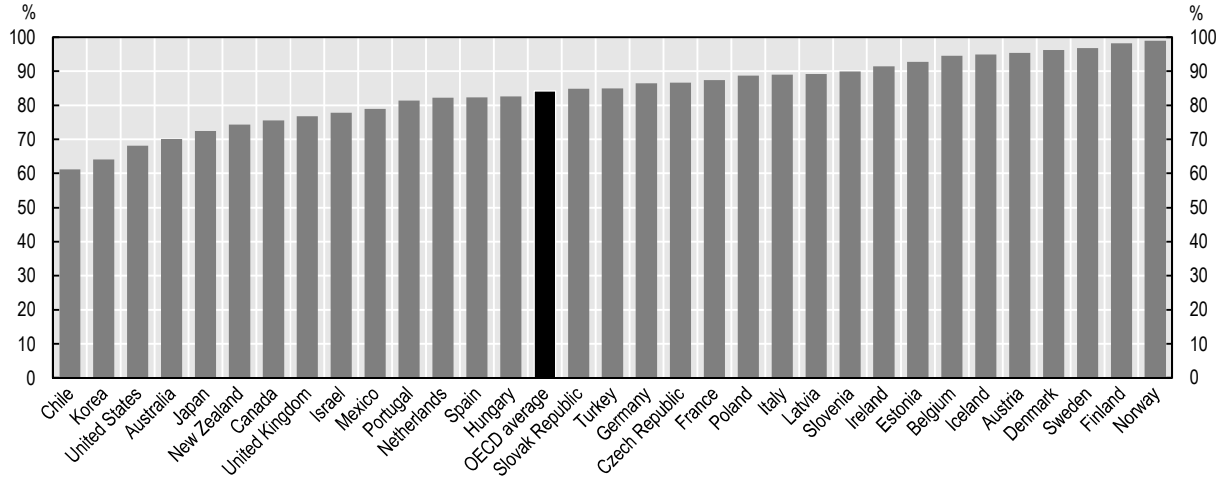
In most countries, governments heavily subsidise education and training. This should act as a major incentive for individuals to continue studying, and therefore helps overcome the market failures and the risk of under-investment outlined in Chapter 1 of this report. In addition, governments can and do use funding arrangements for education and training institutions to steer the mix of provision in favour of subjects that are either strategic or face high labour market demand. Several approaches can be taken, including: varying the level of public subsidy by field of study; rewarding institutions for the good labour market outcomes of their graduates; and regulating the

starting up of new programmes and the closing of old ones. From a market failure perspective, such incentives may be necessary because there may be reluctance on the part of education and training providers to respond to changing labour market demand given that making the necessary adaptations are costly, both in terms of financial and human resources.

Educational institutions are financed primarily through public funding

The most obvious way of lowering the cost of education and training and to incentivise individuals and employers to invest in them, is to provide public subsidies to education and training institutions. Indeed, across all OECD countries, public funding still accounts for the lion's share (84% on average) of expenditure on educational institutions (Figure 2.2) – ranging from nearly 100% in the Nordic countries, to less than 70% in the United States, Korea and Chile. This is not just a very large subsidy for education and training acquisition, but it is also likely to dwarf any other types of financial incentives that governments use to steer skills development (and therefore limit their relative effectiveness). This is an important point, because it highlights the fact that financial incentives are, to a large extent, built into the existing system.

Figure 2.2. Share of expenditure on educational institutions which is public, OECD, 2013

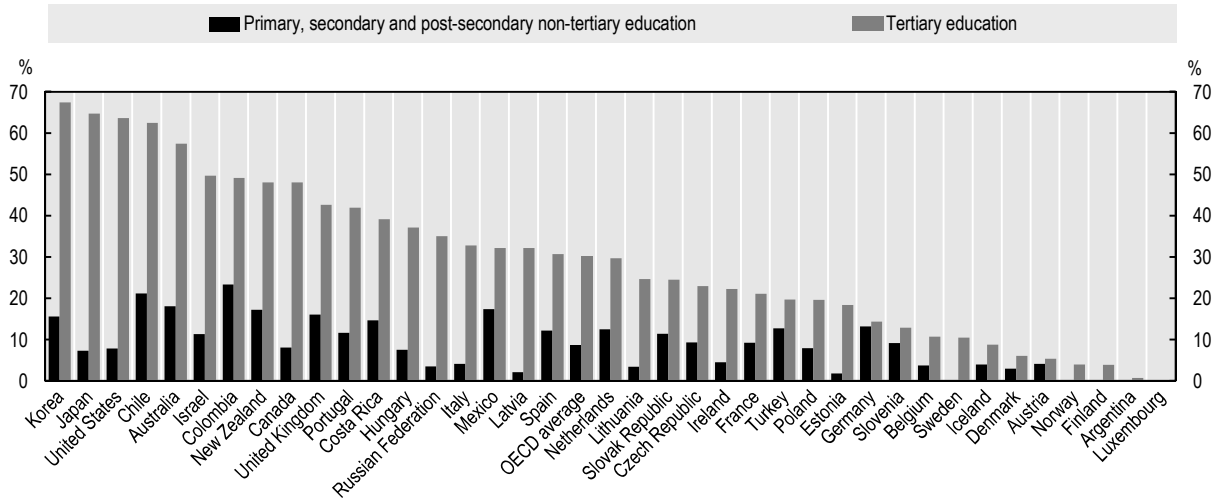


Source: OECD (2016), *Education at a Glance 2016*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2016-en.

Private contributions are greater in some countries, as well as at higher levels of education

The level of public subsidy varies considerably not only across countries, but also across levels of education within countries. Figure 2.3 shows that while private expenditure represents less than 10% of total expenditure on educational institutions below tertiary level, this rises to 30% at tertiary level. Private expenditure on tertiary level institutions exceeds 50% in five countries, all of which are non-EU: Australia, the United States, Chile, Japan and Korea.

Figure 2.3. Share of private expenditure on educational institutions, by level of education, OECD, 2013



Note: Includes subsidies attributable to payments to educational institutions received from public sources. 2014 for Chile; 2012 for Canada.

Source: OECD (2016), *Education at a Glance 2016*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2016-en.

The share of private expenditure on tertiary education has increased between 2000 and 2012 in more than three-quarters of countries (OECD, 2015a). This trend was particularly marked in some European countries (e.g. Hungary, Italy, Portugal and the Slovak Republic), where there were significant changes in tuition fees and where enterprises participated more actively in providing grants to finance tertiary institutions. By contrast, the average share of private funding did not change much at the primary, secondary, and post-secondary, non-tertiary levels – although it did increase in some countries, most significantly in Portugal and the Slovak Republic (OECD, 2015a).

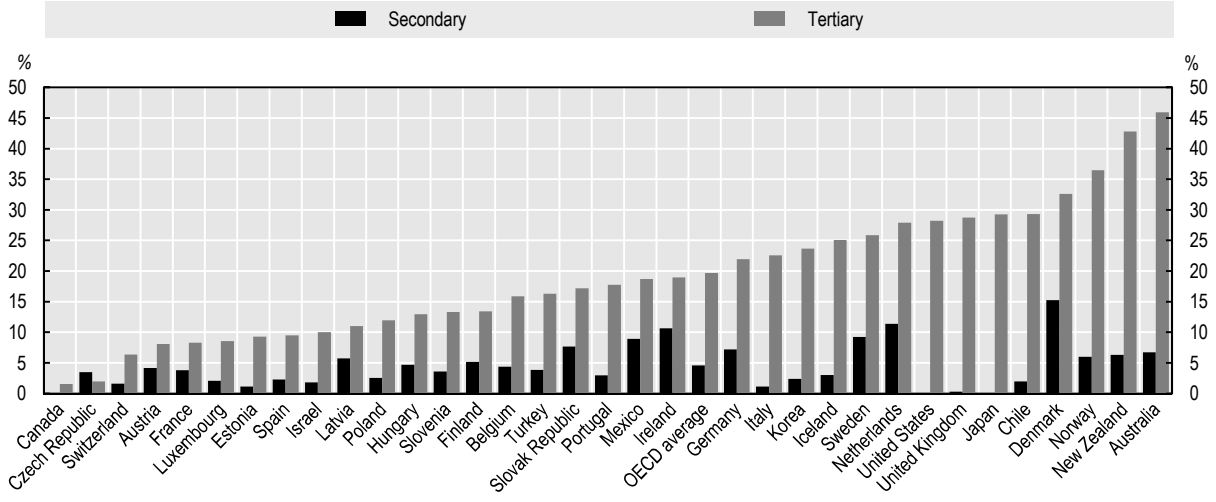
There are at least two economic arguments for lower public subsidies at higher levels of education. First, the extent of market failure (in particular short-sightedness and lack of information) is likely to be greater for students at lower levels of education, which warrants a higher degree of government intervention. Second, the private returns to education tend to rise with the level of education, which justifies higher private contributions towards the cost of education at higher levels.

The analysis in this sub-section therefore suggests that financial incentives targeted at individuals and/or employers to invest in education and training may play a more important role in some countries than in others, and particularly at higher levels of education. It is important to note, however, that even in countries where students bear a significant share of the cost of education and training, the space for incentives might be limited if governments and social partners continue to decide on the allocation of places.

A significant share of public funding for educational institutions is channelled through private entities

Not all government funding goes directly to educational institutions. Across the OECD, 5% and 20% of government expenditure for secondary and tertiary education, respectively, is channelled through private entities (Figure 2.4). This includes scholarships and grants to households as well as student loans, but also transfers and payments to other private entities. One of the main reasons to channel public funding for education through private entities is to make the system more demand-led and to make people think about their skills investments. Again, the share of public funding that is spent indirectly on education varies not only by level of study, but also from country to country. In tertiary education, for example, New Zealand and Australia, but also Denmark and Norway, channel a third or more of their public funding via private entities, while in Canada and the Czech Republic this proportion is 2% or less. Again, the general trend across OECD countries is towards more such indirect distribution of government funds (Kärkkäinen, 2006).

Figure 2.4. Share of public expenditure on education channelled through private entities, by level of education, OECD, 2013



Note: Calculated as G14/G20. Year of reference is 2012 for Canada.

Source: OECD Education Database (Educational expenditure by source and destination).

Adult learning benefits from far less public funding

Obtaining information that is comparable across countries on the financing of adult learning is much more difficult, due to the diversity of the sector, its scattered nature, and also the fact that definitions of adult learning can vary significantly across countries. What is certain, however, is that adult learning benefits considerably less from government subsidies. A recent attempt at obtaining comparable spending figures for adult learning across a number of EU countries suggests that total spending varies between less than 0.6% and 1.1% of GDP. Of this, governments only contribute 0.1% to 0.2%, while employers bear the brunt of expenditure on adult learning, typically around 0.4% to 0.5% (FiBS and DIE, 2013). Individuals, for their part, contribute around 0.2% to 0.3% of GDP. These figures suggest that there might be considerably

more scope in adult learning for the use of financial incentives to steer skills investments. That being said, many countries do provide free courses to the employed and the unemployed/inactive for training in basic skills (see Section 2.2 for some examples), and short training courses are usually provided free of charge by the public employment service to jobseekers who need to improve their employability. In addition, and in the context of the future of work, there is a concern among policy-makers that stronger incentives should be put in place for lifelong learning. This is one of the reasons why in the Netherlands, for example, the government has increased its spending on workforce training.

In post-secondary education, governments generally have little control over student numbers

In tertiary education, most governments have limited control over student numbers by field of study. For example, in only four out of 26 European countries does an authority external to the university decide on the number of state-funded study places (Estonia,[1] Hungary, Lithuania and Turkey). In five countries, admission to universities is based solely on completion of secondary education and therefore neither institutions nor the government can directly control the number of study places (Austria, Flanders, France,[2] the Netherlands and Switzerland). In nine further countries, universities decide independently on the number of study places (Denmark, Ireland, Italy, Latvia, Luxembourg, Norway, Poland[3], the Slovak Republic[4] and Sweden) and in the eight remaining countries, student numbers are agreed through negotiation with an external body (Germany (Brandenburg, Hesse and North Rhine-Westphalia), the Czech Republic[5], Finland, Greece, Iceland, Portugal, Spain and the United Kingdom[6]) (Estermann et al., 2011).

That being said, governments do occasionally take steps to limit the number of students on particular programmes with low labour market demand – even where higher education institutions are relatively autonomous. In Denmark, for example, caps were introduced in 2014 on the number of students in higher education study programmes where graduates have historically experienced systematically and significantly higher unemployment rates. This new system will be evaluated in 2017. In Austria, the government imposes a maximum number of study places that universities can offer in psychology (De Boer et al., 2015). In Quebec (Canada), every programme is limited in size, where the latter is determined on the basis of labour market demand (*devis scolaire*). Finally, in Poland, student numbers can increase within certain margins from year to year (+2%) – although larger increases may be possible upon ministerial decision, taking into account, among other things, the structure of fields of study and the number of students in individual fields of study, including fields of strategic priority for national development, and labour market demand for graduates from various fields of study.

No systematic information is available on the extent to which governments control student numbers in lower level vocational education. As in the case of higher education, practices vary across countries, although there is also likely to be less institutional autonomy. In both Hungary and Portugal, for example, places are largely centrally planned. In Portugal, the National Agency for Vocational Education and Training (*Agência Nacional para a Qualificação e o Ensino Profissional* – ANQEP) uses the outputs of the Skills Needs Anticipation System (*Sistema de Antecipação de Necessidades de Qualificações* – SANQ) to determine the number of professional

courses offered by the national training system. By contrast, in Finland, VET providers can decide independently on the kind of education and training provided, in close collaboration with local employers. Generally, there appears to be a trend towards increased institutional autonomy in the VET sector in many countries (Cedefop, 2008).

Governments have a range of tools at their disposal to steer the mix of provision

Governments can nevertheless use a range of financial incentives to try and steer the mix of provision:

Public subsidies

While institutions may, ultimately, be free to decide what courses they provide, governments can heavily influence provision by targeting public subsidies at particular courses only. Several examples of this practice were identified:

- In *Latvia*, the government provides a certain number of free study places in higher education each year, based on labour market forecasts and consultations with social partners and institutions. The government has been gradually increasing the number of publicly financed study places in STEM fields and cutting them in social sciences, and the plan is to have STEM courses make up as much as 55% of all free study places by 2020 (European Commission, 2015). This approach has been criticised, however, in that it reduces the incentives of institutions to become more labour market oriented, since the decision about which courses to provide is largely taken out of their hands (European Commission, 2015).
- In *South Australia*, there is a subsidised training list, which shows the range of VET courses that may be subsidised through the WorkReady initiative. Courses are assessed for their public value, taking into account a number of factors including: the alignment with government priority industries, industry growth prospects, and the strength of the employment outcome from the qualification. The list is routinely updated and released to add new and replacement courses and to remove courses that are no longer subsidised. Similarly, the New South Wales (NSW) Skills List identifies the qualifications eligible for a government subsidy under Smart and Skilled. Developed through extensive industry and community consultation and labour market research, the Skills List includes a wide range of vocational qualifications to support the diverse skills needs of NSW employers.
- Sometimes, funding for specific courses is made available on top of existing funding. In *Australia*, for example, the federal government announced on 22 November 2013 that it would be allocating additional Commonwealth supported places to universities for four years from 2014 to 2017, for students undertaking courses in postgraduate nursing and allied health specialities, diploma-level language courses, and enabling and diploma-level preparatory courses.
- Some countries make such additional funding available on a competitive basis, so that institutions need to vie amongst each other for a share of the additional student places. In *England*, for example, the Higher Education Funding Council for England (HEFCE) regularly seeks bids for funding to increase the number of graduates in certain priority disciplines (DECC, 2010; BIS and DCMS, 2016).

- Another example is *Lithuania*, where universities can apply for target funding to increase the number of study places in areas of national importance, but which are less popular among students. In the VET sector, institutions and individual employers may apply to the Ministry of Education and Science for funding to start a new programme in an area where there is a clear skills need (European Commission, 2015)
- Even in countries where higher education institutions have a high degree of autonomy, governments sometimes fund particular courses in attempt to address labour market needs. In *Sweden*, for example, the government has made some adjustments in the number of health care and engineering places in higher education (OECD, 2016a).
- In *Korea*, the government provides additional funding to VET colleges and higher education institutions which better serve industrial needs and adjust their programmes to be more in line with labour market needs.
- In British Columbia (*Canada*), the 2014 Skills for Jobs Blueprint initiative announced that it would target 25% of operating grants to post-secondary education institutions on programmes aligned with high-demand occupations (targeted programming supporting labour market priorities). Also in British Columbia, one-time funding may be allocated for short-duration health programmes to address areas of high labour market demand. The one-time nature of the funding allows for flexibility in programme delivery to address changing regional requirements. In Alberta, the Targeted Enrolment Expansion grant is a funding strategy to increase access to high-demand and collaborative delivery programmes in the post-secondary system in order to address labour market priorities.

Similar initiatives to provide additional student places in mathematics, science and technology have been reported in: Estonia, Hungary, Austria, Poland and Portugal (European Commission/ EACEA/Eurydice, 2013).

A subtler alternative to funding student places on some courses of study only, is to allow the public subsidy to vary by field of study – for example by allocating more funding to courses that are deemed to be in high demand by employers or strategic from society's point of view. An important distinction should be made between arrangements where the public subsidy varies by field of study because of differences in cost, and those where the variation in public subsidy is deliberately designed as an incentive to encourage the provision of certain courses rather than others. Indeed, in many countries funding formulae acknowledge the different resource implications of providing certain programmes which arise from expensive teaching materials, higher salaries for specialist teachers, etc. These arrangements cannot be classified under the heading of "financial incentives" and therefore are not discussed further in what follows. That being said, it is important to point out that, even where subsidies vary purely based on cost considerations, this could have an implicit impact on the incentives for institutions, particularly where the subsidies are not an accurate reflection of the true costs of providing each type of course.

Several examples of schemes where variations in public subsidies are used to steer the mix of provision can be found across OECD countries:

- In *Australia*, states such as Queensland have used variations in subsidy rates for VET provision as a way to steer market forces in strategic directions. "Priority One"

qualifications are those which lead to occupations deemed to be critical priorities in Queensland, and the cost of training for apprentices and trainees in these qualifications is 100% subsidised. By contrast, "Priority Two" (not deemed critical in Queensland but considered as high priorities) and "Priority Three" (not deemed critical in Queensland but considered as medium priorities) are 87.5% and 75% subsidised, respectively, and therefore still require contributions by industry, employers, apprentices and trainees. The funding priorities are determined from national and state data in conjunction with industry input, and are reviewed annually.

Also in Australia, the Commonwealth Grant Scheme provides funding to higher education providers based on the number of full-time equivalent students. As of 2014, the amount of subsidy varies across eight fields of education (de Boer et al., 2015). These "funding clusters" are: Law, accounting, administration, economics, commerce; Humanities; Mathematics, statistics, behavioural science, social studies, computing, built environment, other health; Education; Clinical psychology, allied health, foreign languages, visual and performing arts; Nursing; Engineering, science, surveying; Dentistry, medicine, veterinary science, agriculture.

- In *England*, the government funds projects to develop subject provision and increase student demand in modern foreign languages (Routes into Languages programme), mathematics (sigma), and quantitative social science (Q-step programme). These subjects are sometimes collectively referred to by the term "strategically important and vulnerable subjects" (SIVS).
- In *Denmark*, the vast majority of state grants for educational institutions are allocated using the "taximeter" system, the basic idea of which is that money follows the student. Institutions are given a block grant, which institutions are free to use as they see fit. This block grant is calculated using rates which vary by groups of educational programmes. These rates are politically decided and are meant to reflect societal needs, in addition to the costs and characteristics of programmes (European Commission, 2015). Labour market needs therefore play a role in the funding of educational programmes in Denmark.
- In the *Czech Republic* additional funding has recently been provided to the following programmes of study: "minor" languages (e.g. Vietnamese, all Balkan languages, etc.), art-oriented study programmes, as well as nursing.

The examples cited so far discuss public subsidies for particular programmes of study. However, governments can also encourage institutions to provide transversal skills which they would expect all students to gain, regardless of their field of study. An interesting example of this approach is Poland where, until recently, the government provided subsidies to universities for providing specific courses ("ordered specialities" or "contracted programmes") – most commonly in engineering, mathematics and the natural sciences. For the period 2014-20, this approach has been replaced by the Competency Development Programme which is based on skills across all courses of study as opposed to specific courses, with a particular focus on entrepreneurial, professional, interpersonal and analytical skills.

Transferrable skills are also the focus of public subsidies for institutions in a number of other countries. For example, Flanders (Belgium) provides funding to strengthen the transferrable skills of PhD students, while in Norway emphasis is placed on integrating entrepreneurship into different types of education. Similarly, Estonia has launched the EETA programme in order to develop the teaching of entrepreneurial competences at all levels of education, and Austria has made funding available through its higher education

performance agreements for developing entrepreneurial skills. In Chile, competitive funds are made available for institutions to strengthen the teaching of transversal skills in VET (*Concurso para el fortalecimiento de las competencias transversales*). In this context, it is worth highlighting that the European Commission intends to revise its Key Competencies Framework in 2017, with the goal of developing a shared understanding of what these key competencies are and fostering their introduction in education and training curricula – including entrepreneurship and transversal skills.

Finally, it is worth noting that, while the discussion so far has generally focused on subsidies for longer education and training courses, governments also subsidise short-term training courses through their Public Employment Service. Indeed, where such training is not provided in-house, the Public Employment Service will either provide vouchers or purchase such training from external training providers and, frequently, the courses procured will be in areas of high labour market demand. In Spain, for example, the Observatory of Occupations identifies those occupations where the demand for labour is high/growing and these are subsequently discussed in round tables with the State Foundation for Training for Employment, resulting in a list of high priority training needs. Training institutions only receive funding if their proposal includes at least 50% of learners being trained in priority training actions.

Obviously, the use of subsidies to encourage institutions to provide certain types of courses assumes that the fundamental problem is a lack of provision and that, once this supply-side bottleneck is removed, sufficient demand exists for the courses that are being subsidised.

Performance-based funding

Another, more indirect way to encourage education and training providers to align provision with labour market needs is to base an element of the funding formula on a set of pre-defined outcomes, such as the number of students/graduates in certain fields, or the labour market outcomes of graduates. This is part of the so-called "performance-based funding" (or "outcomes-based funding") that is increasingly being used by countries across the globe to "connect funding to measureable indicators and thus […] to incentivise and reward the achievement of specific policy goals" (Estermann and Claeys-Kulik, 2016). The advantage of this approach is that it places responsibility in the hands of institutions and encourages them to think carefully about how to increase intake/graduation in certain subjects or how to improve the labour market outcomes of their students, while giving them the freedom to come up with their own solutions. The European Commission has advocated the use of such funding mechanisms on a number of occasions (see Estermann and Claeys-Kulik, 2016).

One option is to use such funding to encourage institutions to provide certain types of courses and to ensure that students graduate from them. In the United States, for example, a large number of states (37) have introduced an element of performance-based funding in the financing of two- and four-year colleges to encourage them to provide certain types of courses (especially STEM, Allied health and Education) – and to ensure that students graduate successfully. Table 2.1 provides a summary overview of the metrics that are used by each of these states.

Table 2.1. US States using performance-based funding to incentivise the provision of certain fields of study

State	Performance indicator
Arizona	Performance-funding based on degrees awarded, and there is a 15% bonus for certain high demand degrees.
Arkansas	40% of performance funding for 4-year institutions is based on 4 mandatory measures, one of which is the number of STEM credentials earned.
Colorado	The new performance funding model includes metrics for retention and completion with additional weights for type of credential earned.
Connecticut	The 2015 House Bill 6919 establishes a task force to develop a strategic outcomes-based funding plan that is aligned with the goals and benchmarks established by the Planning Commission for Higher Education. It specifically mentions increasing the number of degrees in areas with workforce shortages.
Florida	The metrics used by the university funding model include bachelor's and graduate degrees awarded in areas of strategic emphasis.
Hawaii	The outcomes incorporated into the formula include degrees and certificates awarded to students in STEM fields.
Illinois	Additional weight is provided for graduates who majored in a STEM or health care field.
Indiana	Metrics for two- and four-year institutions include high impact degree completion which is defined as bachelor, masters and doctoral degrees in STEM related fields).
Kansas	Four-year institutions have a choice of indicators, one of which is the percent of certificates and degrees awarded in STEM fields.
Maine	Metrics include the number of degrees in STEM, Allied Health, and other high priority fields.
Massachusetts	Degrees and certificates in high demand fields are weighted more.
Michigan	Performance metrics for universities include undergraduate degree completions in critical skills areas. In the case of community colleges, 15% weight is given for local strategic value.
Minnesota	Performance goals for the University of Minnesota system include increasing the total number of STEM degrees by 3%.
Mississippi	Metrics include degrees awarded in priority fields (STEM, Health, Education).
Missouri	Metrics for 2-year colleges cover percent of developmental students who successfully complete their last developmental mathematics course and then successfully complete their first college- level math course. They also include the percent of career/technical graduates who pass required licensure/certification examination.
Nevada	While metrics are specific to each institution, they include "economic development" - i.e. the number of STEM and allied health degrees and certificates, as well as the number of certificates and degrees awarded in an institution selected discipline which aligns with the state's economic development plan.
New Mexico	The formula rewards institutions for the number of certificates and degrees awarded in state workforce priority areas.
North Carolina	Baselines and goals are set for a range of measures, including the developmental student success rate in college-level mathematics courses.
Ohio	Part of funding for two-year colleges is linked to students completing any developmental mathematics in the previous year and attempting any college level Math either in the remainder of the previous year on any term this year. For four-year colleges, additional weights are awarded for degree completion in STEM fields.
Pennsylvania	Optional metrics related to the number of STEM degrees.
South Dakota	Top of Form One-half of performance funding will be based on the number of new degrees awarded with special emphasis on degrees in science, technology, engineering, and mathematics (STEM) or other critical need areas.Bottom of Form
Texas	Top of Form Metrics include: the number of students who successfully complete developmental education in mathematics; the number of students who complete first college level course in mathematics; additional points for degrees awarded in STEM or Allied Health fields.Bottom of Form
Utah	One of the metric used is the percentage of students enrolling in, and successfully completing, developmental mathematics courses and who immediately or concurrently enroll in college level mathematics.
Washington	Measures include completing college mathematics.
Wisconsin	The performance metrics reward the number of degrees and certificates awarded in high−demand fields and the number of programs or courses with industry−validated curricula.

Source: National Conference of State Legislatures (2015), *Performance-Based Funding for Higher Education*. http://www.ncsl.org/research/education/performance-funding.aspx.

An alternative option is to use such funding to reward institutions based on the labour market outcomes of their graduates. Again, several states in the United States have built this approach into their funding formulae for community colleges and/or higher education (see Box 2.1). At the federal level, the United States also operates the "Gainful Employment Rule", which requires vocational programmes at for-profit higher education institutions and non-degree programmes at community colleges to

meet minimum thresholds with respect to the debt-to-income ratios of their graduates. Programmes that fail to meet these minimum requirements risk losing their federal funding for a period, which increases their chances of closing down.

Box 2.1. Rewarding good graduate labour market outcomes in the United States through performance-based funding for higher education

Many states in the United States have moved away from enrolment-based funding systems for higher education that are based exclusively on how many full-time equivalent students are enrolled at the beginning of each academic year, and instead are aligning funding models with state goals and priorities. Most states now have a funding formula or policy in place to allocate a portion of funding based on performance indicators. In some states, these performance indicators include measures of the labour market success of recent graduates:

- In *Florida*, the university performance funding model adopted by the Board of Governors allocates a part of funding based on the percent of bachelor's graduates employed and/or continuing their education one year after graduation, as well as on the median average full-time wages of undergraduates employed in Florida one year after graduation. Similarly, the Florida College System metrics include job placement/continuing education as well as entry level wages.
- In *Kansas*, new state funds for two-and four-year institutions are allocated through performance agreements which comprise a number of indicators from which colleges can choose, including: i) the percent of students employed or transferred; and ii) the wages of students hired.
- In *Louisiana*, institutions enter into performance agreements with the Board of Regents. Metrics incorporated into those agreements include the employment of degree and certificate earners.
- In *Minnesota*, 5% of base funding is reserved until institutions meet three out of five performance goals. For Minnesota State Colleges and Universities, one of these goals is to increase the employment rate of graduates by at least 4%.
- In *Missouri*, under the 2014 Senate Bill 492, each institution was required to add a metric for student job placement in a field or position associated with the student's degree level and pursuit of a graduate degree.
- In *New York*, funding is allocated through the Next Generation NY Job Linkage Program, eligibility for which depends on colleges submitting a performance improvement plan. Among the performance metrics, the 2015 Assembly Bill 3003 lists the following measures: the number of students who are employed following degree or certificate completion and their wage gains.
- In *Tennessee*, 100% of state funding is allocated based on institutional outcomes (with the exception of some base amount which is set aside for operational support). Community college metrics include the number of graduates placed in jobs.
- In *Utah*, USD 1.5 million was set aside in fiscal year 2015 in one-time funding allocated based on performance. One of the performance metrics used to allocate this funding was the job placement rates following graduation.
- In *Wisconsin*, one of the nine performance metrics used is the placement rate of students in jobs related to their programme of study.

Source: National Conference of State Legislatures (2015), Performance-Based Funding for Higher Education. http://www.ncsl.org/research/education/performance-funding.aspx.

Similar initiatives exist in a number of other countries. In Canada, the province of Ontario has required universities and colleges to report on key performance indicators (KPIs) since the mid-1990s, and these include data on postgraduate employment as well as employer satisfaction rates (Ziskin et al., 2014). Similarly, in the Province of Alberta, funding has been linked to various performance indicators, including the

employment rate of graduates. In both provinces, roughly 2% of the overall grant is tied to performance. In Korea, the government provides special funding to the 50 universities with the best performance in terms of: i) graduate employment rates; ii) the proportion of teachers with industry experience; iii) the proportion of students who took part in internships or fieldwork [Program to Foster Leading Universities with focus on Industry-Academic Cooperation (Leaders in Industry-University Cooperation – LINC)].

While most funding systems for higher education in European countries also contain an element of performance-based funding (Claeys-Kulik and Estermann, 2015),[7] the formulae used have tended to focus primarily on input indicators such as student numbers and, to a lesser extent, output-oriented indicators (e.g. number of graduates). According to Claeys-Kulik and Estermann (2015), only the Czech Republic, Finland, Hungary, Italy, Portugal, Romania and the Slovak Republic use the graduate employment rate as an indicator for allocating performance-based funding.

- In the *Czech Republic*, the unemployment rate of graduates was, over the period 2012-15, one of several indicators that were used to calculate the budgets of higher education institutions – but its weight was rather low (European Commission, 2015).
- In *Finland*, the performance-based funding scheme for universities has, since 2013, included a small (1%) share of funding which was allocated on the basis of graduate employment outcomes (Kettunen, 2016). For polytechnics, this share of funding is slightly higher, at 3%.
- In the *Slovak Republic*, one of the several indicators used in calculating the state subsidy for study programmes at public higher education institutions is the graduate employment coefficient of a particular institution in a particular field of study.

In addition to these, the present review found examples of performance-based funding in a couple of other European countries. Since 2009, France allocates 20% of funding for higher education institutions on the basis of performance measures, including graduate employment (EPC and DGEFA, 2010) and, from 2017 onwards, Estonia will use a new funding model for higher education which will allocate up to 20% of funds based on performance. One of the six indicators will be the labour market outcomes of graduates.

While a substantial number of countries use performance-based funding to reward institutions that achieve good graduate labour market outcomes, the actual impact of such funding is likely to be limited given that: i) employment outcomes (or the share/number of students/graduates in a particular discipline) generally represent only one among many performance indicators; and ii) the overall share of funding that is distributed on the basis of performance is often very small.[8] In addition, the funding available for performance frequently consists of a fixed amount and so competition for funds amongst institutions ends up being a zero-sum game (what one institution gains, another loses). This is also likely to limit the incentive for institutions to enhance their performance.

There are also some risks attached to the use of performance-based funding. One of these is the potential volatility in funding for institutions – particularly when funding is not received up front but only much later, at the point where performance can be

assessed. Another risk is that institutions "game" the system to improve performance as measured against the indicators chosen, but at the expense of other, often unmeasurable (or more difficult to measure) outcomes, such as quality. Some examples of such gaming behaviour were cited by Cedefop (1998), in relation to the use of performance-related funding for VET in the United Kingdom: "cases of training providers registering non-existent trainees, double-counting candidates, inventing courses and placing trainees with "friendly" employers for a short time in order to trigger output payments related to job placement". Another possibility is that institutions gradually shift towards the provision of courses that have immediate labour market outcomes, without worrying about the long-term labour market attachment or quality of jobs obtained. This happened to some extent in the early days of the Job Training Partnership Act (JTPA) in the United States, which partly paid training providers on the basis of placement and retention in unsubsidised employment. This resulted in a pronounced shift towards training courses with good short-term placement rates, with little attention paid to participants' longer-term employment outcomes. Subsequent reforms of the programme devised new performance measures which focused on longer-term employment outcomes (Cedefop, 1998).

A related danger with performance-related funding, if it is not designed appropriately, is that institutions engage in "creaming" (i.e. selecting only those students with the best possible labour market prospects). There is also the risk of a "Matthew effect", whereby well-performing institutions get better, and poor-performing ones worse. Some may also argue that performance-based funding, particularly where it represents a large share of total funding, infringes on institutional autonomy – although, in practice this will depend on the design, process and implementation of the performance-based rewards (de Boer et al., 2015). Either way, such systems often involve high transaction costs for all parties involved. Finally, while performance-based funding may have a positive effect on the supply-side, it cannot solve problems on the demand-side: even if institutions align their mix of provision to labour market needs, nothing guarantees a sufficient interest on the part of students to take up the right courses.

Research has also shown that the success of performance-based funding depends critically on a number of other factors, including: the regulatory framework; the share of funding that is linked to performance (as well as how long it has been in place, and the stability of the system); whether the system sets uniform goals, criteria and solutions, or tailor-made ones; and the transparency of the system. For example, the formula-based budgeting system that was in place in Austria prior to 2013 was accused of being complex and opaque, and therefore failed to have any significant impact on the behaviour of institutions (de Boer et al., 2015). In practice, it is very difficult to design a standardised system which can adequately account for the heterogeneity of institutions and their student populations. In Italy, for example, a range of indicators were introduced into the funding mechanism in 2008 to reward the quality of research and teaching, including the employment outcomes of graduates. The system was criticised because it failed to take into account regional variation in unemployment rates as well as differences in student intakes (European Commission, 2015).

Performance contracts

Many countries use performance contracts (sometimes also called target agreements or development contracts) to agree certain objectives to be attained with education providers. These are not always tied to funding ("soft" versus "hard"

contracts) but, where they are, they tend to reward organisations on the basis of *expected* rather than *actual* performance. As de Boer et al. (2015) point out, they are a less binding way for governments to try and steer the system. Some examples of such contracts that focus on graduate labour market outcomes or the provision of certain types of courses include:

- In *Denmark*, the development contracts signed between the government and institutions include indicators that measure the transition to the labour market assessed through analyses of the job situation 4-19 months after graduation. The contracts are not legally binding (they are letters of intent), and they were introduced to try and achieve a shift from control and top-down regulation by the government to more dialogue and agreements based on the universities' own goals and commitment. That said, universities must report on their contracts in their annual reports and in the annual audit by the ministry. If universities fail to comply with their contracts, their board can be dissolved by the minister (de Boer et al., 2015). Lessons from the Danish experience with development contracts suggest that such contracts should contain an element of flexibility which allows them to be adapted to the specific needs of individual institutions, and also that it is better to have fewer (3-5), and more focused targets.
- In *Germany*, the Government of Nordrhein-Westfalen withdrew from detailed interference in the affairs of higher education institutions in 2007. With the increase in autonomy of institutions, performance contracts started playing a more important role in linking the objectives of the state to the behaviour of institutions. The performance contracts covered issues such as research priorities, but also the number of places for new entrants per department (Jongbloed, 2010).
- *Estonia* abandoned its system of state-commissioned places and now uses performance agreements which give institutions more autonomy in deciding how many study places to offer in different fields of study (European Commission, 2015), while still allowing the government to negotiate certain floors or ceilings on the size of individual programmes. For example, so far agreements have been struck to reduce the number of admissions in law programmes, increase them on IT courses, and to accept a minimum of students to first year medicine.
- In *Scotland*, outcome agreements set out what colleges and universities plan to deliver in return for their funding from the Scottish Funding Council. In their outcome agreements for 2015-16, institutions committed to providing education that best meets the changing social and economic needs of Scotland. Some of the ways they have said they will do this include: offering more opportunities to study STEM subjects, collaborating where possible in relation to nursing provision, and supporting the National Gaelic Language Plan.
- In 2016, *Norway* introduced multi-annual performance agreements in some higher education institutions, which aim to set more concrete expectations with regards to their performance. Once these are up and running successfully, the plan is to roll these agreements out to all institutions.
- In *Latvia*, agreements are concluded every year between the Ministry of Education and Science and higher education institutions which cover (amongst others) the number of state-funded study places and the number of graduates.

One-off (capital) funding

Sometimes, the provision of certain types of skills is held back by institutions' uncertainty about the future demand for such skills and/or the high cost of setting up new programmes or expanding them (particularly where capital investments are significant). In such cases, there may be an argument for governments to provide one-off funding to establish the necessary conditions for those skills to be provided. For example, in the Slovak Republic, capital funding has been made available for the development of university science parks; in Latvia, EU Structural Funds are used to enlarge and modernise STEM facilities; and the Government of New South Wales (Australia) provided funding for modernising facilities and information technology initiatives in technical and further education (TAFE). In Belgium (Brussels and Wallonia), Advanced Technology centres are being set up in secondary schools to provide equipment to promising professional sectors (European Commission, 2015). Some countries even build entirely new institutions to provide skills that are deemed to be strategic or will be in high demand. For example, the UK Government has recently set up a National College for Digital Skills, which accepted its first students in September 2016. The college seeks to bring together best practice for the teaching and learning of advanced digital skills. The ambition is to reach 5 000 students within five years (BIS and DCMS, 2016). In Italy, higher technical institutes have been set up in collaboration with the regions to try and provide a rapid response to the skills demands of local economies, particularly in those technological areas covered by the "Industry 2015" plan (European Commission/EACEA/Eurydice, 2013). In order to make such investments sustainable, however, it is important to ensure that the necessary operational funds can be secured once the programmes are up and running.

Regulating the start-up of programmes

Governments can also steer the supply of education and training by regulating the start-up of new programmes (and, indeed, the closing of existing ones). This can be seen as a financial incentive insofar as a programme's eligibility for public subsidies is conditional on its being approved. In many cases, such approval is carried out by education experts and based on an assessment of the anticipated learning outcomes, the quality of instruction (including the qualifications of the teaching staff and the adequacy of physical infrastructure and other resources available), as well as on the positioning of the new programme in relation to existing programmes (e.g. to avoid duplication).

Increasingly, however, countries also require evidence that there is a labour market need for new programmes. This is the case, for example, for VET programmes in Australia (South), France, Hungary, Ireland, Korea (contract-based departments), Poland, Sweden and the United States, and for HE programmes in Austria, Denmark, Flanders (Belgium), France, Germany, Italy, Lithuania, Manitoba (Canada), Poland (academic units having no authority to award the degree of *doktor habilitowany*) and the Slovak Republic. Such labour market needs can be demonstrated in a variety of ways, including through: surveys of demand (Austria), employers' opinions (Lithuania and Denmark), agreements with employers to provide traineeship places (Hungary), evidence of alignment with skills gaps (Ireland), or the use of other labour market indicators, like employment rates (Denmark). In France, requests for new VET qualifications (which, most often, come from professional branches, but sometimes from individual companies in certain sectors) are sent to the Ministry of Education and

must be supported by an "opportunity study" which sets out the economic/technological case for the new qualification as well as the employment prospects. The request is then submitted to national consultative bodies (*commissions professionelles consultatives*) which are composed of employers and employees. Upon positive evaluation, the content of the qualifications is designed by working groups composed of education experts, as well as employers and employees – and, when finished, the content of these qualifications then goes back to the national consultative bodies for approval.

Most often, the onus is on the institution proposing the new programme to demonstrate the existence of a labour market need, although in some systems this is undertaken by the government. In France, for example, "opportunity studies" are commissioned by the Ministry of National Education for new VET qualifications. These studies, which are carried out by external research bodies, identify existing and anticipated skills needs, and how these translate into qualification requirements. An education inspector (*inspecteur de l'éducation nationale*) is then tasked with collecting and reviewing the relevant studies and reports concerning skills projections in the area under consideration (European Commission, 2015).

One important question is whether labour market demand is best defined in terms of current or future needs. Relying on the current needs of employers may help in solving short-term skills shortages, but may not address the longer-term needs of the labour market, and could also lead to volatility in course provision. For example, in Sweden, Higher Vocational Education programmes are very responsive to labour market needs – but they are approved for a short period of time and disappear once the demand has been satisfied (see Box 2.2). Apart from resulting in very high transaction costs for providers and the government (who are involved in a constant process of approving and closing down courses), this also causes problems for students because there is no clear study route for those who would like to progress in their studies. On the other hand, funding places on the basis of forecast demand may also result in problems if there is no current need for such skills. For example, in Ireland, the new national training authority (SOLAS) now provides five-year forecasts of apprentice requirements based on analyses of future market demand. However, it is not clear to what extent such analyses have any influence on employers' decisions to sponsor apprentices (OECD, 2016b).

Another question is whether skills needs should be defined at a national, or rather at a regional/local level. In most countries, this seems to be done at a national level, but France, Germany and Poland take a more local/regional approach. In France, the relevance for the local labour market is assessed when evaluating HE institutions' new supply of training. In Poland, new VET programmes need the agreement from local (*poviat)* and/or regional (*voivodeship*) labour market councils, which are advisory bodies to local/regional labour offices and are responsible for ensuring that new programmes are in line with labour market needs (European Commission, 2015). In Germany, university courses need to be approved by the regional Ministry of Science (European Commission, 2015).

Box 2.2. The Swedish model of Higher Vocational Education

Set up in the mid-1990s, and inspired by the demand for specific skills expressed by employers like Volvo, the aim of the Swedish model of Higher Vocational Education (*Yrkeshögskolan*, or *Yh* for short) was to provide a form of education that could respond to labour market needs, while at the same time deliver highly skilled professionals. Typical *Yh* programme length is between six months and two years. However, for a programme to result in a qualification upon graduation, it must have a minimum duration of one year.

Employers are the main stakeholders in this model, and their involvement is four-pronged. First, employers work together with providers to translate specific skills needs into a programme proposal. Second, they back the funding application that the training institutions submit to government (Swedish National Agency for Higher Vocational Education): no funding can be obtained without clear proof of employer demand. Third, once the programme is approved, each provider has to set up a steering committee for the programme, made up of employers, employer organisations, and trade unions. This steering committee is responsible for the implementation of the programme, including admissions, the syllabus, and quality assurance. Finally, nearly all programmes (except those of very short duration) contain a workplace learning component (*Lärande i Arbete*, or LIA), which is seen as one of the main success factors behind the Swedish model of Higher Vocational Education.

The providers of Higher Vocational Education are autonomous in the sense that they decide which applications for courses to submit – although they need to abide by the rules set by the national agency. In practice, a wide range of organisations can provide HVE courses, including state higher education institutions, municipalities, county councils and private natural or legal persons. Importantly, there are no requirements for staff to have formal teaching qualifications, which allows practitioners to teach.

Source: Tomaszewski, R. (2012), "The Swedish Model of Higher Vocational Education", mimeo.

While in theory it is useful to consider the labour market relevance of new programmes, there is a danger that, in practice, it turns into a mere formality (a box-ticking exercise), rather than a process which can truly influence the decision of which programmes to offer. In Austria, for example, evidence of labour market needs often has no more than a "confirmatory or legitimising character" (European Commission, 2015). One issue is that there are high transaction costs involved in approving programmes, particularly where a wide range of information needs to be considered – which makes it difficult to consider and analyse detailed evidence on labour market needs. This is one of the reasons why some countries (e.g. Denmark) are moving away from the accreditation of individual study programmes and towards the accreditation of institutions instead – combined with a much greater emphasis on internal accreditation procedures (while retaining the same requirements for accreditation).

Other factors which may influence the degree to which labour market needs are truly taken into account is the independence and the composition of the committee/body charged with approving study programmes. Involving a varied group of stakeholders may be important, such as in the case of the accrediting council (*AKKREDITIERungsrat*) in Germany – which consists of representatives from institutions, local government, social partners, international education experts, as well as students (European Commission, 2015). Involving a wide set of stakeholders might also be useful because it allows for the consideration of a broad set of reasons for introducing a new programme – as long as there are clearly defined criteria for approving new programmes as well as processes for resolving potential disagreements.

Tuition fees

In most countries, education and training providers are not entirely free to set the level of tuition fees. In Europe, for example, universities are free to set tuition fees in only four countries (Estonia, Hungary, Latvia and Luxembourg). In the other countries where tuition fees are charged, the level of tuition fees is either: i) set jointly by universities and an external authority (Switzerland); or ii) set by universities under a ceiling set by an external authority (Flanders, Italy, Lithuania, Germany (North Rhine-Westphalia, Portugal and the United Kingdom); or iii) entirely set by an external authority (Austria, France, the Netherlands, Spain and Turkey) (Estermann et al., 2011).

In theory, therefore, countries can steer investments in education and training through tuition fee policies. In practice, however, countries do not appear to do this. Table 2.2 shows the extent to which fees in tertiary education are differentiated by field of study, as well as the reasons for doing so. In more than half of the countries with available data (and where tertiary institutions charge tuition fees), fees are differentiated by field of education. The exceptions are: Belgium, Italy, the Netherlands and Switzerland. However, while there are several reasons why countries vary tuition fees by field of study, it does not appear as though countries lower tuition fees to incentivise students to pursue certain fields of study over others. If anything, fees are higher for subjects for which there is higher labour market demand. Presumably, the promise of higher labour market returns is deemed to be a sufficient incentive for individuals to pursue those fields of study. One exception is New Zealand where, in response to engineering shortages, the government expanded engineering positions in universities and reduced applicable tuition fees (OECD, 2015b).[9]

Instead, tuition fees are allowed to vary across fields of study to account for: equity issues; the cost of education; and differences in labour market opportunities (in the latter case, governments tend to charge higher fees for courses that have good labour market outcomes – i.e. fees are set in accordance with estimated future ability to pay). As shown by Table 2.2, the latter reason is the main rationale countries give for differentiating fees. In Australia for example, tuition fee differentiation is linked to the level of salaries that graduates in certain disciplines can expect to receive. However, the public cost of the field of education is also used to differentiate tuition fees in Australia, as well as in Hungary and New Zealand. In these countries, the higher the cost of the field of education, the higher the level of tuition fees charged by educational institutions.

Table 2.2. Differentiation of level of tuition fees by field of education, tertiary education, OECD, 2013-14

	Tuition fees	Differentiation by field of study	Reasons for differentiation		
			Relevance to labour market	Public cost	Other
Australia	Yes	Yes	Yes	Yes	No
Austria	Yes	Yes	No	No	No
France	Yes	Yes	m	m	
Canada	Yes	Yes	Yes	No	No
Hungary	Yes	Yes	Yes	Yes	No
Israel	Yes	Yes	Yes	No	No
Korea	Yes	Yes	Yes	No	No
New Zealand	Yes	Yes	Yes	Yes	No
Slovak Republic	Yes	Yes	Yes	No	No
Slovenia	Yes	Yes	m	m	m
United Kingdom	Yes	Yes	Yes	No	No
United States	Yes	Yes	No	No	Yes[1]
Belgium	Yes	No			
Italy	Yes	No			
Japan	Yes	m			
Netherlands	Yes	No			
Switzerland	Yes	No			
Denmark	No				
Estonia	No				
Finland	No				
Norway	No				
Slovak Republic	No				
Slovenia	No				
Sweden	No				
Turkey	No				

Source: OECD (2015a), *Education at a Glance 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2015-en.

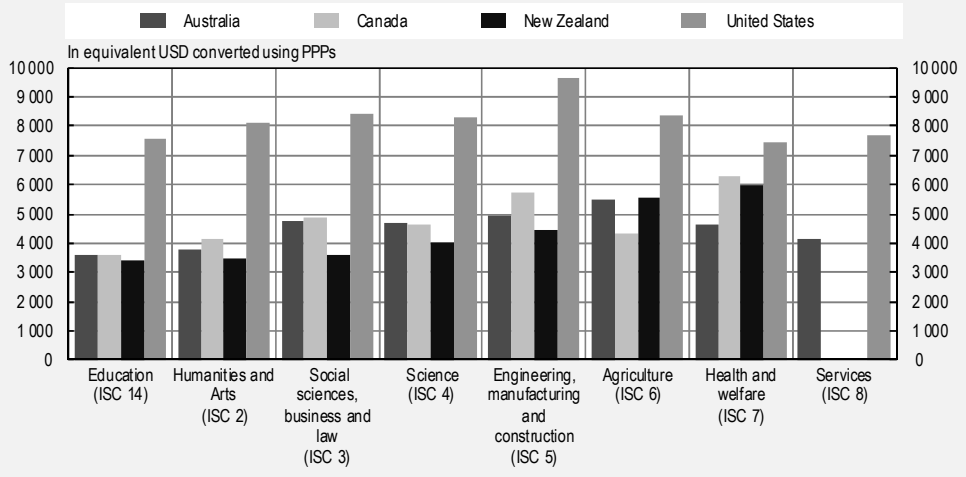
Box 2.3 offers a more in-depth analysis of the structure of tuition fees for bachelor's courses by field of study in Australia, Canada, New Zealand and the United States. It confirms that fees are generally higher in fields of study with good labour market outcomes and high costs of provision (e.g. engineering and medicine).[10]

Box 2.3. Tuition fees for bachelor's degrees by field of study in Australia, Canada, New Zealand and the United States

For four out of the 13 countries listed in Table 2.2 that vary tuition fees for bachelor's degrees by field of study, OECD (2015a) has succeeded in collecting more detailed information about the structure of fees by field of study. Figure 2.5 shows how fees vary by field of study in relation to those charged for degrees in Education (the field of study that generally has the lowest fees). Although there is some variation across countries, there is a clear tendency for fees to be higher in courses that are either expensive to provide or that have good labour market outcomes – e.g. Engineering, manufacturing and construction, as well as Health and welfare (which includes Medicine). The clearest example of this is in New Zealand. But there are also exceptions. For instance, fees in Health and welfare are generally lower than those in Education in the United States. Similarly, in Australia, fees for Health and welfare are amongst the lowest. These differences in pricing structures are likely to reflect a mixture of differences in labour markets, student demand, as well as government and societal priorities.

Figure 2.5. **Average tuition fees charged by tertiary institutions for bachelor degrees, by field of education, 2013-14**

Based on full-time students



Source: OECD (2015), *Education at a Glance 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2015-en.

2.2. Demand-side measures: Incentives for individuals

The previous section focused on supply-side measures – i.e. interventions targeted on education and training institutions that are designed to influence the mix of provision. The present section turns to the demand-side, starting with measures that are targeted at individuals. While there are many reasons why individuals invest in education and training, an important motivation is the expected return in terms of higher future earnings in the labour market. Those returns can be modified by government through the use of financial incentives to try and change the behaviour of individuals.

Traditionally, such measures have been concerned primarily with getting individuals to invest more in education and training, regardless of the type of skills that are acquired. The tools that governments have at their disposal to try and achieve that goal include: subsidies, savings or asset building mechanisms, tax measures, subsidised loans, time accounts and training leave entitlements. Each of these will be discussed in

turn, including their relative strengths and weaknesses – however, the review will pay particular attention to those cases where countries use such incentives to steer the education and training decisions of individuals. To anticipate some of the findings, governments primarily use grants and scholarships to reach that objective. Other measures leave much more freedom to individuals to choose what skills they invest in – although this can still lead to decisions that meet labour market needs if they are coupled with other interventions, such as good information, advice and guidance.

Finally, it is worth noting that the role of financial incentives is likely to be limited in those cases where education and training are largely provided free of charge. However, where private contributions are significant (or foregone earnings as a result of participation in education and training are high), they can play a more important role. For example, Chapter 1 of this report showed that private contributions tend to be more important in higher education than at other levels of education. Similarly, the provision of adult learning is largely taken care of by the private training sector, which tends to receive few public subsidies (Ziderman, 2016). Moreover, adults wanting to participate in training often have to take time out of work, which adds significantly to the cost of training. In these cases, there would appear to be more scope for the use of financial incentives.

Subsidies

Subsidies are the most direct, as well as a highly flexible, way of providing financial incentives to individuals to invest in education and training. They include: scholarships, grants, bursaries, allowances, vouchers, training cheques, credits, etc. and come in many shapes and sizes – which makes them difficult to classify. A simple taxonomy distinguishes between subsidies on the basis of their target population, on the one hand, and the type of skills gap they seek to address, on the other (Figure 2.6). So subsidies can either target students in initial education, the employed, or the unemployed/inactive; and the skills promoted can either be basic, transversal or specialist. The discussion that follows focuses on the latter type of skills. Policies to promote transversal skills were already discussed to some extent in Section 2.1 and Box 2.5 provides a brief overview of some programmes that target basic skills acquisition.

Figure 2.6. A simple taxonomy of subsidies for education and training targeted at individuals

		Target group		
		Students (initial education)	Employed	Unemployed / Inactive
Skills	Basic			
	Transversal			
	Specialist			

The classification of incentives proposed here helps to structure the discussion that follows, but it is necessarily schematic. Not all subsidies can be neatly classified into one of the cells of Figure 2.4. For example, several countries have programmes in place that are open to both the employed and the unemployed/inactive (although the generosity of the subsidy may still vary to reflect the relative disadvantage of each group). Examples of such programmes include: the *Cheque Formação* in Portugal; de *Tijdelijke regeling*

subsidie schooling richting een kansberoep in the Netherlands; education and training benefits in Japan; and the *Bildungsgutschein der Arbeiterkammer* in Austria. In addition, subsidies vary substantially along a large number of other dimensions, including: their generosity (level of subsidy and length for which they are awarded), eligibility rules, the type of expenditures covered, the modalities of payment, etc.

Subsidies are widely used across all countries to incentivise education and training acquisition: most countries have student support systems in place as well as subsidised labour market training for the unemployed/inactive. The majority of these programmes, however, do not target specific skills. This is particularly true in the case of grants for initial education, the objective of which is primarily to increase participation in post-compulsory education for less advantaged groups. That being said, several countries have scholarship schemes in place that target specific skills that are in high labour market demand – frequently science, technology, engineering and mathematics (STEM) skills – and training for the unemployed/inactive is commonly organised to satisfy existing (or even anticipated) skills needs. In the discussion that follows, the focus will be primarily on the extent to which such programmes are used to steer education and training decisions.

An important trade-off in the design of subsidy schemes is between, on the one hand, simplicity (and therefore lower administration costs, but possibly higher deadweight loss) and, on the other hand, greater targeting (which increases administration costs and possibly reduces take-up, but also cuts deadweight loss). Schemes that are less targeted have tended to disproportionately benefit the high-skilled and, therefore, resulted in high deadweight loss. For example, in the case of the Training Cheques in Flanders (Belgium), almost half of the beneficiaries were highly qualified employees, while middle- and low-skilled people were underrepresented. As a result, the Training Cheques were reformed in 2015 and access was restricted to the low- and middle-skilled (and the system is currently undergoing further reforms). In Estonia, the training vouchers made available over the period 2009-10 were used primarily by highly educated unemployed persons because they funded upskilling rather than retraining courses. This observation led to a reform of the vouchers in 2011 which allowed them to be used for retraining as well.

That deadweight losses are often high was demonstrated in the literature review by Oosterbeek (2013), who estimated that one additional euro of training expenditures costs approximately three euros of taxpayers' money (Oosterbeek, 2013). To reduce deadweight loss, many subsidy schemes are targeted on the low-skilled and the disadvantaged, as in the example of Flanders given above (see Box 2.4). However, if individuals are unfamiliar with training, even targeting subsidies might not help unless such aid is accompanied by other interventions such as information, advice and guidance – an issue that will be discussed in more depth in Chapter 3 of this report. When the objective is to steer education and training decisions, it is also not clear whether there is any particular value in targeting financial incentives at vulnerable groups.

Box 2.4. Targeting incentives at vulnerable groups

Certain groups face more barriers than others with regards to skills investments and these groups also tend to be those most affected by changing skills demands. Such groups include: low-skilled and low-wage workers, migrants, minorities, people with disabilities, young and older workers, the long-term unemployed, as well as some parents. Given that many advantaged groups are likely to invest in their own skills without the help of public subsidies, governments can reduce deadweight losses of incentives programmes by targeting such schemes at those who need them most.

The vast majority of incentives programmes for vulnerable workers focus on the individual as the main beneficiary (rather than the employer). Frequently, access to programmes is restricted based on a number of characteristics such as age (e.g. 45-64 in case of the Targeted Initiative for Older Workers in Canada); income and wealth (e.g. the extensive means-test of the *Kyushoku-sya Shien Seido* programme in Japan); skill (e.g. maximum upper secondary education for Alternate Training in Wallonia, Belgium); the presence of children (e.g. the Transitional Benefits for single parents in Norway); disability (e.g. the Australian Mobility Allowance). In Australia (Aboriginal and Torres Strait Islander), Canada (Aboriginal) and Israel (Arab and ultra-Orthodox men and women), a large number of subsidies are available for individuals from minority backgrounds. Some programmes are open to a wide number of vulnerable groups simultaneously (e.g. the Allowance for Course and Course-related Costs in Austria) while others target individuals with multiple barriers (e.g. the *Nodarbināto personu profesionālās kompetences pilnveide (SAM 8.4.1)* programme in Latvia, which prioritises employed persons aged 45+ working in low-wage occupations). Finally, some programmes, while open to everyone, provide greater support to vulnerable groups. For example in Finland, the *Ammattitutkintostipendi* scholarship for qualified employees is 15% larger for individuals with no qualifications.

Targeting vulnerable groups is best achieved through subsidies for individuals, rather than through subsidies for employers. That being said, subsidies for employers are sometimes (also) needed – particularly where training programmes contain a work-based learning component and employers are reluctant to take on certain individuals whose productivity is (perceived to be) lower. For example, financial incentives exist in Australia, Austria, France and Norway to encourage employers to take on vulnerable groups as apprentices. Similar incentives exist for other work-based learning programmes, such as the *Traineejobb* in Sweden and the *Fonds de l'expérience professionnelle* in Wallonia, Belgium. The *Career-up Josei-kin* programme in Japan offers another interesting approach in that it provides employers with subsidies for training individuals on non-regular contracts. Indeed, individuals on such contracts are less likely to receive training from their employers than regular workers given that the employer may not be able to capture the full benefit of any productivity increase resulting from the training if the individual leaves the employer prematurely.

Box 2.5. Subsidies/programmes for basic skills

Basic skills: The challenge

In Europe alone, an estimated 70 million adults lack adequate reading and writing skills, and even more have poor numeracy and digital skills (European Commission, 2016). This puts them at risk of unemployment, poverty and social exclusion – particularly in a world where job losses resulting from digitalisation and globalisation are likely to be concentrated disproportionately among the low-skilled. In addition, the world is facing an unprecedented displacement crisis and many refugees arriving in OECD countries need help acquiring basic language skills, as well as a range of other competences, to facilitate and accelerate their social and labour market integration in the host country. In response, the EU has proposed to introduce a Skills Guarantee to help low-skilled adults acquire a minimum level of literacy, numeracy and digital skills and/or progress towards an upper secondary qualification or equivalent through three steps: a) have their skills assessed and any gaps identified, b) receive a tailor-made package of education / training and c) have their skills validated (European Commission, 2016).

While the focus of the present report is not on basic skills, a few interesting schemes were nonetheless highlighted in the country responses to the questionnaires and, given the importance and current relevance of the topic, it seemed worthwhile to dedicate some space to the discussion of subsidies for the acquisition of basic skills – although it should be highlighted that what follows represents neither an in-depth nor a comprehensive overview of such programmes, but just a summary of the information contained in the responses to the questionnaires.

Subsidies for basic skills

Most countries have basic skills programmes in place and provide those entirely free of charge. The mode of delivery may be through specialised centres [e.g. in Flanders (Belgium) and Ontario (Canada)] or through a system of vouchers which individuals may use in training centres of their choice [e.g. in Vienna (Austria)]. In some cases, there may be a limit on the total value of training (Austria) or on the number of hours that are provided free of charge [e.g. 510 hours in the case of the Adult Migrant English Programme (AMEP) and 800 hours in the case of the Skills for Education and Employment (SEE) programme – both in Australia].

In addition to free provision, some programmes provide financial incentives for participation. For example, in the SEE programme in Australia, job seekers in receipt of an income support payment with Mutual Obligation Requirements will also receive a supplement of AUD 20.80 per fortnight while participating in SEE. In Norway, migrants participating in the Introduction Programme receive an Introduction Benefit of EUR 20 000 per year (taxable and reduced to two thirds for participants under the age of 25). In Ontario (Canada), delivery organisations can apply for training support funding which they can use to remove financial barriers for learners, like travel and childcare costs. In Sweden, students in basic adult education may access the general student financial support system.

Targeted skills and beneficiaries

Basic skills programmes usually focus on basic literacy and numeracy skills, language skills (particularly in the case of migrants) and, in some cases, also on basic digital skills (e.g. Ontario Literacy and Basic Skills programme amd *Kompetansepluss* programme in Norway). In the case of low-skilled (out-of-school) youth, the objective is often to help them complete secondary education (e.g. the *Utbildningskontrakt* or Education Contract in Sweden). A number of programmes go further and offer training in communication and interpersonal skills (Ontario and Finland), as well as in civic and working life skills (Finland).

Basic skills programmes are largely self-targeting, and therefore the risk of deadweight loss is relatively low. This is why many basic skills programmes are open to everyone, including both the employed and the unemployed (e.g. Flanders, Belgium). Other programmes, however, focus on specific target groups, such as: out-of-school youth (Canada, Sweden and the United States), low-skilled job seekers (Australia), older workers in low-wage occupations (Estonia), and migrants (see below).

Box 2.5. Subsidies/programmes for basic skills *(cont.)*

Programmes for migrants

Migrants (including refugees) represent one group which is often targeted separately because of the specific barriers that they face. With the recent influx of refugees, many countries are facing significant challenges and are re-thinking the way such programmes are delivered. At the European level, the New Skills Agenda for Europe calls for member countries to identify migrants' skills early on and refer them, if necessary, to appropriate training in order to facilitate their integration (European Commission, 2016). In Finland, the goal is to move to a more rapid assessment of migrant skills and quicker participation in training. The plan is to achieve this by flexibly combining modules according to specific target groups and their needs, as well as through online/distance learning or other self-motivated study between normal contact hours. In Norway, a new system has been introduced in 2017 which will provide fast-track access to the labour market for people who have been granted permission to stay and who have skills that are in demand in the labour market, while increasing the time spent in the Introduction Program for participants with little or none education.

Improving basic skills programmes

Given that individuals with poor basic skills are likely to face many other barriers to training and labour market participation, it is important to make basic skills programmes as flexible as possible. Options include taking a modular approach (e.g. Flanders) or providing online courses. In Ontario (Canada), for example, the e-Channel service provides better access for persons with disabilities and those who live in rural and remote communities, as well as for those who have responsibilities which restrict them from fully participating in other basic skills programmes. In Sweden, young people participating in the Education Contract are allowed to combine their studies with part-time work or work-based learning, in an attempt to increase their motivation.

It may also be useful to combine basic skills programmes with other types of assistance. For example, some programmes map individuals' skills and qualifications at the start of the programme, draw up a personal learner development plan, provide careers advice, refer individuals to vacancies and ensure follow-up.

Subsidies for initial education/training

Most countries have elaborate student support systems in place to help individuals finance the cost of initial education, particularly at the post-secondary level where private contributions tend to be more significant. The purpose of the present section is not to review these student support systems (this is already done extensively elsewhere, for example in the OECD's *Education at a Glance* publications), but rather to see to what extent such systems are used to steer the education and training decisions of individuals.

Many countries have scholarship programmes in place that provide incentives for students to take-up certain courses. The present review found examples of such schemes in: Australia (Jobs of Tomorrow in New South Wales), Canada (British Columbia Access Grant for Labour Market Priorities), Chile (*Beca Nuevo Milenio*, *Beca Práctica Técnico Profesional*, *Becas Técnicos para Chile*), Croatia, the Czech Republic, Estonia ("smart specialisation"), Greece, Hungary, Israel, Korea (Presidential Scholarship for Sciences and Engineering, Scholarship for Humanities 100 Years), Latvia, Malta, Slovenia, Sweden and the United States (SMART) (Table 2.3).[11]

The vast majority of these programmes focus primarily on science, technology, engineering and mathematics (STEM) courses, while the remaining target subjects for which there is high labour market demand. Because labour market needs are easier to measure at the regional/local than at the national level, several programmes are regional initiatives (e.g. the British Columbia Access Grant for Labor Market Priorities

in Canada; scholarships in Croatia and the Czech Republic), while others are national programmes but allow for regional variation in how labour market priorities are defined (e.g. Hungary). A minority of these schemes have additional requirements in terms of the prior academic achievement of students and their (family) income. Examples of scholarships were found both in the (non-tertiary) VET and tertiary education sectors – however it is not possible to say to what extent the examples cited here are representative of all scholarships that incentivise the take-up of certain fields of study.

Table 2.3. Financial incentives to encourage the take-up of specific fields of study in initial education

Country	Scheme	Value	Education level / type	Fields of study	National / regional	Low income	High achiever
Australia (New South Wales)	Jobs of Tomorrow scholarships	AUD 1 000 over a 4 year period	VET	STEM	Regional	No	No
Canada (British Columbia)	British Columbia Access Grant for Labour Market Priorities	Up to CAD 16 400 in up front grants as well as loan reduction	Foundation and pre-apprentice programmes	Primarily STEM[a]	Regional	Yes	No
Chile	Beca Nuevo Milenio, Beca Práctica Técnico Profesional, Becas Técnicos para Chile	[…]	VET	Technical	National	Yes	Yes
Croatia	Scholarships provided by local authorities	[…]	[…]	Fields of study and occupations which are difficult to obtain in the local labour market.	Regional	[…]	[…]
Czech Republic	Annual stipends	A few hundred EUR per month	Apprenticeship and VET	Programmes where student demand is low, but employer demand is high	Regional	[…]	[…]
Estonia	Smart specialisation	Between EUR 160 and EUR 300 per month	Tertiary	STEM	National	No	No
Greece	Scholarships for STEM	[…]	Doctoral and postdoctoral	STEM	National	Yes	Yes
Hungary	Scholarship for increasing the number of individuals participating in VET for in-demand qualifications	Between HUF 15 000 and HUF 35 000 per month per person	VET	[…]	National	[…]	Yes
Israel	Subsistence allowance & subsistence perseverance allowance	[…]	VET	[…]	National	[…]	[…]
Korea	Presidential Scholarship for Sciences and Engineering	[…]	Tertiary	STEM	National	No	Yes
Korea	Scholarship for Humanities 100 Years	[…]	Tertiary	Humanities	National	No	Yes
Latvia	Free places in priority HE courses programmes	[…]	Tertiary	STEM	National	[…]	[…]
Malta	Maintenance grant (or stipend) system	Higher grant of EUR 2 194 per year, plus a one-time grant of EUR 698	HE and VET	STEM	National	No	No
Slovenia	Scholarship policy (2015-19)	EUR 100 monthly	[…]	[…]	National	No	No
Sweden	Higher grants for Teacher Education Programmes in mathematics, biology, physics, chemistry, science and technology	[…]	Tertiary	STEM	National	No	No
United States	National Science and Mathematics Access to Retain Talent (SMART)	Up to USD 4 000 per year	Tertiary	STEM & foreign language	National	Yes	Yes

[…] Unknown/missing information.

a) The eligible in-demand programmes are: Power Engineering; Heavy Mechanical Trades; Industrial Mechanics (Millwright); Mining Industry Certificate; Oil and Gas Field Operations; Plumbers; Steamfitters and Pipefitters; Sprinkler System Installers; Welders and related Machine Operators; Carpenters; Industrial Electricians; Heavy Equipment Operators; Ironworkers; Sheet Metal Workers; Gas Fitters; Baker; Cook/Chef.

Source: Responses to OECD questionnaires and European Commission (2015).

In financial terms, many of these scholarships are actually relatively small when compared to the overall cost of education (including its opportunity cost) and, especially, to the lifetime earnings premium that individuals can gain from studying a course that is in high labour market demand. Despite this, there is some evidence that scholarships targeting specific fields of study can be effective. Box 2.6 attempts to explain this phenomenon with reference to the SMART programme in the United States, and suggests that student myopia, poor information about future earnings and credit constraints could be among the possible explanations.

Box 2.6. National Science and Mathematics Access to Retain Talent (SMART) grants in the United States

SMART grants are awarded to third-, fourth-, and fifth-year undergraduates who are majoring in technical fields (physical, life or computer science, engineering, mathematics, technology), or a critical foreign language. The student must have at least a 3.0 GPA for all classes taken in the programme as of the most recently completed payment period. In addition, the student must be eligible for a Pell Grant (i.e. be a low-income student).

Denning and Turley (2017) evaluate the effect of this grant on subject choice by using the discontinuity in eligibility for the programme introduced by the means-test for the Pell Grant. Using data for public universities in Texas, they find that eligible students were 3.2 percentage points more likely than their ineligible peers to major in the targeted fields. Finding such a large effect is rather surprising given that the grants (approximately USD 8 000) are relatively small in comparison to the average wage differentials between fields of study, and the authors argue that this might occur because students are myopic, misinformed about future earnings, or credit-constrained.

That said, an earlier (unpublished) study looking at the impact of SMART grants in Ohio public universities found little effect on field of study choice (Evans, 2013). Denning and Turley (2017) argue that this is likely driven by data-related issues which mean that Evans (2013) has less statistical power. Indeed, restricting their Texas sample in the same way as Evans' Ohio sample, Denning and Turley no longer find any statistically significant effects on field of study choice, although the magnitude and size of the effects are similar to those in their main analysis.

Source: Partly based on http://www2.ed.gov/programs/smart/index.html.

Subsidies for the employed

Subsidies for training existing employees are most often paid to employers, and not to the employees directly (see Section 3.2). This is because employers usually have a good sense of their skills needs and subsidies are designed to help them overcome barriers that prevent them from investing in those skills. In certain circumstances, however, it makes more sense to target the subsidy directly at the employee. In particular, many low-skilled workers receive little training and are stuck in poor quality jobs with low earnings, little job security and poor career prospects. By targeting training directly at such workers, governments can help them increase their chances of retaining their existing job and/or moving to a higher quality one. For this reason, such programmes are sometimes referred to as "retention and advancement" services. In countries where these programmes operate, they often target skills and/or occupations in high demand in the labour market.

In the United States, for example, the WorkAdvance programme helps low-income adults obtain more rewarding jobs in high-demand fields with opportunities for career growth (e.g. IT, transportation, manufacturing, health care, and environmental remediation). The programme offers formal training which takes into account

employers' skills requirements and results in industry-recognised certifications. An evaluation of the programme using a randomised controlled trial found that it increased the earnings of participants (with the greatest increases observed for those programmes that were most demand-driven) (Hendra et al., 2016). In Germany, workers without qualifications and workers who have spent at least four years working in a job unrelated to their initial training (*Berufsentfremdung* or "professional alienation") may receive funds from the government to retrain in an area with good labour market prospects. In Hungary, the "Training the poorly-qualified and public workers" programme seeks to improve the employment outcomes of the low-skilled. In Finland, adults with no vocational qualifications are exempted from paying fees for education and training that lead to competence-based qualifications (European Commission/EACEA/Eurydice, 2013) and, in Flanders (Belgium) workers who (re)train can receive a subsidy (*aanmoedigingspremie*) for a period of up to two years – though this may be extended if the training is in a shortage occupation (*knelpuntberoep*).[12] In Portugal, training acquired with the *Cheque Formação* should be in line with the training priorities set annually by the IEFP (the public employment service) and, in South Australia, the Skilling for the Future programme provides existing workers with the skills necessary to progress in their industry or to transition to a new job.

Subsidies for the unemployed/inactive

Labour market training for the unemployed/inactive plays a critical role in matching labour demand and supply by ensuring that the unemployed/inactive are given the skills that are needed by employers. This requires good labour market intelligence (including forecasts). In Ireland, for example, the Momentum programme offers training to the long-term unemployed and prepares them for work in growth sectors which have been identified based on occupational forecasts and other labour market information. Similarly, the Springboard programme in Ireland (which targets unemployed university graduates) is oriented towards areas of perceived high labour market demand, as identified by the Expert Group on Future Skills Needs (EGFSN).

Sometimes, programmes are targeted at very specific skills or occupations. For example, the "ways into nursing" programme in Austria funds training for jobseekers who are interested in working in the health and care sectors, both of which have experienced a growing demand for skilled workers in recent years. More often, however, countries rely heavily on PES staff to match skills needs with appropriate training. In Austria, for example, most training for the unemployed is decided on in agreement with the PES, and always takes into account actual skills shortages in the labour market. Similarly, in Sweden, an employment officer assesses the applicant's situation on the labour market, and takes into consideration his/her vocational area, experience and the current state of the labour market to decide whether a labour market training programme would be a good option for the applicant. Training is supposed to be directed towards bottleneck occupations and, in recent years, most programmes have been in the fields of manufacturing, transport, and health and social care.

Compared to Sweden and Austria, some other countries take a more hands-off approach and provide the unemployed with vouchers that they can spend on the training of their choice – although this choice is frequently either guided or restricted in some way. In the case of the Vocational Competency Development Account System in Korea, for example, the jobseeker receives counselling prior to being issued with the voucher and, in Estonia, vouchers can only be used on a list of training programmes in

areas of labour market need. With the pilot of the *Assegno di ricollocazione* voucher, Italy is trying a slightly different approach. The voucher will be given to unemployment benefit recipients after 4 months of unemployment and can be spent in accredited training institutions. The latter will receive payment only once the trainee has successfully found a job – so the onus is placed largely on the training provider. In the case of the Czech Republic, training choice is entirely up to the jobseeker, since this is perceived to increase his/her motivation for participating in such training.

Matching training to labour market needs may work best if a regional approach is taken. For example, in Finland, training courses are purchased through public procurement by regional centres of economic development, transport and environment (ELY centres). The choice of courses to purchase is based on estimated regional labour market needs obtained through the help of various short-, medium-, and long-term anticipation tools. In France, the *Plan 500 000 formations supplémentaires* aims to fill existing vacancies as well as future skills needs by training one million jobseekers (i.e. 20% of the total number of jobseekers) in 2016. Significant efforts were devoted at regional level to identify training needs, in collaboration with the public employment service and the Regional Directorates of Enterprise, Competition, Innovation, Work and Employment (*Direccte*).

In terms of incentives, labour market training for the unemployed/inactive is usually provided free of charge while individuals continue to receive unemployment (or equivalent) benefits – but the duration of such programmes is often limited: six months in Sweden, 1 200 hours (approximately eight months) in Israel, 12 months in Australia (Newstart and Youth Allowance), and up to three years (with average weekly hours of 20 or more) in case of the *Fachkräftestipendium* (Skilled Workers' Grant) in Austria. Sometimes, additional funding is made available to cover travel and other costs associated with attending training programmes. For example, the Austria *Beihilfe zu den Kurs- und Kursnebenkosten* (Allowance for Course and Course-related Costs) covers not only 100% of the course costs, but also 100% of course-related costs, such as medical or psychological assessments, examination fees, special clothes, commuting expenses, board and lodging, as well as sign language interpretation. In some countries, the term "financial incentive" may be less meaningful because benefits recipients are obliged to participate in education and training within a mutual-obligation principle.

Unemployment benefit is designed to help with job search activities and can usually not be kept if the individual engages in longer-term academic study (which tends to be financed through general students subsidies, loans, etc.) Indeed, it may be difficult to combine participation in long-term education and training with the job search requirements and work-first approach taken by many OECD countries' activation frameworks. Moreover, one would want to avoid creating perverse incentives whereby individuals choose to become unemployed in order to get their studies funded. Despite this, a handful of countries allow individuals to keep their unemployment benefit while participating in longer-term courses – although usually very strict conditions are attached to such programmes. In Finland, for example, UB-funded study may be undertaken only if the PES agrees that there is a local labour market need in the area where the training is being pursued, and unemployment benefits may only be received for a maximum of 24 months per qualification or degree. However, because participation in this programme is at the discretion of the local PES, there is an element of "postcode lottery" as the use of it varies significantly from one region to another. In Wallonia (Belgium), individuals can keep their unemployment benefit if they fulfil certain conditions in terms of their current unemployment status,

duration of unemployment, job search effort, and qualification level. These conditions may be eased (e.g. duration of unemployment) if the studies or training lead to occupations where there is a labour shortage. Similarly, in Flanders (Belgium), jobseekers can keep their unemployment benefit if they decide to take up training in certain fields for which there is strong labour market demand (*knelpuntopleidingen*). This list of courses is updated every year by the National Employment Office (*Rijksdienst voor Arbeidsvoorziening*). In Denmark, upon approval of the PES, unskilled jobseekers aged over 30 can take one of 104 vocational education and training programmes and receive an unemployment benefit at a reduced rate (80%) for a period of up to two years. If the training is aligned with expected demands in the labour market, they are entitled to the full unemployment benefit. In some countries, participants in longer-term training are moved to a training allowance and no longer treated as registered unemployed (OECD, 2015c).

Many jobseekers will not need any training in order to find new employment, but just access to good labour market information services. Training programmes are therefore frequently reserved for those individuals struggling to find a new job. This means that training for the unemployed tends to be targeted on those with the greatest employability barriers, and PES counsellors generally play a key role as "gatekeeper" to training programmes. In some countries, there are more explicit rules to guide the targeting of training programmes at those most in need. This could be through minimum unemployment duration requirements (e.g. some programmes, like the Irish Momentum programme, are targeted on the long-term unemployed) or by targeting specific groups (e.g. the *Scholingvoucher werkzoekende 50-plusser* in the Netherlands is targeted on older workers). In some countries, profiling tools are used to decide on the generosity of support for training. In the Netherlands, for example, the UWV (national employee insurance body) estimates the risk of long-term unemployment and a greater training grant is given to those at highest risk. Similarly, in Italy, the amount of the *Assegno di ricollocazione* voucher ranges between EUR 1 000 and EUR 5 000, depending on the personal characteristics and profile of recipients. Another promising practice is to target labour market training not only on individuals who are already unemployed, but also on those who are about to become so. In Lithuania, for example, workers who have been given a notice of dismissal may benefit from up to eight months of *Profesinis mokymas* (vocational training) during which they receive an education grant of 0.6 times the monthly minimum wage.

Savings and asset building mechanisms

Individual Learning Accounts

While the subsidies discussed so far provide incentives for individuals to participate in education and training immediately, there are also subsidies that encourage such participation in the future. The best-known among such schemes is the individual learning account (ILA), which emerged in the late 1990s as an alternative to traditional subsidy schemes. ILAs are (tax-sheltered) savings accounts that can be opened by individuals for the purpose of funding future learning activities. The philosophy underlying these initiatives is similar to those of vouchers – i.e. to "empower" individuals in education and training markets by encouraging them to take responsibility for their own education and training choices. However, they also have a secondary objective, which is to involve other stakeholders in the process. Indeed, third parties (e.g. the government and employers) may often also contribute to the account –

although individuals generally retain freedom of choice concerning the type and timing of training, training provider and amount invested. Such schemes appear to have existed at some point or other in Canada, the Netherlands, the Basque region of Spain, the United Kingdom and the United States (OECD, 2003), as well as in Austria and Flanders (Belgium). However, they appear less and less used. For example, the Dutch mechanism (*Levensloopregeling*) is being abandoned, following disappointing results. The instrument was also used disproportionately more by the high-skilled and those on higher incomes (Ministerie van Sociale Zaken en Werkgelegenheid, 2011). In other countries, while the term "individual learner/savings account" is still used, in actual practice the scheme represents a voucher/subsidy for current investment in education and training. For example, the means-tested Individual Learning Accounts in Scotland give eligible individuals up to GBP 200 a year to be used towards training.

ILAs suffer from a number of disadvantages, which may help explain why they have fallen out of favour somewhat. First, they are relatively costly to administer and frequently only involve small amounts of money. Because of this, it is difficult to get commercial banks to provide them, and they therefore require a separate bureaucracy to manage them. Second, giving unrestrained freedom to individuals to choose the type of training they want to take up may lead to fraudulent activity, as the early experience with ILAs in England has shown: the scheme was discontinued in November 2001 because of reports of bogus providers who manipulated the scheme to pocket the subsidy without any real course content (BMBF and OECD, 2005). This points to the importance of combining demand-led financing mechanisms with a system of quality assurance through which providers are certified – a point which applies equally to some of the subsidy schemes discussed in the previous sub-section. Third, ILAs are more likely to be used by high- than low-skilled individuals, which could potentially exacerbate duality and inequality in skills outcomes. While other demand-led financing mechanisms suffer similar drawbacks, the problem is particularly acute with ILAs because of poor financial literacy and a lack of information, and direct subsidies accompanied by advice and guidance may therefore be more effective than ILAs to promote learning among low-skilled individuals (Cedefop, 2009a). In the United Kingdom, for example, there has been a clear move away from savings-building mechanisms and, while the term ILA has often been preserved, the trend has been towards voucher-based instruments, targeted on the low-skilled, and accompanied by the provision of information, advice and guidance (IAG).

The heavier weight that existing ILAs now give to IAG has another advantage, which is that it allows training acquisition to be steered to a greater extent towards areas of labour market need. Indeed, while in theory it is possible to restrict the usage of ILAs to training for occupations that are in demand in the labour market, in practice no examples were identified where this was the case. Instead, countries have opted for "softer" ways of steering through the provision of IAG. In this respect, there were some interesting experiments in the early 2000s in the United States, where beneficiaries of Individual Training Accounts (ITA) were given varying degrees of counselling, depending on the Workforce Investment Agencies they were attached to. Evaluations showed that the take-up of ITAs was lower when counselling was mandatory, while the best results were obtained where counselling was offered on a voluntary basis without being too directive (Gautié and Perez, 2012). The labour market relevance of training undertaken with ILAs is also likely to be greater where employers contribute to the cost of training.

Savings accounts for parents

Another way of encouraging savings for future learning takes the form of tax-sheltered savings accounts for parents. These are particularly popular in North America. Some examples include the Coverdell Education Savings Accounts (previously known as the Education Individual Retirement Account) in the United States; savings accounts at the state level in the United States (known as the 529 savings plans); and the Registered Education Savings Plan (RESP) in Canada. No examples were found of where such programmes were used for steering.

One significant drawback of such schemes is that they are more likely to be used by higher income households (OECD, 2007). One of the reasons is that the benefits of such accounts rise with income, given that those with the highest marginal tax rates gain the most from sheltering their income from taxation. In addition, for parents whose children's enrolment in higher education is uncertain, the benefits of such accounts are far more uncertain, since they will be taxed if the money saved up is used for anything other than education. In Canada, however, a RESP can be transferred tax-free to a Registered Retirement Savings Plan (RRSP). Another problem identified in the United States is that means-tested financial aid tends to be reduced as assets in the 529 or Coverdell increase, so that the lowest-income families actually gain little from investing in such accounts (Dynarski and Scott-Clayton, 2016). Finally, in the case of Canada, it was also found that poor financial literacy and lack of knowledge/awareness about RESPs among low-income groups acted as a barrier to their participation.

Time accounts

A mechanism related to the one discussed in the previous section is the time account, which allows individuals to save up time (rather than money) for training purposes (e.g. the *Compte Personnel de Formation* in France – see Box 2.7). Through such accounts, individuals can accumulate time (occasionally linked to overtime hours or foregone bonus payments, though not necessarily) which they can subsequently use for paid time off to participate in training. Time accounts can be attractive to employers because they allow them to avoid paying high rates for supplementary hours, as well as to avoid having redundant personnel during slack times. For employees, a particular advantage of such schemes is that they help overcome time constraints (and the high cost of foregone earnings) – which are often one of the primary obstacles to employees engaging in training.

Box 2.7. *Compte personnel de formation* (Individual Training Account) – France

France has a long history of using time accounts to incentivise training. Already back in 1994, it had adopted a law introducing the *Compte épargne-temps* (Time-Saving Account) which allowed employees to accumulate time credits over a number of years and subsequently use these credits for either early/gradual retirement, the take-up of part-time work, or training leave.

These accounts have been through a number of changes over time, and the current *Compte personnel de formation* (Individual Training Account – CPF) replaced the previous *Droit individuel de formation* (Individual Training Right – DIF) on 1 January 2015. Under this scheme, the account of each full-time worker is credited with 24 hours each year during the first five years, and with 12 hours per year during the subsequent three years – up to a maximum of 150 training hours in total (with part-time workers accumulating credits in proportion to their hours worked). These training hours, which are preserved upon job loss and also transferrable between employers, can be used to acquire recognised qualifications or basic skills, or to take up a list of training courses selected by the Regional Councils, the social partners and the professional associations, which often reflect foreseeable economic needs. If the training takes place during working hours, then the employee needs to obtain permission from his/her employer, but this is not needed if the training takes place entirely outside working hours. Indirect costs (i.e. wages) are only covered if the training takes places during working hours. All direct training costs are covered either by an OPCA (*Organisme paritaire collecteur agréé* – i.e. the collective training fund), an OPACIF (*Organismes paritaires collecteurs agréés pour le financement du congé individuel de formation*), or directly by the firm if it spends at least 0.2% of its wage bill on the CPFs of its employees.

The recent Labour Law of August 2016 (*Loi n° 2016-1088 du 8 août 2016 relative au travail*) has extended the use of the CPF to the self-employed and all youth aged sixteen and over. In addition, workers without qualifications now accumulate 48 hours per year (compared to 24 hours for other workers).

Tax incentives

Governments widely use tax incentives to incentivise individuals to invest more in education and training, and these come in various forms: tax allowances (i.e. deductions from taxable income); tax credits (sums deducted from the tax due); tax relief (lower or zero rates) on scholarship incomes, grants and student income; and tax deductibility of interest payments on student debt.

However, tax measures do not appear to be used for steering education and training decisions. This is likely because tax authorities have neither the capacity nor the expertise to verify the type of education and training that is purchased through tax incentives. The present review did not find a single example where tax incentives are used to encourage individuals to take up certain courses.

Oftentimes, the way that tax incentives are designed may even hinder investments in those skills that are most required in the labour market. For example, most tax allowances for skills spending are available only when the training concerned is related to a worker's current employment. The only exceptions are the Czech Republic and the Netherlands. That said, Austria and Germany provide tax relief for work-related professional training that prepares the individual for a change in occupation. Such restrictions do not seem desirable and countries should aim to remove them. Not only do they make the system complicated (since the meaning of "work-related" is ambiguous), they also fail to recognise that non-work related training can be of economic value in the future (Torres, 2012). In particular, such training could allow individuals to change career or occupation and, therefore, help societies address skills mismatch. On the other hand, there is a clearer argument for excluding training that is entirely leisure-related (as most countries in fact do). From 2016 onwards, for example, Estonia no longer allows costs for "hobby centre" training courses to be deduced.

Tax incentives have a number of advantages over the types of subsidies discussed earlier in this section. First, their take-up is likely to be higher than that of grants and scholarships: contrary to such measures (which often require the individual to file an application in order to benefit), tax-based incentives are simply part of the annual tax return process and therefore are easier to access. This also means that awareness of tax incentives is likely to be higher. Another advantage of tax incentives is that the administrative costs of delivering them are generally lower than the cost of running scholarship and grant programmes, since they piggy-back on an existing tax infrastructure (although this is only likely to be true if the measures are set up in such a way as to not require extensive monitoring of compliance – Marsden and Dickinson, 2013).

That said, there are also disadvantages to tax measures. For example, individuals must generally wait until after the end of the tax year to be able to claim them, which might be a problem for those for whom immediate liquidity constraints are a barrier to participation. Indeed, this is an issue identified with the tax credits for college education in the United States (Dynarski and Scott-Clayton, 2016), along with the increasing complexity of the tax incentive system. Second, tax measures often receive less public scrutiny than big spending programmes, which generally makes them less transparent. Tax measures may also be harder to target and may therefore carry higher deadweight effects: they often end up favouring the groups already with the best access to education and training. At the very least, tax measures should be income-tested – although doing makes so introduces a trade-off with simplicity which, in turn, could reduce take-up. In the Netherlands, for example, evaluation has shown that the tax deduction (*aftrekpost scholingsuitgaven*) was used primarily by highly skilled individuals and that it had a very high deadweight cost (between 73% and 100%) (Centraal Planbureau, 2016). In response to this evaluation, the Dutch Government is replacing the tax deduction with schooling vouchers targeted at individuals with lower skills. Similarly, in Canada, the Education and Textbook tax credits will be eliminated in 2017 to enhance student financial assistance, which helps provide timely assistance to students from low- and middle-income families.

Loans

One of the main sources of market failure in the skills market stems from the difficulty individuals face in financing their education and training through borrowing. Governments can and do therefore intervene by putting in place a range of measures – such as state guarantees, interest rate subsidies, loan guarantees, income-contingent repayments, student loan remission and/or forgiveness – to address the reluctance of private financial institutions to provide loans for education or training purposes but also the risk averseness of certain learners (particularly those on lower incomes).

It has been argued by some that loans are a particularly cost-efficient way of financing investments in skills, as they allow available public resources to be spread further. If all the money that was spent on subsidies like grants and scholarships were used instead to guarantee or subsidise loans, proponents of loans believe that aid would be available to more students and investment in skills would increase. A second argument in favour of loans is that they shift some of the cost of education and training to those who benefit the most, namely individuals. Given the recent crisis and tightening of public finances, many countries are shifting their student support systems from grants to loans. Some examples of where this has happened recently include Finland, Sweden and the United Kingdom.

But loans also have their weaknesses. In particular, it has been argued that loans are less effective than grants in encouraging individuals on low incomes to invest in education and training, in part because of their higher debt averseness. Also, loans systems often require a developed and expensive infrastructure for providing support to borrowers, as well as for administration and servicing – and this could significantly lower the alleged efficiency of loans as a tool for financing skills acquisition. Finally, high level of student debt may have adverse effects both for students and for governments, if large numbers of students are unable to repay their loans.

While most loans are designed to increase investments in skills, some countries have built incentives for steering into their loans systems. For example, some countries link remission and/or forgiveness to the labour market situation of the graduate. In the United States, loans are forgiven for working a certain period of time in government or some non-for-profit organisations (Public Service Loan Forgiveness Program), or as a teacher (Teacher Loan Forgiveness Program). In Australia, student loan repayments and/or debt can be reduced if graduates of particular courses take up related occupations (or work in specified locations) – although the system is being abandoned since a recent evaluation showed it was not having the desired effect (Box 2.8). In Estonia and Latvia, loan forgiveness is available to certain public employees. In Norway, there is a reduction in the student loan if the individual has completed certain teacher programmes within certain subject areas.

Box 2.8. Addressing skills mismatches through student debt forgiveness: The case of Australia

Through the Higher Education Loan Programme (HELP), the Australian Government provides financial assistance in the form of loans to people undertaking courses at university and other higher education, as well as at approved vocational education and training providers. The loans are income-contingent: once the graduate's income exceeds a certain threshold, she will have to start repaying the loan. Under the HECS-HELP benefit programme, graduates of particular courses are given an incentive to take up related occupations or work in specified locations by reducing compulsory HELP repayments or HELP debt. In particular, graduates from the following fields may be eligible for HECS-HELP benefit: mathematics, statistics or science; education, nursing or midwifery; and early childhood education.

However, a review of the Demand Driven Higher Education System commissioned by the Australian Government found no strong evidence that the HECS-HELP benefit influences the jobs decisions of graduates (Kemp and Norton, 2014). The evaluation also found that the programme functions more as a "windfall gain to graduates who find out about it" rather than something that shapes their decisions on courses and careers. As a result, the Australian Government has proposed to abolish the HECS-HELP benefit from 1 July 2017.

Source: https://www.ato.gov.au/Individuals/Study-and-training-support-loans/Bonuses,-benefits-and-discounts/.

Similarly, the Government of Canada offers student loan forgiveness to eligible family doctors, residents in family medicine, nurse practitioners and nurses that practice in under-served rural or remote communities. Family doctors and residents in family medicine may receive up to CAD 8 000 per year in student loan forgiveness to a maximum of CAD 40 000 over five years. Nurses and nurse practitioners may receive up to CAD 4 000 per year in student loan forgiveness to a maximum of CAD 20 000 over five years. This scheme applies to the federal portion of a student loan. In addition, provinces offer student loan forgiveness to steer students towards areas of high labour market need (see Box 2.9 for a description of the British Columbia Loan Forgiveness Program).[13]

Box 2.9. Addressing skills mismatches through student debt forgiveness: The case of British Columbia, Canada

Recent graduates in select in-demand occupations can have their student loans forgiven by agreeing to work at publicly funded health care facilities in underserved communities, or working with children in areas where there is an identified shortage. If eligible, the outstanding portion of student debt will be forgiven at a rate of up to a maximum of 20% per year for up to five years. So, after five years of employment, an individual's entire loan can be forgiven. While individuals are in the programme, the government will also pay any outstanding interest that accumulates during each year that they are registered in the programme. The eligible occupations are as follows:

Eligible occupations in underserved communities are:

- Nursing (including licensed practical nursing, nurse practitioners, registered psychiatric nurses and registered nurses)
- Physician, including residents
- Midwifery
- Pharmacist
- Medical laboratory technologist
- Diagnostic medical sonographer
- Speech language pathologist
- Audiologist
- Occupational therapist
- Physiotherapist

Eligible occupations working with children throughout B.C. are:

- Speech language pathologist
- Occupational therapist
- Audiologist
- Physiotherapist
- School psychologist
- Technology educator
- Teacher of the deaf/hard of hearing or the visually impaired

The proportion of loan that is forgiven each year depends on the number of hours of in-person service provided, which need to sum to at least 99 hours per year:

Total annual hours of in-person service	Annual % of student loan debt forgiveness
0 to 99	0%
100 to 249	10%
250 to 399	15%
400+	20%

Source: https://studentaidbc.ca/repay/repayment-help/bc-loan-forgiveness-program.

In some countries, government-backed or –subsidised loans are only available for certain fields of study. In Malta, for example, the National Youth Agency (*Aġenzija Żgħażagħ*) has partnered with APS Bank to set up the Youth Specialisation Study Scheme (YSSS). Under this scheme, young people (aged 18-30) taking up their studies abroad or through distance learning can obtain subsidised soft study loans at favourable terms for the following fields of study: aerospace, health and biotechnology, digital games production, veterinary studies, agriculture and marine studies, youth work, sport, nature conservation, arts, and specialised restoration. In Australia, the Trade Support Loans are designed for apprentices and have a strong element of steering, since eligibility is based on a priority list which identifies those occupations and qualifications in high demand. This list includes certificate III or IV qualifications leading to certain priority trade occupations that currently appear on the National Skills Needs List as well as a number of agriculture and horticulture qualifications at the certificate levels II, III and IV levels.

Study/training leave

Giving employees a right to study leave (and guaranteeing the right to return to their job after completing the training course) sends an important message about training, and in most countries such rights are either enshrined in national legislation or defined in collective agreements between employers and employees. Under most of these arrangements, employees are also protected from dismissal and retain their entitlement to health insurance and pensions rights while on study leave (Cedefop, 2012).

While the right to study leave signals the importance of training to employers and employees, it does not solve the problem of how the costs of training are going to be covered – in particular the income of the employee while he/she is attending the training course and/or the cost of a replacement worker. Indeed, this may be one of the reasons why the ILO Paid Educational Leave Convention 1974 (No. 140) has received a relatively low number of ratifications (Gasskov, 2001) and why uptake of training leave is frequently quite low in OECD countries (OECD, 2003; Stone, 2012).[14]

In practice, many countries use financial incentives to ensure the uptake of study leave, and there are large differences across countries in how such schemes are designed. Eligibility is often determined based on work history and varies from just six months in countries like Austria (training allowance and part-time training allowance) to five years with the same employer in Italy (*aspettativa non retribuita per motivi di studio*). In some countries, workers are entitled to a certain amount of study leave every so many years (e.g. *Weiterbildungsgeld* in Austria, but also in Estonia and Belgium[15]) and there are often special eligibility rules for workers on temporary contracts. In Germany, study leave incentives are focused on the low-skilled and SMEs (*WeGebAU*). The length of study leave also varies significantly from a number of days per year (usually around a month) to two years over a period of five years (Finland). While some countries do not provide any financial support to individuals while they are on study leave (e.g. Hungary, Italy, Latvia), others do. In the latter case, the generosity of support varies significantly: in France, for example, workers on study leave (*Congé Individuel de Formation*) are entitled to their full wage, but most other countries put a cap on this replacement wage (e.g. Walloon and German-speaking communities of Belgium) or pay an allowance which is often equivalent to the level of unemployment benefit (e.g. *Weiterbildungsgeld* in Austria). In most cases, this allowance is paid directly to the worker, but in some cases the employer continues to pay the wage and needs to claim back the expenses (e.g. Belgium). Finally, it is worth mentioning that in some countries there are no special financial arrangements for study leave, but employees can access the general student support system (e.g. Finland and Sweden).

There are several ways in which study leave arrangements can be used for steering skills acquisition. Belgium, for example, provides longer study leave for individuals who (re)train in areas where labour market shortages exist (*métier en pénurie*/knelpuntberoep). In Austria, training choices need to be approved by the PES, which should only be done if the course is likely to improve the labour market prospects of the individual in question; "hobby courses" are not financed. In Norway, the studies undertaken must be vocational. In countries where study leave is regulated by collective agreement (e.g. the Netherlands), training priorities are likely to reflect those set down by the social partners. Finally, some governments (e.g. Hungary,

Iceland, Lichtenstein, Latvia and Portugal) make training leave compulsory for certain professions, e.g. teachers, social care, or health care specialists (Cedefop, 2012).

As a closing remark, it is important to mention that study leave arrangements are often closely related to other mechanisms designed to encourage investments in education and training – such as collective training funds to promote cost sharing and payback clauses which guarantee that employers recover at least part of their investment in training in the event that the trained employee leaves soon afterwards. The take-up of study leave may also be combined with part-time work, to ensure that the costs of training are being shared between employers and employees (Cedefop, 2012).

2.3. Demand-side measures: Incentives for employers

This third sub-section turns towards demand-side measures focused on employers. The reasons why employers invest in training include: greater employee loyalty, and therefore lower labour turnover and reduced recruitment costs; but also increased productivity and higher profits. However, the existence of a range of market failures (see Section 1.6) implies that employer investment in education and training may be lower than what is socially optimal. Ensuring that employers have the right incentives to invest in training is therefore important, particularly since they are often the main sponsor of adult learning (Ryan, 1993; EIM and SEOR, 2005). In addition, employers may lack knowledge on what kind of training they need and/or is available, which could result in the wrong type of investments being made. In general, these barriers to training tend to be greater for small and medium-sized enterprises (SMEs).

The range of measures that can be used for incentivising and steering employers is very similar to those aimed at individuals. They include subsidies and tax incentives, but also a number of other measures like training levies, payback clauses and public procurement mechanisms. Each of these measures will be discussed in some detail in the sub-sections that follow, with a particular focus on whether and how they are used to steer the training decisions of employers. As in the case of individuals, governments appear to primarily use direct subsidies to incentivise training among employers – although few of these subsidies contain a strong steering element. Instead, "softer" steering is used, for example by encouraging employers to offer apprenticeships and other forms of work-based learning (which are often linked to immediate labour market needs). In addition, many programmes allow training needs to be identified flexibly at the local level and in partnership with employers, rather than dictating top-down what skills should be prioritised. That being said, sector-based approaches and mechanisms that encourage collaboration between employers are frequently adopted.

Targeting interventions at employers instead of individuals has the advantage that any additional training is more likely to meet specific labour market needs. One drawback, however, is that it is more difficult for government to precisely target interventions on disadvantaged workers without significantly raising administrative costs (and therefore risking lower take-up on the part of employers) as well as monitoring costs. Another possible problem is that training becomes too employer-specific and fails to address more general labour market needs.

Subsidies

The vast majority of incentives for steering the training decisions of employers come in the form of direct subsidies – which is likely because they are a very flexible tool that can easily be adapted to specific needs and circumstances. This also means, however, that subsidies come in many shapes and sizes, and that it is not straightforward to classify them. The discussion that follows nevertheless attempts a distinction between those that: i) incentivise employers to provide work-based learning opportunities; ii) encourage them to take on and train unemployed individuals; iii) get employers to train existing workers; and iv) seek to achieve joint solutions between several employers.

Most subsidies targeted at employers remain general and do not target specific skills. The risk with this approach is that valuable resources are spent on training that is not directly relevant to current or future labour market needs. On the other hand, it allows for more flexibility in the identification of training needs, both on the part of employers and on the part of government, especially at the local level. While certain programmes do target specific skills, there is no robust evidence to indicate whether this is effective or even desirable. For example, in the case of the Walloon *Chèque Formation* (a training voucher which employers can purchase at a subsidised rate), some of the vouchers are targeted specifically at green and language skills. Feedback on the programme suggests that these vouchers create more administrative burden while making little difference in practice since such training may be purchased via a general voucher anyway (despite the fact that the green and language vouchers may be purchased in addition to the maximum limit of general vouchers). However, robust evaluations would be needed before definite conclusions can be drawn.

What is certain, however, is that a certain amount of flexibility appears to be a desirable property in subsidies targeted at employers. One interesting approach found in a number of programmes is to design bespoke training tailored to the specific needs of the employer. For example, the Industry Skills Fund in Australia (now closed) used to provide micro, small and medium-sized businesses in priority industries with high-quality industry-specific tailored training that is not yet part of any existing training package. Another example is the Skilled Trades Training Fund in Michigan (United States) – a programme to create public-private partnerships with employers to design training models that adapt in real time with changing employer demand.

Another important aspect of flexibility is to allow programmes to be adapted to local labour market needs. For example, as part of the Job Fund Agreements in Canada, provinces and territories have the flexibility to design and deliver programmes and services that best meet the needs of their labour market, including initiatives that target certain skills/occupations/sectors. The need for such flexibility is critical not only in the design of active labour market programmes, but also to increase the responsiveness of education and training systems to changing labour market needs (see OECD, 2016c as well as Chapter 3 of the present report).

While employers may need an incentive to invest in training, it is important to remember that, in most cases, they are one of the main beneficiaries of such training and that, therefore, an element of cost-sharing is logical. Indeed, subsidising training that employers would have been willing to pay for anyway would result in large deadweight losses. The extent of cost-sharing will, of course, depend on many factors – including whether the training is specific to the firm or general; the duration and cost of the training; the expected returns; the firm's size; as well as the skill level of the

employees to be trained – but most programmes do, in fact, have an element of cost sharing and usually only cover the direct costs of training, while leaving the indirect costs (such as loss of working time) to the employer.

Small and medium-sized firms are the most likely to encounter barriers to training, and the flexibility provided by subsidies makes them an effective tool for targeting SMEs and, thereby, reduce the extent of deadweight loss associated with public funding for training. Many of the subsidies discussed below do, in fact, have a SME focus, either by being exclusively targeted on them, providing more generous subsidies, or allowing more flexible funding arrangements (Box 2.10). That being said, systematic targeting may be administratively complex and expensive, and so a trade-off arises between reducing deadweight, on the one hand, and red tape, on the other – just like in the case of subsidies for individuals.

Box 2.10. Special incentives for SMEs

Analysis of the responses to the questionnaires sent out as part of this project suggests that around a quarter of all subsidies targeted at employerscontain special incentives for SMEs to invest in training. A number of different approaches are used:

- Some programmes are *targeted exclusively* at SMEs. Some of these are designed to help SMEs overcome cost barriers (e.g. *Chèque Formation* in Wallonia, Belgium; *Profi!Lehre* and *Weiter!Bilden* in Austria; Consortium for HRD Ability Magnified Program (CHAMP) in Korea) while others specifically seek to help them grow and become more competitive through skills investments (Industry Skills Fund in Australia, *KMO Portefeuille* in Flanders, Belgium). In this context, the *Formação-Ação* in Portugal focuses on a particular barrier to SME growth, namely management skills.
- Another group of programmes is open to firms of all sizes, but provides *larger subsidies* to SMEs. For example, the *Crédit-Adaptation* in Wallonia (Belgium) offers EUR 6-7 per training hour to large firms, and EUR 9-10 to SMEs. In France, employers with fewer than 250 employees receive an additional EUR 1 000 subsidy if they take on an apprentice. In Finland, the precision training offered as part of the Joint Purchase Training covers 30-50% of the costs, depending on the size of the company. In Japan, several programmes provide greater subsidies to SMEs, including: *Career Keisei Sokushin Joseikin* (which covers half the training costs of SMEs, compared to just a third for large firms); *Career-up Josei-kin* (which provides larger wage subsidies and higher ceilings on training costs for SMEs); and the Subsidy for Securing and Developing Skilled Construction Workers (which covers 90% of the cost of training for SMEs, compared to 50% for larger firms). In Latvia, the training support for enhancing the competitiveness of enterprises covers 80% instead of 60% of the costs of general training and 45% instead of 35% of the costs of special training when the firm is an SME. In Poland, grants awarded through the National Training Fund cover 100% of the costs of lifelong learning for micro-enterprises, compared to 80% for all other firms.
- Another approach is to provide *more flexibility and/or simpler procedures* for SMEs. For example, in the Canada Job Fund Agreements, employers can apply for up to CAD 10 000 in government contributions toward the direct costs of training, such as tuition and training material – and they are required to contribute, on average, an additional 1/3 to these training costs. However, small businesses, with 50 or fewer employees, can benefit from more flexible funding arrangements, such as the possibility to count wages as half of their employer contribution or contribute a minimum of 15%. In Flanders' *KMO Portefeuille*, SMEs can apply for subsidies online, and the procedure has recently been further simplified.
- Finally, while some programmes do none of the above, *special efforts are made to include SMEs* in the programme. For example, this is the case of the *Kompetansepluss* programme in Norway.

Subsidies for work-based learning

Apprenticeships (or traineeships) offer a useful solution to the problem of labour market steering since provision adjusts more or less automatically to the (immediate) needs of the labour market. However, there are a range of reasons why the supply of apprenticeship places may be below the socially optimal point, and therefore many countries provide financial incentives for employers to take on apprentices. Such incentives are particularly common during times of economic crisis, when employers have a tendency to reduce the number of apprentices they take on (ILO, 2012). For example, in Ireland, during the recession that followed the 2007-08 financial crisis, a scheme was put in place by what was then called the Irish National Training and Employment Authority (FÁS) (but has now become SOLAS) which paid employers a wage subsidy if they took on an apprentice who had been made redundant (Steedman, 2010).

Financial incentives may be also be helpful in countries that lack a tradition of apprenticeship education and where employers are less familiar with the system and its benefits. Providing incentives in those countries might be a way of drawing in more employers and building capacity, while gradually strengthening social partner involvement on a more durable basis. Examples of such schemes may be found in several countries, including:

- In *England*, an Apprenticeship Grant for Employers is available for employers "who are not able to recruit an apprentice without the grant", have fewer than 50 employees, and have not had an employee start an apprenticeship in the previous 12 months. The aim is to support employers to create new jobs and recruit new 16- to 24-year-olds. Eligible employers receive a payment of GBP 1 500 once a qualifying apprentice has completed 13 weeks "in-learning", and they can claim up to five grants during the time the grant is available.
- In *France*, employers can benefit from reductions in social security contributions on apprentices, with greater reductions available to smaller firms (fewer than 11 employees – excluding apprentices). Small firms may also benefit from EUR 1 100 per quarter for taking on a young apprentice (aged 17 or under) as well as a regional incentive of at least EUR 1 000 per year. For firms with up to 249 employees, a one-off bonus of EUR 1 000 is available for hiring a first apprentice, or for increasing the number of apprentices in relation to the previous year. Firms may also benefit from a tax credit of EUR 1 600 per apprentice, which is increased to EUR 2 200 for apprentices in their first year and those who meet certain disadvantage criteria. Finally, firms with 250 employees or more and which pay the apprenticeship tax can get a reduction in the tax due if apprentices represent more than 5% of their workforce (up to a limit of 7%).[16]
- In the *United States*, significant resources are being set aside for the ApprenticeshipUSA initiative to further the goal to double and diversify Registered Apprenticeships by 2019. Special grants are being made available to scale up successful apprenticeship programmes, and to expand and market apprenticeship to new sectors. Under the ApprenticeshipUSA initiative, more than USD 90 million in grants and contracts have been provided by the US Department of Labor to US States, industry and workforce intermediaries, employers, labour and community-based organisations, and other partners to expand and market apprenticeship to new sectors and underserved populations, including women, persons of colour, and individuals with disabilities. Moreover, in 2015 the

Department invested over USD 175 million in the American Apprenticeship Grant Initiative (AAI) to public-private partnerships to expand high-quality apprenticeships, and to provide more opportunities for underserved populations to train for jobs in demand. The Department anticipates AAI to train and hire more than 34 000 new apprentices in high-growth and high-tech industries including health care, IT and advanced manufacturing over a five-year period.

The US workforce system under the Workforce Innovation and Opportunity Act (WIOA), which is administered by the US Department of Labor provides access, flexibility, and resources for work-based learning opportunities, including: On-the-Job Training (OJT), Registered Apprenticeships, customised training, and incumbent worker training. These funds can offset extraordinary costs to businesses in bringing on and training new employees, be customized for the individual needs of a company, and help businesses train their workers on new skills or productions to grow their business or avoid layoffs. For example, OJT contracts typically reimburse employers up to 50% of wage rate of the participant for the extraordinary costs of training and supervision; in limited circumstances, the reimbursement may be up to 75% of the wage rate of the participant. WIOA programmes also support placing individuals into Registered Apprenticeship programmes. In certain circumstances, for example, Registered Apprenticeship arrangements may be established that incorporate OJT requirements, leveraging WIOA resources. In addition, WIOA programmes also can support a range of support services for participants, such as books, tools and uniforms, child care, and transportation. Federal support also can be available through other departments (Education, Veterans Affairs, Agriculture, Transportation, and Housing and Urban Development), as well as from state initiatives, with tax credits for employers available in Arkansas, Connecticut, Guam, Louisiana, Missouri, Nevada, Rhode Island, Tennessee and Virginia.

Similar support for employers to provide (structured[17]) work-based learning exists in most countries, including: Canada, Chile (*Programa Aprendices*), Finland (*Oppisopimuskoulutuksen koulutuskorvaus ja korotettu koulutuskorvaus*), Greece, Hungary, Korea (work-study dual system), Italy, Luxembourg, Romania, the Slovak Republic and Sweden (*Anordnarbidrag gymnasial lärlingsutbildning*).

Even in countries where apprenticeships are established, however, there are many financial incentives in place for employers. The case of Austria, for example, illustrates a comprehensive approach with subsidies that encourage the provision of apprenticeships alongside incentives for quality improvements, as well as guidance, counselling and other support services for employers (Box 2.11). This reiterates a key message that emerges from this report – i.e. that financial incentives work best when combined with other support measures.

Another country that boasts an elaborate set of financial incentives is Australia through its Apprenticeships Incentives Programme (AAIP). A wide range of incentives are available, including additional incentives for occupations listed on the National Skills Needs List (NSNL) as well as for Priority Occupations. In addition, there are a number of state incentives schemes in place. For example, in Queensland, the School to Trade Pathway (STP) incentive provides employers with up to AUD 5 000 to take on a school-based apprentice and retain them in a full-time apprenticeship after they have completed their schooling. The first payment of AUD 2 500 is made six months after the school-based apprentice converts to full-time apprentice arrangements, and the second payment of AUD 2 500 is made 18 months after the school-based

apprentice converts to full-time arrangements. In Victoria, there is a completion bonus to ensure that greater numbers of apprentices and trainees complete their training and, in South Australia, the Critical Skills Fund provides completion payments of up to AUD 2 000 to employers who complete apprentices and trainees in an area of skills needs. Recently, the Australian Industry Group has argued for the introduction of additional incentives for employers supporting STEM-related apprenticeships (Ai Group, 2016). While financial incentives can help address a range of challenges in boosting the number of apprentices, the existing evidence on their effectiveness is mixed (Box 2.12 and Mühlemann, 2016). One pitfall to avoid is that the system becomes too complex and administratively burdensome.

Box 2.11. Financial incentives for apprenticeships: How Austria does it

Companies have a clear incentive to invest in apprenticeship training: not only does it allow them to meet their future need for qualified skilled workers, but apprentices also carry out valuable work during their training. It is therefore right that employers should bear a significant share of the cost of apprenticeship training. In Austria, the school-based part of training is financed by the government, while the company bears the cost of work-based training. The latter consists primarily of apprenticeship remuneration which tends to be laid down for each individual occupation in collective bargaining agreements.

Despite the fact that there are significant benefits to employers from investing in apprenticeship training, the Austrian Government provides a wide range of subsidies that strengthen employers' incentives to take on apprentices. First, there are a number of tax incentives in place: health insurance contributions are waived in the first two years of the apprenticeship; and contributions to accident insurance are waived for the entire training period. Second, the company can apply for a basic subsidy at the end of every apprenticeship year: three gross apprenticeship remunerations for the first year; two gross remunerations for the second year; and one gross remuneration for the third and fourth years, respectively.

The government also provides subsidies to try and improve the quality of apprenticeship training (including continuing education and training for trainers; additional tutoring courses for apprentices with learning difficulties; and subsidies for inter- and supra-company training alliances) and to boost the share of young women and disadvantaged youth. In addition, the government lays on guidance, counselling, care and support services targeted in particular on sectors with few training companies.

Finally, there are a range of local initiatives as well, like *Profi!Lehre – Die Förderung für Lehrlinge mit Potential* in Styria which targets apprentices in technical professions in SME's in the fields of production, skilled crafts and enterprise-related services. The subsidy covers 70% of the cost of external training courses up to a limit of EUR 3 000 per apprentice (maximum five apprentices per company).

Source: Austrian response to the OECD questionnaire on "Addressing Skills Shortages and Mismatch Through Financial Incentives".

The Australian Apprenticeships Incentives Programme also stands out in that it uses incentives to steer the provision of apprenticeship programmes. Very few other countries do this, presumably because apprenticeships are seen as responding directly to labour market needs already. However, addressing immediate employer needs is not equivalent to tackling more structural skills challenges or promoting strategic skills investments. Therefore there might still be a place for steering incentives. A few programmes in other countries contain a steering element. In Norway, Apprenticeship Grants are equivalent to EUR 15 500 per year, but extra grants can be given for apprenticeships in small trades in need of protection (*små og verneverdige fag*). In Israel, the "Starter, Apprentices Training" is targeted at industries and professions with recruitment difficulties (metals, automotive, culinary, etc.) Similarly, in Sweden, the Trainee Jobs (*Traineejobb*) programme is targeted on shortage occupations. The largest

support is available for trainee jobs in the welfare sector (85% of wage costs up to a limit of SEK 510 per day) but the support is also significant for other priority areas (50% of wage costs up to a limit of SEK 300 per day).

Box 2.12. The effectiveness of financial incentives for apprenticeships: Recent evidence from across the OECD

Examples of incentives that mattered

South Carolina (United States)

In 2007, South Carolina introduced tax credits for employers worth USD 1 000 per year and per apprentice, which can be claimed for up to four years. The subsidy is intended to offset the direct and indirect costs of establishing a registered apprenticeship programme, including: course design and development, instructional costs, training materials and supplies, maintaining records, and administration of the programme. While this incentive is relatively modest, Lehrman (2015) argues that it has played an important part in the huge success of the programme, which managed to achieve a more than six-fold increase in registered apprenticeship programmes and a five-fold increase in apprentices since its introduction (from fewer than 1 000 in 2007 to more than 5 000 in 2014). Others, however, stress that the success of the programme is due primarily to its comprehensive nature, which includes hands-on administrative assistance from Apprenticeship Consultants for employers, as well as access to the state's technical college system (Hanks and Gurwitz, 2016).

Australia

Between 2001 and 2013, the Australian Government introduced a number of changes to employer incentives for apprentices. One of these, introduced in October 2012, reduced the employer incentives for part-time apprentices in areas where there are no skills shortages and, in August 2013, all financial incentives for apprenticeships in those areas were removed. As a result, there were no longer any incentives available for most apprenticeships in non-trade areas (e.g. retail positions in food, clothing, information technology, horticulture, printing and for dental assistants) where the employees were with the firm for three or more months prior to starting their apprenticeship. While there was already a decline in the number of apprenticeships in those areas prior to the removal of the incentives, it has been argued that the latter has contributed to the decline (Montague, 2013). Other research has shown that the incentives have had a significant, positive effect on commencements (Deloitte, 2012), and that this effect is larger for traineeships than for apprenticeships since the incentives are larger in comparison to the overall cost for the former than they are for the latter (Marsden and Dickinson, 2013). The Australian Government continues to provide around AUD 400 million in incentives to employers per annum for apprentices. Overall, however, the system of support for apprenticeships is seen as complex and administratively burdensome (Commonwealth of Australia, 2011).

France

Following two years of declines in the number of apprenticeships in the private sector in France, there was a 1.6% increase between 2014 and 2015. This increase was observed primarily at the level of the *Certificat d'Aptitude Professionnelle* (Certificate of Professional Competence – CAP) and follows the introduction of financial aid for small firms taking on a minor (aged 17 or under) as an apprentice. In firms with fewer than ten employees, there has been an increase in the number of apprentices of nearly 10%.

Examples of incentives that were less successful

Germany

Over the period 2008-10, firms in Germany could receive a training bonus (*Ausbildungsbonus*) ranging between EUR 4 000 and EUR 6 000 if they hired disadvantaged youth (i.e. individuals who unsuccessfully applied for training positions in the previous year, had not completed compulsory education, had learning difficulties or came from a disadvantaged social background). Similarly, a 30% bonus was available for firms taking on disabled apprentices. However, an evaluation of the training bonus suggests that it did not generate any additional apprenticeship positions (Bonin et al., 2013).

Box 2.12. The effectiveness of financial incentives for apprenticeships: Recent evidence from across the OECD *(cont.)*

Switzerland

Analysis of the successful apprenticeship system in Switzerland suggests that financial incentives for employers may not be needed as long as the system is designed in such a way as to allow firms to train apprentices in a cost-effective manner and generates a net benefit on average (Müehlemann and Wolter, 2013). Note that apprenticeship contracts, in themselves, can be seen as a way of incentivising training: typically, apprentices are paid less than their productivity for most of the period covered by the contract, which allows employers to recoup the cost of training (OECD, 2003). While workers can quit before the end of the contract without paying a penalty (when their productivity is highest, and the gap with their pay the greatest), they have an incentive to stay in order to get their training certified.

Subsidies to hire and train the unemployed

Some countries have schemes in place whereby they subsidise employers to take on an unemployed person and train her. A broad distinction can be made between, on the one hand, programmes that aim to provide unemployed (usually young) people with work experience combined with training to improve their subsequent employability, and, on the other hand, programmes where the government provides subsidies for training an unemployed person that has been (or will be) hired by an employer on a more durable basis.

The first category of programmes bears many similarities to the work-based learning programmes discussed in the previous section – except that they are active labour market measures and not structured work-based learning programmes (and in most cases, therefore, do not lead to formal qualifications). An interesting example of such a programme is the *Emplois d'avenir* (Jobs of the Future) in France, which encourages employers to hire low-skilled, unemployed youth for a period of three years. The government covers 75% of the wage costs (paid at the minimum wage) and, in return, the employer commits to providing a tutor who will accompany the young person and assist them in identifying and participating in appropriate training. The programme also has an element of steering since it focuses primarily on digital and green sectors, health and social services, as well as the care, culture and tourism sectors. Although the focus is primarily on not-for-profit organisations, private firms can also benefit from the subsidy in sectors that have been identified as priority at the regional level. Similar programmes exist in Greece (training voucher for young unemployed aged 18-24), Italy (*Tirocini in Garanzia Giovani*), the Slovak Republic (subsidy to provide work experience to young, unemployed graduates) and Wallonia (Belgium – *Formation Alternée* and the *Programme de Transition Professionnelle*, which also targets the low-skilled and the long-term unemployed).

The second type of programme seeks to address two challenges simultaneously. Indeed, in many countries, high unemployment co-exists with a significant proportion of employers reporting recruitment difficulties. If employers cannot find the required skills on the labour market, then it makes sense for them to take on and train an unemployed person, with some financial compensation for the initially lower productivity of the individual hired (i.e. the same logic as for the apprenticeship subsidies discussed in the previous sub-section) and/or subsidies to cover external training costs. In return, there is often an expectation that the employer will hire the

trained individual (sometimes on a permanent contract). Because such "training on demand" programmes seek to fill existing skills needs, none of them have a specific steering component. In a 2012 study carried out for the European Commission among public employment services, 16 out of 19 countries confirmed that they had some mechanism for providing training in direct response to employer requests and, in 9 of these countries such training was organised to fill a specific vacancy (MobilityLab, 2012). Examples include:

- Work and Income support in *New Zealand* covers part of the individual's wages for up to a year while they learn, and subsidises the cost of their training. For employers to qualify, the position offered has to be permanent, and for at least 30 hours a week (although some part-time positions are also eligible). The employer may not have dismissed another worker in order to employ the person.
- The Individual Job Training (*Individuele Beroepsopleiding* – IBO) in *Flanders (Belgium)* allows employers to hire a jobseeker and, with the help of the public employment service (VDAB), train him up in the workplace over a period of one to six months, following a jointly established training plan. The wage and social security contributions of the individual are covered by the VDAB and the employer is only expected to pay a "productivity premium". In return, the employer is asked to hire the individual after the training, normally on a permanent contract.
- In *Wallonia (Belgium)*, the *Plan Formation-Insertion* allows employers to train jobseekers to fill existing vacancies. The duration of the training period is usually between 4 and 26 weeks (but can be up to 52 weeks for low-skilled youth). In addition to the training costs, the government will cover the trainee's wages. In return, the firm must subsequently hire the individual for a period at least as long as the duration of the training and must show that the hiring is additional to the existing workforce (i.e. that there is no substitution of workers).
- In *Chile*, tax incentives are available to train workers even before they are hired (*Franquia Tributaria: Pre contrato*). These training activities can last for up to two months. The objective of the programme is to develop or improve the skills of future workers in order to increase their employability, but there is no obligation on the employer to hire the individual at the end of the training.
- The *brug-WW* in the *Netherlands* compensates employers for the hours individuals spend studying on condition that they guarantee to hire them once the training is complete.
- In *France*, the *Action de Formation Préalable au Recrutement* (AFPR) covers 400 hours of training paid by the PES as well as wages for the individual: EUR 5 per internal hour of training (up to a ceiling of EUR 2 000) and EUR 8 per external hour of training (up to a ceiling of EUR 3 200). The payment is conditional on the existence of an employment contract which will take effect following the training (either a 6-12 months temporary contract, a training contract, or a temporary agency contract with at least six months of assignments over the coming nine). Another, related, programme is the *Préparation opérationnelle à l'emploi individuelle* (POE I), which targets employers aiming to recruit on an open-ended or longer temporary contract (at least 12 months).
- In *Latvia*, the *Apmācība pie darba devēja* programme subsidises part of the wage of the trainee, as well as 50% of the minimum monthly wage of supervisor. In return,

the employer needs to hire the individual for at least three months after the training is completed.

- In *Japan*, employers can receive subsidies either for hiring and training people who were forced to leave their old job, or for hiring and training people who are transferred from former employers. Subsidies cover both on-the-job and off-the-job training (*Rodo Ido Shien Joseikin*).
- In *Poland*, tripartite training agreements (*Trójstronne umowy szkoleniowe*) have been introduced in 2014 to provide the unemployed with training tailored to the specific needs of the employer. These agreements, signed between the PES, the employer and a training institution, specify the skills and qualifications required by the employer, and the latter's commitment to employ the trainee for at least six months after the training is completed.

Subsidies to train existing workers

Another set of subsidies helps employers with the training of their existing workforce. Again programmes differ widely in the extent to which they target specific skills. Some programmes leave the identification of specific training needs entirely to the employer and have no targeting element at all (e.g. the Czech Republic's POVEZ programme, Korea's subsidy for vocational training, and the SME Portfolio in Flanders, Belgium), while others target very specific skills. For example, Scotland's Low Carbon Skills Fund gives businesses with under 100 employees the opportunity to apply for up to GBP 5 000 towards employee training costs in areas such as renewable energy and low-carbon technologies, energy efficiency, waste management and reuse, and reducing carbon in supply and energy management. Up to 50% of employee training costs are funded, with a ceiling of GBP 1 000 per employee. In Portugal, the *Programa Formação-Ação* focuses on management skills and, in Brussels (Belgium), the ICT Cheque is a voucher that covers 100% of the cost of ICT training courses (up to a maximum of EUR 2 240). However, such programmes are rare and it is not clear that they have strong value-added, as the experience with the *Chèque Formation* for eco-climate and language vouchers in Wallonia (Belgium) has shown.

A far more common approach is to target specific sectors (rather than skills). There are many different reasons for targeting specific sectors:

- *Supporting structural change.* Sometimes, particular sectors may be facing difficulties and training funds are provided in an attempt to prevent unemployment. An example of such a programme would be the "Employees and Enterprises Structural Adjustment in the Financial Crisis Framework" programme in Greece, a programme which, subject to a structural adjustment plan and an accompanying training plan, provides companies with a subsidy of EUR 5 or EUR 13 per training hour, depending on whether the training takes place after or during working hours. Another example is the *Bedriftsintern opplæring* (in-house training) programme in Norway.
- *Overcoming specific training barriers*. In some sectors, workers face particular training barriers and may need specific government support. For example, in Australia, the Long Day Care Professional Development Programme (LDCPDP) targets paid educators from long day care providers eligible to receive the government Child Care Benefit. Specific barriers to training in this sector include: difficulties associated with releasing staff to attend professional development activities (backfilling); the costs of training; and the costs of travel to attend

activities, particularly from rural and remote locations. In Wallonia (Belgium), the *Fonds de formation Titres-Services* targets the service sector (cleaning, customer relations, communication, health and safety) – encompassing a group of workers who are significantly less likely to receive training. A couple of other programmes specifically target the construction sector (e.g. *Qualifizierungsoffensive Bau* in Styria, Austria, and the *Kensetsu Rodosha Kakuho Ikusei Josei-kin* programme in Japan).

- *Supporting strategic sectors and sectors with growth potential*. A particularly common reason for targeting subsidies at specific sectors is to provide them with the necessary skills so that they can realise their growth potential, and/or to support sectors that are of particular strategic importance. In Japan, for example, the *Career Keisei Sokushin Joseikin* programme is a general training programme targeted at existing employees, but greater subsidies are provided in priority areas, including: health, social work, ICTs, and environment-related construction and manufacturing. In Australia, the Industry Skills Fund targets micro, small and medium-sized businesses in priority industries, with the objective to help them grow by providing them with high quality, industry-specific tailored training that is not yet part of a training package. In Latvia, training subsidies aim to enhance the competitiveness of enterprises in the ICT, food, pharmacy, energy, manufacturing, tourism, forest, and printing and publishing industries.

Subsidies for joint employer solutions

One of the drawbacks of targeting training subsidies at individual employers is that the resulting skills may be too firm-specific and not resolve broader sectoral or even national skills challenges. In addition, there are many other advantages to joint solutions, including risk pooling, information sharing and economies of scale that should not only encourage more training by employers, but also make that training more labour market relevant. Such arrangements can be particularly beneficial for smaller firms and might help them to access training that would otherwise not be accessible as well as to procure training of a higher quality and/or more tailored to their needs.

Many countries therefore seek to achieve more collaborative solutions, either by: i) making the award of subsidies for training conditional on collaboration between employers; or ii) using public funding to set up specific bodies that provide a range of training and related services to a group of employers.[18] Such arrangements are not always easy to set up, however. One particular obstacle is how to build sufficient trust between employers (who are normally in competition with one another) to come together and collaborate on training issues (Cox et al., 2009).

Examples of subsidies conditional on employer collaboration include:

- The *Strategische Transformatiesteun* (Strategic Transition Support – STS) In *Flanders* (Belgium), which can cover 20% of training costs up to a limit of EUR one million per year and per firm, as long as at least three firms participate.
- The *Yhteishankintakoulutus* (Joint Purchase Training) scheme in *Finland* where employers are encouraged to jointly identify training needs and participate in the procurement and planning of that training together with the Employment and Economic Development Office.

- In *Portugal*, funding is available to cover between 50% and 85% of training costs in skills that have been identified as in need by a large number of companies.
- The "Class in the Workplace" programme in *Israel* provides incentives to employers to come together and design a vocational training course, on condition that they then hire some of the graduates for at least a year.
- The Employer Ownership of Skills Pilot (EOP) in *England* uses a competitive bidding process to subsidise a series of skills "solutions" designed and led by employer-led partnerships. An intermediate evaluation of the programme concluded that the EOP generated a change in behaviour among employers, and particularly among SMEs who provided training they would not have done otherwise. The key benefit, however, was found to be in the collaborative model used by the EOP which reduced risk, primarily by allowing a sufficient number of learners to be generated across several SMEs (BIS, 2015).

Most of the subsidy programmes discussed above assume that employers know what their current and future skills needs are. However, information failures are a key barrier to skills acquisition and overcoming this barrier might not be easy, particularly for a single employer. In *France*, a solution to this problem has been put in place in the form of the Anticipation and Technical Support Contract (*Contrat d´études prospectives et l'appui technique*). Through this scheme, employers can obtain state funding to anticipate changes in skills needs in their sector, or on a geographical basis. 50% of the costs of the skills anticipation study are financed by the state (rising to 80% in some exceptional circumstances, but never exceeding EUR 90 000). The study should not only diagnose the key employment and skills issues and set out possible future scenarios, but also put forward a range of actions necessary to remedy the problems identified.

Sometimes, governments set up and fund special bodies to come up with joint training solutions. Compared to simple subsidies to employers, such bodies have the advantage that they can provide a broader range of support services to help employers with their training decisions. They are often organised on sector/industry basis. Examples of such bodies include:

- Group Training Organisations (GTOs) in *Australia* have proven useful in reducing the risk for smaller employers in taking on an apprentice (as apprentices are employed by the GTOs, not the employers themselves) as well as some of the bureaucracy associated with employing an apprentice (GTOs run the recruitment process and pay salaries). Some (though not all) are supported by public authorities, with some charges to employers.
- Similarly, in the *United Kingdom*, there are around 40 Group Training Associations (GTAs) operating in key industrial areas which operate as public-private partnerships in the delivery of apprenticeship training and adult workforce development. GTAs charge small membership fees, but government subsidies are a far more important source of funding for certain forms of training (e.g. apprenticeships). GTAs have been found to be particularly useful where there are skills requirements specific to a particular, relatively homogeneous group of employers and it has been argued that they boost the amount of training undertaken as many firms have neither the time or money to source and manage the training they need (Burge et al., 2002).

- In *Norway*, the government agrees apprenticeship contracts with collective training offices, which represent groups of small firms and have the legal responsibility for off-the-job training. As in the case of Australia and the United Kingdom, this arrangement enables small firms to benefits from economies of scale and hence to meet the national minimum standards for training apprentices (OECD, 2017).[19]
- In *Korea*, the government, chambers of commerce and the private sector have collaborated to set up training consortia which are either centred around larger companies working with their supplier enterprises, or made up of groups of around 50 SMEs that appoint training managers to liaise with local providers to deliver their members' training needs. The evidence suggests that these arrangements have helped increase the relevance and quality of training, while reducing the cost of courses through economies of scale. They appear to have helped smaller firms to "shift from reliance upon pre-service to in-service training, and from supply-oriented public institution training to more cost-effective demand-oriented in-plant and on-the-job training" (Stone and Braidford, 2008; Stone, 2012).
- In *Austria*, the *Impuls-Qualifizierungsverbund* (IQV) creates a network of several companies to carry out tailored training programmes for their employees, as well as to exchange information and to develop new ideas. IQV Consulting is externally commissioned by the public employment service (AMS) and supports network members to: build up and run the network; survey the educational needs and create training plains; advise in the development of human resources development programmes; research and organise network training. The IQV consultancy is offered throughout Austria and the maximum duration of each company's involvement is ten days. The cost of IQV support services are fully funded by the AMS. If there are at least three companies involved 50% of the participating businesses must be small or medium-sized enterprises.
- In *Slovenia*, competence centres for HR development have been set up to encourage co-operation among companies within the framework of individual industries. By co-funding of education and training of employees, the Public Fund of HRD is encouraging employers to identify skills needs and prepare HRD plans, as well as promoting further education or training in order to achieve greater employee competitiveness and flexibility.
- The *Centres de Compétence* (Skills Centres) in *Wallonia (Belgium)* are set up in strategic areas and sectors with a solid technology base and aim to support innovation and growth through the development of relevant skills. The model is based on a partnership approach and the centres intervene both upstream (through monitoring, information, awareness, etc.) and downstream (though validation of skills, improved integration courses, etc.) A similar approach exists in Flanders (Belgium) with the *kennisinstellingen*.

Other measures

The following sub-sections contain a list of tools other than direct subsidies that governments also sometimes use to encourage employers to invest in training. These are discussed separately either because they are used less frequently than direct subsidies (e.g. loans, job rotation schemes, public procurement) and/or not used much for steering (e.g. tax incentives). In principle, however, there is no reason why some of these tools could not be used more for steering education and training acquisition.

Tax incentives

Tax incentives are really just another type of subsidy, except that they operate in a different way. For this reason, it is worth discussing them separately – although there is clearly a lot of overlap with the previous section. Tax incentives are widely used across countries to incentivise employers to invest in training. A range of measures are available, including: tax allowances (deducted from gross income to arrive at taxable income); tax exemptions (income that is exempted from the taxable base); tax credits (sums deducted from the tax due); tax relief (lower rates for some tax payers or activities); and tax deferrals (the postponement of tax payments). Torres (2012) provides an excellent overview of the use of such measures across OECD countries.

The great advantage of tax measures is that they build on existing institutional arrangements, and so come at relatively low additional cost both for the government and for the employer. However, their primary aim is to target under-investment in training and they are much more difficult to use to steer the system towards investments in certain types of skills. In fact, no country seems to use tax incentives to encourage employers to invest in certain types of training. This is likely to be because tax authorities have neither the capacity nor the expertise to closely monitor firm spending on training. This may also lead to concerns about the quality of the training that is financed through tax measures. In fact, this was one of the reasons why Austria moved from a tax-based support system for apprentices to a grants-based system (Marsden and Dickinson, 2013).[20]

While tax measures do not appear to be used for "hard" targeting (i.e. for incentivising training in specific areas), several countries do rely on them to encourage firms to provide apprenticeships and work-based learning. According to Torres (2012) two OECD countries provided corporate income tax incentives[21] for hiring trainees (Austria and Belgium) and four provided reductions in social security contributions for wages paid to trainees (Austria, Italy, the Netherlands and Spain). This review found additional examples of such measures in: Canada, the Walloon region of Belgium, the Czech Republic, France, Greece, New South Wales and Queensland (Australia), Poland and Turkey. A few more countries have indicated an intention to introduce them – including Spain where, up until now, the provision of work-based learning by companies has been voluntary. In order to increase the percentage of students training in companies, Spain is moving towards the development of a dual VET system and will encourage employers to sign training and learning contracts by offering reductions in social security contributions.

Because tax incentives are a relatively blunt measure, they tend to result in large deadweight losses. To minimise these, countries sometimes target tax incentives on small and medium sized firms, or on particular types of employees. The risk with such targeting, however, is that it may result in undesirable substitution of training across groups, as was shown by Leuven and Oosterbeek (2004). This study found that a 40% additional deduction to train workers aged 40 years or older in the Netherlands induced employers to train workers above the age threshold at the expense of those under it. Targeting also increases administrative costs, which may put employers off from taking them up in the first place. This is what appears to have happened with a tax incentive in Korea in the mid-1990s which, despite its generosity, had relatively low take-up (Stone, 2012).

There are a number of other ways in which tax incentives can be targeted on SMEs and/or more vulnerable workers. One option is to limit tax deductions to non-wage costs only, as Austria and the Netherlands do (OECD, 2005), because allowing firms to deduct trainees' wages provides incentives for them to invest in high-skilled workers (since they earn higher wages). Another possibility is to allow higher deductions for SMEs, or in the case of training for the low-skilled or other disadvantaged groups. In Malta, for example, tax reimbursements are greater for small firms than for large ones. An alternative option to reduce deadweight losses would be to reward only those companies that increase their expenditure on training from one year to the next – although this is likely to penalise firms that invest heavily, but stably, over time.

There is little evaluation evidence on the effectiveness of tax incentives for employer-sponsored training. Leuven and Oosterbeek (2004) found that a tax deduction in the Netherlands had little effect on additional training. On the other hand, Bednar and Gicheva (2014), looking at an income tax exemption for employer-provided tuition assistance for graduate courses in the United States, found that attendance among full-time workers aged 24-30 was higher when the tax exemption was available and also that the use of employer aid increased.

Loans

In theory, liquidity constraints can act as a barrier to small firms investing in the training of their staff and providing subsidised loans to them may therefore help in promoting employer-financed training. In practice, however, no OECD country has such schemes in place – with the exception of Korea. In Korea, employers establishing training facilities or purchasing training equipment can obtain a loan from the government (through the Vocational Ability Development Programme) to cover up to 90% of the costs (up to a maximum of KRW 6 billion). Loans need to be repaid within a period of ten years. The programme is relatively small, however, with only 29 beneficiaries in 2015 (73 over the whole period 2011-15) and a total of approximately EUR 10 million in loans being awarded in 2015.

Training levies/funds

Training levies are used in some countries as a way to pool resources from employers and earmark them for expenditure on training. They are a form of collaborative solution, but differ from those that were discussed above in that, generally, they do not involve a government subsidy.

Training levies can emerge either from public policy or from the initiative of social partners. Given the focus of the present report, only the former type of levy schemes are considered here – although it is not always easy to draw a neat distinction between the two. For example, in the Netherlands, sectoral training funds (*Opleidings- en Ontwikkelingsfondsen*) are set up and managed by the social partners. However, by extending collective agreements, the Minister of Social Affairs and Employment can effectively impose a training levy to the entire sector (Smith and Billett, 2003).[22] Similarly, in Switzerland, the government can make participation in a training fund compulsory for all firms in a sector (Brisbois et al., 2009). In Italy, while inter-sectoral bilateral training funds were instituted by law and need to be approved by decree, they are both set up and run by the social partners without government involvement. Similarly, in the United Kingdom, sector skills councils were a government policy, but they needed to be set up on the initiative of employers.

The main purpose of levy schemes is to address the concern that training firms have their workers "poached" by non-training ones. Training levies "mutualise" financial resources and use them for the common good: they mitigate the "free-riding" problem by reshuffling money from employers who invest little in training to those who invest a lot. As a result, training levies can promote higher levels of employed-sponsored training by helping to overcome this type of market failure.

The extent to which training levies are able to incentivise additional training depends on the exact design of the scheme. There are many variants of levy schemes, and below are some of the most common ones:

- *Revenue-generating schemes* represent the simplest form of levy, and are essentially little more than an earmarked tax. Such schemes were widespread in Latin America, but even at the turn of the millennium, Gasskov (2001) noted that they were becoming increasingly rare. Aimed only at raising funds for publicly-provided training, such schemes do little to alter the incentives of employers to invest in training. Brazil's SENAI is a classic example of this type of scheme – although arrangements in other countries contain revenue-generating elements. For example, part of the funds raised through Denmark's Employers' Education Contribution (*Arbejdsgivernes Uddannelsesbidrag* – AUB) is used to finance vocational schools. Similarly, the purpose of the Finnish Education Fund is to support employees' vocational studies by granting them adult education allowances and to support the development of the vocational qualification system by granting scholarships for qualified employees.
- *Levy-grant schemes*, by contrast, do create an incentive for employers to invest in training – not only because employers can only get their contributions back if they apply to the fund for resources, but also because they can get grants larger than the levy they paid. Such schemes can also help address labour market needs by making grants conditional on training in specific skills. The disadvantage of levy-grant schemes is that they require many case-by-case decisions, and therefore imply higher administration costs. The process of grant applications might also be more burdensome for small firms, and therefore puts them at a disadvantage in terms of accessing resources from the fund. One example of this model is the intersectoral training funds in Italy. Employers wishing to run vocational training projects must apply to the head office of the relevant intersectoral training fund, where a technical team will evaluate the application, including whether it takes into consideration the priorities established by the fund. Other countries where such schemes operate include the United States (Arizona Job Training Tax), Denmark (*Kompetenceudviklingsfonde* – Skills Development Funds), Greece, Poland (National Training Fund – *Krajowy Fundusz Szkoleniowy*) and Korea.
- Finally, there are levy-exemption or *train-or-pay schemes*, under which a tax is imposed on employers, but which is reduced by the amount that enterprises spend on allowable training activities. The incentive for employers to invest in training lies in the fact that the cost of training is reduced to zero up to the amount of the tax liability. In Hungary, for example, firms can reduce their compulsory VET levy by up to 16.5% to co-finance their employees' vocational and foreign language training. In Greece, the contributions to the recently established ELEKP training fund are used to organised training programmes in which firms decide to participate or not.

A variant of this type of scheme is the *cost-reimbursement scheme* (exemplified by the French system – see Box 2.13), in which firms pay a compulsory levy but can claim expenses back for any training costs they incur during the year.[23] Train-or-pay and cost-reimbursement schemes carry a lower bureaucratic burden than levy-grant schemes, and they give employers a greater degree of freedom in planning their own training decisions – although this means there is less scope for steering the system. Also, the risk of deadweight is relatively large in the case of employers who would have spent more than the required level anyway. Three additional concerns are: i) that employers, in an attempt to get their contributions back, spend money on training without too much thought, resulting in lower training quality – which is what happened in the case of the Quebec training levy (Gagnon and Smith, 2013); ii) that firms reduce their training effort to the minimum level required to qualify for a tax rebate (or exemption) (known as the "levelling down" effect); and iii) that employers simply opt to pay the levy rather than provide training, because it is just easier to do. Apart from France, examples of such schemes can be found in Belgium, Canada (Quebec) and Denmark (Employers' Reimbursement System (AER) for apprentices). From April 2017, a new train-or-pay levy scheme to fund apprenticeships will operate in the United Kingdom (the Apprenticeship Levy).

In practice, countries often have hybrid schemes with funds raised through levies distributed via various mechanisms including grants and direct subsidies to education and training providers. Examples of such schemes include the Irish National Training Fund, as well as the Hungarian and Spanish schemes.

Box 2.13. The French cost-reimbursement levy scheme
(*Contribution à la formation professionnelle continue*)

The financing of employer training in France has undergone many changes over the years – with the most recent reform coming into force on 1 January 2015. Employers now make a single contribution, with small firms (fewer than 11 employees) paying 0.55% of payroll and large firms (with 11 or more employees) paying 1% (1.3% in the case of temporary work agencies).

To avoid disincentive effects to firm growth of moving above the employee threshold, the contribution only increases gradually over time for growing firms: it is kept at 0.55% for the first two years the firm moves over the threshold, then increases to 0.70% and 0.90% in the third and fourth years, respectively.

The contributions paid by firms are collected and managed by sector training funds (OPCA – *Organisme paritaire collecteur agréé*) – run both by corporate branches and trade unions. Firms are reimbursed for any training activities they finance during the year. Any funds unused by the firm at the end of the year are used by the OPCA to finance the training activities of other firms. To increase the labour market relevance of training courses, OPCAs help companies analyse their needs in terms of employment, skills and training courses. They also have a close relationship with training providers and jointly design training courses.

Firms with 11 or more employees may obtain a reduction in their contribution from 1% to 0.8% – and manage the difference (i.e. 0.2% of payroll) themselves by directly financing the individual training accounts of their employees – as long as the social partners have reached a firm-level agreement. If after three years the firm has not dedicated at least 0.2% of payroll to continuous professional development, then the funds need to be returned to the OPCA.

Under certain circumstances, training levies can be used to ensure that training efforts are focused on those groups of firms or workers who would otherwise receive little training. This is particularly so in levy-grant schemes, which can establish

priorities for the use of such funds. Levy-grant schemes also offer the opportunity to focus training efforts on areas where there is high labour market demand.

One advantage for government is that, in most cases, training levies do not require any public funds and are therefore a "cheap" way (from the public purse's point of view) to increase investment in training. It is also possible that levy schemes, by imposing a compulsory financial contribution, raise awareness of, and commitment to, training activities. Contributions to levy schemes may also ensure a stable and constant flow of finance, which makes investments in training less sensitive to the business cycle. Finally, such schemes may offer economies of scale and reductions in transaction costs if training is procured collectively.

However, there are also several risks attached to levy schemes. The first is that they are perceived by employers as nothing more than an additional tax while, at the same time, they take autonomy about training investments away from them. In fact, employer buy-in is critical for the success of levy schemes as the Australian attempt to replicate the French system in the early 1990s demonstrated: the support of employers could not be achieved as firms perceived the Training Guarantee Scheme as just another tax (Cox et al., 2009). Another (relatively old) example of weak employer support is Hungary, where employers felt that the government exerted too much control over the funds, which limited their effectiveness (Dar et al., 2003).[24]

One way of achieving greater employer buy-in is to involve them more closely in the governance of levy schemes, including in decisions on training priorities and funding allocation. This is more easily achieved when levy schemes are organised on a sectoral (or local) basis, addressing the specific needs and concerns of employers in that sector (or geographical area), thereby increasing their sense of ownership. More decentralised schemes also have the advantage that they can generate highly specialised knowledge about employment- and training-related issues which, in turn, can result in higher quality training being undertaken and a better alignment between labour market needs and the supply of skills. An interesting example of training funds that are organised on a sectoral basis is the Skillnets in Ireland (Box 2.14). On the downside, one might argue that such concentration on sector- or area-specific concerns could result in an under-supply of more general training and carry a risk of losing sight and control over national skills priorities. In some countries, sectoral levies co-exist with national ones – e.g. France and Belgium, where there is a compulsory national payroll levy, but some sectors voluntarily collect a greater contribution which is used for developing sector training.

Box 2.14. Ireland's Skillnets

The Skillnets training networks in Ireland are groups of private businesses in the same sector and/or region that have come together to carry out training-related activities that may not be possible if each firm acted on their own. Typically, Skillnets carry out the following tasks:

- Analyse the training and development needs of members and potential trainees, identifying skills requirements and priorities for action;
- Assess the strategic importance of long-term competitiveness of the skills identified;
- Identify solutions/delivery mechanisms to meet those needs;
- Develop training network structures and processes to establish the operation of the training network as a basis for specified training activity;
- Organise the delivery and implementation of training;
- Promote collaboration and co-operative activity, sharing of knowledge and the exchange of best practice;
- Monitor and measure results, providing performance indicators and quality standards for training activity engaged in by businesses;
- Report on the progress, outcomes and impact of training network activities and processes to Skillnets.

There are currently 63 Skillnet training networks active in Ireland. These are all funded through a mixture of government funding and the National Training Fund, which is financed through a levy on employers of 0.7% of reckonable earnings of employees in certain employment classes. Because the levy was introduced simultaneously with a 0.7% reduction in employer social security contributions, it encountered little resistance from employers (although it also means that awareness of the direct contribution to the NTF is relatively low) (Marsden and Dickinson, 2013).

An example of such a network is Wind Skillnet, which has carried out extensive training needs analysis with its member companies, working closely together with the Irish Wind Energy Association and taking guidance from leaders in the Irish Wind Industry. Wind Skillnet has developed a suite of courses that meet the requirements of trainees in the Wind Industry. The courses cover a range of topics including turbine operation, maintenance and productivity, finance, planning, grid connection and wind monitoring.

A survey of employers suggested that half the training undertaken through the Skillnets would probably not have been undertaken in the absence of the programme and that the vast majority of employers would not have found training of a similar quality (Frontline, 2015). According to Marsden and Dickinson, one of the greatest advantages of the Skillnets model is that it reduces the administrative costs of training, which is particularly helpful for SMEs. Skillnets are also tasked by the government to target training "towards areas suggested as appropriate by Government Policy and the ongoing evidence-based analysis by Forfas and the Expert Group on Future Skills Needs" (Frontline, 2015).

Source: http://www.skillnets.ie; http://www.iwea.com/_wind_skillnet.

The other problem with levies more generally is that, in practice, large employers tend to benefit disproportionately from them. This is often because small firms lack the capacity to determine their training needs, to plan such training, and to file applications for cost reimbursement or grants. That being said, levy schemes can be designed in such a way as to target more resources on SMEs (e.g. Spain) and/or grant them reductions in (or exemptions from) the levy fee (France, United Kingdom, Quebec). In Italy, there are specific ad hoc training funds for SMEs[25] and some of the Dutch sectoral funds have advisors visiting and supporting small firms to identify and formulate their training needs (Müller and Behringer, 2012). With the right checks and balances in place, levy schemes can also ensure that training reaches the most disadvantaged workers. In Spain, for example, firms' funding applications to the levy scheme need to be reviewed by the firm's worker representatives first (OECD, 2005).

Finally, some have argued that training funds can be sensitive to abuse practices (particularly when they are of the levy-grant type), which raises the need for detailed rules governing their operation and therefore leads to higher administration costs. Complicated regulations concerning training requirements and approval were allegedly behind the abandonment of the Korean train-or-pay scheme in the 1990s (Müller and Behringer, 2012).

Job rotation (and other incentives to grant study leave)

Section 2.2 of this report discussed rights to training leave and the financial incentives that exist to encourage individuals to take up training leave by offering them a replacement wage. In some countries, additional incentives are in place to help employers find a replacement worker, for example through job rotation. Job rotation offers a solution to the problem of worker absence for training purposes by offering the employer a temporary replacement in the form of an unemployed person. This type of scheme, originating in Denmark in 1994, has the advantage of simultaneously promoting training and helping the unemployed gain skills and labour market experience. Under the current Danish scheme, employers who take on an unemployed person as replacement for the worker who is on training leave, are expected to pay him/her the wage set by collective agreement, but in return receive an amount equal to 160% of the unemployment insurance (Cedefop, 2016). However, few other countries have such schemes in place. Portugal has a job rotation for training scheme in the autonomous region of Azores. Sweden used to have a scheme (the *Utbildningsvikariat* or Education Temporary Positions) which provided employers financial support (through a tax credit) to cover the cost of wages (up to a limit and for a maximum of six months). The programme, which primarily benefited employers in the health sector, was abandoned in 2006. While the Finnish *Vuorotteluvapaa* scheme provides employers with a subsidy to take on an unemployed person, the scheme is not specifically designed to encourage training: leave can be taken for any purpose, as long as it has been agreed between the employer and employee.

Payback clauses

One of the reasons for the under-provision of general training by employers is the fear of poaching, which means that employers risk not being able to recoup their investment in skills. Payback clauses are contractual arrangements that permit employers to recover at least part of their investment in training in the event that the trained employee leaves soon afterwards. They reduce the risk of a loss of investment in training and can encourage employers to invest in skills. However, while payback clauses have been sold primarily as a tool to incentivise employer training, they can also help overcome a second market failure, namely credit constraints, by allowing individuals to borrow from their employers to cover the costs of training. Indeed, some payback clauses have referred to the cost of training as a loan which is to be forgiven through service (Gasskov, 2001). Based on an experiment in the Netherlands, Sloof et al. (2003) showed that payback clauses are very effective at addressing the problem of underinvestment, and could even induce overinvestment. Evidence from the trucking industry in the United States confirms that training contracts significantly reduce post-training quitting (Hoffman and Burks, 2015).

A recent review of training clauses in 33 European countries found that they exist in most countries, with the exception of Denmark, Finland, Greece, Iceland and Lichtenstein (Cedefop, 2012). That said, there is considerable variation across

countries in how payback clauses are regulated. National regulations exist in 14 countries, while in three further countries payback clauses are primarily a matter of collective agreement between the social partners. In the remaining ten countries, payback clauses are agreed at company level, either in company-level agreements or directly in individual contracts (Cedefop, 2012). The same report goes on to recommend that labour law should provide a general framework for the use of payback clauses (to reduce the risk of legal disputes), while at the same time allowing flexibility for them to be amended at sectoral and/or company level.

Although payback clauses can be found in most European countries, it is not clear to what extent they are actually being used (or, indeed, enforced). Stone (2012) cites a figure of 15% of firms in Germany (and more in Switzerland) using such clauses – but reliable data is not generally available. In the response to the questionnaires that were sent out as part of this project, Austria, Finland, Italy and Norway mentioned that, although payback clauses are legally allowed, they are not frequently used. In Austria, this is because they can only be used for very specific and costly training. In Norway, they make little sense since most education and training is freely provided. And in Italy there was, until recently, some uncertainty around the legal validity of payback clauses (*clausole di stabilità*). Only Latvia, the Netherlands and Poland reported that payback clauses are commonly used.

One problem with payback clauses is that they might be very well-suited for employees enrolling in formal education and training programmes (which have a clear market price), but not so for those engaging in more informal types of learning. In addition, they are often less suitable for small companies that are generally less likely to invest in expensive training (most countries establish either the minimum costs or duration of training to be legally considered for an agreement on payback clauses). Finally, the effectiveness of payback clauses might be diminished by the fact that the law and/or collective agreements are often very vague about the costs that have to be reimbursed in case of termination of employment – which renders their enforcement more difficult. In England, for example, the use of payback clauses is currently unregulated and left to each employer to decide on (Cedefop, 2012). In practice, this means that it is difficult for employers to make departing employees pay back training costs because such clauses could be seen as "penalty clauses" which are unenforceable in employment contracts (Brown, 2015).

The literature has documented some interesting/innovative uses of payback clauses. Sometimes, individuals who leave early are not only expected to repay a share of the training costs, but they are also barred from working for specified competitors during a pre-defined period of time (Gasskov, 2001). While it is not clear at this stage whether it ever materialised, there were plans at some point in the United Kingdom to introduce "portable" training loans: if the worker were to quit before her share of the training costs had been reimbursed, then the responsibility for the remaining payments would shift to the new employer. Finally, payback clauses can also be designed in such a way as to encourage successful completion of training, and require employees to reimburse part of the costs if he or she does not finish the training (Cedefop, 2012).

By their very nature, payback clauses are instruments to encourage training in general, rather than training in specific skills. Accordingly, neither the literature review nor the questionnaires uncovered a single example of the use of payback clauses to address skills mismatch.

Public procurement

Another type of financial incentive that is not costly for the government is to make the award of public contracts to firms conditional on the provision of certain types of training. For example, in Switzerland, public procurement policies have been used to encourage firms to provide apprenticeships and the evidence suggests that the policy increased the number of training firms, without affecting training quality negatively. However, the effect is limited in size, as only small firms and firms operating in sectors where public procurement represents a large share of the business, are affected positively (Strupler Leiser and Wolter, 2016).

The UK has similarly announced that it would use the GBP 220 billion that the public sector spends each year on public procurement to "support investment in the skills required to secure a low carbon future" and, in particular, to support a large number of apprenticeships through this means (DECC, 2010). Back in 2003, the Department for Education and Skills and the Office of Government Commerce produced a guide on how basic skills requirements could be incorporated into government procurement arrangements. It covers the inclusion of contract clauses that force suppliers' employees to have relevant skills or to take on a certain number of trainees/apprentices. Binks (2006) provides case studies of the use of public sector procurement to advance the skills agenda in the United Kingdom, as well as in a few European countries. He cites the example of Sunderland City Council which hired a contractor for a school-building project to take on and train a number of trainees, with 40% of the labour used coming from deprived local areas.

An interesting development in Norway is that the government has recently made it compulsory for public procurement contracts to require firms to use apprentices if there is a need for them in a particular sector. Public authorities at the state level have to request the use of apprentices in contracts for services and construction with a duration of over three months and a value of over NOK 1.1 million (excluding VAT) (over NOK 1.75 million for all other public bodies). The ultimate objective is to ensure a sufficient supply of apprenticeships and qualified workers in those particular sectors.

2.4. Comprehensive solutions

The analysis so far has divided incentives rigidly into those targeted at institutions, individuals, and employers, respectively. However, many skills shortages and mismatches need concerted action from all stakeholders in order to be resolved. For example, there is no point increasing the demand for a particular course when provision cannot respond flexibly. Similarly, there is no point increasing the number of STEM places in higher education if students have neither the appropriate qualifications nor the motivation to take up such courses. Several countries have therefore designed programmes that seek to address skills challenges in a holistic manner by encouraging collaboration between all stakeholders.

- The Employment and Skills Development Actions (*Actions de développement de l'emploi et des compétences* – ADEC) in *France* offer a more permanent arrangement for employers to solve sector skills issues with the help of a government subsidy. The aim of the initiative is to put in place skills projects that are designed and implemented by the social partners, and which seek to address employment and skills issues arising from economic, social and demographic change. Subject to a framework agreement signed between the government and the employer

organisation, funding is made available for a range of interventions centred primarily around training. The amount of funding is negotiable and depends on the nature of the planned interventions, the size of the firms involved, the degree of disadvantage of the target group of individuals, and the extent of co-financing.

- *Austria's* labour foundations are social partner initiatives to address structural change through skills enhancement programmes. Two main types of labour foundations are available: outplacement foundations, which are launched at the initiative of one or several enterprises affected by major staff cuts; and inplacement foundations, which are provided by one or several firms in a region or sector affected by manpower shortages. Labour foundations are subsidised by the state: participants in labour foundation programmes may extend unemployment benefit receipt, and the government also may also provide some funding towards the costs of career guidance, training provided by external providers, active job-search measures, and additional course-related costs (although the exact costs covered depend on the type of foundation programme).
- In the *United States*, the National Fund for Workforce Solutions supports industry partnerships around the country with the aim of developing a pipeline of skilled workers who meet the needs of employers, and promote improvement to business practices and public policies that lead to better career opportunities for low-wage workers and jobseekers. For example, Partners for a Competitive Workforce is a tri-state partnership in the Cincinnati region which involves more than 150 organisations, including employers, workforce boards, chambers, education and training institutions, and community groups. The partnership is developing sectoral partnerships in health care, advanced manufacturing, construction, and IT, seeking to identify industry skills needs and develop aligned curricula and career pathways that meet those needs.
- Another initiative in the *United States* is the Trade Adjustment Assistance Community College and Career Training (TAACCCT) competitive grant programme, which supports community colleges in creating partnerships with employers and industry to develop training programmes that meet needs for in-demand jobs. Employer engagement is a key feature of this programme and, in all four rounds, community colleges were required to partner with employers and employer-led Workforce Investment Boards to design and implement job training programmes based on industry-recognised credentials. In the last round, grantees were incentivised to partner with national and/or regional industry associations to create credentials that can be replicated with other education and training institutions across the country where industry also needs to hire workers with those skills.
- In the *Netherlands*, sector plans (*sectorplannen*) are temporary plans to stimulate the labour market in certain sector or regions, with an important role for education and training to help overcome specific challenges – such as a mismatch between the supply and demand of labour. The social partners are heavily involved in drafting and implementing these plans and contribute a significant share of the funding. The state covers up to 50% of the total cost for a period of up to 24 months (36 months in the case of BBL qualifications, a type of vocational training).
- In *Flanders (Belgium)*, the sector covenant instrument bridges the gap between the Government of Flanders and the social partners within the sectors. The covenants are agreed every two years and result in the allocation of several sector consultants to

each sector. The covenants shape the social partners' commitment to strengthen labour market priorities at sectoral level. Results have been achieved in three specific policy themes which have been set out by decree: a better link between education and the labour market; stimulated development of skills; and increased diversity in the labour market.

- In South *Australia*, the Jobs First approach gives training and service providers, employers and individuals the opportunity to co-invest in high quality training projects for specific groups of people, industries and regions. These projects typically provide combinations of accredited and non-accredited training with additional support services that address barriers to employment – such as individual or family case management, structured mentoring, work experience, career services, building work readiness, and brokerage into a job. Submissions to the Jobs First programme are partly judged on the strength of employer involvement and commitment.
- In a similar spirit, the *European Commission* is launching a Blueprint for Sectoral Cooperation on Skills, with the intention of mobilising and co-ordinating key players to improve skills intelligence and tackle shortages in economic sectors. Sectoral skills partnerships will be set up at the EU level in industry and services, and then rolled out at national or regional level to translate sectoral strategies for the next 5-10 years into the development of concrete solutions, such as the joint development of higher VET opportunities and business-education partnerships.

Notes

1. This information dates back to 2010/11. While the Government in Estonia used to decide on the number of state-funded places in certain fields of study (state-commissioned study places), taking into account labour market needs, this system has now been abandoned. Indeed, it was found that the previous system was not effective at solving skills shortages and, instead, introduced distortions (European Commission, 2015a). The new system that was introduced to replace it is based on performance agreements. As part of these agreements, different approaches have been taken – e.g.: agreements to decrease admissions (in law), increase admissions (in IT), and to accept a minimum number of students to the first year of the programme of study (in medicine).
2. With the exception of access to health studies (*numerus clausus*) and admission to certain vocational training (such engineering schools).
3. Except in Medicine and Dentistry.
4. For the Slovak Republic, the information is different from what was reported in Estermann, Nokkola and Steinel (2011) and reflects current practice, as discussed with the Slovak authorities.
5. In the Czech Republic, the government has stopped limiting the number of students on medicine and stomatology courses in higher education.
6. In England, there are no longer any limits imposed on student numbers and institutions are now free to independently decide on the number of study places.
7. According to European Commission/EACEA/Eurydice (2013), around half of EU member states have (or are planning to have) initiatives to expand the use of performance-based funding in higher education.
8. The volume of performance-based funding is not always limited. In the examples discussed in De Boer et al. (2015), the share of performance-based funding in the total recurrent budget ranges from below 10% in Ireland to 100% in Tennessee. In Austria, Denmark, Finland, Scotland and Thuringia (Germany) the share is also above 50%.
9. In New South Wales, Australia, fees for apprenticeships and traineeships are capped to encourage people into work-based learning pathways.
10. The real question, (at least in theory) is whether the ratio of fees for programme X versus Y truly reflects average outcomes (once appropriately discounted etc.). If not, then one of the two is being favoured.
11. In addition, there is the *Deutschlandstipendium* scholarship programme in Germany. The programme provides EUR 150 of funding conditional on EUR 150 of co-funding from an employer. While the programme does not target specific fields of study, students in MINT courses are more likely to obtain a scholarship since employer demand for those courses is higher (European Union, 2015).

12. Flanders is currently reforming its financial incentives for training and the subsidy (*aanmoedigingspremie*) is being revised.

13. Similarly, Saskatchewan runs a Student Loan Forgiveness for Nurses and Nurse Practitioners Programme.

14. It may also be why in many countries it is difficult to obtain statistics on the number of individuals benefiting from study leave since such information only tends to be collected if and when training leave is associated with some type of subsidy.

15. As this report was going to press, Flanders was reforming its financial scheme to ensure the uptake of study leave.

16. This information refers to the *Contrat d'apprentissage*. In France, there is also the *Contrat de professionalisation*, which differs slightly in terms of the target group, the amount of training, and the remuneration. A similar set of incentives is available to entice employers to hire individuals on this type of contract.

17. The focus here is on structured work-based learning schemes (apprenticeships and traineeships), but many countries also have incentives in place to encourage employers to provide work placements (including internships). Such programmes provide individuals with useful work experience and workplace skills that improve their chances of finding and holding on to good jobs later on. Sometimes, they can be used for steering as well. For example, CareerFocus in Canada aims to encourage employers to offer internships. The programme is not usually focused on particular sectors/skills but, Budget 2016 invested additional funding in order to create new green jobs for youth and also to increase job opportunities for young Canadians in the heritage sector. Other examples of (non-steering) work placement incentives include: the Canada Summer Job programme, the "Traineeships for young job applicants 2" in the Czech Republic, the *Périodes de mise en situation en milieu professionel (PMSMP)* in France, Introductory Training in Germany (which prepares young people for integration in vocational education and training or paid employment), the "Support for the acquisition of job skills" in Lithuania, and the internship agreements in Spain.

18. Collective training arrangements can be set up on the initiative of employers only, with no government intervention at any stage (e.g. vertically linked firm networks or supply-chain relationships, where large enterprises provide training directly to small ones; business/trade associations/clubs). These are not the focus of the present report.

19. In Germany, the federal Ministry for Economic Affairs and Energy introduced intermediaries in 2007 which are responsible for interviewing both SMES and apprentices, and thereby significantly reduce recruitment costs for SMEs (OECD, 2017c). A similar solution exists in New South Wales (Australia) in the form of CAPS (Continuing Apprentices Placement Service), which provides a free job matching service for employers and apprentices/trainees on the National Skills Needs List.

20. In addition, it was difficult with the tax incentives to take into account the duration of apprenticeships as well as the total cost to the employer (Marsden and Dickinson, 2013).

21. In most countries, the costs of training are deductible for corporate income tax purposes (like many other business expenses). Only measures over above this

standard deductibility of training costs should therefore be regarded as tax incentives.

22. Note that collective agreements can only be extended if they also provide a training clause (van der Meer and van der Meijden, 2013).

23. In some schemes, firms can only get their contributions back in kind through training that is either developed or procured by the managing body of the scheme. Such schemes, which are sometimes referred to as "levy-access" schemes (Marsden and Dickinson, 2013), have the disadvantage that they limit the kind of training that employers can invest in, and this reduction in choice and competition may, in turn, reduce the quality of the training provided. On the other hand, such training might be much more tailored to the specific needs of the group of employers represented by the scheme.

24. Later reforms ensured that employers in Hungary had greater freedom in deciding on the allocation of their contribution (Müller and Behringer, 2012).

25. All the examples cited here are taken from Cedefop (2008).

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Chapter 3

Best practice, framework conditions, limitations and risks in the use of financial incentives for education and training

This final chapter provides a brief overview of what the literature has to say on: i) best practice in the use of financial incentives; ii) framework conditions for their effective implementation; iii) the limitations; and iv) risks attached to the use of such incentives.

3.1. Best practice

Administrative burdens should be kept to a minimum

Complicated administrative procedures can seriously reduce the take-up and effectiveness of financial incentives, as the Finnish experience with the *Toppis tai Oppis-mallit* scheme has shown: while this programme has a lot of potential it has rarely been used because of the heavy administrative burden. Similarly, an evaluation of the Canada Job Grant found that Provinces and Territories were facing some challenges related to the processing of applications and capacity to meet performance measurement commitments (Goss Girloy Inc., 2016). Another evaluation of the Greek programme "Employees and enterprises structural adjustment in the financial crisis framework" also concluded that bureaucracy needed to be reduced (Procedure S.A., 2014). Some programmes offer innovative solutions to reduce administrative burdens. An interesting recent example comes from the subsidised municipal work schemes in the Netherlands, where: i) a national, private organisation takes care of registering participants; and ii) a dedicated web portal allows employers to bypass the municipal bureaucracy and recruit participants and obtain financial support in just a few hours (Cedefop, 2016). In Tyrol (Austria), an online application procedure for apprentices has been introduced, which significantly shortened processing times.

Keep it simple

The proliferation of financial incentives can lead to an overly complex system in which individuals and employers no longer understand the incentives that they are facing, resulting in sub-optimal choices being made. The report has discussed the example of the Australian Apprenticeships Incentives Programme, which in 2011, was criticised as being too complex. Another example is that of tax benefits for college attendance in the United States, where college students and their families can benefit from: tax credits (American Opportunity Tax Credit); tax-advantaged savings plans (Coverdell and 529 programmes); deductions for tuition costs and loan interest; exclusion of scholarships, grants and tuition fee from taxable income; and a dependent exemption for students aged 19 to 23. In addition, graduates can receive subsidies in the form of tax deductions for interest paid on student loans. A recent review of these tax incentives (Dynarski and Scott-Clayton, 2016) argues that "the increasing scope and diversity of [tax] subsidies implies increased complexity" and that, as a result, families often fail to make optimal choices as many do not fully understand the eligibility rules and benefit calculations, and how they interact with other elements in the tax system. Estimates by the United States Government Accountability Office suggest that around 14% of families eligible for an education tax benefit failed to claim it, while 40% of filers who used the tuition tax deduction would have been better off claiming one of the tax credits.

Build a degree of flexibility into the design and use of financial incentives

The more financial incentives are targeted at very precise skills needs, the less likely they will be able to adapt to geographical variations in skills needs, as well as to emerging new trends. This may be one of the reasons, for example, why relatively few initiatives exist that target more specific skills needs, like digital skills for example (Box 3.1). Ideally, skills needs should be allowed to be identified flexibly at the local level, in co-ordination with employers, trade unions, education and training providers.

Similarly, financial incentives are best designed in such a way as to adapt quickly to new and emerging skills needs. Such flexibility will require good relationships with social partners, strong employment services, as well as high-quality information, advice and guidance.

Box 3.1. Financial incentives for digital skills

Digitalisation has the potential of significantly altering the nature of work, and one immediate implication is that a growing share of jobs are likely to require some level of digital skills – whether these are specific or generic. Meeting this increase in the demand for digital skills presents a significant challenge. For example, the number of unfilled vacancies for ICT professionals in Europe is expected to almost double to 756 000 by 2020 (European Commission, 2016). There is also significant concern about individuals' generic ICT skills. For example, in Italy and Korea, around a quarter of adults report having no experience in using computers or lack the most elementary computer skills, such as the ability to use a mouse (OECD, 2013).

To deal with these challenges, the European Commission launched the Digital Skills and Jobs Coalition towards the end of 2016 – a new flagship initiative bringing together all stakeholders and member states committed to develop a large digital talent pool and to ensure that individuals and the labour force in Europe are equipped with adequate digital skills. Through the European Pact for Youth, one million young people will be trained in digital skills, and a "smart classroom" programme will reach 100 000 students. Through the Grand Coalition for Digital Jobs companies and other organisations have offered millions of additional training opportunities (European Commission, 2016).

Against this backdrop, it is of interest to explore the extent to which countries that responded to the OECD questionnaires on financial incentives use such tools for steering the provision and acquisition of education and training towards digital skills. A key finding from the present report is that, in general, financial incentives define skills needs flexibly and that few programmes are narrowly focused on promoting a very specific type of skill. Nevertheless, several examples could be identified of programmes that seek to encourage the provision and acquisition of digital skills:

- In some countries, efforts are focused on the *institutional side*, either through the provision of one-off capital funding (e.g. funding to invest in information technology initiatives in New South Wales' VET sector), performance agreements (e.g. agreements to increase admissions to IT programmes in Estonia) or investments in staff skills (e.g. training of academic staff in computer skills in Poland's higher education institutions).
- Other initiatives are targeted at *individuals*. In Estonia, for example, "smart specialisation" stipends are available for students taking courses in computer engineering, computer science, information technology and software engineering, at both bachelor's and master's levels. In Austria, vouchers are available for both the employed and the unemployed to take up internet/data technology and communication courses. In Greece, vouchers for connecting unemployed university graduates with the labour market are partly focused on ICT skills. In Israel, the Programme for Integrating Arab, Druze and Circassian Academics into the Hi-Tech Industry finances training skills such as Real-Time, Java, Application Development and QA. It is also worth remembering that some basic skills programmes focus on digital skills (see Box 2.5).
- Finally, some initiatives are targeted on *employers*, like the *Career Keisei Sokushin Joseikin* programme in Japan which targets the training of existing workers in ICTs (as well as a range of other skills). In Portugal, the programme *Formação-Ação* aims to improve SME skills in six thematic areas: organisation and management, implementation of management systems; internationalisation; digital economy; energy rationalisation and efficiency; and strategic and operational management. In Wallonia (Belgium), the Skills Centres (discussed in Section 2.3) target STEM, digital and green skills.

Involve the social partners

The review has demonstrated that, in many cases, the involvement of the social partners is an important factor in determining the effectiveness of measures. Good industrial relations can be beneficial for training in a number of ways. For example, employee participation in training decisions can help shift employer supply towards more general types of training that are more easily transferrable on the labour market, as well as push for a more equitable supply of learning opportunities (OECD, 2003; OECD, 2005). Involving social partners can also help in assessing and anticipating skills needs (OECD, 2016a) and developing education and training curricula that match labour market needs (OECD, 2005). In Austria's VET system, curricula are strongly connected to labour market needs and the social partners play a critical role in defining, adapting and implementing new vocational qualifications. In Flanders (Belgium), it is a legal requirement that all public higher education institutions have social partner representatives on their board of directors. In Lithuania, training for the unemployed is organised in close co-operation with employers to ensure that it meets their needs. In Poland, convents (advisory bodies of higher education institutions) are compulsory in vocational higher education institutions, and they contain representatives from industry/employers. Many other examples of social partner involvement can be found in other countries as well.

Make the most of the opportunities offered by new technologies

It has long been recognised that new technologies can reduce the costs of accessing training by offering opportunities for e- and distance learning. A recent example is the UK's Digital Business Academy which is an online platform designed to teach digital business skills, with free online business courses delivered by experts from UCL, the Cambridge Judge Business School and Founder Centric. Eleven courses are currently offered, including: establishing a business start-up, developing and managing digital products, marketing, performance management and tracking (BIS and DCMS, 2016). A similar example is the online Skills Academy in the United States, which offers open online courses of study, helping students earn credentials online through participating accredited institutions.

Technology can also help in providing better information and guidance to individuals about skills needs and available training. There are many examples of such initiatives across EU and OECD countries. In Denmark, *Uddannelseszoom* (education zoom) is a digital tool which aims to help young people in their education and career decision-making processes by allowing them to compare three educational programmes at a time on self-selected parameters like salary, unemployment rates, etc. In Lithuania, AIKOS is an open information, guidance and counselling system for students, employees, employers, guidance and counselling personnel. It provides information on education and training programmes, providers, qualifications as well as on education and employment statistics (vacancies, unemployment rates), and descriptions of occupations. The tool also allows individuals to take self-assessment personality tests. In Latvia, the PES publishes short-term forecasts of labour market needs through an electronic visualisation tool that allows users to view the information in a detailed and graphically comprehensible way (European Commission, 2015). Some other examples of similar tools include: the AMS Skills Barometer and *Karrierekompass* (career compass) in Austria; the *Onderwijskiezer* in Flanders (Belgium); the *Horizons emploi* in Wallonia (Belgium); the *ForeAmmatti* website in Finland; and the Occupational Compass (*Yrkeskompassen*) maintained by the Swedish PES.

Technology can also facilitate the identification of skills needs in the first place. For example, in the United States, the Department of Commerce's National Institute of Standards and Technology's Manufacturing Extension Partnership (MEP) has developed a cloud-based software diagnostic, called SMARTalent, which allows small manufacturers to capture both their current and future skills needs. This information is gathered in real time and used by community colleges, apprenticeship programmes and Workforce Investment Boards to identify changes in advanced manufacturing skills demand. Also in the United States, the White House Office of Science and Technology Policy hosted a "Data Jam for Job Seekers" with the aim of catalysing entrepreneurial development of new apps and uses of data that can help match job seekers and employers, and to help current workers find paths to be trained for better jobs and careers. Later, prototypes of these apps were demonstrated and launched at a White House "Datapalooza for Job Seekers".

Certify learning outcomes and recognise informal and non-formal learning

Skills acquired outside of the formal education and training system are often not documented or formally recognised. Validating non-formal and informal learning will increase the incentives for individuals to invest in training because it allows them to signal their skills to the labour market and, therefore, capitalise on their investment. It may also facilitate access to further education and training, particularly for disadvantaged groups (including migrants) (European Commission, 2016), and thereby make it easier to address skills shortages. However, establishing transparent standards and reliable assessment procedures is not always easy in the case of adult learning, given the smaller increments in learning and the heterogeneity of learning outcomes. In many countries, recognition processes are in place, but remain marginal and small (OECD, 2010a). As part of its agenda to promote the validation of non-formal and informal learning, the European Union has encouraged countries to provide skills audits to all the unemployed, which will help them assess their knowledge, skills and competences to prepare for validation and/or plan for training. For people in work, it might be difficult to encourage employers to engage in skills recognition since it makes such skills more portable and, therefore, increases the risk of trained employees being poached. In the Netherlands, employers have (since 2007) been able to benefit from a tax reduction (*Wet vermindering Afdracht Loonbelasting*) of EUR 300 per worker per year if they pay for their employees' recognition of prior learning (*Erkenning Verworven Competenties*).

Couple financial incentives with other interventions

Nudging individuals and firms by altering their financial incentives to invest in education and training may help in promoting skills acquisition. However, this will often only address part of the barriers that they face and, in order to be most effective, financial incentives may have to be coupled with other types of interventions (such as information, advice and guidance). In Austria, the *Impulsberatung für Betriebe* (IBB) consists of free counselling by the PES for companies undergoing organisational change, including in the area of continuing vocational training. In Israel, the "Programme for Integrating Arab, Druze and Circassian Academics into the Hi-Tech Industry" found that mentoring was very important part of the programme, in addition to the financial incentive offered. In Australia, where many financial incentives are in place to encourage the provision and take-up of apprenticeships, the New South Wales Government also put in pace the Continuing Apprentices Placement Service (CAPS),

which provides a free job matching service for employers and apprentices/trainees on the National Skills Needs List. It helps employers find apprentices/trainees who want to continue in their training and it helps retrenched apprentices find another job in their chosen trade.

Regular monitoring and evaluation

By verifying what works and what does not, for whom and in what circumstances, assessment and evaluation can contribute to more efficient and effective policy making (OECD, 2005). Despite this, most financial incentives are implemented without ever being subject to an evaluation. In the absence of robust evidence, it is difficult to draw definitive conclusions about what works or not, and to make recommendations as to how financial incentives are best implemented in practice. As Marsden and Dickinson (2013) point out, "the sheer diversity in approaches one observes in itself suggests either that there is little consensus over what works or rather that it is the small details which matter." Going forward, countries should therefore ensure that sufficient resource is dedicated to the monitoring and evaluation of programmes, so that lessons can be learnt for their future improvement. Some countries are already taking such steps. In Turkey, for example, the "e-mezun" web portal collects information on VET graduates' learning and labour market outcomes, which allows the strengths and weaknesses of the VET system to be assessed. In the United States, any programme authorised under the Workforce Innovation and Opportunity Act has to monitor the employment outcomes of participants, and make such information available to both participants and policy makers. In Latvia, recipients of training vouchers are asked to complete a special evaluation sheet which allows their labour market outcomes to be monitored by programme managers. In Norway, a database has been set up in order to generate up-to-date performance reports on the *Kompetansepluss* programme, including detailed information on participants. This information will also be used to evaluate the long-term impact of the programme. In Canada, best practice guides are being compiled for the Targeted Initiative for Older Workers programmes, which allow Provinces and Territories to learn from each other's experiences.

3.2. Framework conditions

Good information, advice and guidance (IAG)

One common thread throughout the literature on financial incentives is the importance of having strong IAG systems in place. This is particularly important in countries that are moving towards more demand-led systems and where the risk of information failures is therefore the greatest. Well-informed consumers will make well-informed choices and governments can therefore use IAG to ensure that education and training decisions are made in those areas where there is the greatest labour market demand. What is needed is impartial, accurate and accessible information about labour market needs and the learning on offer (including information on the cost and quality of education and training opportunities).

The literature contains several examples of incentives programmes that have failed as a result of poor IAG services. The much-cited ILA programme in England, for example, not only failed because of widespread fraud, but also because participants lacked information on the available learning opportunities: 85% of them did not receive any IAG to assist them with their choice of learning, and 73% had not

considered more than one provider before starting their course (BMFB and OECD, 2005). Similarly, a voucher programme for employers in Hamburg (Germany) had very low take-up despite the high value of the subsidy, primarily because of poor information (OECD, 2005).

One can observe a paradigm shift in the nature of IAG and what its intended objectives are. While, in the past, IAG focused primarily on matching people to jobs (i.e. making expert recommendations about what people should do), today IAG is much more oriented towards helping people make their own decisions, based on a good understanding of their abilities, skills, interests and values, and of the options available to them. Similarly, while the main objective of IAG in the past was to help young people make immediate choices about their careers, it is now much more about assisting people of any age and at any point in their lives, to make education, training and occupational choices and to manage their careers.

While a full review of IAG practices across OECD countries is beyond the scope of this report, three key trends are nonetheless worth highlighting:

- *The increased use of technology to provide IAG services*. Some examples of this were already given above, when the opportunities that technological change offers were discussed. Another example of this is the College Scorecard in the United States, which is a website providing information to prospective students on the cost, graduation rate and average starting salary for each college in the country. The provision of such information should not only help students make more informed choices, but is also likely to put pressure on colleges to focus on the labour market outcomes of their students. A similar initiative is the Unistats website in the United Kingdom.[1]

  While, on the one hand, the increased use of technology in the provision of IAG opens up many new opportunities and the chance to reach a wider target audience, it can never be a complete substitute to face-to-face tutoring and counselling, particularly in the case of low-skilled individuals who may be less familiar with the internet (or even lack access to it) (OECD, 2005). Indeed, evidence from the Survey of Adult Skills shows that one in ten adults report having no prior computer experience – ranging from less than 2% in Sweden to more than one in five in Italy and the Slovak Republic (OECD, 2016c).

- *The setting up of one-stop shops for the provision of IAG*. One commonly encountered problem in the provision of IAG is that it is scattered and individuals (particularly those already in the labour market) encounter difficulties in finding and accessing the right sources of information that are tailored to their needs. As a solution to this, one-stop shops for IAG have sprung up across OECD countries, which often also offer validation of prior learning. In the United States, one-stop career centres were set up by the Workforce Investment Boards, as directed by the Workforce Investment Act of 1998. These career centres are implemented in all US states under a variety of different local names. Another example is the VEU Centres in Denmark, set up in 2010, which function as partnerships between all adult education and training institutions at a particular regional level and which act as a one-stop shop for individuals and employers seeking guidance on what opportunities exist in adult education and training.[2] In Luxembourg, the *Maison de l'Orientation* brings together various IAG actors under one roof and helps individuals: identify their interests, abilities and skills; find information on work and training

opportunities; and access these opportunities. Even where one-stop shops have not been set up, there has been a move towards greater consistency and co-operation between the various IAG providers – for example between the national and regional levels in France.

- *Establishing the right to free career development guidance throughout individuals' working lives.* In the context of lifelong learning, individuals need to be able, at any point in their lives, to access information, advice and guidance services that will help them to make educational and occupational decisions to further their careers. Many countries have begun to enshrine the right to such guidance in national legislation. Out of 19 countries/regions which answered the question whether a legal right to counselling existed in their country, nine said that such a right existed and that it was universal (Belgium (Flemish and German-speaking communities), Estonia, France, Korea, Latvia, Lithuania, Poland and Portugal), four had a legal right that was restricted to certain groups [Belgium (Wallonia)[3], Greece, Hungary and Sweden], and five had no such legal right (Austria, Norway, Japan, the Czech Republic and Italy).[4] In France, the *Conseil en évolution professionnelle* (CEP) gives individuals the right to free and impartial information, advice and guidance throughout their working lives. In Flanders (Belgium) a career voucher allows all workers to buy eight hours' worth of career guidance with a registered provider every six years (European Commission/EACEA/Eurydice, 2013).

In addition to these trends, there are plenty of examples of innovative practice in the provision of IAG across OECD countries. Again, a full overview is beyond the scope of this note, but a few examples include: "speed-dating" between students and employers in Slovenia, which allows students to test themselves in practical situations and receive direct feedback from employers (Cedefop, 2016); the School Ex programme in the Netherlands, which holds "reversal" or "turnaround" conversations (*ombuiggesprekken*) with students who have opted for courses with poor labour market outcomes, in an attempt to change their minds (Box 3.2); and the Korea Job World, which is an interactive vocational experience centre providing career guidance to the public in general, and young people in particular. It consists of an 80 000 square meter, six-story building, offering visitors a unique opportunity to explore and experience various occupations and career opportunities in an interactive way. It is designed to help people obtain a realistic view about possible professional choices and prospects, and to give career advice based on individual interests and aptitude. In Austria, universities are increasingly offering self-assessment tests as instruments for informed study career decisions, and they are compulsory in some study programmes. In Spain, all VET students take a compulsory course in "Professional and Educational Guidance" (*Formación y Educación Laboral*) in which they learn a range of soft (e.g. teamwork and conflict resolution) and job search skills, and develop a professional profile (European Commission, 2015).

Box 3.2. "Turnaround" conversations in the Netherlands

In response to the economic and financial crisis, and building on an earlier programme (School Ex) which aimed to encourage young people in vocational education to continue studying, the Dutch Government launched School Ex 2.0 in 2012/13.

As part of the programme, "exit" discussions are held with graduates from upper secondary vocational education (*middelbaar beroepsonderwijs* – MBO) to discuss their next education and/or career steps. An evaluation showed that 70% of (near) graduates from MBO courses discussed their future at least once with a staff member of the school, and that a quarter of them reported that it had influenced their decisions: 4% decided to continue studying; 5% decided to follow another field of study than they had initially intended; 6% decided to start working; and 12% reported it had affected their decisions in some other way (Meng et al., 2014).

New in the School Ex 2.0 programme were the "*ombuiggesprekken*". These are conversations with young people entering upper secondary vocational education (MBO) and who have applied for courses with poor labour market prospects. The objective of the conversations is to change their mind and make them opt for courses with better labour market outcomes instead. The evaluation of the programme shows that between 4-10% of students changed their mind about which course to study following one of these conversations (Meng et al., 2014).

The evaluation also shows that, in general, young people appreciate being given information about labour market prospects. However, the *ombuiggesprekken* were not held as frequently as expected, because it seems schools were concerned that it would affect their intake. Placing the responsibility of having the conversations with the schools themselves therefore seems to have introduced a conflict of interest which was potentially harmful for the effectiveness of the programme.

Finally, good information, advice and guidance should also raise awareness of the government policies that are in place to promote education and training (including to employers). Indeed, there are examples of incentives measures that have failed to have the desired impact because awareness about them was low. This was the case for both the *Fonds de formation Titres-Services* in Wallonia (Belgium) and the *Tussenkomst bij opleiding in een competenciecentrum van VDAB* in Flanders (Belgium).

Qualifications frameworks

By establishing clear links between skills, qualifications and occupations, qualifications frameworks help make education and training systems more transparent, allowing the value of different qualifications to be more clearly recognised by students, employers and other stakeholders (OECD, 2010b). At the European level, the European Qualifications Framework (EQF) allows qualifications awarded in different countries and by different education and training systems to be understood and compared. As such, strong qualification frameworks help increase the value of qualifications and, thereby, encourage investments in education and training. They also facilitate analysis of how employer needs translate into concrete training needs. Many countries have now implemented qualification frameworks – however, the extent to which they are successful depends on a range of factors, including: the strength of the methodology for allocating qualifications to levels and the extent of key stakeholder support (OECD, 2010b).

Policy co-ordination and coherence

Education and training policy is often scattered across different ministries and organisations (education, labour, welfare, finance, PES, social partners), as well as across different levels of government (central, regional, local). For example, tax policies are frequently unconnected to education and training policies, and there is

often little co-ordination between ministries of labour (usually catering to learning for the unemployed and in firms) and ministries of education (focusing primarily on initial education). Even within education, funding for higher education and funding for further education are usually under different agencies. Co-ordination problems are particularly manifest in adult learning, where the number of stakeholders is often greater than in initial education, and policy responsibility more fragmented. A lack of co-ordination and coherence is likely to result not only in conflict of interest and wasteful public expenditure, but also in confusing incentives for potential learners, employers and providers. To ensure co-ordination with all stakeholders involved and that policies are complementary, countries have introduced a range of solutions, including:

- *An overall, coherent strategy.* Policy co-ordination and coherence in tackling skills needs are best achieved through a joint strategic approach between all relevant parties which clearly sets out the goals as well as the policy package required to achieve them. This policy package may include financial incentives, but also other tools depending on the challenges that need to be overcome. Coherence between policy measures is critical, since some tools reinforce each other, while others conflict. Examples of strategies to address skills needs include the Dutch *Techniekpact* and *Masterplan Bèta en Techniek*; the MINT initiative in Austria; the STEM 2012-2020 plan in Flanders; and the *Hochschulpakt* and promotion of MINT university courses in Germany.

- *Institutional mergers*. In Spain, the running of vocational training facilities used to be split between the ministries of education and labour, depending on the nature of the client (students v. the unemployed). This resulted in large inefficiencies, which were addressed by a merger that created the Integrated Vocational Training Centres (IVTCs). IVTCs now provide training within the national qualifications systems to all clients, regardless of which public service referred them (OECD, 2005). In Scotland, funding for both higher and further education is under the same agency (Scottish Further and Higher Education Funding Council).

- *The creation of specific institutions with policy responsibilities*. The specific responsibilities of such institutions can vary, but typically include: sharing information across stakeholders, establishing national training priorities, and joint planning and delivery. In the Netherlands, for example, an inter-ministerial platform for lifelong learning was set up to promote the co-ordination and effectiveness of policy initiatives, bringing together all relevant stakeholders: ministries of education, culture and science, social affairs and employment, economic affairs and justice, as well as the social partners (OECD, 2005).

- *Setting targets*. Setting targets in terms of learning outcomes may also help in getting a diverse range of actors to work together towards common goals. This is what the European Union is trying to achieve with its Education and Training (ET) 2020 strategy, through which it hopes to achieve policy coherence across countries. ET 2020 sets the following benchmarks:

- Fewer than 15% of 15-year-olds should be under-skilled in reading, mathematics and science;
- The rate of early leavers from education and training aged 18-24 should be below 10%;
- At least 40% of people aged 30-34 should have completed some form of higher education;
- At least 15% of adults should participate in lifelong learning;
- At least 20% of higher education graduates and 6% of 18-34 year-olds with an initial vocational qualification should have spent some time studying or training abroad;
- The share of employed graduates (aged 20-34 with at least upper secondary education attainment and having left education 1-3 years ago) should be at least 82%.

Getting targets right is not straightforward, however. For example, one would need to make sure that: the outcomes that one wants to achieve are measurable; the level at which the targets are set is both realistic and challenging enough; and that the focus of the targets does not distract away from other policy priorities (and therefore results in an inefficient allocation of resources).

A high quality and responsive training system

Financial incentives targeted at individuals and firms are unlikely to be effective unless there is an education and training offer that is both attractive and responsive to changing labour market needs. Without this, it is unlikely that demand-side measures will be effective. If the education and training on offer is not perceived as being of high enough quality, then demand will remain low, regardless of the financial incentives put in place by government. There is therefore a need to put processes in place for quality assurance (e.g. quality seals, general standards such as ISO 9000, etc.) as well as for the accreditation of providers – and information on the quality of programmes and providers should also be shared with end users.[5] Education and training systems also need to be transparent and easy to navigate if private investment in skills is to be encouraged, and they need to be accessible (e.g. through distance and/or modular learning) to respond to the needs of different student groups.

Education and training systems should also be able to respond flexibly to changing labour market needs. The experience with the Youth Credits in the United Kingdom in the early 1990s showed how demand-side measures will only have a limited impact if provision remains unresponsive. As part of the programme, young people (16- and 17-year-olds) were given vouchers to access work-based training. However, evaluations of the scheme showed that young people only displayed limited levels of consumer behaviour, and that this was primarily because of limited choice of provision (particularly in rural areas) (Cedefop, 2000). In some local areas, this was addressed by lowering regulatory barriers to entry and exit for training providers, equalising government subsidies between public and private providers, and removing ceilings on the number of weeks or outcomes that could be delivered by providers. Such changes allow the supply of training services to expand in response to demand – although there is a risk that they come at the expense of falling quality. In Spain, despite some reforms of the system in 2011, bureaucracy to update qualifications remains burdensome and

therefore hinders rapid labour market alignment (European Commission, 2015). A good example of a responsive training supply can be found in Tyrol, Austria, where, in order to respond quickly to changes in the labour market, limited special programmes can be created to specifically promote certain target groups.

Another aspect of a good, attractive and responsive training supply relates to curriculum development. On the one hand, this is about making subject content and the way it is taught attractive and interesting to learners, as this may improve take-up. For example, in the context of boosting take-up of STEM subjects, it has been noted that the way science is taught has a great influence on students' attitudes towards science, their likelihood to pursue science subjects, as well as their achievement in them (European Parliament, 2015). As a result, reforms of science curricula in Europe have tended to give more weight to inquiry-based learning in the teaching of science subjects, as well as a greater contextualisation of science education by embedding it within current social issues (European Parliament, 2015). In order to be attractive, curricula also need to be able to adapt flexibly to labour market needs. A recent OECD report (OECD, 2016b) argues that giving the local level freedom in curriculum development can help improve labour market responsiveness. The report highlights a number of ways in which this can be done:

- *National curriculum frameworks operationalised locally*. An example of this approach is Italy's Higher Technical Institutes, which offer an alternative to academic studies at the tertiary level. Twenty-nine technical profiles and their learning outcomes are defined at national level, but the institutes are given the freedom to tailor the curricula to the specific needs of the local labour market (OECD, 2016b). A second example is the Framework Educational Programmes in the Czech Republic, which set the general goals of education, the key competences to be developed, and the expected learning outcomes. Within this framework, schools can develop their own School Educational Programmes (OECD, 2016b). Finally, in Poland, the core curriculum specifies the generic learning content for each occupation of the national occupational framework, but VET schools are free to decide on the more specific/technical content (European Commission, 2015).

- *Locally designed programmes accredited based on national specifications*. This approach, which is more bottom-up, is adopted in a number of countries, including in Austria for the Universities of Applied Sciences. While these institutions are free to design their own degree courses, they must be accredited with the Agency for Quality Assurance and Accreditation Austria to obtain formal federal recognition (OECD, 2016b). In Ireland, Specific Skills Training and Traineeships are developed by regional Employment and Training Boards in collaboration with the employers concerned, and are subsequently submitted to the relevant awarding/accreditation body for approval (OECD, 2016b).

- *Modularised programmes*. In Sweden, programme structures for upper secondary VET are determined at national level, but schools can "pick and mix" from a range of courses in consultation with the local programme council. Subject to approval and quality assurance by the National Agency for Education, schools can also apply special variants and/or include new courses within the programme (OECD, 2016c). Portugal's initial VET and Adult Education and Training courses have a similar modular structure. In initial training, providers have to develop the mandatory short-term training units from each training standard from the National Catalogue of

Qualifications and can complete it by choosing from a range of short-term training units to make up a qualification. In Adult Education and Training courses providers choose a certain number of short-term training units to make up modular training. Providers can choose from a range of short-term training units to make up a qualification, and they can also request a change to these units in order to better reflect local labour market needs (OECD, 2016c). Lithuania has recently introduced a modular vocational training system (European Commission, 2015).

Curricula are also more likely to be labour market relevant where they are designed in collaboration with employers. However, despite the benefits of employer engagement in curriculum design, such partnerships remain underdeveloped. In some countries, financial incentives exist to try and encourage employers to participate in curriculum design. In the Czech Republic, for example, there are tax advantages for firms co-operating with schools in vocational training. In Spain, employers are compensated for their participation in the State Governing Board of Schools, in the General Council of Vocational Training, as well as for their collaboration in the design of VET qualifications and curricula. However, even where employers are represented on the councils and committees that are in charge of curriculum development, this does not guarantee that their views are taken into account (Cedefop, 2012a). In some countries, employers (and employees) are given a decision-making role (e.g. Germany, the Netherlands, Romania and Spain), while in others it is more advisory (e.g. France, Portugal and the Slovak Republic) (Cedefop, 2012a).[6] Other countries have developed interesting ways of involving employers in the design of curricula:

- In *Luxembourg*, "curriculum development teams" are responsible for developing initial VET programmes, and they include representatives from the labour market proposed by the chambers of employers. The outcomes from the curriculum development teams are published on an interactive national platform, which are then used by teachers, trainers and professionals as the basis for continuous training and coaching.

- *Ireland* tries to attract foreign direct investment through the Assured Skills programme: firms intending to invest in Ireland express their skills demands, which are subsequently met through bespoke training programmes.

- In *England*, the government is increasingly taking a "hands-off" role with regards to curriculum development, with its main role being limited to the setting up of framework conditions. For example, while the curriculum regulatory authority Ofqual sets the overarching rules and principles for developing vocational curricula, in the hospitality, tourism, travel, passenger transport and retail industries sectors, the process itself is managed by People 1st – a skills and workforce development charity (Cedefop, 2012b).

- In *Poland*, the aim of the *New Study Programmes* project is to implement training programmes based on analysis and economic forecasting, tailored to the needs of the economy, the labour market and society. Funds are distributed on a competitive basis to finance the creation and implementation of new courses of study (or the adaptation of existing ones) corresponding to current socio-economic needs. All submitted projects must include employers in the preparation of programmes and in

their implementation. In addition, all projects must respond to the needs of individual regions, as defined in the Regional Innovation Strategies.

A strong Public Employment Service

The PES can and should play an important role in helping jobseekers acquire those skills that are in demand in the labour market, regardless of whether training is provided in-house or purchased externally. Too often, however, training remains insufficiently aligned with labour market needs and therefore fails to significantly improve the job prospects of the unemployed. PES sit on a wealth of vacancy data which, if exploited properly, could prove invaluable in identifying existing and emerging labour market demand, and in guiding jobseekers to those areas in greatest need. Despite this, only 10 out of 19 European PES claim they use this data for guiding training provision (MobilityLab, 2012). Other potentially useful sources of information include: consultations with employers and other stakeholders (e.g. sectoral bodies, regional development organisations, and education authorities) as well as evaluations of training courses. Some PES even have their own research bodies, such as the Institute for Employment Research (IAB) in Germany and the Occupational Observatory in Spain (MobilityLab, 2012). However, the ability to accurately identify skills needs does not guarantee that training will necessarily be aligned with labour market needs. PES also need the necessary autonomy to decide on training programmes and to adapt these to the specific needs of jobseekers. In Sweden, for example, despite excellent labour market information, the PES struggles to respond rapidly to existing skills needs because of a (slow) central procurement process of training programmes and the lack of flexibility in deciding on the allocation of funds at the local level (OECD, 2016d).

3.3. Limitations

The main limitation of using financial incentives to steer the provision and acquisition of education and training was already highlighted in Section 2.1 of this report – i.e. that they are generally quite small in comparison to the size of general subsidies for education and training providers. Similarly, tax incentives for skills are often dwarfed by the incentives built into the general income and corporate tax systems. This is not to say that financial incentives cannot be effective in steering education and training decisions, but just that expectations around their impact may need to be tempered.

In addition, there are many other factors that influence the decisions of individuals and employers to invest in skills. Besides financial matters, an individual's decision to invest in education and training will also depend on: personal and family circumstances, the desire/interest to learn, awareness of the benefits of learning and the opportunities that exist, the accessibility of learning opportunities, personal character, etc. Employers' training decisions will depend on: their understanding of the benefits of training, the accessibility and quality of training opportunities, the nature of the business, the extent of competition, the quality of management, etc. A good understanding of the factors that influence the education and training decisions of firms and individuals is critical to put together the most effective policy package to address skills shortages and mismatch. For example, Müller and Behringer (2012) cite evidence from the 2005 European Continuing Training Survey which suggests that employers rated financial incentives as the most helpful public measure in only eight

countries, whereas the provision of recognised standards and frameworks for qualification and certification, publicly-funded advisory services, and ensuring standards of trainers were seen as more useful in the other 17 countries. Financial incentives should therefore form part of a comprehensive policy package which also includes non-financial measures such as: information, advice and guidance, information campaigns (to make employers and individuals aware of the benefits of investing in education and training), occupational licencing, the introduction of quality standards (such as the Investors in People accreditation), establishing commitments to train, etc.

It is also important to bear in mind that financial incentives can only be as good as the information about skills needs that underpins them. While most OECD countries now have systems in place for skills assessment and anticipation (OECD, 2016a), others are still building them. Greece, for example, is currently setting up a mechanism for the identification of labour market needs. Even where such systems are already up and running, however, there are important differences across countries in the quality and coverage of such exercises, as well as in the way that they are used – and key challenges remain. One of these is that the kind of data produced by such exercises is not always easily translated into policy-relevant information: it may be either too technical or not sufficiently disaggregated (OECD, 2016a). A second challenge, which is particularly relevant for education and training policy, is that there is often a long time lag between the production of the information and when it can be used for policy – meaning that the data may not be available when crucial decisions need to be made. It is therefore important to recognise that "labour market alignment is more an art than a science" (Cleary and Van Noy, 2014) and that there is a risk of getting it wrong. Moreover, where information on skills needs is detailed and reviewed regularly, there is a risk that the priorities and goals are frequently shifted, leading to uncertainty for the actors involved. Finally, even where information is good, reliable and up-to-date, it needs to be communicated effectively to those who make decisions. An example of good communication is how the UKCES used to publish its Working Futures forecasts under a variety of different formats, including: detailed, analytical reports; press releases; summaries; careers advice for young people; etc. – and also made sure that points of contact were available in case further questions arose from the available information.

Another limitation worth mentioning is that financial incentives mostly tend to focus on the acquisition of formal education and training. The reason for this is obvious, since it is much more difficult to monitor whether public funds have truly been spent on training when the latter is of an informal nature. However, this clearly presents another limitation of financial incentives, since there is mounting evidence that informal learning is far more important for workers' human capital development than formal training courses (de Grip, 2015). There is also a risk that, by incentivising formal learning, more informal forms of learning are crowded out.

Finally, while financial incentives may be effective in getting individuals and employers to invest in certain types of education and training, they do not guarantee course completion and, therefore, the actual supply of skills needed. In Canada (Apprenticeship Completion Grants), Australia (completion incentives for apprentices), and in Finland (reduction in student debt for timely completion of studies), financial incentives are in place that encourage such completion – although, of course, successful completion of courses depends on a complex array of other factors as well. In addition, even where individuals successfully complete their education and training,

the time lags involved between the identification of the original skill need and graduation from the programme may mean that labour market demand has evolved in the meantime and that new and different skills needs have now emerged.

3.4. Risks

Throughout this report, a range of risks attached to the use of financial incentives were cited. These include: the possibility that, by focusing on formal training, financial incentives simply produce a shift from informal to formal training, without necessarily resulting in additional training; the high deadweight loss attached to many of the measures used; and also the risk that financial incentives tend to worsen inequality in access to education and training given that low-skilled workers and SMEs tend to face more difficulty in accessing them, as well as other barriers more generally. These limitations are not unsurmountable, but just need to be borne in mind when designing incentive schemes.

There is also a more general risk attached to focusing too narrowly on labour market outcomes. While meeting labour market needs is an important objective of education and training, they also have many other goals, including: increasing personal well-being, reducing inequality, promoting social cohesion, preserving culture, strengthening research capacity, supporting innovation, etc. By focusing too much on labour market outcomes, countries risk a "narrowing of the goals" (Grey and Scott, 2012). Indeed, one concern with promoting studies that have good labour market outcomes is that smaller disciplines that are less connected to the labour market, but may be important for other reasons, become vulnerable and may disappear.

While the main purpose of this report was to provide countries with an opportunity to learn from one another about how financial incentives can be used for steering education and training, it is important to remember that initiatives cannot be blindly transplanted from one context to another. Often the kinds of programmes, institutions and agreements that are in place in a particular country emerge from the specific economic, social and cultural context of that country and are closely intertwined with them. Lessons can nevertheless be learnt from each other's successes and failures to shed light on and provide solutions to one's own problems.

Notes

1. The New Skills Agenda for Europe (European Commission, 2016) argues that better information should be made available on the labour market outcomes or learning progression of higher education and higher VET graduates. In line with this, countries are increasingly making such data publicly available so that prospective students can make informed decisions about courses and institutions to attend. In the Czech Republic, the REFLEX survey collects information on graduate outcomes, including employment, mismatch, the evaluation of skills by employers, etc. In the United States, the Department of Labor makes performance data on the Trade Adjustment Assistance (TAA) programme publicly available to employers and workers. Also in the United States, community college training programme scorecards contain information on employment and earnings outcomes. In Bulgaria, information on graduate labour market outcomes feeds into a University Ranking System (European Commission, 2015a). In Latvia, each higher education institution already provides information to prospective students on the labour market outcomes of its graduates, and the government is developing an information system that will track the learning and labour market outcomes of each individual student.
2. The incentives structure set up by the Danish Government in the case of the VEU centres is particularly interesting. Providers are obliged to be partners in a VEU centre if they want to receive any state funding, and more funding is available if the providers exceed their adult learning targets, which motivates greater co-ordination between them (European Commission, 2015b).
3. In Wallonia, it would be more appropriate to say that the legal right is specified (rather than restricted) for certain groups.
4. While no legal right to counselling exists in Austria, there is a broad and highly differentiated support structure supplied by the PES and the social partners that is open to everyone. Similarly in Japan, opportunities for "career consulting" are not limited. A legal right to counselling for continuing education and training is not explicitly stipulated by law, but there is a law which prompts to build a mechanism for career counselling in education.
5. A related issue is to avoid abuse by unscrupulous private providers. The case of the ILAs in England has been mentioned several times throughout this report. A related example is that of the VET fee-help scheme in Australia, where some private providers missold courses to students to maximise the grants money they could obtain from government. In response to this, the Australian Government is strengthening the regulatory framework governing the operation of for-profit providers, including more rigorous vetting and monitoring of providers, as well as the banning of brokers and other aggressive marketing techniques.
6. It should be noted, however, that there can be differences among countries concerning this advisory role. For example, see Section 2.1 for details for the organisation in France concerning VET qualifications delivered by the Ministry of Education.

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Glossary

Certification of learning outcomes	The process of stating that an individual has acquired a set of learning outcomes and awarding a document testifying to this. This necessitates the involvement of an accredited authority to certify performance and possibly its level.
Individual learning account	A savings account to be used only for adult learning purposes. Normally, multiple stakeholders invest in the account, including the government, individuals, firms, and/or sectoral bodies.
Informal and non-formal learning	Informal learning is never organised, has no set objective in terms of learning outcomes and is never intentional from the learner's standpoint. Often it is referred to as learning by experience or just as experience. Non-formal learning is more organised and can have learning objectives.
Job rotation	An arrangement which supports training through addressing the need to replace the absent worker and covering the cost of a replacement worker. The absent worker is frequently replaced by a job-seeker.
MINT	Mathematics, Information sciences, Natural sciences and Technology.
Payback clause	A contract arrangement that permits employers to recover at least part of their investment in training staff members in the event that they leave voluntarily soon afterwards.
Performance-based funding	Funding mechanism whereby part of the funding for education and training institutions is allocated based on the *ex post* assessment of pre-defined performance measures/criteria.
Performance contract	Also called target agreements or development contracts, these are an instrument used by government to agree objectives to be attained with education providers. They are not always tied to funding ("soft" versus "hard" contracts) but, where they are, they tend to reward organisations on the basis of *expected* rather than *actual* performance.
Qualification framework	An instrument for the development and classification of qualifications according to a set of criteria for levels of learning achieved.

Recognition of learning	Recognition of learning is the process of recording of achievements of individuals arising from any kind of learning in any environment; the process aims to make visible an individual's knowledge and skills so that they can combine and build on learning achieved and be rewarded for it.
STEM	Science, Technology, Engineering and Mathematics.
Study/training leave	A regulatory instrument which, either by statutory right and/or through collective agreements, sets out the conditions under which employees may be granted time away from work for leaning purposes (Cedefop definition).
Time account	A mechanism which allows individuals to save up time in a time account (or bank) that can be drawn upon to continue earning while learning.
Training levy	In levy schemes, employers pay a (compulsory or voluntary) contribution to a pooled fund out of which training is financed.
Voucher	An earmarked payment made to an education/training consumer for use at the institution of their choice (Cedefop definition).

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Getting Skills Right

Financial Incentives for Steering Education and Training

Skills have the potential to transform lives and drive economies. However, in many countries, imbalances between the supply and demand for skills lead to significant skill mismatches and shortages, with as many as three in five workers in the OECD employed in jobs that do not make the best use of their skills. At the same time, a large number of employers report hiring problems due to skill shortages. This series examines how countries measure changing skill needs and how they develop skills that respond to labour market needs and how they ensure that these skills are fully utilised by individuals and employers. Presenting both thematic reports on specific policies and issues and in-depth country reviews, this series offers countries the information and analysis they need to get skills right.

The present report examines how governments use financial incentives to promote a better alignment between labour market needs, on the one hand, and the supply of skills, on the other. In doing so, it identifies: i) innovative models that countries may be interested in learning from; ii) best practice in the design and use of financial incentives; iii) framework conditions for their effective use; and iv) limitations and risks in the use of financial incentives.

Consult this publication on line at ***http://dx.doi.org/10.1787/9789264272415-en***.

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