



European Training Foundation



Financing work-based learning as part of vocational education reform

A handbook for policy makers and social partners





Contents

Acknowledgements	03
Executive summary	04
1. Introduction	07
1.1 The focus and approach of the handbook	07
1.2 What does financing refer to?	09
1.3 Why the financing of work-based learning matters	10
1.4 Financing school-based and work-based vocational education: Similarities and differences	12
1.5 Financing work-based learning: An ideal model and reality	13
1.6 Financing work-based learning: Balancing costs and benefits	14
2. Work-based learning and the European agenda on vocational education	18
3. The costs of work-based learning programmes	20
3.1 A framework for thinking about costs	20
3.2 The costs of the work-based component	24
3.3 The costs of the school-based component	33
3.4 The cost of managing and steering work-based learning programmes	36
4. Raising and distributing the funds for work-based learning	38
4.1 Financing through training taxes or levies and training funds	38
4.2 Tax expenditures	43
4.3 Direct grants and subsidies for companies	44
4.4 Pooling resources between firms	45
4.5 Financing mechanisms that target individuals	46
4.6 Financing the school-based component of programmes	48

Written by Richard Sweet for the European Training Foundation.

The contents of this handbook are the sole responsibility of the author and do not necessarily reflect the views of the ETF or the EU institutions.

PDF ISBN 978-92-9157-701-9 doi:10.2816/528931 TA-03-18-123-EN-N

@ European Training Foundation, 2018 – Cover photo: ETF/Ard Jongsma
Reproduction is authorised provided the source is acknowledged.



5.	Steering and managing the financing of work-based learning	53
5.1	Collective governance	53
5.2	Data and evidence	56
6.	Bringing the elements together: Financing work-based learning in upper secondary education in the Netherlands	57
6.1	Costs	57
6.2	Raising and distributing funds	58
6.3	Steering and managing financing	60
Annex: Sectoral and regional VET funds in Switzerland		61
Acronyms		63
References		64

Acknowledgements

This handbook was written by Richard Sweet, with contributions by Stefan Thomas, ETF expert. The project was supported by Helmut Zelloth, leader of the ETF Strategic Project on VET Provision and Quality Assurance. The ETF's Didier Gelibert, Vincent McBride and Xavier Matheu de Cortada were part of the peer review team.



Executive summary

This handbook will help policy makers and social partners to look at the issues involved in financing work-based learning, and to make better choices between the policy options that face them when designing and improving programmes. Effective financing is a key way to achieve goals such as improved access and quality. Extending and improving work-based learning programmes is central to the European agenda on vocational education and training (VET).

Work-based learning refers to programmes that are part of formal VET and combine learning in the workplace with learning in the classroom. Examples include apprenticeships, traineeships/internships, and unpaid work placements.

Financing includes:

- both direct costs and indirect costs in the form of foregone income;
- how funds are raised and distributed;
- the benefits of programmes in relation to their cost; and
- how financing is managed and steered.

In an ideal world, governments would meet all of the school-based costs of programmes, employers would meet all company-based costs, and learners' wages would reflect their productivity over time. However these conditions rarely apply, and so a number of policy options are available to help bring costs to firms, individuals and governments more closely into line with the benefits that each receives.

Costs

A proper understanding of costs is needed as a basis for budgeting and planning. There are three types of work-based learning programme costs: work-based costs; school-based costs; and costs

involved in managing and steering programmes. These costs can be borne by companies, by individuals, and by governments. They can be incurred at the national, regional and local levels. Costs are influenced by the design features of programmes such as how much time is spent in the workplace, and by policy decisions such as how much assessment should be done. Overall costs are also influenced by the number of places offered by employers and the number of young people wanting places in programmes.

The major costs of the work-based component of programmes include payment for learners; social security and accident insurance for participants; deciding which firms will take part in programmes; mentors, trainers or supervisors of the learners in the enterprise; supervising and assuring the quality of the work-based learning; assessment; training facilities and training equipment; and finding places for learners in firms. In each case, a number of options are available to meet these costs. The handbook sets out these options and the issues involved, and gives examples of how countries have addressed these issues.

The major costs for the school-based component are teachers' salaries; teacher professional development; purchasing and maintaining facilities, tools and equipment; and learning materials. The level of the costs for the school-based component will depend upon some key programme design features. The more time that is allocated to work-based learning, the lower, as a share of total costs, will be the school-based costs. School-based costs will increase if schools, rather than workplaces, carry out functions such as selecting firms, finding placements for learners, visiting firms to check on quality, and assessment.

The costs of managing and steering programmes include the costs of setting standards; inspection and supervision; assessment;



counselling and guidance; research; and administration. These are generally shared between government and the social partners. Governments' costs can be fragmented across different ministries and levels of government, and can often be difficult to separate from the costs of managing and steering the VET system as a whole. The social partners' costs to participate in steering programmes will be greatest when they have a large role in steering and managing the VET system as a whole.

Innovation, development and evaluation are other costs that need to be considered as part of the costs of steering and managing work-based learning programmes.

Raising and distributing the funds for work-based learning

Financing through levies and training funds

Levies can help to address the 'free loader' problem of firms that do not train poaching staff from firms that do train. They are often described as falling into three groups: exemption or rebate schemes that allow companies to reduce their tax obligations according to the amount of training that they provide; cost reimbursement schemes that pay companies for designated training activities; and levy-grant schemes that combine a tax with grants. In practice, most are hybrids.

Training funds commonly exists in association with levies, and can be the vehicle into which levies are paid. Training funds can also receive income from other sources.

Setting the rate: There are two options for setting the rate of training levies. One is for all firms to pay the same rate, regardless of how training costs vary as a function of industry sector or firm size. The other is for the rate of the levy to vary for firms with different characteristics. Uniform rates are easier to administer. However they fail to recognise the different training costs of different firms, and so their incentives may be ineffective if firms with low training costs end up paying far more than their training

really costs them, whereas firms in which training is expensive may pay well under their real expenditure on training. This has important implications for how schemes are designed.

Eligible activities: Very few levies and training funds are specifically targeted at apprenticeship and other work-based learning programmes. The more common rule is for the funds raised by training levies, and the funds spent by training funds, to be able to be used for a wide variety of purposes within the education and training system other than work-based learning programmes. These other purposes commonly include employee training, research, career development planning, and advising employers on training and development.

This implies that training levies and training funds can be a fairly scattergun and weakly targeted policy instrument for extending and improving work-based learning programmes, whatever their impact and benefits may be in other parts of the VET system. Careful thought needs to be given to the intended purposes of training levies and training funds, and to how eligible activities for grants are specified, if levies and funds are to assist the operation of work-based learning programmes.

Administration and management: Levies and training funds are most likely to be effective when they are: designed and managed with strong social partner control or involvement; introduced after extensive consultation, and have general support from employers; clearly specify the types of training or the types of employees that are the targets; contain few loopholes and exceptions that can be exploited; simple and not costly for firms to access and administer; and openly scrutinised so that they do not become easy to avoid.

Other ways to raise and distribute funds for work-based learning programmes

Tax expenditures, through which governments forego income such as payroll tax or social security contributions, are a common way for governments to finance work-based learning programmes.



Direct grants and subsidies can be used to offset the cost to companies of providing work-based learning programmes, to encourage firms to hire more apprentices or trainees, or to provide an incentive for firms to hire apprentices or trainees from particular groups. To be effective they must be carefully targeted and monitored so that they do not subsidise those who would have been hired without the subsidy, or provide government subsidies to firms whose training costs are less than the benefits that they receive from training. However, they may be a more effective way to finance work-based learning than training levies and training funds, as they are easier to target upon designated programmes that meet specific criteria.

Pooling resources, including government subsidies, between firms can be a way to assist small firms that by themselves lack the time or expertise to properly select and train participants in work-based learning programmes.

Raising funds from, and distributing funds to, individuals

Payments by and to individuals can be ways to: meet part of government costs for the school-based part of programmes; encourage participation by reducing learners' costs; encourage disadvantaged groups to participate; encourage increased completion rates; or support a market-based approach to training. The mechanisms used to do this can include loans, grants, scholarships and vouchers.

Financing the school-based component of programmes

Almost everywhere, governments are the major source of funds for the school-based part of work-based learning programmes. These can be provided by a number of different national Ministries, as well as by regional governments. A number of other funding sources can be observed, including student fees, training levies and training funds, and employer contributions.

How funds for the school-based part of programmes are distributed can be important in supporting policy objectives such as more efficient steering of programmes and bringing them closer to labour market demand. The methods used to distribute funds for the

school-based component include block grants, specific purpose grants, and grants tied to enrolments; vouchers, either for employers or for students; competitive tendering; and outcomes-based funding linked to attendance, attainment or employment.

Steering and managing the financing of work-based learning

In practice, steering the financing of work-based learning is closely linked to how other aspects of work-based learning systems and programmes are steered and managed: regulation, standard setting and quality control for example. And the reality is that decisions that are made on such matters will have financial implications.

Collective governance structures that involve all relevant partners are essential. For government involvement, education and labour ministries each have a role, and where regional governments have a significant role in delivery, their involvement is also important. Strong involvement of the social partners is particularly important in the management of national VET agencies. Collective governance is an issue at the sectoral level and the regional or local level, as well as nationally. Collective governance is particularly important if training taxes or levies and associated training funds are to operate effectively.

However, the existence of formal structures may not by itself be sufficient if government continues to play a relatively top-down role and employer organisations and trade unions are given only a modest role in managing the system.

Data and evidence are an important part of the effective governance of work-based learning programmes. Good data and evidence become particularly important where output measures such as completion rates form part of quality assurance. Data and evidence for steering purposes can come from the collection and analysis of administrative data, from policy evaluation studies and from research.

The handbook concludes with a description of how the separate elements of a financing system come together in the case of upper secondary vocational education in the Netherlands.



1. Introduction

1.1 The focus and approach of the handbook

This handbook looks at the policy issues that are involved in financing work-based learning. It is intended to assist policy makers and the social partners – representatives of employer and employee organisations – in ETF partner countries to make choices about financing when they are introducing or reforming work-based learning¹. It does not try to provide right answers or to tell policy makers and social partners how things should be done. Instead, its approach is to set out, for the issues that it discusses, what some of the options might be and what the advantages and disadvantages of these options might be. Countries' circumstances differ, and what might be appropriate for one may not be appropriate for another.

Work-based learning refers to programmes that are part of formal VET, and in which learning in the workplace is combined with learning in the classroom². These programmes can have many different names, and their features can be very different: for example how time is shared between the workplace and the classroom, their length, or the type of qualification that is awarded. The common feature of all of them is that formal learning takes place in two locations: the workplace and the classroom.

- **Apprenticeships** provide occupational skills and typically lead to a recognised qualification. They combine learning in the workplace with school-based learning in a structured way. In most cases, apprenticeships last several years. Most often the apprentice is considered an employee, and has a work contract and a salary.
- **Traineeships and internships** are workplace training periods that complement formal or non-formal education and training programmes. They may last from a few days or weeks to months. They may or may not include a work contract and payment. (The European Union (EU) has established a Quality Framework for traineeships that recommends written agreements.)

Here are some examples.

- In **Irish** apprenticeships in craft trades normally last four years in seven phases: three off the job and four on the job. The total duration of the off-the-job phases is approximately 40 weeks out of the total four-year apprenticeship. Apprentices sign an employment contract and have the legal status of employees. Both the apprentice and the employer sign an apprenticeship agreement that sets out their responsibilities and obligations.
- In **the Netherlands** all vocational qualifications can be obtained in a school-based track or a dual track. In a school-based pathway, at least 20% of students' time is spent in work-based learning and in the dual track at least 60% of the total time is work-based learning. To enrol in the dual track, a contract with a firm is obligatory and in most cases this is a labour contract. However, there is no obligation for this in the school-based track. Students in the dual track stay with one firm for the duration of their course, but students in the school-based track might change one or several times during their course.

¹ The handbook builds upon, and extends, sections of a previous ETF handbook on work-based learning (Sweet, 2014).

² Other types of work-based learning that are not part of formal VET are not the handbook's focus. For example on-the-job training, which takes place at work and is the most common form of work-based learning for most people, is not part of the handbook.



- In Armenia short two weeks to one month unpaid internships are the main form of work-based learning programme in upper secondary education. They do not lead by themselves to a formal vocational qualification.

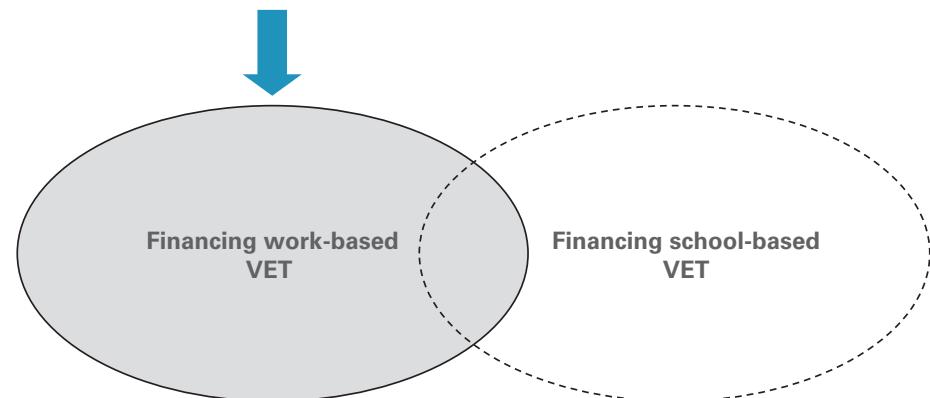
The main focus of the handbook is financing the workplace part of programmes. Work-based learning programmes also include a classroom-based component. This classroom component is not the main focus of the handbook, but it will be discussed, as it needs to be taken into consideration in thinking about the overall financing of programmes.

After this introduction (Chapter 1), there is a brief discussion of the policy context for work-based learning in members of the European Union (Chapter 2). The handbook then has three main chapters.

- Chapter 3 discusses the costs involved in work-based learning programmes and how these can be shared among employers, individuals and governments. It discusses the costs involved in the work-based component; the school based component; and managing and steering.
- Chapter 4 looks at how the funds required to meet programmes' costs can be raised and distributed in order to meet policy goals.
- Chapter 5 looks at how the financing of work-based learning programmes can be managed and steered.
- The handbook concludes (Chapter 6) with a description of how the separate elements of a financing system come together in the case of upper secondary vocational education in the Netherlands.

Each chapter contains practical examples that illustrate the range of options that countries have adopted to address the issues that are discussed.

FIGURE 1.1 The handbook's focus





1.2 What does financing refer to?

Financing refers here to a number of things:

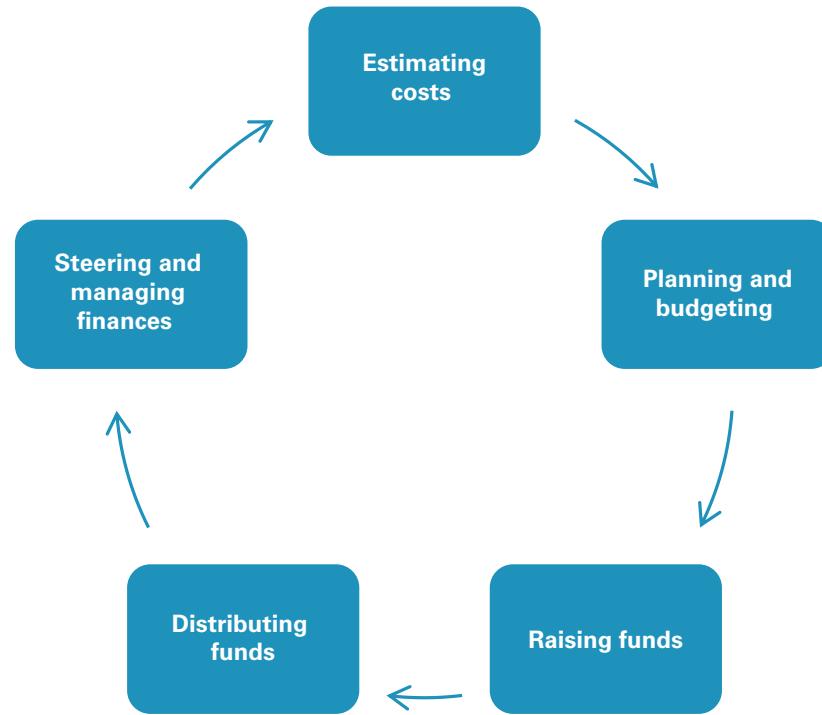
- what needs to be paid for in work-based learning programmes;
- the direct cost of the things that have to be paid for;
- the costs represented by income foregone as part of programmes, for example:
 - income foregone by governments when they give companies relief on social security payments or payroll taxes;
 - income foregone by companies when their staff train learners rather than engage in production, and when plant and equipment are used for training rather than for production;
 - income foregone by learners when they accept a reduced salary in return for achieving higher skills;
- who pays for these costs;
- how funds are raised;
- how funds are distributed;
- the benefits of programmes in relation to their cost; and
- how the overall financing of work-based learning programmes is steered.

The financing process begins with estimating costs, which are the basis for planning and budgeting. Then consideration needs to be given to how funds are to be raised to meet costs, and to how funds should be distributed. Finally, processes to steer and manage financing need to be in place. Figure 1.2 illustrates this process.

Finances are only one of the resources that work-based learning programmes require. Human resources such as in-company trainers and physical resources such as training equipment and learners' tools are also needed. How these resources are financed is clearly important for this handbook. However, issues such as how to ensure their quality are not a focus here.



FIGURE 1.2 The financing process



1.3 Why the financing of work-based learning matters

How work-based learning programmes are financed is an essential part of how they are designed and managed. Financing is a key way in which important policy goals are achieved. And the policy goals adopted for work-based learning will have an impact upon how it is financed. The goals that effective financing can contribute to include:

- creating increased access to and participation in work-based learning, both by employers and by learners, including through better financial incentives;
- helping existing resources to go further so that demands on the public sector are reduced;



- achieving fairer cost-sharing between governments, employers and individuals, and between regions, industries, and firms of different sizes;
- improving the quality of programmes; and
- improving the way in which the system as a whole is steered and managed.

BOX 1.1 Financing apprenticeship training in Algeria

A combination of a rational system of training wages, well targeted public subsidies and an apprenticeship tax that penalises non-trainers has given Algeria a coherent system for financing apprenticeship training. It provides appropriate incentives for participation both to young people and to employers.

Payments to apprentices begin at 15% of the national minimum wage for the first six months, rising to 30% in the second six months, and then in regular steps each month to reach 80% at the end of the training period. For the first six to twelve months, when the apprentice is the least productive, the cost of these payments is met by the state. Social charges are met by the state throughout the full period of the apprenticeship. This wage structure gives employers an incentive to hire relatively unproductive youth and to provide them with training. It gives young people an incentive to acquire skills in the expectation of receiving higher wages at the end of the training period.

This system of payments to apprentices is combined with a legal obligation for employers to hire apprentices, and an apprenticeship tax that is paid by those who do not. The number of apprentices that firms must hire depends upon their size, ranging from at least one and a maximum of three for firms with one to five employees, and rising to at least 3% and a maximum of 6% of total employees for firms with 1,000 or more workers. Initially set at 0.5% of a firm's wages bill, the apprenticeship tax is now equal to 1% of the total, and is paid only by those firms that do not recruit apprentices. Firms that recruit some, but less than their minimum obligation, pay a proportion of the tax. The proceeds of the tax are paid into a special fund to support apprenticeship. These arrangements provide more effective incentives to encourage employer participation than general-purpose vocational training taxes that apply to all firms, whether or not they train, and that do not differentiate between the training of young people and the continuing training of existing employees.

Apprenticeship numbers in Algeria have increased steadily from 85,283 in 1990 to 244,167 in 2011–12, and have risen particularly rapidly since 2003 when the apprenticeship tax was increased from 0.5% to 1% of a firm's wages bill. This is despite the fact that, if faced with a choice between paying the tax and hiring the minimum number of apprentices, a firm will always save money by paying the tax (not taking into account the value of the productive work provided by the apprentice). Thus the tax has the potential to be an effective trigger to encourage employer participation in the training of young people. However, in practice, procedures for getting exempt from the tax are difficult and so many companies find it simpler to pay the tax.



Box 1.1 illustrates the importance of financing arrangements in underpinning work-based learning reform, showing how coherent financing arrangements have helped to underpin the reform and expansion of apprenticeship in Algeria.

1.4 Financing school-based and work-based vocational education: Similarities and differences

There is an overlap between the financing of work-based vocational education and the financing of classroom-based vocational education. This is because classroom-based learning is always part of work-based learning programmes as they are defined here. There are other similarities. Both require the partnership involved in vocational education- between government and the social partners- to be taken into consideration, and in both cases multiple ministries can be involved, making a coordinated approach to financing challenging.

However, the issues that arise when thinking about financing work-based learning can differ, either to some extent or quite a lot, from those that are normally raised when thinking about financing traditional classroom-based vocational education.

- Work-based learning programmes are less expensive for governments than classroom-based vocational education. Because either some or most of learners' time is spent at work, fewer classrooms and teachers are required, and demands for workshops and equipment are reduced.
- The total cost of work-based learning programmes can be harder to estimate, as much of it is either hidden within firms or not captured by governments: for example when college or school budgets do not separate the costs of the classroom elements of work-based learning programmes from the costs of purely classroom-based programmes.
- Employers' costs and benefits are a more important issue for the financing of work-based learning programmes than they are for the financing of classroom-based vocational education.
- In both cases incentives for individuals to participate need to be taken into account, but these incentives can differ between the two types of vocational education.
- In classroom-based programmes, a key issue for learners is whether they will have to pay to take part, whereas in work-based learning programmes the question of whether they will be paid is more likely to arise.

These types of differences suggest why a handbook such as this is important for policy makers. Quite a lot of material exists on financing vocational education, but generally it either focuses entirely on financing school-based vocational education, or does not distinguish between the key issues for school-based and work-based vocational education.



1.5 Financing work-based learning: An ideal model and reality

In an ideal world there is a simple model of how work-based learning is or should be financed³. In this model:

- Governments meet all of the costs of the school-based part of programmes.
- Employers meet all of the costs of the training that takes place in firms.
- What learners are paid by firms reflects their productivity and rises as they become more productive.
- Total costs for the firm (wages plus training costs) are either less than learners' productivity (so that the firm makes a profit and the in-firm training is self-financing) or equal to learners' productivity (so that the firm does not make a loss from taking part in the programme).

³ This ideal model is reflected in much of the literature on the economics of apprenticeship. See as an example Cedefop (2016a), p. 41.

TABLE 1.1 Financing: The ideal and reality

Financing work-based learning	
The ideal model	Reality
Government meets all school-based costs.	Employers and learners also contribute to school-based costs.
Employers meet all company-based costs.	Governments subsidise employers' training costs.
Learners' wages reflect their productivity over time.	Learners' wages are higher than their productivity OR unpaid trainees deliver productivity that exceeds company training costs.
Learners' wages plus company training costs are equal to or less than their productivity.	Learners' wages plus company training costs exceed their productivity.

However, this ideal model is rarely achieved in practice.

- Some of the school-based costs can be met by employers – for example by donating equipment – or by individuals in the form of tuition fees.
- Governments adopt a range of methods to meet part of companies' training costs – for example through direct grants, wage subsidies and taxation relief.



- When training in the firm is not organised effectively, apprentices' or trainees' productivity may never exceed the costs of training them.
- When learners are unpaid – for example in internships and work placement programmes – they may deliver productivity that is well in excess of the firm's training costs.

These differences between the ideal model and the real world help to explain why the financing of work-based learning programmes can involve a wide range of mechanisms and policy choices to help bring the costs to firms, individuals and governments more closely into line with the benefits that each gains in order to achieve the principle policy objectives of work-based learning.

1.6 Financing work-based learning: Balancing costs and benefits

The balance between the cost of work-based learning and its benefits is important for companies when trying to decide whether or not to offer it. The costs for companies are described in Section 3.2⁴. On the other hand, companies benefit from learners' contribution to production: if learners were not taking part in these programmes, companies would otherwise have to pay other employees to carry out the productive work done by learners. Companies may also benefit by saving the costs involved if they had to hire new employees, including costs of the recruitment process, the integration of new employees and the risk of hiring a person that is not matching the expectations of the company. The net costs to a company are equal to the gross costs less the benefits gained from learners' contribution to production (Figure 1.3).

The benefits to companies from taking part in work-based learning may be either short-term or long-term. These are set out in Figure 1.4.

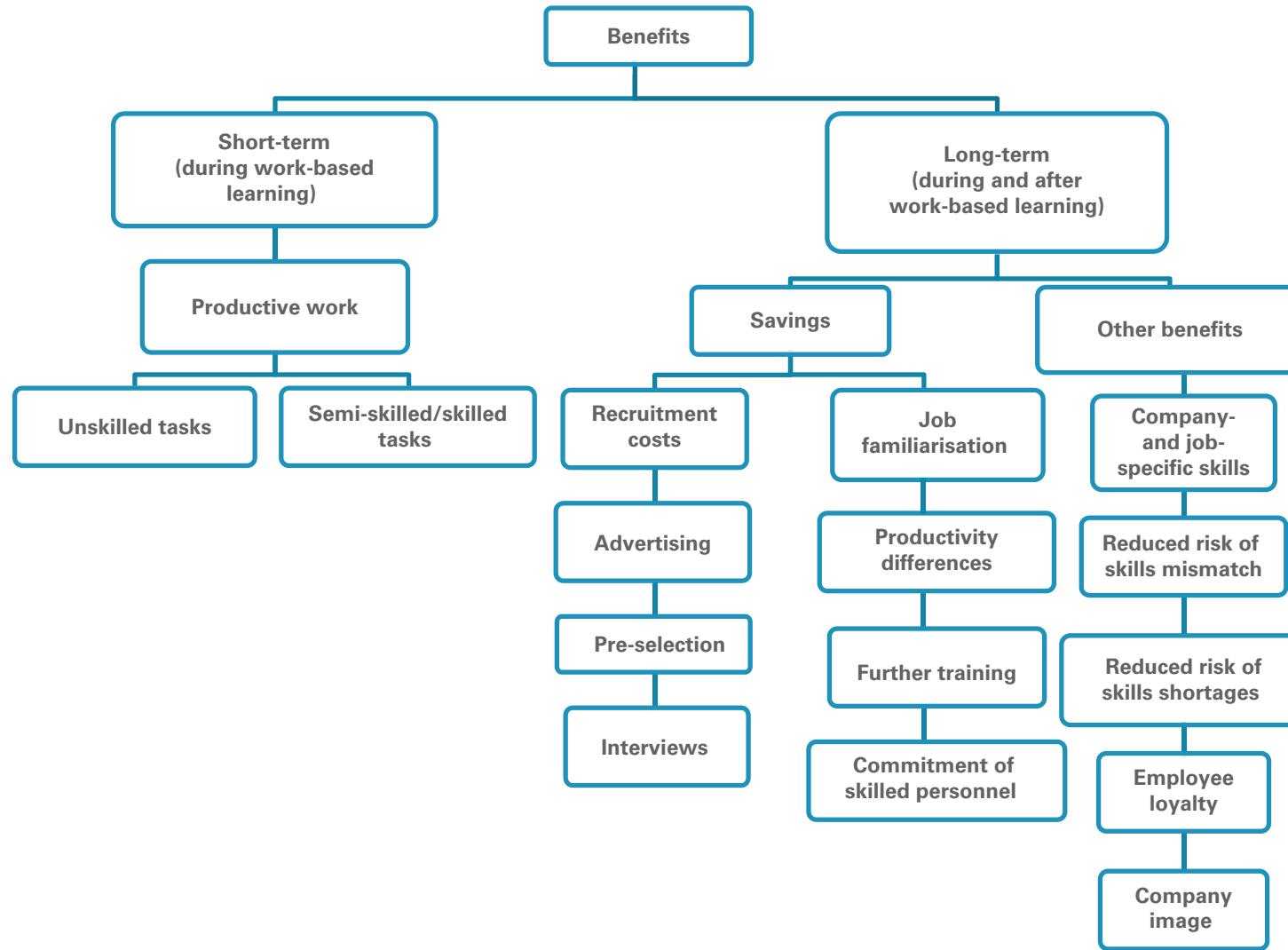
⁴ Briefly, these costs are payments to learners; the paid time of in-company trainers; training facilities; consumables; tools and equipment; teaching materials; assessment; and social security.

FIGURE 1.3 Net costs of work-based learning to employers





FIGURE 1.4 Financial and non-financial benefits to employers in Germany's dual system⁵



⁵ Source: GoVET, www.bibb.de/govet/en/71186.php



Balancing costs and benefits: Evidence from Germany and Switzerland

The best evidence on the costs and benefits of work-based learning comes from studies of the German and Swiss apprenticeship systems. Similar evidence is not readily available for other common forms of work-based learning such as internships, or for apprenticeship systems that are organised in different ways in other countries. Therefore, relative costs and relative benefits may be quite different in other types of programmes and in other national contexts.

Table 1.2 shows the latest available data on average training costs, training benefits and net costs for Germany in 2012–13 and Switzerland in 2009. It shows that value of the productive work of an average Swiss apprentice exceeded the costs of training, resulting in net benefits for the company. On the other hand, in Germany the productive work of an average apprentice covered only around 70% of the company's investment in training. It should be noted that within each country there was considerable variation in net costs and benefits. In Germany 30% of apprenticeships resulted in net benefits to the company, despite the average cost of training there being greater than the benefits. In Switzerland the comparable figure was 71%, so that despite average benefits exceeding average costs, over a quarter of firms did not benefit financially from training apprentices.

TABLE 1.2 Average costs and benefits of apprenticeship training in Germany (2012/13) and Switzerland (2009)

Costs and benefits per apprentice and training year	Germany (€)	Switzerland (€)
Costs	17,933	26,179
Benefits	12,535	28,496
Net costs	5,398	- 2,316

Source: Mühlemann (2016), p. 27

These benefits and net costs were calculated by the researchers within the period of the apprenticeship. This may be taking too short-term a perspective on benefits. While the benefits of apprenticeship training in Germany were, on average, found to be less than the costs of training, companies in Germany retain around 60% of their apprentices as skilled workers after apprenticeship. This allows the training firms in Germany to realise post-apprenticeship benefits. In Switzerland, labour mobility is much higher, and around two-thirds of Swiss apprentices leave their training company within a year after training. Thus, it could be argued that Swiss training companies have a production-oriented motivation for training apprentices (counting on net benefits during apprenticeship) rather than an investment-oriented motivation (relying on post-apprenticeship or long-term benefits). The situation in Germany appears to be the opposite: in other words, companies train for the longer-term benefits rather than short-term gains.



A number of factors appear to influence the balance between the costs and the benefits of work-based learning. These include:

- The company size. For instance, large companies may exploit economies of scale when providing work-based learning.
- The occupation and the industry sector in which training takes place. Costs and benefits can differ greatly by economic sector or occupation.
- The duration of work-based learning. Longer periods of work-based learning increase the probability that companies will cover their initial investment in training.
- The institutional context. For instance, minimum wages and collective bargaining agreements may influence the payment for learners. Benefits may be harder to realise if training wages are too high, and easier to realise if training wages or allowances are low.
- The provision of financial and non-financial incentives. In some countries, the government reimburses companies for some of the costs for work-based learning. Sectoral or regional training funds (see Chapter 4) may also be used to provide financial incentives that encourage companies to take on learners⁶.

Why is data on the costs and benefits needed?

For policy makers, sound data and evidence on the costs and benefits of work-based learning is crucial when considering the introduction of a subsidy that aims to encourage companies to offer work-based learning.

- If subsidies are not carefully targeted, there is a risk of public funds being wasted, and of companies receiving large windfall gains for apprentices that they would have hired without subsidies.
- If the benefits of apprenticeship training exceed the costs, there seems few grounds for paying subsidies to firms.
- One argument is that apprenticeship training subsidies are only potentially useful in regions and occupations where net training costs exceed the benefits of training (are greater than zero), and where companies are facing shortages of skilled workers⁷.

For companies that do not offer work-based learning opportunities, transparent information on the costs and benefits of training at the workplace may help to reduce uncertainties about the financial burden for training firms, and encourage them to take part. The social partners can play an important role in explaining relative costs and benefits to companies.

⁶ Mühlemann (2016), pp. 30–40.

⁷ For example see Mühlemann (2016).



2. Work-based learning and the European agenda on vocational education

European countries and the social partners have been cooperating in the field of VET through the Copenhagen Process since 2002. At the Riga summit in June 2015, the Ministers responsible for VET reaffirmed their efforts towards raising the overall quality and status of VET in order to meet the Education and Training 2020 strategic objectives, as well as their support for the wider European growth and jobs agenda. The EU Member States, the candidate countries, the European social partners and the European Commission agreed on a new set of five medium-term deliverables for the period 2015–20 (European Commission, 2015a). Five key priorities to further improve VET systems have been set for the period until 2020.

The first of the five medium-term deliverables focuses on work-based learning in VET: 'Promote work-based learning in all its forms, with special attention to apprenticeships, by involving social partners, companies, chambers and VET providers, as well as by stimulating innovation and entrepreneurship.'

The conclusions included the following concrete actions and or policy options:

- mobilising initiatives at national level to boost the share of WBL in VET programmes in school-based programmes and those combining learning in schools and enterprises, as appropriate;
- mobilising actions to strengthen, review or introduce apprenticeships in the context of the European Alliance for Apprenticeships, and integration of apprenticeships provided under Youth Guarantees in national VET systems;
- creating a clear regulatory framework for work-based learning, taking into account existing regulations, industrial relations and education practices;
- setting up and enhancing institutionalised intermediary support structures with the involvement of chambers, business and sector organisations to manage administration related to work-based learning in companies; and
- assisting VET providers in finding training places for trainees and VET teachers and trainers in enterprises, and supporting small and medium-sized enterprises in providing apprenticeship places (including through incentives).

In 2013, the European Alliance for Apprenticeships was launched with the aim of strengthening the quality, supply, image and mobility of apprenticeships in Europe. The Alliance is a platform managed by the European Commission in close cooperation with EU social partners. It brings together governments and other key stakeholders, such as business associations, individual companies, social partners, chambers, VET providers, regions, youth representatives and think tanks. All five candidate countries⁸ are part of the Alliance.

⁸ Albania, the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey



As part of its New Skills Agenda for Europe, the European Commission proposed that business and the social partners should be involved in designing and delivering VET at all levels and that VET should include a strong work-based dimension (European Commission, 2016a, p. 5). To inspire and support the various stakeholders to make work-based learning happen, the Commission identified 20 guiding principles for high-performance apprenticeships and work-based learning (European Commission, 2016b). In October 2017, the European Commission proposed a [European Framework for Quality and Effective Apprenticeships](#) (European Commission, 2017a). The framework is in line with the European Pillar of Social Rights, which defends a right to quality and inclusive education, training and life-long learning. Furthermore, the European Pact for Youth supports the employability of young people through partnerships between relevant public and private stakeholders (European Commission, 2015b).



3. The costs of work-based learning programmes

3.1 A framework for thinking about costs

Understanding the costs involved in work-based learning programmes is important for effective budgeting and planning. A wide variety of costs can be involved, although not all costs will be involved in all programmes. Cost variation among programmes can be a result of programme design features such as whether a wage is paid to participants, the proportion of total time that is spent in the workplace, as well as the result of policy decisions on matters such as such as the amount of assessment that is carried out and the extent to which training quality in the workplace is monitored.

Costs fall into three categories:

- the cost of the work-based component;
- the cost of the school-based learning component; and
- the cost of managing and steering programmes, both at the individual programme level and in the vocational education system as a whole.

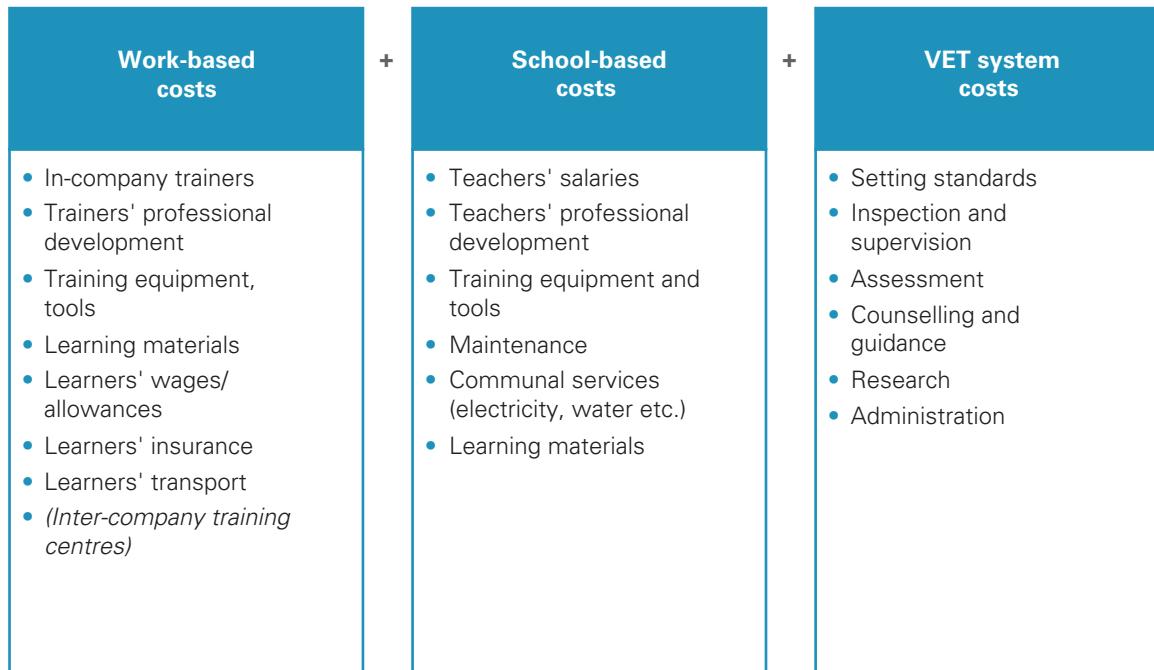
Figure 3.1 illustrates the types of costs involved in each of these categories.

The costs of work-based learning programmes can be borne by employers, by individuals, or by governments. Typically they are shared among the three. And costs can be incurred at different levels of the system: for example central government or regional government; a ministry or an individual school; an individual employer or an industry association. How the costs are shared will – like the level and type of costs – vary widely from programme to programme. Depending on the specific features of the education and training system in a given country, the levels of participation in work-based learning programmes, and hence the costs accruing, may vary considerably by region or economic sector.

Choices that are made about work-based learning programmes can have quite different impacts upon **the level of costs**. These choices can also have quite different impacts on **how costs are distributed** between firms, individuals and governments. Choices about programmes that influence the level and distribution of costs need to be made in terms of their impact upon the affordability of programmes, their quality, and their impact upon participation by firms and individuals.



FIGURE 3.1 Work-based learning programme costs



The supply of and demand for places will influence costs

Both the supply by employers of places in work-based learning programmes, and young people's demand for these places, will directly affect the level of costs to employers, to employer organisations and to the government (Figure 3.3).



FIGURE 3.2 Influences on the level and distribution of costs

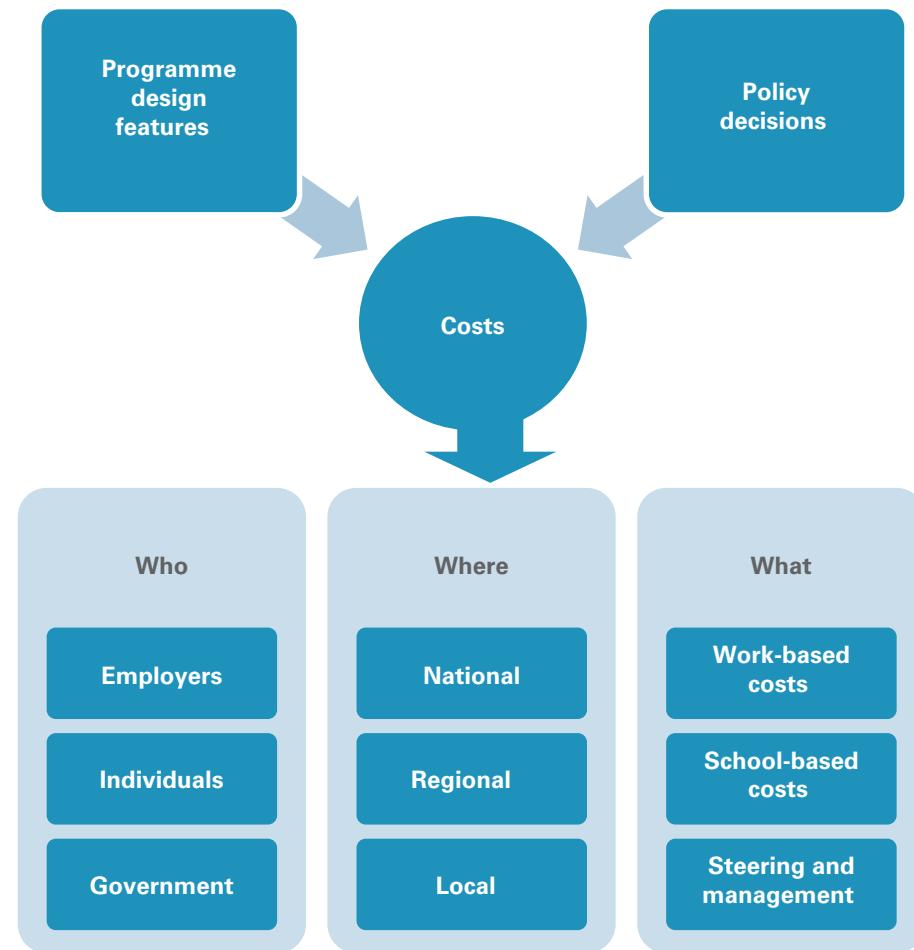
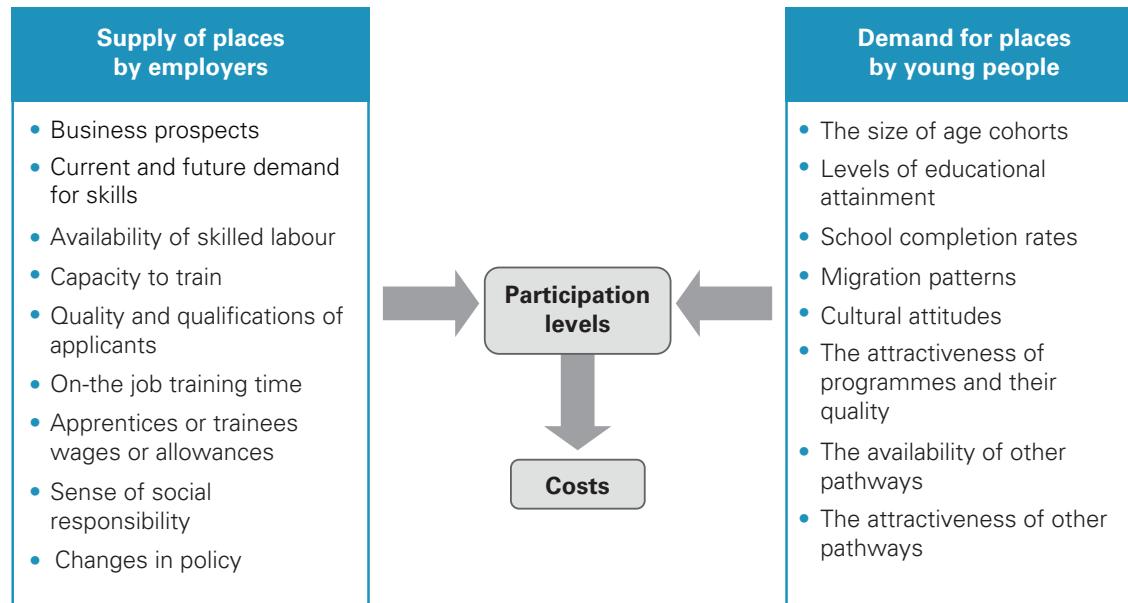




FIGURE 3.3 The supply of and demand for work-based learning influences costs



The supply of places

The willingness of employers to create places in work-based learning programmes is influenced by a number of factors. These include:

- future business prospects;
- their current and future demand for skilled labour;
- the availability of skilled labour, including alternative sources such as immigrants;
- their capacity to train;
- the quality and qualifications of applicants;
- the length of time learners are attending on-the job training;
- the cost to them of apprentices or trainees wages or allowances;
- their sense of social responsibility; and
- changes in the policy context, such as the introduction of a levy or of other financial and non-financial incentives.



The demand for places

The number and quality of young people who both want to and are able to enter work-based learning programmes depend on factors such as:

- the size of age cohorts;
- levels of educational attainment;
- school completion rates (particularly where programmes require minimum levels of education);
- migration patterns;
- cultural attitudes towards VET;
- the attractiveness of programmes and their quality; and
- the availability and attractiveness of other pathways such as higher education. Limiting places in other options can increase the number and quality of applicants. Expanding other options may reduce the number and quality of applicants⁹.

Many of these factors can interact. For example high immigration levels may increase the potential supply of applicants, but cultural attitudes among immigrant groups may make vocational pathways less appealing than other options.

⁹ For example a substantial expansion in the number of university places funded by the Australian government after 2010 was associated with a significant drop in the number and quality of young people applying for apprenticeship places. See Karmel, Roberts and Lim (2014).

3.2 The costs of the work-based component

Major costs associated with the work-based component of work-based learning programmes are:

- payment for learners;
- social security and accident insurance for participants;
- deciding which firms will take part in programmes;
- mentors, trainers or supervisors of the learners in the enterprise;
- supervising and assuring the quality of the work-based learning;
- assessment;
- training facilities and training equipment; and
- finding places for learners in firms.

Options for addressing these costs are described, issues associated with these options are discussed, and some examples are given of how countries have addressed the issues. The section concludes with a general discussion of the costs of training in the workplace.



3.2.1 Payment for learners

Options	Issues
<ul style="list-style-type: none">• Learners are legally students and no wage is paid.• An allowance is paid to students, but not a full wage.• If learners are employees, a wage is paid, but reflecting lower productivity the wage is less than the wage of a qualified worker.• Learners are paid a wage, but the employer is paid a wage subsidy to help offset wage costs.	<ul style="list-style-type: none">• If learners are unpaid, firms may be more willing to participate. However, learners may resist participating if the amount of productive work that they are asked to do is too high.• If wages paid during training are too high, the incentive for employers to participate may be reduced. If they are too low compared with other available options, young people may not participate or may drop out part way through a programme.• If wages do not increase after training has been completed, there will be a risk to drop out before completion. If the wages paid after completing training are higher than those paid during training, the incentive to participate and to complete is increased.

Examples

- **Algeria:** Payments to apprentices begin at 15% of the national minimum wage for the first six months, rising to 30% in the second six months, and then increasing in regular steps each month to reach 80% at the end of the training period.
- **Germany:** The apprentice earns a salary that increases every year and is on average one-third of the starting wage for a skilled worker. Apprentices' wages are negotiated in industry-wide collective agreements, and can vary widely between industries and regions.
- **Morocco:** Trainees taking part in alternance training must be paid a monthly subsidy by the employer. This can be lower than the minimum wage but must be agreed with the trainee or their legal representative. This is not a wage, and so trainees do not pay income tax from their subsidy. In practice it appears that many young people are not paid.
- **Turkey:** Employers pay at least 30% of the minimum wage to apprentices, candidate apprentices and students taking part as trainees in workplace training. They are not required to pay income tax.
- **Ukraine:** Students taking internships as part of initial vocational education are paid a salary during their internship. This represents half of the fee that participating employers are required to pay. The other half is paid directly to the schools.
- **Montenegro:** The revised VET law provides that the Ministry of Education covers learners' remuneration in Year one (10% of the minimum net wage) and Year 2 (15%) while employers have to cover Year 3 (at least 20%). This regulation is based on an agreement between the Chamber of Commerce and the Ministry of Education.



3.2.2 Social security and accident insurance for participants

Options	Issues
<ul style="list-style-type: none">The cost of insurance to compensate for injuries at work is borne by the firm.Governments waive or pay the cost of this insurance for programme participants.The cost of insurance is borne by the educational institution.The cost of insurance is borne by students.	<ul style="list-style-type: none">If students are not insured against accident or injury participation will be discouraged.The case for the firm bearing all or part of the cost of social insurance and injury compensation insurance is greater when participants are legally employees.Governments may use reduction in the costs of social security and accident insurance to encourage firms to take part.
Examples	
<ul style="list-style-type: none">Albania: Students on work placements or internships pay a health insurance fee, and companies are obliged to pay a contribution to the social and health insurance system.Jordan: Medical insurance for school students taking part in applied secondary education programmes is paid by the government, and employers are exempt from social security payments.Former Yugoslav Republic of Macedonia: Learners are not covered by a health insurance but they are insured against injuries through the school.Morocco: Employers are exempt from social security charges both for apprentices, who are employees, and for those taking part in alternance programmes, who are not.Serbia: Vocational schools have to sign a contract with an insurance company in order to cover health and safety insurance for all learners during work-based learning. The insurance costs are paid by the local governments.Spain: The government offers discounts on social security contributions to companies that hire young unemployed people under any contract with a training content.Turkey: The government meets the costs of apprentices' and candidate apprentices' social security contributions and the costs of insurance for workplace accidents and occupational health.	



3.2.3 Deciding which firms will take part in programmes

Options	Issues
<ul style="list-style-type: none">• Firms are not screened for suitability and any firm can volunteer, or educational institutions allow any enterprise to take part.• Firms' suitability is checked by employers' chambers or similar organisations.• Educational institutions check the suitability of firms and decide whether they can take part in programmes.	<ul style="list-style-type: none">• If any enterprise can participate, this may encourage larger numbers of enterprises to take part. However, it may result in poor-quality training.• If the conditions attached to participation are too time-consuming and restrictive, this may reduce the willingness of enterprises to take part.• Requiring schools and colleges to screen the enterprises may be difficult if teachers are not given enough time to check enterprises properly. And it will take the time of teachers, reduce the time available for teaching, and add to the institutions' overall teaching costs.• Checks on the suitability of enterprises by employer organisations can increase the commitment of industries and individual employer programmes. However, they need resources to do this: sufficient income from membership fees; enough members in an industry or region to make it affordable; and a network of regional offices that is able to ensure that most potential enterprises can be contacted and assessed.• Where a network of employer organisations does not exist, the most practical organisations for checking the suitability of enterprises may be local educational institutions.

Examples

- **Algeria:** Local apprenticeship commissions are responsible for collecting offers of apprenticeship placements from employers and applications from those wanting to be apprentices.
- **Denmark:** Approving and inspecting enterprises that want to take on trainees, on the basis of defined criteria, is the responsibility of 120 trade committees on which employers and employees are equally represented. To be approved, an enterprise must have a certain level of technology, and a variety of tasks to be performed that will provide the trainee with a full range of activities and tasks corresponding to the qualification requirements of a skilled worker.
- **Moldova:** Most vocational schools have contracts with specific enterprises to provide internship places, and so enterprises are selected by the school, not the student.
- **Morocco:** Vocational schools are responsible for placing those taking part in alternance programmes with enterprises and for defining the training that should take part in the enterprise.



3.2.4 Mentors, trainers or supervisors of the learners in the enterprise

Options	Issues
<ul style="list-style-type: none">Any employee nominated by the enterprise is able to train learners in the workplace, and they are not required to have any formal qualifications or training.All workplace supervisors, mentors or trainers are required to have either a formal vocational qualification in their occupation, or a formal qualification in on-the-job training.Employees who supervise learners are given the opportunity to take part in voluntary courses on how to train. These courses can be provided either by employer organisations or by government.Handbooks, guides, skill lists and similar materials are developed to help employees to train in the workplace. These materials can be developed by employer organisations or by educational institutions.Visits to enterprises to check on any problems and offer support to in-firm trainers are made by:<ul style="list-style-type: none">representatives of employer organisations;teachers from educational institutions;other stakeholders, for instance public authorities.	<ul style="list-style-type: none">If employees who deliver workplace training as part of programmes are required to have specific experience, qualifications or training, the quality of programmes is likely to be higher.However, requiring such experience, qualifications or training represents a cost that may discourage enterprises from taking part.If educational institutions provide either compulsory or voluntary programmes to help employees to improve their training skills, there is likely to be a pay-off in programme quality, but there will be a cost involved.

Examples

- Germany:** Companies that train apprentices must register at least one employee who can function as the designated responsible trainer. The requirements are set out in the national VET Act and the Regulation on Trainer Aptitude. These trainers must hold a qualification in the occupation in question, and must have proven knowledge of education theory. In practice many other employees are also involved in apprenticeship training within the company.
- Morocco:** Enterprises taking part in alternance training must have a tutor to guide trainees. The tutor must have an appropriate vocational qualification and at least two years of relevant experience.
- Turkey:** Enterprises that provide training to 10 or more apprentices (or students) have to establish a training unit for this purpose.



3.2.5 Supervising and assuring the quality of the work-based learning

Options	Issues
<ul style="list-style-type: none">Visits to enterprises to check employment conditions and/or training quality, and to advise on training are made by:<ul style="list-style-type: none">teachers from educational institutions,representatives of employer organisations,government labour or apprenticeship inspectors.Skills that cannot be provided by the firm as part of its normal work are provided to learners by:<ul style="list-style-type: none">letting them spend time working in other firms that can provide these skills,special cooperative industry training centres,schools or colleges in their practical training workshops.	<ul style="list-style-type: none">If no checks are made on the quality of the training provided by enterprises as part of work-based learning programmes, and if no checks are made on working conditions, there is a risk that the training will be of poor quality and that learners will be exploited.Requiring organisations such as schools and colleges, departments of labour and apprenticeship directorates to carry out these checks will involve costs. The more frequent and detailed the checks, the higher the costs.

Examples

- Algeria:** The Labour Inspectorate is responsible for ensuring that apprenticeship legislation and regulations are applied. It ensures that the rights of apprentices are observed and that apprentices are protected in terms of health and safety.
- Moldova:** Students are monitored during their internships by the trainers from their school, who visit the companies every two or three days, or once a week, depending on the location of the company.
- Germany:** Training in the workplace is based on a training plan following guidelines set out in the national training regulation for each qualification. It regulates the duration of the apprenticeship, describes the profile of the profession, and sets out final exam requirements. Small companies or highly specialised firms are encouraged to form training alliances with other firms in order to be able to provide comprehensive training.
- Morocco:** The vocational institution plays a key role in the alternance system, as in addition to selecting the trainees and providing general and technical training, it places them in enterprises and elaborates the overall training plan, which specifies the division of tasks with the enterprise. The vocational school also defines the duration and timing of work-based learning, the weekly duration of training, the methods used to evaluate trainees, and examination dates (together with the employer). The school provides the trainee with a portfolio that is used to monitor the training taking place in the enterprise.



3.2.6 Assessment

Options	Issues
<ul style="list-style-type: none">Enterprises assess what has been learned and inform organisations such as schools, colleges or central apprenticeship authorities of the outcome.Employers' chambers or similar bodies conduct tests and examinations of what has been learned in the workplace.Assessment of what has been learned in the workplace forms part of assessments carried out by the school.Learners are required to meet the costs of assessment.On-the-job learning is assessed at regular intervals throughout the programme and is used to assess both learners' progress and programme quality.On-the-job learning is only assessed at the end of the programme to certify satisfactory completion.	<ul style="list-style-type: none">Costs will be minimal if learning and skill development are not assessed as part of work-based learning programmes. This may not matter in programmes that are brief and have weak links to the formal VET system. However, the lack of assessment will be an issue if work-based learning is part of a formal vocational education qualification.The cost of assessment will increase if assessment is frequent. However, leaving the assessment of work-based learning until the end of a programme and using it only to decide if a certificate or qualification can be awarded reduces the chances that problems can be detected and corrected part way through a programme, and means that any gaps in the skills that should be acquired cannot be filled.Work-based learning can be assessed by enterprises themselves, by bodies such as employers' chambers, industry associations and tripartite trade committees, or by vocational schools or colleges. The decision about where the assessment should be carried out will influence who bears the costs.

Examples

- Algeria:** Public vocational training establishments are responsible for periodically evaluating the knowledge acquired by apprentices and for arranging the final examination, with the participation of employers. Thus, assessment costs are shared between them.
- Germany:** At the end of their training, apprentices take a final exam, which is regulated and executed by the chambers (of crafts and industry/trade). The assessment is funded by companies that pay a fee of around EUR 500 per apprentice for each assessment, and by the chambers, for instance by paying for teachers who are members of the assessment board.
- Turkey:** The final examinations for enterprise-based training are held on the same date in all vocational schools and take place over a three-day period, the first devoted to assessing theory and the second and third to practical skills. Enterprise representatives are able to participate in these examinations, and may be paid an honorarium if they do.
- Jordan:** National examinations that cover both theoretical knowledge and practical skills are held as a requirement for successful programme completion.



3.2.7 Training facilities and training equipment

Options	Issues
<ul style="list-style-type: none">• Firms provide dedicated training facilities and training equipment.• Training facilities and training equipment are part of the firm's normal production processes.• Industry associations or employer groups establish cooperative training centres to provide equipment and facilities that individual firms do not have.• Individual participants provide their own tools, but other training equipment is provided by the firm.	<ul style="list-style-type: none">• Dedicated training facilities can add to the firm's costs and may risk training becoming more distant from normal production.• Relying upon facilities and equipment that are part of normal production makes training more realistic, but may lead to skill gaps.• Cooperative training centres require well-organised employer or industry associations to be effective.• Requiring individuals to provide their own tools may be unrealistic if training wages are low and may deter students from disadvantaged backgrounds from taking part.• In occupations where expensive tools are required for training, governments may need to compensate participants in order to ensure that enough people take up training.
Examples	
<ul style="list-style-type: none">• Turkey: All costs of equipment and consumable materials used in training are covered by firms.• Germany: Inter-firm training centres established by employers' chambers can be used to address skills gaps that result from individual firms' lack of equipment and facilities required to complete a training plan.• Canada Revenue offers a tax benefit in the form of the Tradespersons' Tools Deduction. Apprentices may be able to deduct the cost of eligible tools bought to earn income as a skilled tradesperson.	



3.2.8 Finding places in firms for learners

Options	Issues
<ul style="list-style-type: none">• Individuals find their own places in firms.• Schools find places in firms for students.• Government agencies such as labour offices find places in firms.• Employer bodies find places in firms.	<ul style="list-style-type: none">• If individuals find their own training places in firms there is no direct cost to employers, schools or governments. However, there may be indirect costs if individuals' lack of labour market knowledge or employers' lack of selection skills result in either individuals' failing to find a place, or inappropriate selection leading to dropouts.• Intermediary bodies linked to employers such as regional chambers can help to reduce mismatch between employers and apprenticeship seekers. They incur a cost either to the employer organisation or to government through cost subsidies, or both.• Dedicated government bodies such as apprenticeship centres can help to reduce mismatch, and involve a direct cost to government. Similarly a direct cost is incurred if labour offices devote resources to apprenticeship selection.• If schools find work placements for their students there is a cost in terms of teacher time.

Examples

- **Denmark:** The social partners take part in local education committees for each of the programmes at a college. Among other tasks, these committees help obtain work placements for students.
- **The Netherlands:** Students in the dual track in upper secondary education are expected to find an apprenticeship contract themselves. However if they cannot find a place, schools can assist them. The Foundation for Cooperation on VET and Industry is funded by the Ministry of Education and has a legal function to ensure that the number of places in companies matches demand. It provides a website (Stagemarkt.nl) to link students to companies, and employs staff to monitor companies and accredit them.
- **Australia:** Through the Australian Apprenticeship Support Network the government provides services including screening, testing and job matching to help get the right apprentice in the right apprenticeship with the right employer.



3.2.9 The costs of training in the workplace: Some general issues

Workplace training involves a cost to companies through the lower productivity of those who are being trained, and through the loss of productive working time by those doing the training. The costs to the enterprise are likely to be higher where programmes recruit people with poor work skills, few social skills, or physical disabilities. Costs of workplace training will be lower in programmes that are short and involve less training, such as work shadowing and work experience. Costs will be higher where programmes have a close link to the formal vocational education system, where enterprises provide extensive training, and where this training is over a long period.

If there is no recognition of these costs, employers may be unwilling to take part in programmes that have a wider economic benefit. If compensation for these costs is too high, employers will gain windfall profits and public funds will be wasted. If participants in programmes that result in a portable skills move to enterprises that do not train, the enterprises to which they move gain the benefit of other firms' training. This may discourage enterprises from participating. Public policy may wish to try to prevent such free loaders.

The training costs in the workplace can be met in a number of ways. One is for individual employers to bear the full cost of workplace training. This is reflected in the ideal model of financing that is discussed in Section 1.5 above. Another is for the discount built into training wages to compensate employers for their training costs. In practice, a number of other mechanisms are adopted. These include government wage subsidies, tax relief, relief from social payments or similar mechanisms. Another is the use of special training taxes, at times in association with national or industry training funds, to charge firms that do not provide training (for example, to apprentices) and exempt firms that do. These and other mechanisms are discussed in Chapter 4.

3.3 The costs of the school-based component

Broader issues in the financing of vocational education are not the main focus of the handbook, but how the school-based component is financed does need to be considered as part of the overall reform of the financing of work-based learning. This is because there are some financing issues that are distinctive to the school-based part of work-based learning programmes: the overall design of programmes has an impact upon how much the school-based component costs.

In addition, some approaches to the financing of vocational education as a whole may have distinctive features when applied to the school-based part of work-based learning programmes. These largely effect how funds are raised and distributed to vocational education institutions, and will be discussed in the next chapter.



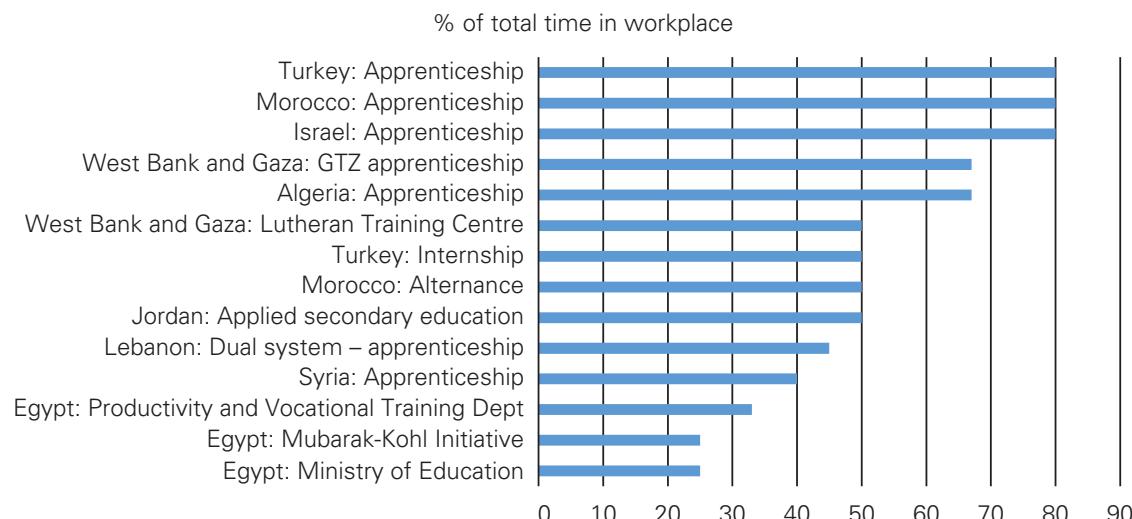
How programme design influences school-based costs

The main elements of the school-based component that need to be funded are:

- teachers' salaries;
- teacher professional development;
- facilities, tools and equipment, both purchase and maintenance; and
- learning materials.

The cost of all of these will be influenced by the overall design of work-based learning programmes. In brief, maximising time in the workplace and maximising the workplace's role in teaching practical skills will reduce the overall cost of the school-based component as a share of total costs.

FIGURE 3.4 Workplace time as a share of total programme duration in 14 Mediterranean region programmes



Source: Sweet (2009)



As a share of total programme costs, the cost of the school-based component will fall as the proportion of the total programme time that is spent in the workplace rises. A smaller school-based component requires fewer teachers and fewer classrooms. Figure 3.4, drawn from previous ETF work, shows that proportion of total programme time spent in the workplace in 14 work-based learning programmes ranges from a quarter to 80%. This points to wide variation among programmes in the relative cost of the school-based component.

The relative amount of time spent in the school-based component, hence its share of total costs, can vary from programme to programme within the one country, and this will have implications for budgeting. In Morocco, for example, Figure 3.4 shows that only 20% of the apprenticeship programme time is spent in school, whereas in alternance programmes half of the time is spent in school. And in France the amount of time spent in the school-based component varies according to the pathway (apprenticeship or vocational high school (lycée professionnel)) and the level of the programme (Table 3.1).

TABLE 3.1 Work-based time as a share of total programme time in France

Course	Level	Work-based time (%)
Apprenticeship CAP/BEP	EQF 3	60–75
Lycée professionnel CAP/BEP	EQF 3	18–25
Apprenticeship Bac Pro	EQF 4	60–75
Lycée professionnel Bac Pro	EQF 4	22

Source: Greatbach and Tate (2017)

The higher the proportion of practical skills that schools, rather than the workplace, are expected to teach the greater will be the need for expensive facilities and equipment, and accordingly school-based costs will rise as a share of total programme costs.

If schools, rather than employers, have a major role in quality control through selecting firms, finding placements for students, visiting firms to check training quality, and assessment of the skills gained at work, the financial burden on the school will increase, as the time devoted to these tasks will reduce the time available for teaching, and the number of teachers employed may need to increase. Moreover, if schools are to perform these tasks effectively, resources may need to be devoted to teacher staff development and programme coordination, as these generally fall outside teachers' standard tasks. Table 3.2 shows the involvement of schools in Germany, Morocco and Turkey in selecting firms, finding placements, visiting firms and assessment.



TABLE 3.2 Selected school costs in three work-based learning programmes

Programme	Cost to school involvement in			
	Selecting firms	Finding placements	Visiting firms	Assessment of work-based learning
Germany – apprenticeship	No	No	No	No
Morocco – alternance	Yes	Yes	Yes	Yes
Turkey – internships/traineeships	Yes	Yes	Yes	Yes

3.4 The cost of managing and steering work-based learning programmes

Chapter 5 discusses the management and steering of work-based learning programmes in more detail. Here some of the costs involved in steering and management are briefly outlined. As shown in Figure 3.1, these costs include setting standards; inspection and supervision; assessment; counselling and guidance; research; and administration. These are generally shared between government and the social partners.

Costs to government for steering and managing work-based learning include:

- the direct cost of employing staff to help steer and manage work-based learning programmes; and
- the cost of establishing and staffing of committees, working groups and governing bodies.

These costs can be fragmented across different levels of government (local, regional, national); and across a number of different ministries (for example education and labour, or ministries such linked to particular industries such as agriculture or shipping). It would normally be difficult to separate the costs associated with steering the work-based parts of the vocational education system from the costs of steering and managing the vocational education system as a whole: many of the things that need to be managed, such as setting skill standards, apply to all parts of the system¹⁰.

The **social partners' costs** are normally borne by bodies such as employers' chambers and trade unions rather than by individual firms. The costs to the social partners are greatest where they assume a larger role in managing the vocational education system as a whole, including the work-based part of it. The costs include participation in tripartite committees, but can also include, if the social

¹⁰ These costs of administrative and managerial staff are additional to the costs to government of the salaries of teachers and school management who are involved in programme management at the local and regional level.



partners have a strong role in matters such as quality assurance and assessment, the types of costs outlined above when describing the direct costs of the work-based component of programmes: for example screening firms and assessment. The costs can include:

- employing staff to take part in steering and managing individual programmes and the system as a whole;
- promoting work-based learning programmes; and
- the cost to individual employers and trade unionists represented by the time taken to participate in steering and management.

Innovation, development and evaluation are other costs that need to be considered as part of the process of steering and managing work-based learning. Donor organisations can be very important sources of this types of funding in ETF partner countries. To be successful, innovative pilot project need sustained support over an extended period if they are to become embedded in the vocational education system as mainstream programmes.



4. Raising and distributing the funds for work-based learning

This chapter looks at:

- financing through training taxes or levies and training funds;
- tax expenditures as a way to finance work-based learning;
- direct grants and subsidies;
- briefly, pooling funds between firms;
- financing mechanisms that target individuals; and
- how funds are raised and distributed for the school-based part of programmes.

4.1 Financing through training taxes or levies and training funds

4.1.1 What are training taxes or levies?

Training taxes or levies (referred to, from here on, simply as levies) can be used to increase the incentives for companies to train¹¹. They are a way to address the ‘free loader’ problem of firms that do not train – shifting their training costs to other firms by poaching staff from firms that do train. In this way it helps address a systematic tendency to under-invest in training and increase equity between firms.

Levies designed to increase training incentives are often described as falling into three categories.

- Exemption or rebate schemes by which companies can reduce their tax obligations through the amount of training that they provide or purchase. These arrangements can apply either to reduced obligations to pay a designated training levy, or to reduced obligations to pay payroll taxes or other forms of taxes. These latter arrangements are discussed in Section 4.2 under tax expenditures.
- Cost reimbursement through which companies are paid grants for certain designated forms of training. Issues associated with grants and subsidies are discussed in Section 4.3.
- Levy-grant schemes, which combine a tax levied on designated firms with grants to help meet the costs of training.

However, in reality the distinctions between these three types should not be exaggerated, as few pure models exist and many are hybrids¹².

¹¹ They can also be a way to generate revenue to finance public vocational training. These are not the focus here, as the funds that they raise are generally used to support classroom-based learning rather than work-based learning.

¹² See Johanson (2009).



BOX 4.1 Examples of training levies and training funds

Australia introduced a Training Guarantee levy in 1990. All firms with payroll costs over AUD 200,000 had to spend at least 1.5% of their payroll on the provision of 'structured' training for their employees. As an alternative they could donate the funds to an approved education and training organisation. If they did neither, the funds were paid into general government revenue. The scheme did little to lift employee training, provoked resentful compliance and abuse of the guidelines, and was widely criticised for its high compliance costs and for emphasising training quantity over training quality. It was suspended in 1994 and abolished in 1996.

Denmark's dual apprenticeship system is supported by an employer levy. All public and private employers contribute a fixed amount per employee (around EUR 370 per year in 2016) to a dedicated Employers' Reimbursement Fund. The funds are used to pay apprentices' wages while they are in off-the-job training.

In 2017 **England** introduced a levy through which all firms with an annual payroll over GBP 3,000,000 (thus exempting smaller firms) are required to pay 0.5% of all payroll. The amount paid by each employer is deposited in a training account for each firm, and is topped up by a 10% government contribution. Firms can use this account to pay registered organisations to provide training and assessment for their apprentices. Account funds must be used within 24 months. Employers who cannot call on these funds, either because they are small employers who pay nothing or little into the levy, or because they have exhausted their training account, must pay 10% of the training and assessment costs of their apprentices, with the levy funding the remaining 90%.

In **the Netherlands** there are around 100 voluntary training levies, known as training and development funds. The funds are established through collective bargaining in particular industry sectors, and normally run for three years or more before they are reviewed. The funds are independent of the government, and do not depend on regulation by law for their existence. Employers pay an agreed percentage of their total wage bill into industry sector training funds, and this payment can be either mandatory or voluntary. The rates are set by each training and development fund, but all employers pay the same percentage, irrespective of company size. The funds can engage in a variety of activities including but extending beyond assisting companies with the training costs involved in formal work-based learning programmes, both in the dual track and the school-based track. These include employee training, research, and advising employers on training and development matters.

In **Turkey** an Apprenticeship, Vocational and Technical Education Development and Promotion Fund was established in 1986. Some 1% of employers' income tax is allocated to it, as well as 20% of the annual training budget of the Turkish Labour Union of Handicrafts and other Commerce Chambers. Only about 20% of the fund is transferred to the Ministry of Education; the remaining 80% is spent on general budget items. Roughly, three quarters of the funds provided to the Ministry of Education from the fund are spent on equipment and materials for VET. The remainder is spent on a combination of wage supplements for VET teachers and honoraria paid to members of apprenticeship governance and advisory bodies.



In **Switzerland** the Confederation may declare an economic sector to be of general interest. In this case, all companies within the sector, both those that train and those that do not, are required to contribute to a vocational and professional education and training fund that is specific to the sector. The funds may use company contributions for a variety of purposes that include developing training programmes, organising courses and qualifications procedures, and promoting specific occupations. Regional funds also exist, but companies that belong to a sectoral fund are exempt from belonging to a regional fund. Further details are provided in Annex.

4.1.2 What are training funds?

National, regional or sectoral training funds are instruments to administer and distribute financial resources for vocational training. The resources distributed by funds may be, and commonly are, raised principally through training levies, but may also come from sources such as public budgets and donors. They may also be distributed to a variety of different actors and for a wide range of purposes.

4.1.3 Issues associated with levies and training funds

Our interest here is on some of the characteristics of levy schemes and on the impact that these have upon firms' participation in work-based learning. Their impact upon other aspects of the VET system such as employee training or recurrent VET is not the main concern, even though this tends to dominate most of the literature on levies and training funds. For present purposes, three aspects of schemes are significant: the rate of the levy and company coverage; eligible activities; and administration and governance.

The rate of the levy and company coverage

Two main options can exist. The first can be seen in the training levy introduced in Australia in 1990, in Denmark's employer levy for apprenticeship and in the apprenticeship levy scheme introduced in England in 2017 (Box 4.1). This requires all firms that are required to pay the levy, to pay the same rate regardless of industry sector. The uniform rate is usually expressed as a percentage of payroll or a fixed amount per employee, but other formulas can also be found, such as a percentage of construction costs in building industry schemes. In some cases levy rates that are uniform across all industry sectors can vary with the size of the firm. For example the 2017 English scheme exempts employers with payrolls below a nominated figure, as did the 1990s Australian scheme.



The second option is one in which the rate varies according to the industry sector. Examples include:

- Tunisia's vocational training tax in which the rate for service sector firms is half the rate for industrial enterprises;
- Switzerland's regional and sectoral levies (Annex); and
- the Dutch training and development (O&O) funds which are established through voluntary sector agreements between the social partners, with the rate being set individually for each sector (see Chapter 6).

A 2003 review for the World Bank (Dar et al., 2003) found that uniform rates were the most common model for training levies. Uniform rates have the attraction of being simpler to administer and being more easily understood by employers. However, their big disadvantage is that they can fail to recognise the different circumstances and training costs of firms in different industry sectors and firms of different sizes.

The incentives presumed by levies may be ineffective if firms with low training costs end up paying far more than their training really costs them, whereas firms in which training is expensive may pay well under their real expenditure on training. Training costs are generally higher in firms requiring high cost technology than they are in firms where technology and equipment investment is low, and higher for occupations that require a long training period than for occupations in which the period required to attain competence is short. Training expenditure is generally lower in small firms than in large firms.

- Tunisia's vocational training tax, which has existed since 1956, recognises this by setting the rate of the tax at 2% of the salary bill of industrial firms and 1% in the case of service enterprises.
- Grollman et al. (2017) advocate modifying the English apprenticeship levy so that it better recognises the heavy investment in training that is required in occupations such as car service.
- While evaluations of levy grant schemes are limited, they generally suggest that the impact is inequitable by firm size, with larger firms generally benefitting more, and smaller firms tending to see levies simply as a tax¹³.

This points to the need to carefully consider how the rate for training levies is set for new schemes, to think carefully about the balance between administrative simplicity and effectiveness, and to consider how levy rates can be set variably by industry sector or other firm characteristics such as firm size.

Eligible activities

Training levies and training funds appear in many if not most cases to be a fairly scattergun and weakly targeted policy instrument for extending and improving work-based learning programmes, whatever their impact and benefits may be in other parts of the VET system. It is important to point out that almost no training levies and training funds are specifically targeted at apprenticeships and other forms of work-based learning programmes. The principal exceptions to this are Denmark's apprenticeship levy, England's 2017 apprenticeship levy, and the French apprenticeship tax.

¹³ Dar et al. (2003); Johanson (2009)



The more common rule is for the funds raised by training levies, and the funds spent by training funds, to be able to be used for a wide variety of purposes within the education and training system other than work-based learning programmes. For example:

- The Dutch training and development (O&O) funds' resources (Chapter 6) can be spent on activities that include employee training, research, career development planning, and advising employers on training and development matters such as training rights, in addition to supporting employers with the costs of training students in the dual track. In the early 2000s only 40% of the funds collected through the O&O funds were spent on training, although this had risen to 59% in 2009¹⁴, and not all of this would have been spent on students in the dual track.
- Switzerland's sectoral and regional funds (Annex) may use company contributions for a variety of purposes that include developing training programmes, organising courses and qualifications procedures, and promoting specific occupations. These need not be limited to those taking part in the dual apprenticeship system.
- Even in the case of the French apprenticeship tax, the impact of the tax upon supporting apprenticeship is weakened by the ability of employers to meet their obligations by paying part or all of their obligations to universities and other educational institutions, rather than by supporting apprenticeship. In 2010, 38% of revenue from the tax was allocated to non-apprenticeship training¹⁵.

A further difficulty is that whatever the approach to the provision of grants to firms from training levies or training funds, experience has shown that it is very difficult to influence how these funds are spent within the enterprise¹⁶.

Careful thought needs to be given to the intended purposes of training levies and training funds, and to how eligible activities for grants are specified, if levies and funds are to assist the operation of work-based learning programmes.

Administration and management

Evaluations of training levies and associate training funds suggest that they are most likely to have a positive impact when they:

- are designed and managed with strong social partner control or involvement, rather than by government acting alone. Both schemes that give a leading role to employers and schemes that have balanced tripartite governance can be successful;
- are introduced after extensive consultation, and have general support from employers;
- clearly specify the types of training or the types of employees that are the targets;
- contain few loopholes and exceptions that can be exploited, thus having administrative transparency and avoiding employer cynicism about the scheme;
- are simple for firms to access and administer;
- have relatively low administration and compliance costs for firms and for training funds; and
- are openly scrutinised so that they do not become easy to avoid¹⁷.

¹⁴ www.cedefop.europa.eu/FinancingAdultLearning

¹⁵ Cahuc and Ferracci (2014)

¹⁶ Smith and Bilett (2015b, p. 111)

¹⁷ See for example Johanson (2009), Smith and Bilett (2015b) and Kuczera (2017).



4.2 Tax expenditures

Chapter 1 points out that financing includes both direct expenditure and indirect expenditure in the form of foregone income. Governments commonly use tax expenditures, rather than direct grants, as a way to finance work-based learning. They use them to provide incentives to companies and to compensate them for costs¹⁸. Tax expenditures are often used because they do not appear as line items in government budgets. As a result they can be less transparent than direct grants, harder to account for, and easier to use to make payments to sectional interests. Tax expenditures can take the form of reduced obligations to pay taxes such as payroll tax or company tax, or a reduction in other compulsory payments such as workers' compensation or social contributions.

Incentives provided through tax expenditures can reduce either the tax base or the tax due. They include tax allowances (deductions from the gross income to arrive at the taxable income); tax exemptions (some particular income is exempted from the tax base); tax credits (sums deducted from the tax due); tax relief (some classes of taxpayers or activities benefit from lower rates); and tax deferrals (postponement of tax payments)¹⁹. However, experience²⁰ suggests that tax expenditures as incentives are unlikely to work well in countries where formal industry is not well developed, where small enterprises make up a bulk of all private enterprises, and where administrative or organisational capacity is weak (including tax collection capability).

Examples of the use of tax expenditures to provide incentives for work-based learning programmes are given in Box 4.2.

¹⁸ Tax expenditures appear to be less common than direct subsidies. Note that Austria abolished incentives through tax expenditures in 2008 and replaced them by direct subsidies, and the Netherlands did the same in 2014.

¹⁹ Kuczera (2017), p. 22

²⁰ Palmer (2015)

BOX 4.2 Tax expenditures for work-based learning

In **Australia** employers of apprentices and trainees may be eligible for State payroll tax rebates and reductions in workers' compensation insurance premiums, but the arrangements vary from State to State.

In **Belgium** employers who train a young person on an alternating work and learning programme that requires a training or employment contract may receive payroll tax deductions and may receive a reduction in employer contributions in respect of the cost of the in-company tutors of young people.

In **Canada** the Apprentice Job Creation Tax Credit is a non-refundable tax credit for an employer that is equal to 10% of the eligible salaries and wages payable to eligible apprentices in respect of employment. The maximum credit an employer can claim is USD 2,000 per year for each eligible apprentice.

In **Jordan** medical insurance for those in relevant programmes is met by the government and participating employers are exempt from social security payments.

In **Morocco** employers are exonerated from social charges and from the vocational training tax in respect of both apprentices and those undertaking alternance programmes.



4.3 Direct grants and subsidies for companies

Grants or subsidies may come from standard government revenue or from designated training funds. Examples of direct grants and subsidies are given in Box 4.3. They can be used to:

- offset firms' training costs: for example the cost of special training equipment or facilities, or the cost of the firm's mentors or trainers;
- offset the wage costs of trainees or apprentices;
- encourage firms to hire more apprentices or trainees;
- provide firms with an incentive to hire apprentices and trainees from particular groups or with particular characteristics;
- improve the relationship between training and labour market demand; or
- try and improve completion rates and programme quality.

To be effective, direct grants and subsidies need to be carefully targeted and monitored. Issues associated with grants and subsidies include:

- Lump sums that are not tied to the number of apprentices or trainees may build a firm's training capacity but do little to increase the number of trainees or apprentices. Subsidies based on the number of trainees or apprentices may do more to create additional places.
- The impact of subsidies upon additionality may be highly variable between different types of firms and different industries, and their overall impact may be quite modest. One reason for this is that subsidies may represent only a very small proportion of total costs, and thus provide a very limited incentive. This points to the importance of careful targeting and monitoring.
- Subsidies that reduce wage costs need to be considered in relation to how well the training wage is designed. A wage structure that provides an improved incentive to train may be a better option.
- Subsidies may involve a significant deadweight, in that employers would have hired apprentices or trainees without the subsidy, so that it has no impact upon their behaviour.
- Subsidies may attract employers who are mainly interested in getting their costs subsidised, rather than in training and skill development²¹.
- Universal schemes (those that apply equally to all firms) that are simple to use may be more attractive to employers, but fail to take into account the wide differences between firms and industries. Hence they may lead to a relatively large waste of government funds.
- Small firms may have greater difficulty in accessing subsidies than large firms.

Despite issues such as these, direct grants and subsidies may be a more effective way to finance work-based learning than training levies and training funds, as they are easier to target upon designated programmes that meet specific criteria, whereas training funds are, as indicated above, more often multi-purpose and often not specifically targeted to, or specifically intended to include, work-based learning programmes.

²¹ This seems to have been the case with Australia's traineeship scheme, where the removal of subsidies for many low-skilled occupations in 2011 resulted in a sharp drop in the number of trainees in service sector occupations such as sales.



BOX 4.3 Examples of direct grants and subsidies

In **Algeria** the cost of apprentices' wages is met by the government for the first six to twelve months of the apprenticeship.

In **Australia** the government pays employers a wide variety of incentives for apprentice and trainee commencements and completions. The size of the payments is linked to factors such as labour market demand for the occupation, the skill level of the qualification that the training leads to, the age of the person commencing the apprenticeship or traineeship, whether the person is in a nominated equity group or has a disability, whether the apprenticeship place is a new one, and whether the firm is in a declared drought area. The payment of commencement incentives is a form of wage subsidy. Other types of incentive payments are intended to encourage entry into higher skilled occupations with a known return on the labour market, to discourage training in lower-skilled occupations in which training does not lead to higher labour market returns, to reward completions and reduce dropout rates, and to compensate for the higher training costs incurred in training those from disadvantaged groups. Incentive payments can range from AUD 750 to AUD 3,000. See www.australianapprenticeships.gov.au/publications/summary-australian-government-australian-apprenticeships-incentives-programme

In **the Netherlands** companies receive a subsidy up to a maximum of EUR 2,700 per year per student for providing work placements for students in the dual track. This is intended to compensate them for training costs, and replaced a previous tax incentive arrangement that had been found to be abused. More details are provided in Chapter 6.

In **Norway** firms that train apprentices received a state grant of approximately EUR 15,000 per apprentice in 2014 for to cover the two-year training period that apprentices spend in the firm. It is calculated as the equivalent cost of educating a student in upper secondary school for one year. All firms receive the same sized grant. The grant is supposed to cover all costs related to training the apprentice at the firm. Additional grants are given to enterprises offering apprenticeships in small trades in need of protection, and for taking on apprentices with special needs.

In **Sweden** upper secondary schools receive an additional government grant for students who are apprentices, and 83% of the grant is paid by the school to the firm receiving the student. The firm can receive an additional grant if the apprentice supervisor has participated in a training programme that has been approved by the National Agency for Education.

4.4 Pooling resources between firms

Small firms may lack skills in how to train in the workplace, and the time or expertise to select apprentices or trainees properly. And the nature of their production processes may not allow them to deliver all of the skills contained in a training plan. These are arguments in favour of mechanisms that allow smaller firms to pool resources, including subsidies. Training offices in Norway (Box 4.4) are an example of such a mechanism.



BOX 4.4 Training offices in Norway as a way for firms to pool resources and improve quality

In Norway, in order to reduce the administrative burden of the individual firm and ensure that apprentices are given the correct training, groups of small- and medium-sized firms often establish umbrella organisations – training offices – which assume responsibility for the training of apprentices and formally enter the contractual agreement with the county authority.

The training offices are funded by pooling the government training subsidies that are provided to firms. The use of training offices has increased a lot during the last 20 years, and they now account for up to 80% of all training companies. The training offices have the legal status of a training company, but operate in between the county authorities and the training company. The training offices often take responsibility for recruiting new training companies and coach staff involved in the tutoring of apprentices. They work actively in assuring the quality of the apprenticeship training.

4.5 Financing mechanisms that target individuals

Payments by and to individuals, examples of which are given in Box 4.5, can be ways to:

- meet part of government costs for the school-based part of programmes;
- encourage participation by reducing learners' costs;
- encourage disadvantaged groups to participate;
- encourage increased completion rates; or
- support a market-based approach to training.

The mechanisms used to achieve these aims can include loans, including interest-free and deferred loans; grants; scholarships; and vouchers.

Training wages are discussed as a cost to firms in Chapter 3: but they are also payments to individuals. Here other forms of payment to and by individuals are outlined. The main cost to individuals can be represented by tuition fees for the school-based component of programmes, but also significant are the costs of tools and equipment and transport costs.

Where tuition costs are low or non-existent, as in much of the European Union, mechanisms to reduce the disincentives to participation by disadvantaged groups are likely to be less important²². Free tuition may reduce disincentives to participation in programmes that are completely school-based, but for work-based learning programmes other costs such as tools, equipment and transport are a reality, and policy will need to consider whether assistance needs to be available to reduce disincentives for disadvantaged groups. Targeted allowances, grants and loans, whether interest-free, low-interest or deferred, can be ways to do this.

²² However payments to firms may still be important to encourage them to include disadvantaged groups in work-based learning programmes, particularly programmes in which learners are employees.



BOX 4.5 Examples of payments by and to individuals

In **the European Union** the school-based component of apprenticeship programmes is usually free to students, although those who are older than a certain age may be required to partially cover their fees. This is the case in Denmark and the Netherlands.

In **Australia** apprentices who have to live away from home in order to undertake an apprenticeship can receive a living away from home allowance. To cover the costs of training, apprentices can apply for Apprenticeship Support Loans of up to AUD 20,042. Loans are repayable through the taxation system when a minimum income threshold is reached. Once an apprentice successfully completes their apprenticeship, a 20% discount is applied to the loan amounts borrowed.

In **Canada** the Federal government offers a number of loans, grants and scholarships to apprentices.

To cover the cost of periods of full-time training, apprentices can apply for up to CAD 4,000 in interest-free loans per period of technical training to help with tuition costs, tools, equipment and living expenses, and to cover forgone wages.

- Registered apprentices can get a taxable grant of CAD 1,000 to help them get started in a trade.
- The Apprenticeship Completion Grant is a taxable cash grant of CAD 2,000 paid to registered apprentices who have completed their training.
- A tax deduction is available to registered apprentices for the cost of their tools.

In **Estonia** apprenticeship students are eligible for allowances paid by the school, including study allowances and transport allowances. They are also eligible for low-interest loans, which are paid back after graduating and are guaranteed by the state.

In **Italy's Veneto region**, apprentices get a voucher worth EUR 320 for each 40-hour school-based module to cover tuition and transport costs. To receive the payment, apprentices must attend at least 80% of the course and acquire the desired learning outcomes.

In **Montenegro** and in **Serbia**, some companies provide transport allowances to learners to cover the costs of transport to and from the company.

In **the Netherlands**, those enrolled in the dual vocational education track can deduct training costs from their income tax and claim back the costs in their annual taxation return

Across **seven countries in the Pacific region** student fees represent from between 1% of all TVET revenue (in Kiribati) to 35% (in Fiji).



In market-based vocational education systems such as in Australia, Canada and the United Kingdom, vouchers that are available to cover all or a proportion of tuition costs can be a way to encourage competition between training providers, and to allow the private sector to access public funds²³. In such systems, the proportion of tuition fees that are not covered by public vouchers becomes a significant issue for policy if participation, particularly by the disadvantaged, is not to be discouraged. In these circumstances the availability of grants, scholarships and loans is important in order to achieve equity objectives.

Payments may also be made to individuals in order to encourage higher completion rates. However, these appear to be fairly rare, being more commonly provided to employers or used as part of the way that schools and colleges are funded.

Tax concessions may also be used to compensate individuals for the cost of taking part in work-based learning programmes. These are unusual, and appear more common in systems that have a strong market-based nature, with individuals bearing costs through fees, and competition between public and private providers.

²³ Payments to firms to allow them to purchase training from a provider of their choice can be a way to achieve the same objective.

4.6 Financing the school-based component of programmes

This section looks at how the school-based part of programmes can be financed. This is a subset of the broader question of how vocational education is financed. The funds for the school-based part of programmes can be raised from a variety of sources, and they can be raised in a variety of ways (Table 4.1). Whatever the source, a key policy issue is to ensure that the level of funding is adequate for the needs.

4.6.1 Government funding sources

Almost everywhere, governments are the major source of funds for the school-based part of work-based learning programmes. A survey of apprenticeship schemes in 27 EU countries has shown that governments contributed 85%–95% of the overall costs. However, the extent to which overall costs are borne by governments varies. Where school-based vocational education dominates, as in Poland and Spain, and work-based learning is a small proportion of total learning time, the financial contribution of governments is greatest. Where dual apprenticeship-type systems are well developed, governments bear a smaller share of the total. In Denmark government contributions represented only 60% of the total. In France only 50% of the total costs of apprenticeships were borne by central and regional governments. And in Germany only 24% of the resources devoted to apprenticeship came from government sources (the Länder and the Federal Employment Agency)²⁴.

Government funds for the school-based part of programmes can come from a wide variety of sources: at the national level from Finance Ministries or Ministries such as Education and Labour; and from regional governments in countries where education policy is decentralised. A significant contribution by regional governments can be found in France, Germany and Spain for example. Where

²⁴ See Ikei Consultancy (2012)



this occurs, agreement about the relative responsibilities of each level of government would normally be required. For example agreement would be needed on who is responsible for funding items such as salaries, running costs, capital equipment and materials. See Box 4.6 for the case of France.

In Sweden, the major part of school funding comes from municipal tax revenues, but parts of the funding also come from a central general government grant to the municipalities. This is supplemented by targeted central government grants for special initiatives.

TABLE 4.1 Funding the school-based component of work-based learning programmes

Funding sources	Funding methods
National ministries <ul style="list-style-type: none">• Education• Labour• Other	Grants <ul style="list-style-type: none">• Block grants• Specific purpose grants e.g.<ul style="list-style-type: none">- Variable per programme grants- Running costs- Capital and equipment• Grants tied to enrolments
Regional governments <ul style="list-style-type: none">• Grants from national government• Regional taxes	Vouchers <ul style="list-style-type: none">• For employers• For students
Training funds <ul style="list-style-type: none">• National• Sectoral	Competitive tendering
Employer contributions <ul style="list-style-type: none">• To meet training levy obligations• Voluntary donations	Outcomes-based funding linked to: <ul style="list-style-type: none">• Attendance• Attainment• Employment
Student fees	
Donor assistance	



BOX 4.6 Shared funding of vocational education and training in France

In France, the national government provides close to two thirds of the funding for initial vocational training, paying for the salaries of teachers, school counsellors and guidance staff, while local government is in charge of investment and of the work, recruitment and remuneration of other staff. The regions pay for construction and reconstruction, extensions and major repairs as well as the equipping and functioning of public senior high schools, agricultural colleges, special schools and schools of maritime studies and aquaculture within their areas. They can also give investment grants to private technical colleges. To carry out the responsibilities transferred to them by central Government, the local and regional authorities receive specific monies, known as 'decentralisation appropriations'. The bases on which the authorities redistribute these funds to schools are set out in law.

Source: Cedefop (2009)

4.6.2 Other sources of funds for the school-based component

As outlined in Section 4.1 above, special training taxes and levies, and associated designated training funds, can also be used as a source of funds for the school-based part of work-based learning programmes.

Other sources can include student fees; employer contributions (not including expenditure within firms for training apprentices and trainees, but including contributions such as equipment donations); and donor contributions or development aid. As indicated above, in the European Union these normally represent a fairly small share of total funds. However, in some developing and middle-income countries they can represent a substantial share.

Employer contributions to the cost of the school-based component of programmes can be encouraged by government incentives. These are provided for in Turkey, and tax concessions for private contributions are under discussion in Montenegro.

4.6.3 Distributing funds for the school-based part of programmes

How funds for the school-based part of programmes are distributed can be important to the extent that the distribution methods can help to assist policy objectives such as more efficient steering of programmes and bringing them closer to labour market demand.

How to align vocational education more closely to labour market is a key challenge for countries in which funding has traditionally been supply-driven, where the funding is allocated by methods such as historical formulae, and students are allocated to the places that funds are available for, rather than enrolling in courses that are known to be linked to employment outcomes. Work-based learning programmes suffer less from these problems.



In programmes in which learners are employees, employers' hiring decisions determine the number of places in programmes rather than the number of places being determined by educational administrators. Where learners are students rather than employees, and where the work-based part of programmes is compulsory, the number of firms in industries associated with programmes, and the readiness of firms to sponsor students for training, will place a natural limit on the number of places that can be funded. Under these circumstances, a funding formula that is based upon the number of enrolments makes sense²⁵. This is the funding method that is most commonly observed in countries of the European Union.

Funding for the school-based component that is directly linked to student numbers can be linked to voucher systems. Funds linked to vouchers can flow to training providers either through students, as in the case of Italy's Veneto region illustrated in Box 4.5 above, or through employers who then use the vouchers to purchase training from a provider of their choice. In the United Kingdom, for example, the school-based training fee that is paid by the government is transferred to the training provider once an apprentice enrols.

A system of allocating funds according to the number of students can be combined with ways of funding that seek to link funds to outcome measures. Box 4.7 illustrates this in the case of Denmark's 'taximeter' system of funding. The linking of student vouchers to attendance rates and the achievement of learning outcomes in Italy's Veneto region is another example of ways to link student-driven funding to improved efficiency. Where funds are allocated to schools according to the number of students, a key issue is the degree of autonomy that schools have in allocating funds to particular programmes, or the extent to which the funds are allocated according to centrally set funding formulae. The latter funding method will restrict schools' flexibility in responding to local labour market needs.

Competitive tendering by institutions can be another way to try to use funding methods to improve the efficiency of the system. It can be used to help create quasi-market conditions, in that it creates conditions under which the public and private sectors can both compete for public funds. However competitive tendering carries a risk of institutions competing on the basis of price rather than quality or outcomes, and hence the risk that quality will fall²⁶.

²⁵ In programmes that are largely school-based, other mechanisms may be needed to more closely align funding to labour market demand. These include funding through student vouchers, which assume that at the local level aggregated individuals' awareness of labour market demand will be superior to that of central administrators, and linking funding to course employment outcomes. The latter, however, requires quite sophisticated ongoing systems to monitor student outcomes, and these are available in few countries.

²⁶ This is a common problem with monopsonies, which exist in markets where there is a single purchaser and multiple suppliers (as opposed to monopolies, which are markets where there is a single supplier and multiple purchasers).



BOX 4.7 The Danish taximeter system of funding

In Denmark, a high proportion of the funds for vocational education are distributed to colleges in accordance with the 'taximeter' principle, whereby funding is linked to some quantifiable measures of activity, for example the number of full-time equivalent students, with a set amount awarded per unit. As well as the 'taximeter' rate, colleges receive an annual fixed grant for items such as building maintenance. The total State grant is provided as a block grant, which institutions use at their own discretion within the boundaries of the legislative framework and specific institutional objectives.

In recent years there has been a focus on increasing cost efficiency and effectiveness. The present funding system for initial VET in accordance with the 'taximeter' principle was introduced following a major reform in 1991. Among other things, such a system provides an incentive for colleges to increase retention within the system. Critics point out that such a measure endangers quality as it encourages colleges to be more lax in assessing student performance. The 1991 reform, which was primarily organisational, introduced management-by-objectives as a means to improve overall provision. The funding system was introduced as part of a new public management strategy to decentralise and make institutions compete on 'quasi markets'. Over the years, however, the budgetary room to manœuvre of vocational colleges has been restrained and, in fact, the trend seems to be towards greater centralisation as the Ministry of Children and Education sets up more specific objectives, quality indicators and targets for colleges. From 2003, the concept of value for money was introduced. To obtain earmarked funding, institutions have to show their 'will to change within specific prioritised policy areas.

Source: Cedefop (2012)



5. Steering and managing the financing of work-based learning

Section 3.3 briefly set out the types of costs that are incurred in steering and managing work-based learning programmes. Here the ways in which the financing can be steered and managed are discussed. In practice, steering the financing of work-based learning is closely linked to how other aspects of work-based learning systems and programmes are steered and managed: regulation, standard setting and quality control for example. And the reality is that decisions that are made on matters such as regulation, standard setting and quality control will have financial implications.

5.1 Collective governance

For work-based learning programmes, even more than for vocational education as a whole, collective governance structures that involve all relevant partners are essential. For government involvement, education and labour ministries each have a role, and where regional governments have a significant role in delivery, their involvement is also important. Strong involvement of the social partners is particularly important in the management of national VET agencies, as the example of Turkey in the following paragraph illustrates. Collective governance is an issue at the sectoral level and the regional or local level, as well as nationally. Table 5.1 provides examples of collective governance of selected European sectoral training funds. Box 5.1 provides details of national governance structures in Denmark, and of the involvement of the social partners there in governance at the sectoral and local levels.

Chapter 4 points out that collective governance is particularly important if training taxes or levies and associated training funds are to operate effectively. Employer buy-in is crucial to their success, and their close involvement in governance of such arrangements is vital (Dar et al., 2003; Kuczera, 2017).

In Turkey national legislation gives a clear role to the social partners in planning, development and evaluation procedures through their role in tripartite VET councils. All stakeholders sit on a peak national Vocational Education and Training Council and it reports to the Ministry of National Education. In addition to the national body, provincial councils exist, also with tripartite membership. A range of other tripartite bodies exist for special areas of the system, for example occupational standards committees. The Confederation of Turkish Tradesmen and Craftsmen, one of the country's largest civil organisations, is given a special role in promoting apprenticeship, is a provider of training, and plays a key role in quality assurance, both monitoring the training that takes place within enterprises and being central to the apprenticeship examination and certification system.



However, the existence of formal structures may not by itself be sufficient. For example in Algeria reasonably well-defined structures for cooperation between government and the social partners exist, at least on paper, and national legislation gives a formal role to employer and employee representatives. However, government continues to play a relatively top down role. The role of national employer organisations and trade unions in managing the system appears modest, although they do take part in deliberations of the national consultative council for VET as well as in the consultative commission on VET of the peak body that represents the regional governments. Consultative bodies at the regional level that are meant to be composed of both employer and regional representatives either do not exist in most cases or, if they do, are inactive.

TABLE 5.1 Governance arrangements in selected European sectoral training funds

Country and fund	Governance
Belgium: sectoral training funds	Run by bipartite and joint boards consisting of equal numbers of labour and employer sector representatives. Different social partners are involved in each fund, depending on the sector representative bodies and structures.
Spain: tripartite foundations	Administered and represented by a tripartite board comprising representatives of the most representative Spanish business (and union organisations and by the Spanish Ministry of Employment and Social Affairs.
France: OPCAs (accredited collecting organisations)	Run by bipartite and joint boards consisting of equal numbers of labour and employer sector representatives. Different social partners are involved in each fund, depending on the sector representative bodies and structures.
Italy: inter-professional funds for continuing training	The management bodies of all funds have an equal number of representatives from employer and employee organisations.
Cyprus: Human Resource Development Agency	Administered by a tripartite board of directors including equal numbers of representatives from the Cypriot government, employer organisations and the trade unions.



BOX 5.1 National VET governance structures in Denmark

The social partners play an institutionalized role at all levels in the VET system. They make sure that the provision of VET is in line with the needs and demands of the labour market and they are in close contact with the Ministry of Education where they are advising the Ministry on principle matters concerning VET.

In addition to the social partners, the other stakeholders in the area are also involved in the overall management of the programmes. The Minister for Education appoints a Council for Vocational Training, which consists of a number of members nominated by the social partners. There are, in addition, representatives of management, teachers and students. The possibility also exists to appoint special experts. The task of the Council is, on the general level, to give advice on the educational issues concerning the VET system, for example on structure, accreditation of colleges and on the framework for content and assessment. In addition, the Ministry of Education can appoint Development Committees so that new job areas can quickly be investigated and, where appropriate, be covered by education and training programmes.

The members of the Development Committees will typically be representatives from the Ministry of Education, the Ministry of Employment, researchers in labour market and vocational training areas and other stakeholders. This typically takes place in completely new areas with no existing trade committees.

The social partners take part in a national network of some 50 trade committees that lay down the detailed content of programmes, including their duration and structure, their objectives and assessment, as well as the distribution between practical training and school-based teaching. The trade committees approve the companies to undertake training during an internship and are responsible for monitoring the in-company training. Trade committees appoint local education committees for each of the programmes at the college. At the local level, they are required to advise the colleges about the planning of the programme, to promote cooperation with local industry, and help obtain work placements for students. The social partners also take part in college management through membership of college boards. Thus the costs to both employer organisations and trade unions are relatively high.

Source: Cedefop/Refernet (2014)



5.2 Data and evidence

Data and evidence are an important part of the effective governance of work-based learning programmes. Good data and evidence become particularly important where outcome measures such as completion rates form part of quality assurance. Data and evidence for steering purposes can come from the collection and analysis of administrative data, from policy evaluation studies and from research.

Administrative data is, of the three, the most readily available, but is often not used sufficiently for monitoring and steering programmes. It can be valuable as a source of data on the relationship between programmes and labour market needs, as well as of evidence on cost effectiveness. Examples of basic administrative data that is valuable for steering and management include:

- participants classified by occupational field and industry sector;
- participants classified by off-the-job training provider;
- participants classified by age and sex;
- number of dropouts and completions as a proportion of commencements;
- expenditure on work-based learning programmes within training institutions as a share of total expenditure;
- income foregone by government for tax incentives provided to companies.

More systematic evaluation is important for pilot programmes, and ideally should be built into programmes at the start.



6. Bringing the elements together: Financing work-based learning in upper secondary education in the Netherlands²⁷

6.1 Costs

Costs of the work-based component

Payment for learners: Students in the school-based track are not paid. Dual track students are paid a wage by the firm that is most commonly the legal minimum wage. In some cases the tuition fee to be paid to the vocational school for a student over 18 is also paid by the firm. As a student from the dual track is an employee by law, employers have to pay a share of their wage tax and national insurance contributions.

Workplace training costs: On average, firms' tutors of VET students spend about 25 days a year on supervising and coaching a student in the dual track. In the school-based track it is on average 20 days. Companies spend an average of EUR 8,400 training each participant in the dual track and EUR 1,750 for students the school-based track. This includes the cost of training equipment

Deciding which firms will take part in programmes and supervising and assuring the quality of the work-based learning: The Cooperation Organisation for Vocational Education, Training and the Labour Market (SBB), which is funded by the Ministry of Education, is responsible for the accreditation of firms offering work placements and for monitoring the quality of these work placements. Once companies are accredited, accreditation has to be renewed every four years.

Mentors, trainers or supervisors of the learners in the enterprise: Tutors who are coaching students in the workplace have to be qualified in their occupation and must be pedagogically competent. Training programmes for this are offered by the Cooperation Organisation for Vocational Education, Training and the Labour Market.

Assessment: Assessment and issuing diplomas are matter for the vocational school, but accredited learning companies have to be involved in the assessment procedure leading to the diploma. The Education Inspectorate supervises the quality of examinations.

Finding places for learners in firms: Students in both tracks are expected to find their own places. However, vocational schools often act as an intermediate between students and companies offering placements. A government-funded web site helps to connect students and apprenticeship seekers to accredited firms.

²⁷ This chapter draws from three main sources: Cedefop (2013; 2014; and 2016b).



Costs of the school-based component

The costs of items such as teachers' salaries, teacher professional development, facilities, tools and equipment and learning material reflect the amount of time that students spend in the school compared to the workplace. These costs are greater in the school-based track, where only 20% of the time is spent in the workplace, than in the dual track, where 60% of the time is spent in the workplace.

The majority of the costs of the school-based component are met by government, but households and companies also contribute, as an indication of the relative scale of these contributions.

- Yearly expenditure on initial secondary education in the Netherlands ranges from EUR 13.8 billion in 2005 (EUR 845 per year per head of the population) to EUR 15.8 billion in 2009 (EUR 991 per year per head of the population).
- In 2012, households spent more than EUR 1.3 billion on secondary education while businesses spent more than EUR 1.6 billion.
- In 2009, companies spent a total of EUR 3.4 billion on initial education (not only secondary). Of this, EUR 2.6 billion was earmarked for the support of students in dual education, of which EUR 2.1 billion was for the dual pathway in secondary education.

Costs of managing and steering programmes

These costs are shared between government and the social partners. Among other matters, representatives from vocational education and the social partners work together on the qualifications system, examinations, monitoring the quality of work placements and the efficiency of programmes. Voluntary sector-based training funds, which can be used to support upper secondary work-based learning, are governed by the social partners.

6.2 Raising and distributing funds

Payments to and from employers

Companies receive a government subsidy of EUR 2,700 per school year per student to compensate for the costs of providing work placements in the dual track. These payments are not provided for students in the school-based track. Companies receive a total of almost half a billion euros in subsidies for education and over half a billion euros for the guidance and supervision of dual students (CBS Statline)²⁸.

Many voluntary sector-based collective labour agreements include a levy system to finance training through special training and development (O&O) funds. Not all economic sectors have collective labour agreements, but those sectors that have them they are compulsory. Not all collective labour agreements include a remittance to a sector training fund. But for the about 90 collective labour

²⁸ An important reason for companies and sectors to make use of the regular education system is because educational providers can also provide tailor-made programmes that allow students and employees to acquire the desired level of certification with recognition on the labour market.



agreements that include a training fund for education and development it is compulsory for companies belonging to that sector to remit a percentage of their total wage bill to the sector training fund.

Some funds have specific budgets for companies offering training places in the dual track. In most cases the fund covers a part of the training costs and of the wages of dual track student employees. However funds also support many other types of training. In the early 2000s, only about 40% of the money collected through the funds was spent on training²⁹, not all of this is spent on dual track students, and the funds account for only about 5% of total expenditure on employee training³⁰.

Businesses (and therefore their employees) in the sector are required by the Collective Labour Agreement for that sector to pay a certain percentage of their total wage bill into a training fund. In 2005, this levy averaged 0.67% of the annual wage bill, ranging per fund from 0% to 2.57%. In 2009, the average fund contribution for the funds concerning education and development was 0.43%. In addition, funds sometimes receive EU or government subsidies³¹.

Payments by and to individuals

Students pay course fees to the institution but qualify for financial assistance from the age of 18 to help cover their costs.

Student financial assistance comprises three components: a loan, a student travel product and a supplementary grant that depends on parental income. Loans must always be paid back, but the student travel product and supplementary grant are converted into a gift if a student graduates within 10 years³².

Financing the school-based component

The principle source of funds for schools is direct block grants from the national government that are administered through a special agency of the Ministry of Education. Schools also have access to other funding sources such as student fees, contracted activities for firms, and special projects that are funded by the municipalities using funds that originate from the national government. Funds from the central government are based in part on the number of students, but with incentives to discourage students taking too long to graduate, and using quality agreements to reward individual schools for good performance³³.

Schools have considerable autonomy in how funds are spent. They have full control over the deployment of teaching staff, the educational programmes offered, industry-specific training portfolios in the region, the organisation of education, and the choice of collaboration partners. The school management is also responsible for deciding how to allocate the annual lump sum grant from the ministry and can decide matters such as what amount to allocate to personnel costs, materials and future investments. Yearly auditing helps to provide accountability for how funds are spent.

²⁹ But 59% in 2009, www.cedefop.europa.eu/FinancingAdultLearning

³⁰ Smith and Bilett (2005)

³¹ Sources: http://ilera-europe2013.eu/uploads/paper/attachment/358/ilera_paper_training_funds_mvdm_am_22_june_2013.pdf and <http://ecbo.nl/25102016/wp-content/uploads/2016/12/ecbo.14-161-Sectorfondsen-voor-opleiding-en-ontwikkeling-.pdf>

³² www.duo.nl/particulier/international-student/student-finance/how-does-it-work.jsp

³³ In addition, a small number of agricultural colleges are funded through the Agriculture Ministry, and private colleges which do not receive government grants are free to operate provided they offer accredited courses.



6.3 Steering and managing financing

The most important national actors in governing both forms of upper secondary work-based learning are the Ministry of Education, the Netherlands Association of VET Colleges and the Cooperation Organisation for Vocational Education, Training and the Labour Market (SBB). The latter is the principal vehicle at the national level for the involvement of the social partners in steering the system. It has statutory responsibilities to accredit and supervise companies that provide work-based training, to maintain the VET qualification structure, and to provide information about the job market, practice placements and apprenticeships, and the fitness for purpose of the study programmes. The latter responsibilities are particularly important for the financing of work-based learning, as they help to maintain a correspondence between the supply of places and labour market demand, thus helping to ensure that funds are used effectively.

At the local level there is an expectation of involvement by social partner from local industry in the schools' programmes, and this helps to ensure a fit between what is offered and local labour market demand. In a climate in which schools have considerable autonomy, school inspections and auditing help to ensure the efficient use of funds.



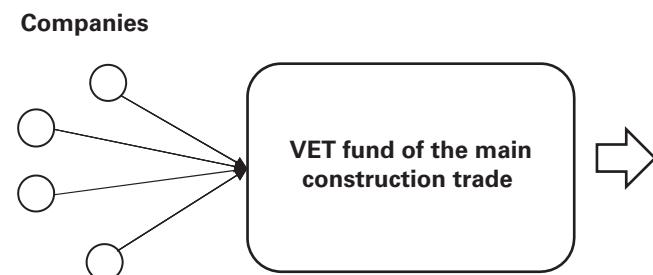
Annex: Sectoral and regional VET funds in Switzerland

In Switzerland there are two different types of VET funds: sectoral and regional. The Confederation may declare an economic sector – for instance the construction sector – to be of general interest. In this case, all companies within the sector, both those that train and those that do not, are required to contribute to a vocational and professional education and training fund that is specific to the sector. The sectoral VET funds may use company contributions for

a variety of purposes that include developing training programmes, organising courses and qualifications procedures, and promoting specific occupations.

So far, around 28 economic sectors have been declared of general interest and therefore these sectoral funds are mandatory for all companies within the given sector. Some 100,000 companies

Sectoral VET fund of the main construction sector in Switzerland



Who contributes?

- All companies of the main construction trade, including one-man companies
- EUR 205 per company and year
- EUR 1.30 per employee and month

Activities

- Development of training programmes
- Organisation of courses and qualification procedures
- Promotion of specific occupations

Who benefits?

- All companies of the main construction trade, which means all companies that are members of the professional organisation (in this case the Swiss builders association) and also those that decided not to become a member



contribute to 28 VET funds. The VET funds may be used according to needs such as items or activities requiring finance. In 2012, annual revenues of the sector VET funds ranged from EUR 145,000 to EUR 3,000,000.

The legal basis for the funds is the VET law (Art. 60 Berufsbildungsgesetz). The bodies responsible for the funds are professional associations, for example the Swiss Builders Association (Schweizerische Baumeisterverband – SBV). They are regulated by the State Secretariat for Education, Research and Innovation (SERI), the federal government's specialised agency for national and international matters concerning education, research and innovation policy.

Sectoral VET funds that had been declared of general interest were evaluated in 2008. They were found to have contributed to a more equal distribution of the costs in VET, not only between members and non-members of professional organisations, but also between companies that train and companies that do not train. The administrative efforts and the additional costs for companies were found to be the main disadvantages of the sectoral VET funds.



Acronyms

AUD	Australian dollar
BEP	Brevet d'études professionnelles (technical school certificate)
CAD	Canadian dollar
CAP	Certificat d'aptitude professionnelle (certificate of professional competence)
Cedefop	European Centre for the Development of Vocational training
EQF	European Qualifications Framework
ETF	European Training Foundation
EU	European Union
EUR	Euro
GBP	United Kingdom pound
O&O	Onderwijs en ontwikkeling (Dutch training and development funds)
OPCA	Organisme paritaire collecteur agréé (accredited collecting organisation)
TVET	Technical and vocational education and training
USD	United States dollar
VET	Vocational education and training



References

Cahuc, P. and Ferracci, M., 'Apprenticeships for employment', *Les notes du Conseil d'analyse économique*, No 19, December, Conseil d'analyse économique, Paris, 2014.

Cedefop, 'Sectoral training funds in Europe', *Cedefop Panorama Series*, No 156, Office for Official Publications of the European Communities, Luxembourg, 2008.

Cedefop, *Vocational education and training in France: Short description*, 2009. Last accessed 29 May 2018 at: www.cedefop.europa.eu/en/publications-and-resources/publications/5190

Cedefop, *Vocational education and training in Denmark: Short description*, 2012. Last accessed 29 May 2018 at: [file:///vcontroller/Users\\$/DNA/Downloads/4112_en.pdf](file:///vcontroller/Users$/DNA/Downloads/4112_en.pdf)

Cedefop, *VET in Europe country report: The Netherlands*, 2013.

Cedefop, *Apprenticeship-type schemes and structured work-based learning programmes: The Netherlands*, 2014.

Cedefop, *Making apprenticeships work for small and medium enterprises*, Cedefop briefing note, 2015. Last accessed 29 May 2018 at: www.cedefop.europa.eu/de/publications-and-resources/publications/9102

Cedefop, *Governance and financing of apprenticeships*, Publications Office of the European Union, Luxembourg, 2016a.

Cedefop, *VET in Europe country report: The Netherlands*, 2016b.

Cedefop/Refernet, *Apprenticeship-type schemes and structured work-based learning programmes: Denmark*, 2014. Last accessed 29 May 2018 at: www.cedefop.europa.eu/en/publications-and-resources/country-reports/apprenticeships-in-wbl

Cedefop/Refernet, *VET in Europe country reports*, 2016. Last accessed 29 May 2018 at: www.cedefop.europa.eu/en/publications-and-resources/country-reports/vet-in-europe-country-reports

Dar, A., Canagarajah, S. and Murphy, P., *Training levies: Rationale and evidence from evaluations*, 2003. Last accessed 29 May 2018 at: <http://siteresources.worldbank.org/INTLM/Resources/TrainingLevies.pdf>

Dorleans, M. and Mingat, A., European Training Foundation, *Cost and financing analysis in VET: Guidance note*, ETF, Turin, 2015.

European Commission, *Riga conclusions 2015: On a new set of medium-term deliverables in the field of VET for the period 2015–2020, as a result of the review of short-term deliverables defined in the 2010 Bruges Communiqué*, Riga, 2015a. Last accessed 29 May 2018 at: http://ec.europa.eu/dgs/education_culture/repository/education/policy/vocational-policy/doc/2015-riga-conclusions_en.pdf

European Commission, *The European Pact for Youth*, Brussels, 2015b. Last accessed 29 May 2018 at: <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2387&furtherNews=yes>

European Commission, *A new skills agenda for Europe*, COM(2016) 381/2, European Commission, Strasbourg, 2016a.

European Commission, *High-performance apprenticeships & work-based learning: 20 guiding principles*, Office for Official Publications of the European Communities, Luxembourg, 2016b.

European Commission, *Proposal for a Council recommendation on a European framework for quality and effective apprenticeships*, Brussels, 2017.

Greatbach, D. and Tate, S., *Funding and expenditure in post-16 education: An international review*, Department for Education, London, 2017.



Grollmann, P., Steedman, H., Jansen, A. and Gray, R., 'Building apprentices' skills in the workplace: Car service in Germany, the UK and Spain', *Research Discussion Paper 011*, Centre for Vocational Education Research, London, 2017.

Ikei Consultancy, *Apprenticeship supply in the Member States of the European Union: Final report*, European Commission, Brussels, 2012.

Isusi, I., 'Financing apprenticeship in European countries', presentation to a Cedefop workshop on Apprenticeship: governance modes and financing approaches, Thessaloniki, 20 May 2015. Last accessed 29 May 2018 at: www.cedefop.europa.eu/en/events-and-projects/events/apprenticeship-governance-modes-and-financing-approaches

Johanson, R., 'A review of national training funds', *Social Protection and Labour Discussion Paper*, No 0922, World Bank, Washington DC, 2009.

Karmel, T., Roberts, D. and Lim, P., *The impact of increasing university places on the pool of apprentices*, National Centre for Vocational Education Research, Adelaide, 2014.

Kuczera, M., 'Incentives for apprenticeship', *OECD Education Working Papers*, No 152, OECD Publishing, Paris, 2017. Last accessed 29 May 2018 at: <http://dx.doi.org/10.1787/55bb556d-en>

Mühlemann, S., 'The cost and benefits of work-based learning', *OECD Education Working Papers*, No 143, OECD, Paris, 2016.

Palmer, R., *Private financing for TVET in the Pacific*, 2015. Last accessed 29 May 2018 at: <https://dfat.gov.au/about-us/publications/Documents/tvet-financing-overview-paper-private-financing.pdf>

Parkes, D., European Training Foundation, *Financing vocational education and training: Priorities and mechanisms in South Eastern Europe*, Office for Official Publications of the European Communities, Luxembourg, 2007.

Smith, A., 'National arrangements for financing training in companies', in Rauner, F. and Maclean, R. (Eds), *Handbook of technical and vocational education and training research*, Springer, 2008, pp. 420–24.

Smith, A. and Billet, S., 'Myth and reality: Employer sponsored training in Australia', *International Journal of Training Research*, December, 2005a.

Smith, A. and Billet, S., 'Getting employers to spend more on training: Lessons from overseas', in Ball, K. (Ed.), *Funding and financing vocational education and training: Research readings*, National Centre for Vocational Education Research, Adelaide, 2005b, pp. 98–118.

Sweet, R., European Training Foundation, *Work-based learning programmes for young people in the Mediterranean region: A comparative analysis*, Office for Official Publications of the European Communities, Luxembourg, 2009.

Sweet, R., 'Work-based learning in vocational education, with particular reference to Australia and its region: Models, constraints, opportunities and benefits', Paper prepared for an International expert panel meeting on work-based learning, ETF, Turin, 14–15 November, 2011.

Sweet, R., European Training Foundation, *Work-based learning: A handbook for policy makers and social partners in ETF partner countries*, ETF, Turin, 2014.

Swiss Confederation, *Vocational and professional education and training in Switzerland: Facts and figures*, 2016.

Thomas, S., European Training Foundation, *Work-based learning in EU candidate countries*, ETF, Turin, 2017.

Website
www.etf.europa.eu

Twitter
[@etfeuropa](https://twitter.com/etfeuropa)

Facebook
facebook.com/etfeuropa

YouTube
www.youtube.com/user/etfeuropa

Instagram
instagram.com/etfeuropa/

LinkedIn
linkedin.com/company/european-training-foundation

E-mail
info@etf.europa.eu

