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International Evidence Review on
Co-funding for Training

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RESEARCH

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Responsibility for the contents of this report remains with ICF GHK.

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Business, Innovation and Skills.

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List of acronyms

AAIP	Australian Apprenticeship Incentive Programme
AQF	Australian Qualifications Framework
BBL	<i>Beroepsbegeleidende Leerweg</i> , Work based vocational training pathway, Netherlands
BIS	Department for Business, Innovation and Skills, UK
BOL	<i>Beroepsopleidende Leerweg</i> , School based vocational training pathway, Netherlands
BVL	<i>Bijdrageregeling Vakopleiding Leerlingwezen</i> , Subsidy for Apprenticeship Education, Netherlands
Cedefop	European Centre for the Development of Vocational Training
CVT	Continuing Vocational Training
CVTS	Continuing Vocational Training Survey
DES	Department for Education and Skills, Ireland
DWP	Department for Work and Pensions, UK
EGFSN	Expert Group on Future Skill Needs, Ireland
EOP	Employer Ownership Pilot
ESF	European Social Fund
ETBs	Education and Training Boards, Ireland
ETPs	Employer Training Pilots
EU	European Union
FÁS	<i>An Foras Áiseanna Saothair</i> , National Training and Employment Authority, Ireland
FE	Further Education
GTOs	Group Training Organisations, Australia

HBO	<i>Hoger Beroepsonderwijs</i> , Higher professional education diploma
IVT	Initial Vocational Training
ISCED	International Standard Classification of Education
LEPs	Local Enterprise Partnerships
LFS	European Labour Force Survey
MBO	<i>Middelbaar Beroepsonderwijs</i> , Upper secondary vocational education diploma
NCVER	National Centre for Vocational Education Research, Australia
NESS	National Employer Skills Survey
NFQ	National Framework of Qualifications
NSNL	National Skills Needs List, Australia
NTF	National Training Fund, Ireland
O&O	<i>Opleidings- en Ontwikkelingsfonds</i> , Training and Development Funds, Netherlands
OECD	Organisation for Economic Cooperation and Development
PAYE	Pay-As-You-Earn
QCF	Qualifications and Credit Framework
ROCs	<i>Regionaal Opleidingen Centrum</i> , Regional training centres, Netherlands
RTOs	Registered Training Organisations, Australia
SME	Small and Medium-sized Enterprises
SOLAS	<i>Seirbhísí Oideachais Leanúnaigh agus Scileanna</i> , Further Education and Training Authority, Ireland
TAFE	Technical and Further Education institutions, Australia
UK	United Kingdom
UKCES	UK Commission for Employment and Skills
US	United States

VEC	Vocational Education Committee, Ireland
VET	Vocational Education and Training
VMBO	<i>Voorbereidend Middelbaar Beroepsonderwijs</i> , Pre-vocational education diploma
WVA	<i>Wet Vermindering Afdracht</i> , Payment reduction for education, Netherlands

Glossary of terms

Additionality

Additionality is defined as the extent to which government-funded training generates outcomes that are additional to what would have occurred in the absence of such provision (HM Treasury, 2011, pp. 59).

Co-funding

Co-funding is broadly defined as shared Government, employer and individual co-investment in the total costs of training. The scope of this study considers only the actual expenditure by employers to finance training supported in part by public funds. This includes all direct costs incurred by the employer in training new and existing staff, including the fees and payments to external providers and those associated with internal training provision.

Continuing vocational training

Continuing vocational training (CVT) refers to education or training taken by individuals who have exited initial education and training or after they have entered employment.

Deadweight

Deadweight is defined as the extent to which the government policy generates outcomes that would have occurred anyway (HM Treasury, 2011, pp. 59).

Displacement effects

Displacement relates to instances where the positive outcomes promoted by government policy are offset by negative outcomes of the same policy elsewhere (HM Treasury, 2011, pp. 59).

Endogeneity

An endogenous variable is one that is related to and determined by other variables also in the model. Training decisions can be endogenous for two reasons: on the one hand, there can be unobservable characteristics, such as managerial quality and attitudes that determine both training and socio-economic outcomes. On the other hand, training may be a choice variable, so that idiosyncratic shocks at firm or industry level affect both training decisions and outcomes such as productivity (Colombo and Stanca, 2008).

Externalities and spillovers

For the purposes of this report, these interchangeable terms refer to benefits to society (with respect to incentives to invest in training) that cannot be captured by private actors in the market. For example, when employers help workers acquire skills and knowledge that

are potentially transferable to other workplaces, it is difficult for the employer to capture all of the benefits of training, since the worker may choose to switch employers.

Formal education and training

Formal education is defined as education provided in the system of schools, colleges, universities and other formal educational institutions and that normally constitutes a continuous ladder of full-time education (OECD, 2005, pp. 319-320).

Grant payment

Grant payments are direct government funding for the purpose of training, which may also be channelled through training funds.

Initial vocational training

Initial vocational training (IVT) generally refers to the initial preparation of new entrants to the labour market (young people) with skills and competences to gain entry into a specific occupation or sector (Cedefop, 2008b).

Job-related training

The term 'job-related' refers to training activities intended mainly for professional reason as opposed to mainly personal or social reasons. That is, the respondent takes part in the activity in order to obtain knowledge and/or learn new skills for a current or future job, increase earnings, improve job and/or career opportunities and generally improve his or her opportunities for advancement or promotion (OECD, 2005, pp. 320).

Leakage

The policy benefits others outside the target area or group (HM Treasury, 2011, pp. 59).

Levy-access

Employers contributing to the levy scheme have access to training developed or procured by the managing body at discounted rates.

Levy-exemption

Sanction or tax on firms if they do not meet a pre-determined level of training provision.

Levy-grant

Employers pay a non-voluntary contribution to a training fund which is then disbursed to training firms.

Levy-reimbursement

Employers pay a non-voluntary contribution to a training fund which is then used to reimburse the costs of training.

Lifelong learning

Lifelong learning relates to the on-going access to the renewing of skills and the acquisition of knowledge. This covers 'all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective' (European Commission, 2001, pp.34).

Non-formal education/training

Non-formal education is defined as any organised and sustained educational activities that do not correspond exactly to the above definition of formal education. Non-formal education may therefore take place both within and outside educational institutions, and cater to persons of any age. Depending on country contexts, it may cover educational programmes to impart adult literacy, basic education for out-of-school children, life skills, work skills and general culture. Non-formal education programmes do not necessarily follow the ladder system, and may have a differing duration (OECD, 2005, pp. 319-320).

Skills

The relevant knowledge and experience needed to perform a specific task or job and/or the product of education, training and experience which, together with relevant know-how, is the characteristic of technical knowledge (Cedefop, 2007).

Skill gap

A skill gap refers to a situation in which the level of skills of the currently employed is less than that required in order to adequately perform the job or to a situation in which the type of skill does not match the requirements of the job (Cedefop, 2010, pp.13).

Skill shortage

Skills shortages refer to a situation in which the demand for a particular type of skill exceeds the supply of available people with that skill (Cedefop, 2010, pp.13).

SMEs

Small- and medium-sized enterprises (SMEs) may be defined differently in different jurisdictions. According to the Organisation for Economic Cooperation and Development (OECD), SMEs are non-subsidiary, independent firms which employ less than a given number of employees. This number varies across countries. The most frequent upper limit designating an SME is 250 employees, as in the European Union. Small firms are generally those with fewer than 50 employees, while micro-enterprises have 10 workers at most.

Social partners

'Social partners' is a collective term used to refer to organisations representing workers and employers such as trade unions and employer associations.

Substitution

Substitution arises when the effects of an intervention on a particular individual, group or area are only realised at the expense of other individuals, groups or areas (HM Treasury, 2011, pp. 59).

Tax allowance

Deduction of a certain sum or fraction of the costs of training investment from taxable profits, over and above the standard deductibility of training costs.

Tax credit (refundable or non-wastable)

Deduction of a certain sum or fraction of a training investment from the tax liability, which entitles the employer to a payment if the tax relief reduces the amount of tax owed to less than zero.

Tax credit (wastable or non-refundable)

Deduction of a certain sum or fraction of a training investment from the tax liability, which is unable to reduce the amount of tax owed to less than zero.

Tax exemption

Employer social security contributions on trainees/apprentices are exempted from the tax base.

Tax reduction

Employer social security contributions on trainees/apprentices are taxed at a lower rate than those on other employees.

Training firms

A training firm is an enterprise that provided any form of training to its employees in a given reference period.

Training voucher

Training vouchers are a form of direct subsidy, and can be exchanged for a certain amount or a certain value of training.

Executive summary

Greater employer and business investment in training is vital to ensure the training delivered by the Further Education (FE) and skills system in England is high quality and responsive to economic need. Striking the right balance in sharing the costs of vocational training between Government, employers and individuals is however a complex issue.

In view of the ongoing process of FE and skills training reform, ICF GHK was commissioned by the Department for Business, Innovation and Skills (BIS) to undertake an international review of evidence on the use of employer-routed, co-funding instruments for training. The review identifies and examines the effects of different co-funding instruments and delivery models on the amount and quality of provision undertaken by employers, and considers the impacts this has on the wider skills training system.

None of the identified co-funding models are identical to the type of co-funding model that could be deduced from recent reviews and policy statements, for example, the Richard Review and the Government's response to it. However, in keeping with such intentions, all are aimed at increasing employer investment in appropriate and high quality FE and skills training in order to increase workplace productivity and thereby international competitiveness.

Key policy lessons

This section is based on an assessment of evidence from a number of sources: English and international policy documents and research; interviews with co-funding and behavioural policy experts; as well as in-depth qualitative case studies (interviews and evidence review) of the Australian Apprenticeship Incentive, the Irish Skillnets Training Network, and the Dutch Payment Reduction for Education programmes.

The main conclusion which emerges from an extensive review of the evidence is that the relationship between different models of co-funding and training outcomes is extremely complex and dynamic.

The complex nature of the relationship stems in part from the wide variety of influencing institutional, economic and personal factors that need to be taken into account. There is also great diversity in the design of different models, the delivery mechanisms and attached conditions. These are also often revised over time.

The variety of tax expenditures, subsidies and levy-grant mechanisms adopted are fundamentally similar, insofar as they route government funding through employers. The extent to which their impacts differ is more often guided by the context in which they are delivered and the detail of specific conditions attached.

The need for consideration of the wider context in which a co-funding incentive operates is a theme that recurs throughout the research, and was emphasised by all of the experts consulted. In particular, three key findings emerge:

- **The behavioural context.** Institutional and personal factors have a stronger influence than financial incentives on the take-up and completion of training. The uptake of co-funding instruments and employer co-investment in training are particularly influenced by perceptions of the benefits and effectiveness of training. To reflect the differentiated attitudes to training, concerted efforts should be taken to develop understanding of where the benefits for training lie and communicate the benefits of training to the actors concerned.
- **The wider policy context.** The emphasis of the research evidence presented in the paper suggests that a perceived focus only on the costs and funding mechanism for training is insufficient. Instead there is a need to place greater emphasis on the benefits of training, and consider the full range of mechanisms to encourage more employers to invest in high quality training for more of their workers. The financial incentives for employer investment in training cannot be isolated from the wider topography of skills policies and programmes.
- **Employer ‘buy-in’.** In addition, whichever delivery mechanism is adopted, employer ‘buy-in’ is vital. The acceptance for a given scheme and the corresponding willingness to invest time and money in it has an important influence on the amount, responsiveness and relevance of training, irrespective of the design of the co-funding model. The evidence suggests that employer ‘buy-in’ can be developed over time based on positive experiences and perceptions of training. Co-funding mechanisms, such as the Skillnets model in Ireland, that support the development of training plans and include an active role for different stakeholders may lead to improved attitudes towards training through peer-learning or network effects. Involvement of stakeholders, including employer representatives and trade unions at industry or local level, can also help to generate and maintain employer and industry ‘buy-in’. Such support is likely to be particularly important with employers or sectors that have limited experience of training.

The review of international evidence also raises several key issues for the implementation of co-funding mechanisms. These are:

- **Aims and objectives.** It is important to be clear about which aspects of learning and skills behaviour the employer-routed incentive is seeking to change. The co-funding models investigated are concerned with a wide variety of considerations including participation, equity, training quality, levels of attainment, increasing absolute levels of employer investment, increasing the incidence of employer investment, creating a responsive provider system, and more often than not, a combination of these. The greater the number of aims and objectives, the more complex the system is. This relationship between complexity and the range of competing objectives is common to all of the co-funding models investigated, and exemplified by the Australian model.
- **The difficulty of targeting incentives.** Little or no impact of incentives for employer co-investment on the low qualified is observed, even where these are the explicit targets of direct funding. Instead, co-funding incentives tend to support the training of workers and new entrants already bearing qualifications. In situations where incentives are instead targeted at particular types of qualification or training, or at particular age groups, this often leads to unintended consequences as firm’s decisions on the type of training to

follow, and for which individuals, are distorted by the incentive. The more that incentives are targeted the greater are the monitoring requirements to ensure that the aims and objectives are met. Loose eligibility criteria, on the other hand, have the benefit of making the incentive accessible to businesses but the disadvantages of not promoting improvements in the quality of training and incurring higher levels of deadweight.

- **The costs of administration borne by employers.** A high administrative burden is a direct result of instruments with more rigorous quality controls and/or which are highly targeted. The complexity of the administrative procedures for accessing funding discourages take-up amongst firms. In particular, instances of discretionary case-by-case assessment of funding applications or requirements to submit formal training plans tend to favour employers that provide training for their employees. Evidence from Australia and Ireland suggests that the engagement of employer networks or group training organisations to act as intermediaries can offset this effect and support smaller firms in particular. The use of the existing tax infrastructure to raise or distribute funds may also relieve the employer of administrative costs. Efficient use of the tax system is, however, conditional on the ability of the tax system to control and sufficiently monitor compliance. The international evidence, and the example of the tax credit for training in the Netherlands, suggests that such monitoring is time-consuming, costly and ultimately difficult to achieve.
- **Monitoring and financial controls.** Incentive and co-funding systems administered through the tax system (and thereby the tax authorities) can lack effective financial controls on the extent of the public contribution. Furthermore, the level and nature of the investment in learning and skills, by the employer and the Government, can also become 'invisible' because it is recorded simply as a tax exemption rather than an investment in workforce development. For both reasons, it is important that the nature and level of employer and public co-investments are monitored.
- **Balancing trade-offs.** All of the case study co-funding systems have met with varying types and degrees of success and failure. No single international system that has been reviewed in this study fits with all of the principles identified as underpinning co-funding reform in England. The lessons to be learnt are more about the efficacy and implementation of elements of these systems rather than applying another country's entire system to an English context. The review has demonstrated that there trade-offs in levels of take-up, costs, levels of administration, targeting, quality, deadweight and other elements and balancing these trade-offs are ultimately political decisions.

1 Introduction and background

ICF GHK was commissioned by the Department for Business, Innovation and Skills (BIS) to undertake an international review of evidence on the use of employer-routed, co-funding instruments for training. The review collates and analyses evidence to consider the effects of different co-funding instruments and delivery models on the amount and quality of provision undertaken by employers, and the impacts on the wider skills training system.

1.1 Research aims and objectives

Striking the right balance in sharing the cost of Vocational Education and Training (VET) between government, employers and individuals (who pays how much, for what, when, where and how?) is a complex issue. This review explores the role of different approaches to co-funding by analysing the evidence of impact of international schemes to foster employer investment.

The overall aim of the review is to establish the underlying evidence base for employer-routed co-funding approaches to further education (FE) and skills training. To this end, this review sets out to identify evidence on international instruments of co-funding. Based on the available evidence, the review then proceeds to assess the following research questions:

- What delivery models are used for co-funding?
- What types of businesses and individuals are targeted, and for what types of training?
- How does the level of employer awareness affect the take-up of co-funding incentives and the amount of job-related training?
- What are the effects on the overall incidence, intensity and quality of training of the different co-funding instruments?
- Do the co-funding models allocate resources efficiently and how is this affected by the conditions of support and the type of instrument used?
- What are the deadweight or displacement effects of co-funding instruments?
- Are there any substitution effects or other unintended consequences, which limit their effectiveness?
- What are the revenue effects of the different co-funding policy instruments? In what ways can the fiscal liability be managed or controlled?

- What are the impacts of the co-funding instruments on the returns to investment in additional training for employers, employees and the wider economy?
- What lessons can be drawn from the international experience of co-funding policy instruments for the English context, and ongoing process of further education and training reform?

The review is therefore interested in understanding the impact and effectiveness of funding models which embed co-funding by providing incentives for employers to invest in training. This contrasts with the current English approach, which primarily routes funding through training providers. The analysis contributes to other ongoing investigations into effective co-funding models and the benefits co-funding can bring to the FE and skills training system, to drive up quality and ensure provision meets demand.

Developed countries face similar challenges in the realm of FE and skills training, and many different policy prescriptions have been sought to increase the responsiveness of training to labour market needs. Learning from other countries experiences can provide valuable support to policymaking in the UK. To this end the study investigates the evidence on the experience and performance of instruments in OECD countries that provide financial support (or penalties) to employers to promote investment in the training of new entrants (initial training) and/or existing workers (continuing training).¹ Full methodological details outlining the scope of the international evidence review are provided in Appendix 1 to this report.

1.2 Further education and skills training policy context

From an international perspective, there is no single system delivering either initial (IVT) and continuing vocational training (CVT) in the UK, but rather a range of public, private and third sector organisations who deliver programmes both for adults and for young people (who have just completed their compulsory education) who wish to acquire or improve their existing skills after completing compulsory education and training. As a result of this, there is a significant crossover between the IVT and CVT systems as adults and new entrants to the labour market may pursue the same training.

For education and training, the UK has a devolved system of governance, with each constituent country of the UK: England, Scotland, Wales and Northern Ireland with authority over the education and training system and skills development strategies. While similarities exist between these devolved education and training systems, there are also many differences (Cedefop, 2011a). England is the sole focus of this study.

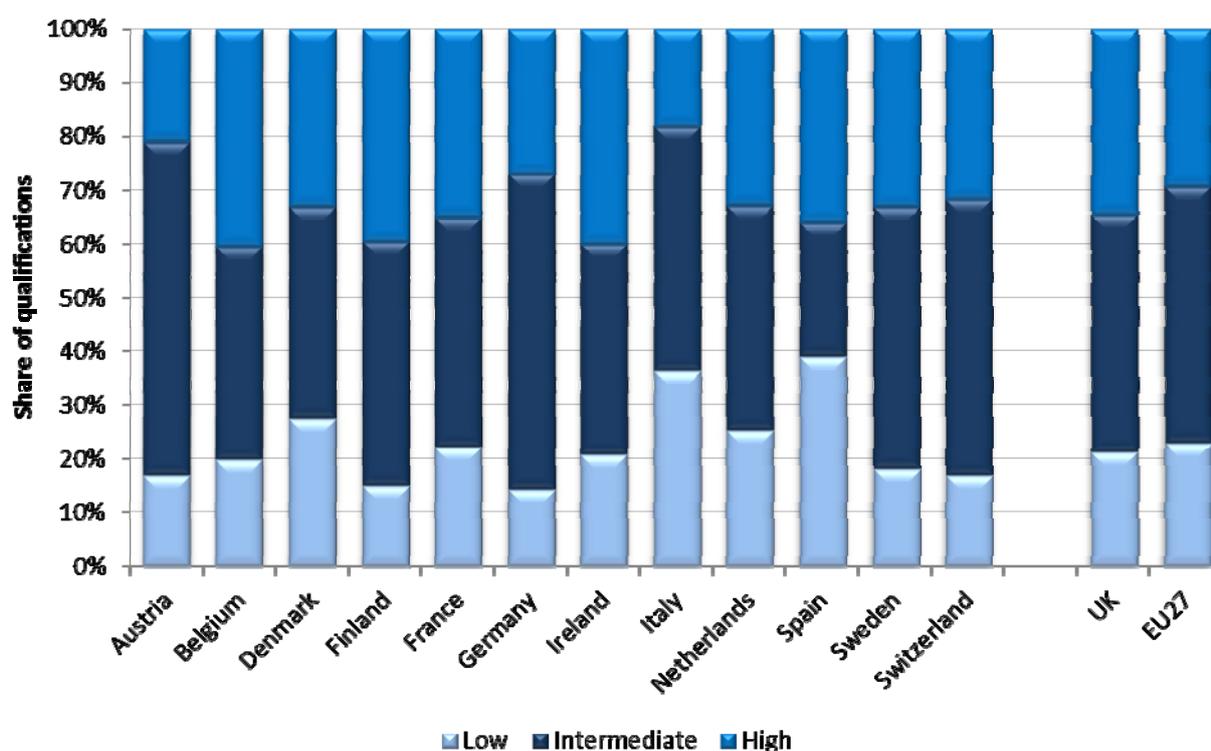
The post-16 FE and skills training system in England has become increasingly outcomes-based. Training providers have flexibility to plan learner-centred delivery systems to meet

¹ Government incentives and financial support aimed at individual learners, or which fund provision directly are beyond the scope of this study. Non-financial incentives including regulatory approaches to: improve the training offer through processes for the accreditation of providers and certification of participants; guarantee individual rights to training; or contractual guarantees to extend the employer-employee relationship through payback clauses and training contracts, are also beyond the direct scope of this study.

users' needs. The flexibility offered by the outcomes approach has been greatest in providing adult learners with access to individually targeted learning and assessment. Young people, increasingly since the renewal of National Apprenticeship programmes, tend to follow more standardised learning programmes. While much initial training is Government-funded, employer funding plays a significant role in providing in-company training or work-based learning delivered through specialist consultants or agencies (Cedefop, 2011a).

The UK, as a whole, has a significantly larger proportion of adults in the labour force with low qualifications and a smaller proportion holding intermediate level qualifications than countries such as Sweden, Finland, the United States, and Germany (Falch and Oosterbeek, 2011). As Figure 1 below shows, in 2010 the UK had similar levels of adults with intermediate or high level qualifications as France, Ireland and the Netherlands.

Figure 1: Share of labour force by level of qualifications in European countries²



Source: 2010 data based on European labour force survey (Eurostat), extracted from Cedefop (2013)

The incidence of work based training among employers in the UK is comparable to its international competitors, with above average rates of company take-up of continuing vocational training courses (60 per cent) in 2010. However, fewer than 1 in 3 employees

² Low qualifications correspond to ISCED levels 0-2, Intermediate qualifications to ISCED 3-4 and High qualifications to ISCED 5-8. An indicative mapping of the English education system against ISCED 2011 is provided in Appendix 3.

participate in such courses (31 per cent), which is below the estimated average rate of participation in the rest of the EU (38 per cent).³

In addition, while rates of enrolment for CVT have been increasing, the UK has relatively low levels of employer provision of initial training. In 2010, only 18 per cent of employers provided IVT, such as apprenticeships (Cedefop, 2013), compared to an estimated EU average of 24 per cent. A lack of high quality training and a lack of workers with intermediate vocational qualifications, particularly at the early stages of career development, are seen as structural weaknesses affecting the UK's competitiveness (UKCES, 2011).

Reflecting a pattern widely observed across Europe and the other OECD countries, larger firms are much more likely to provide IVT or CVT than their small and medium-sized counterparts. The latest findings of the Continuing Vocational Training Survey (CVTS) by firm size are provided in Table 1 below.

Table 1: Participation in vocational training in the UK and the EU

Firm size	Employers providing IVT courses, %		Employers providing CVT courses, %		Employee participation in CVT courses, %	
	UK	EU	UK	EU	UK	EU
All enterprises	18	24	60	56	31	38
Small (10-49 employees)	15	22	56	52	25	25
Medium (50-249 employees)	25	31	76	73	28	34
Large (250+ employees)	43	44	85	89	33	46

Source: Continuing Vocational Training Survey (CVTS 4), 2010

Further, while the proportion of training enterprises may be relatively high in the UK, particularly among larger firms, the quality of this training in terms of its duration, intensity, and whether the training leads to formal accreditation and certification is often criticised (see for example BIS, 2011b).

³ Figures have been taken from the latest Continuing Vocational Training Survey, CVTS, 2010, available from Eurostat at: <http://epp.eurostat.ec.europa.eu/portal/page/portal/education/data>, accessed on 24/04/13. The aggregated EU figures represent official Eurostat estimates made in the absence of official data from 3 of the 27 Member States: Denmark, Greece, and Ireland.

As well as improving the quality of training, a further priority for English FE and skills training policy in recent years has been to widen participation from groups under-represented in training, in particular learners from disadvantaged socioeconomic backgrounds and those with learning difficulties and/or disabilities.

1.2.1 Barriers to training

Employers, which are the primary focus of this study, face disincentives or barriers with respect to investing in FE and training. They may also be sceptical about or unaware of the benefits and cost effectiveness of training.

Human capital theory suggests that firms are discouraged by the fear that they will not be able to benefit from the potential return from training due to staff turnover or poaching of employees by other employers - who may pay higher wages as they have not had to bear the costs of training (Stevens, 1996).

There is however little evidence to support this theory. Anecdotal evidence suggests that firms provide both general and specific training to their staff (Pouliakas, 2012) while the latest empirical evidence suggesting that only a small number of training establishments are found to be poaching-victims in Germany (Mohrenweiser et al. 2011). The lack of evidence notwithstanding, employer perceptions and concerns over this issue may reduce the perceived benefits of training and lead to under-investment in training.

In a recession, and where there are high levels of unemployment, Cappelli (2012) suggests that changes in firm hiring practices exacerbate low levels of IVT, as firms replace recruitment strategies and the accompanying costs of investment in the skills of new recruits with just-in-time hiring of more qualified workers.

Analysis of the National Employer Skills Survey (NESS) 2009 however, suggests that recession may not represent a significant barrier to employer investment in training. Despite the severity of the recession, the vast majority of employers in England reported that their training expenditure, its coverage and its character remained largely intact (Felstead et al. 2012). A minority of employers however reported to have cut spending on training from 2008 to 2009 (Mason and Bishop, 2010). Between 2009 and 2011 however, reported employer investment in training has decreased (UKCES, 2010 and 2012a).

It has also been suggested that employers (and individuals) may be sceptical about the benefits of training or fail to recognise the benefits and the returns on investment when deciding how much to invest in training (Redding, 1996). While the costs of training are salient, the benefits to the firm and the wider industry are less apparent and less tangible, particularly among firms lacking direct experience of training. Training practices among employers, in this sense, may also be seen as a habit within those firms (BIS, 2012a).

The over-riding emphasis on costs may be considered to be reinforced by standard accounting practices (in which training costs are deducted as costs rather than depreciated over time). Training, as a consequence, may be treated as operational costs rather than as an investment (Delsen, 2007), which again may reduce the take-up of training.

Employer investment in training may also be limited by other information constraints and asymmetries including: difficulties in identifying potential providers; evaluating what course content is required to meet occupational requirements, and; assessing the quality of the training offered by competing providers. Ritzen and Stern (1991) argue that improved information on the content and value of training will thereby improve the efficiency of the training market.

Employers, and particularly Small- and Medium-sized Enterprises (SMEs), may also reduce staff training due to cash flow problems or issues over access to finance. In line with the observed differences in participation and uptake of training between small and larger firms, all of the barriers and disincentives to invest in training identified above tend to be greater for SMEs.

Pouliakas (2012) cites other important deterrents to employer investment in training including the preference of firms to provide only limited training if they operate in seasonal markets; and the fact that enterprises in remote locations or newly emerging industries may face a shortage of suitable trainers as well as higher costs, which reduces the cost effectiveness of training.

In light of these constraints, market failures and the identified public policy objectives of widening access to training, Governments tend to intervene by adopting a central role in bearing at least part of the direct costs of training. In particular, government funding may be considered necessary in order for the FE and skills system to deliver accredited training including both general and vocational elements (BIS, 2012a).

Lin and Tremblay (2003) have however questioned the appropriateness of government intervention in CVT, since government is unlikely to be better informed than firms about the type of training needed by employers for their employees. In their report, they go further to say that empirical literature on the evaluation of public training programs (i.e. those directly funded by government) generally finds that such programs are not very effective at improving the skills of economically disadvantaged workers, and in meeting employer needs. Further involvement and co-investment by employers in training can help to ensure that the skills developed are in line with those needed in the workplace.

1.2.2 What is co-funding?

In the literature co-funding is typically defined broadly to consider the sharing of the total costs of training among public and private actors (typically government, employers and individual learners). For the purposes of this study, a more strict interpretation is taken to consider only the direct costs of training, represented by physical flows of cash or cash equivalents such as vouchers or training bonds.

Direct employer co-investment in training in this study is therefore defined as actual expenditure by employers to finance training supported in part by public funds. This includes all direct costs incurred by the employer in training new and existing staff, including the fees and payments to external providers and those associated with internal training provision.

Other direct costs, which are typically associated with training relate to the individual learner, include the cost of personnel absence during periods of external training and the

costs of supervision while undertaking on-the-job training. Here, policy responses and support mechanisms may also be targeted at the individual, but these are beyond the scope of this study. Other costs associated with training typically borne by employers including administration, travel and subsistence are considered either implicit or indirect and therefore not included.

1.2.3 Model of co-funding in England

In England, currently the State funds workplace learning by meeting the costs of the provider in delivering the training to employees. Government funding channelled through the Skills Funding Agency follows the employer or learner to the public or private providers of their choice. In 2010, employers 'chose' private training companies more than twice as often as public training institutions such as FE colleges and universities (BIS, 2013, p. 18).

Over the past ten years there has been an increasing obligation on all training providers to obtain a contribution from employers towards the cost of the training they provide. This 'cost recovery' depends on the level of learning, and only applies to learners aged over 19. In such cases, the State funding meets only 50 per cent of the estimated direct cost of training for a given programme, with employers or learners expected to contribute the remaining 50 per cent. However, as identified in the independent review of FE fees, this co-funding is not routinely collected (Banks, 2010).

The publicly funded skills system is essentially a voluntary system which has had limited impact on increasing employer co-investment in skills, particularly amongst employers who do not usually invest in training. It is argued that this lack of co-funding indicates a wider concern around the current system; as employers are not directly paying for training they are not perceived to be sufficiently critical customers. Employers in the UK frequently express dissatisfaction with training through publicly funded training programmes. However, where they do not pay for training, they are considered less likely to engage with providers or demand better provision (Banks, 2010).

While reporting to be dissatisfied with the training offered, the latest CVTS data for the UK finds that failures in the supply of courses were considered a relatively minor factor in preventing higher employer investment in training. Instead, barriers to training are mainly concerned with demand factors, such as, employer's lack of need for training or unwillingness to pay its direct or indirect costs (BIS, 2013, p.19-20).

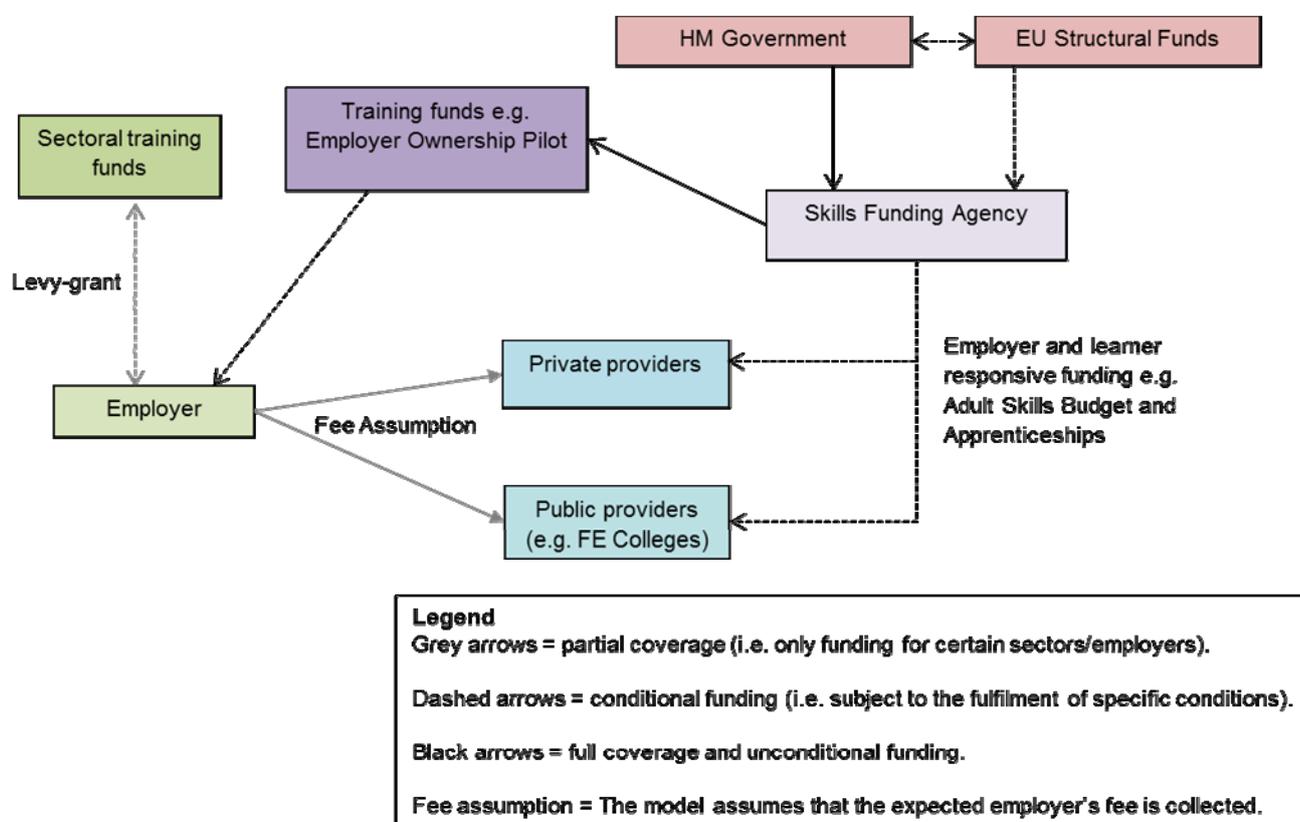
In recent years, there have been a raft of initiatives aimed at increasing levels of work based training in England – some based on developing a high quality and responsive infrastructure (e.g. Centres of Vocational Excellence, Sector Skills Councils), others based on co-financing (e.g. Employer Training Pilots, Train to Gain). None of which have had the desired results. An impact evaluation of the Employer Training Pilots, for example, found no significant impact on attainment, or on uptake among the low-qualified, a key target group (Abramovsky et al. 2011).

Sectoral levy arrangements also currently exist in three UK industries: engineering, construction and the film industry (UKCES, 2012b). The long-standing levy arrangement in the Construction Industry, for example, is based on firm contributions to the industry training board, subject to continuing industry consent of more than 50 per cent of member companies. More generally, only 15 per cent of UK employers (in 2010) contributed to

collective funds for vocational training, with an average contribution of £10,100 (BIS, 2013, p. 64).

Employers in England can also claim corporation tax relief on employee development which covers both the costs of provision and opportunity (wage) costs. Similarly, self-employed workers can claim income tax relief for investments on their own training – albeit only against the costs of provision and not loss of earnings. While the deduction of business expenses is the norm when computing the corporate income tax base (on net profits), the additional exemption of wage costs confers an incentive to train for employers in the UK but the effect of these incentives has not been evaluated.

Figure 2: Current model of co-funding in England



Source: developed by ICF GHK

In a 2010 independent review of 'Fees and Co-funding in Further Education in England', Banks proposed the replacement of the existing funding system with one founded on the principles of: choice, responsiveness, transparency, flexibility, fairness and Government support to stimulate private investment. This review was followed in 2011 by a vision for employer ownership of skills set out by the UK Commission for Employment and Skill (UKCES). Under this proposal for a reformed co-funding model, employer engagement in the skills system would be greater, both in the design of provision and funding (UKCES, 2011).

The Skills Investment Statement (BIS, 2011a) identified a range of innovative approaches to be trialled, including the piloting of outcome based payments and skills funding routed via the employer. These are in addition to the incentive schemes directed at individuals,

beyond the scope of this study, such as the introduction of Advanced Learning Loans for individuals aged 24 or over.

In 2012, BIS and the UKCES launched the Employer Ownership Pilot (EOP) to test the principle of employer-routed public funding backed by private co-investment. The EOP establishes a contestable fund of £340 million available over 4 years, which in the second round of funding (2013-14) represents less than 2 per cent of the total adult skills budget.⁴ While the EOP has encouraged employers to propose innovative solutions and co-fund provision, the delivery model may not be scalable particularly for IVT such as apprenticeships (UKCES, 2013).

The 2012 Richard Review and the follow up Government response sets out a strategy for the renewed model of apprenticeship funding, and provides further insight into the evolving English policy context. This is set out in box 1 below.

⁴ The Employer Ownership budget in 2013-14 is £46 million compared to a total Adult Skills Budget of around £2.5 billion over the same period. Figures are based on BIS and DfE (2013b, p. 42).

Box 1: The Richard Review of Apprenticeships

In his independent report published on 27 November 2012, Doug Richard called on the UK government to redefine the shape of the apprenticeship system, by encouraging the expansion of apprenticeships, improve their quality and make them more focused on the needs of employers (Richard, 2012).

The main Richard recommendations include:

- Target apprenticeships only at those who are new to a job or role that requires sustained and substantial training.
- Focus on the outcome of an apprenticeship, rather than the process.
- Recognised industry standards should form the basis of every apprenticeship.
- The purchasing power for investing in apprenticeship training should lie with the employer.
- The price for apprenticeship training should be free to respond to market value.

To these ends, it is felt necessary for Government funding to create the right incentives for apprenticeship training. While Government should contribute to the cost, it is recommended that this is routed via the employer, in order to ensure relevance and drive up quality.

While emphasising the need to link government payment to transferable training and successful completion of the course, options for a future funding model are however left open. These include:

- Tax credit, whereby employers record how much is spent on eligible training and claim the expenses through their tax return and deducted from pre-tax profits or payroll taxes.
- Direct subsidy by Government, to reimburse a proportion of expenditure towards training on completion of the apprenticeship.
- A contestable fund, whereby groups of employers put forward proposals for Government co-investment to be selected on the basis of best value.

On 14 March 2013, the Government issued its response to the Richard review (BIS and DfE, 2013a), endorsing the recommendations for reform and in particular to:

- Place control of apprenticeships more firmly in the hands of employers.
- Ensure that all apprenticeships are rigorous and responsive to employers' needs.

The principle of co-investment is explicitly accepted in the latest update to the Government's Skills Strategy (BIS and DfE, 2013b, p.36).

Sources: Richard, D. (2012), BIS and DfE (2013a & 2013b)

Taken together, the UKCES vision of employer ownership (UKCES, 2011), the Skills Investment Statement (BIS, 2011a), the Banks Review of FE (Banks, 2010) and the Richard Review of Apprenticeships (Richard, 2012), provide a clear steering on the

direction of the underlying principles which will need to be considered in implementing reforms to the English model of co-funding of FE and training. These are:

- **Employer purchasing power:** Government funding routed via the employer to place purchasing power in their hands.
- **Market value pricing:** Pricing of training fees which reflects their market value and is determined by negotiations between employers and training providers.
- **Employer choice:** Flexibility on the delivery of training in terms of timing and content, which is guided by employer choice.
- **Output or outcome oriented support:** Government support which is partly linked to achievement by conditioning payment on the completion of training or a particular level of attainment.
- **Accredited programmes:** Emphasis on training with links to industry-accredited programmes and national qualifications frameworks.
- **Affordability and fiscal control:** Managed and monitored expenditures to maintain control over the total fiscal liability of government co-funding.⁵

1.3 Report structure

The rest of this report is structured as follows:

- Chapter 2 provides an overview of different co-funding models and reviews the international evidence of their efficiency and effectiveness. This review considers: employer awareness and uptake of incentives; the efficiency of allocation; the marginal effects on the quantity and quality of training stimulated; the impacts on employer and learner outcomes; and the wider impacts on the economy, FE and training system.
- Chapter 3 explores three models of co-funding in Australia, Ireland and the Netherlands in order to establish the efficiency and effectiveness (or otherwise) of different approaches to co-funding. The case studies analyse what works and in what context, how it works and ascertains how reliable this evidence is in order to draw lessons for the English model of co-funding of training.
- Chapter 4 summarises the evidence from the literature review and case studies relevant to the research questions, and considers the role for government in shaping and influencing employer investment in skills and training.

⁵ The guiding principles have been adapted by ICF GHK based on the recommendations expounded in Banks (2010), BIS, (2011a), Richard (2012) and UKCES (2011).

- Appendix 1 describes the methodology outlining how the evidence review was conducted and potential methodological biases, a summary of the key pieces of literature reviewed, an overview of research issues arising from the literature and details of the consultations conducted.
- Appendix 2 describes the methodology and rationale for case study selection, and provides details of the interviews conducted.
- Appendix 3 provides an indicative mapping of the English education system against the 2011 International Standard Classification of Education (ISCED).

2 Literature review

This section provides an overview of different co-funding models and reviews the international evidence of their effectiveness - drawing on evidence from a literature review and expert consultations.

Box 2: Literature Review Summary

Three overarching types of mechanism for delivering co-funding incentives to employers were identified by the literature review.

Direct subsidy

Governments in Australia, Denmark, Finland and Germany provide direct funding to employers' in the form of grant payments or training vouchers. Such funding may also be channelled through training funds, such as the EOP in England.

The key aspects associated with direct subsidy payments are:

- **Low levels of uptake.** This may be attributed to a combination of a lack of awareness among employers of the availability of grant payments and the low levels of reward on offer relative to the costs of both accessing the funding and undertaking training activities.
- **The differential impacts of employer-routed incentives.** The receipt by employers of larger amounts of subsidy is associated with increased levels of investment in formal training. The observed impacts tend however to be concentrated on only a small number of sectors. The evidence suggests that these differential impacts by sector are driven by a number of factors including industry attitudes towards training and the relative size of the subsidy in relation to the total costs of training.
- **The staging of the incentive offers.** On the one hand, some degree of initial finance is required to assist firms facing cash flow problems. Equal levels of incentive attached to the completion or certification of training activities on the other hand may provide insufficient incentive as future rewards are uncertain.

Tax expenditures

Governments in Austria, Canada, France, Iowa (USA), Italy, Luxembourg, Malta, the Netherlands, South Africa, and Spain provide indirect funding to employers' in the form of tax allowances, credits, exemptions and reductions. Such relief may be channelled through the social security or corporate income tax systems.

The key aspects associated with subsidies through the tax system are:

- **Ease of uptake.** Take up of tax concessions by employers tend to be quite high. This is due to existing awareness and familiarity with the tax infrastructure. However, where conditions of claiming are applied this complicates the system, reduces uptake and leads to erroneous claims placing a greater burden on the Exchequer.
- **Problems of evaluation and monitoring.** Researchers and policymakers have undertaken limited research into the influence of tax incentives for training,

Box 2: Literature Review Summary

because they represent foregone revenues rather than the more visible costs associated with direct subsidies. It may also be that issues of confidentiality preclude public evaluation or external assessment. Furthermore, there are limits on how much tax administrations are able to audit tax subsidies and where monitoring processes have been put in place they are often costly, cumbersome or difficult to attach. There is therefore a lack of evidence on the impact of tax measures.

- **Concerns over quality.** Tax offices can lack the expertise necessary to perform robust assessment of the eligibility of any claim. This places greater emphasis on the need to develop mechanisms for assuring quality and effectively signal these to employers and the Exchequer. Further, in cases where similar levels of incentive are provided for a variety of training activities, the tax expenditure may favour the pursuit of low intensity or short training programmes which attract the highest levels of funding.

Levy system

Employer contributions through levy systems are the most widespread mechanism used to induce employer co-investment in training. Levy systems have been adopted by Governments in Belgium, Cyprus, Denmark, France, Greece, Hungary, Ireland, Italy, Korea, Malaysia, the Netherlands, Quebec (Canada), Singapore and Spain. Such levies may be based on compulsory or voluntary contributions, and may be applied universally or on a sector-by-sector or regional basis. In England, levy systems are in place in three sectors: construction, engineering and the film industry.

The key aspects associated with levy systems are:

- **Resistance and superficial compliance.** In the absence of an established consensus on the collective value of training, non-voluntary contributions to levy funds typically encounter resistance from employers.
- **Impacts on quality.** Compulsory investment in training can make employers less vigilant over the quality of training.
- **Employer 'buy-in'.** Voluntary or opt-in levy arrangements can foster the development of consensus in the value and benefits of training. The flexibility and support for local or industry employer networks to develop organically can contribute to the development of collective interest among employers in providing accredited training for new entrants and existing employees.
- **The effects of framing.** Sanctions or penalties as per 'train or pay' models serve to highlight the costs of training, rather than persuade employers that training is a worthwhile investment.

Impacts and issues of implementation

There is limited evidence of differentiated impacts on training outcomes on the basis of the type of model adopted. Instead, the extent to which their impacts differ is more often guided by the context in which they are delivered and the detail of specific conditions attached.

The variety of tax expenditures, subsidies and levy-grant mechanisms adopted are fundamentally similar, insofar as they route government funding through employers.

Box 2: Literature Review Summary

Key issues for implementation recurring across the different types of co-funding mechanism are:

- **The difficulty of targeting incentives.** Little or no impact of incentives for employer co-investment on the low qualified is observed, even where these are the explicit targets of direct funding. Instead, co-funding incentives tend to support the training of workers and new entrants bearing qualifications. Financial incentives also tend to have a greater impact on those employers already investing in training.
- **The costs of administration borne by employers.** Administrative procedures for accessing funding may serve to discourage small firms. In particular, instances of discretionary case-by-case assessment of funding applications or requirements to submit formal training plans tend to favour larger firms. The engagement of employer networks or group training organisations to act as intermediaries can mitigate this effect and help to support SMEs.
- **The behavioural context.** The economic cycle, institutional and personal factors have a stronger influence than financial incentives on the take-up and completion of training. The uptake of co-funding instruments and employer co-investment in training are particularly influenced by perceptions of the benefits and effectiveness of training. These are shaped by individual attitudes, as well as cultural and social norms.

In-depth case study analysis of tax, levy and subsidy-based schemes is undertaken in chapter 3 in order to draw out further lessons for implementation in an English context.

2.1 Methodology

The literature review has comprised three components:

- An initial scan of international sources to identify co-funding delivery models used;
- A literature review of the impact of co-funding instruments; and
- Consultation with known academic and policy experts in the research field to identify emergent research material and establish their viewpoints on key issues.

The review draws on peer-reviewed journal articles, non-peer reviewed academic research, government commissioned research, evaluations and 'grey' literature. Parameters for inclusion (and exclusion) were established to direct the study towards publications of explicit relevance to international models of delivering employer-routed co-funding. Further emphasis was placed on identifying recent literature (post-2001) in order to identify existing delivery models.⁶

⁶ Seminal papers providing empirical evidence are also considered for inclusion since their findings should still be robust.

A quality and relevance assessment of a preliminary list of identified sources was carried out via an initial scan of the literature and compilation of a 'data extraction' form. From an initial total of 89 identified studies, 63 were then assessed in detail for the purposes of synthesis.

The literature review identified 40 different co-funding incentive schemes in 24 countries. In terms of geographic coverage, evaluative assessments and evidence on 18 of these co-funding instruments and policies was available across 12 countries.⁷ A number of qualitative studies also provide comparative assessments of the approach to VET finance in two countries such as France and the UK, or Germany and Switzerland. Further comparative assessments of international experiences, extended the review's coverage to other developed countries in Europe and the OECD.⁸

2.2 Design and delivery of international models of co-funding

Given the benefits of training, there is widespread ambition among policymakers of the need to encourage businesses to share the costs of training (see for example BIS, 2012b or BIBB, 2009). One way of achieving this is through delivery models and incentives that promote employer co-investment in training. There is widespread acknowledgment among the literature and consulted experts that the private sector is a critical partner for increasing cost efficiency, quality, and relevance in skills training.

This review covers all instruments that seek to incentivise employer co-investment in training through voluntary or compulsory measures. This includes but not exclusively those which use the tax system for delivery.⁹ There are three main mechanisms in our typology of delivering such financial incentives to employers: direct subsidies, tax expenditures, and levy systems. Government incentives and financial support aimed at individual learners or which fund provision directly are beyond the scope of this study. Non-financial incentives are also beyond the direct scope of the study.¹⁰

The provision of subsidies to employers, delivered directly via grant payments or indirectly through tax expenditures, can provide financial inducements for employers to make investments in training. In theory the lower cost of training is liable to alter the cost-benefit business decision to invest in training at the margin (by positively impacting on the perceived cost effectiveness of training). In turn, this will have a determining effect on the incidence and amount of training undertaken.

⁷ Australia, Austria, Canada, Denmark, England, France, Germany, Ireland, Italy, Korea, the Netherlands and the US.

⁸ Full details on the methodological approach to the literature review and details of the experts consulted are provided in Appendix 2.

⁹ Typically no VAT or sales tax is applied to training fees, and training expenses can be fully deducted from corporate profits, as is the case with other types of company expenses. In line with Torres (2012), only stipulations going beyond this benchmark practice are considered incentives.

¹⁰ This excludes regulatory approaches to improve the training offer through the accreditation of providers and certification of participants; guarantee individual rights to training; or extend the employer-employee relationship through payback clauses or training contracts.

Consultation with experts suggests that a crucial caveat to this hypothesis is the need for employers to believe that there is at least some value of training and that employers possess sufficient motivation to train. Lack of awareness or a prevailing scepticism regarding the benefits of training may hold back co-investment, particularly among smaller firms. This view is corroborated by a recent BIS review of employer motivations for training (BIS, 2012a).¹¹

An alternative way of overcoming a lack of employer investment in training is through a levy system. Rather than seeking to induce voluntary investments, levies instead make employer contribution to the costs of training compulsory (at least among a particular group of participating members). These costs are not necessarily a decision of the firm but instead represent a mandated fixed cost, much like a tax.

Levies constitute a real but indirect expenditure for the employer. The key difference to an employer subsidy is that they involve both employers which participate in training and those which do not.

Another variant is that some levy and grant-based instruments are delivered through contestable funds. There may also be uncertainty as to whether the investment is exclusively used to finance training activities. The funds may also be explicitly aimed at purposes unrelated to training to provide broader business support.

Table 2 below provides an overview of the types of instrument directed at employers, and maps the 40 identified international examples onto this typology.¹²

In practice, co-funding models may draw on multiple mechanisms and may not fit neatly under a single heading. For example, levy-grant systems based on a universal levy are ultimately a form of direct subsidy, albeit that the funding for the grants are drawn from what is essentially a form of hypothecated tax or a ring fenced revenue raising scheme. Tax incentives can be seen as a form of indirect subsidy, while refundable (or non-wastable) tax credits are in essence grants delivered through the tax system.

¹¹ It follows that for employers, demonstrating the competitive advantage of training may be an effective alternative approach to the co-funding mechanisms explored in this study. In Switzerland, often considered among the forerunners in terms of high quality vocational training, a strong view is taken that tax incentives and subsidies are largely irrelevant and inefficient. Instead it is considered necessary to do more to 'sell' the benefits of training (Wolter, 2007).

¹² Funding schemes directed at individuals and providers are beyond the scope of this review.

Table 2: Typology of co-funding instruments and delivery mechanisms, and their international use

Type of instrument	Delivery mechanism	Working Definitions	Count *	Country / State examples
Direct subsidy	Grant payment	Direct government funding to employers for the purpose of training. Such funding may also be channelled through training funds.	5	Australia, Denmark, Finland, Germany, <i>Ireland</i>
	Training voucher	Funding in the form of vouchers to be exchanged for a certain amount or a certain value of training.	1	Germany (North-Rhine Westphalia)
Tax expenditures	Tax allowance	Deduction of a certain sum or fraction of the costs of training investment from taxable profits, over and above the standard deductibility of training costs.	8	<i>Austria, Belgium (Flanders), Italy, Korea, Malta, South Africa, US (Iowa)</i>
	Tax credit	Deduction of a certain sum or fraction of a training investment from the tax liability, which is wastable (unable to reduce the amount of tax owed to less than zero) or refundable (entitles the employer to a payment if the relief reduces the amount of tax owed to less than zero).	8	<i>Austria, Canada, Chile, France, Japan, Luxembourg, Netherlands, Spain, US (Mississippi)</i>
	Tax exemption / reduction	Employer social security contributions on trainees/apprentices are exempted from the tax base, or taxed at a lower rate.	4	<i>Austria, Australia (State level), Italy, Spain</i>

Type of instrument	Delivery mechanism	Working Definitions	Count *	Country / State examples
Levy system	Levy-exemption	Sanction or tax on firms if they do not meet a pre-determined level of training provision.	4	<i>Australia</i> , Belgium, Canada (Quebec), France
	Levy-grant	Employers pay a non-voluntary contribution to a training fund which is then disbursed to training firms.	9	Cyprus, France, Greece, Hungary, Ireland, Italy, Korea, Netherlands, Spain
	Levy-access	Employers contributing to the levy scheme have access to training developed or procured by the managing body at discounted rates.	5	Denmark, France, Ireland, Singapore, UK
	Levy-reimbursement	Employers pay a non-voluntary contribution to a training fund which is then used to reimburse the costs of training.	1	Malaysia

*Source: developed by ICF GHK; Notes: Italics indicate that the policy has expired or been abandoned. * For simplicity, multiple schemes of a similar nature existing at State or regional level within the same country are counted as 1.*

Within each category of instrument, there is also much room for differentiation between models, as co-finance mechanisms may be universal, sector-based, or specifically targeted at particular groups of enterprises (e.g. SMEs) or individuals (e.g. under 25s, low qualified). They may also focus on new entrants to the labour force or existing staff, or only seek to promote specific types of training, such as apprenticeships.

Co-finance schemes can also differ in terms of the types of costs that are subsidised or reimbursed and the timing or staging of employer and government contributions. Tax incentives for example, can be redeemed at the end of the year through deductions on taxable income at the time of filing a tax return. Alternatively, the tax relief may be provided on a monthly basis through deductions on regular tax remittances, such as employer social security contributions. Financial incentives can also be staged over the period of the training, for example, with an initial payment made when an employer takes on a trainee and a further payment upon completion. Depending on its timing, the government contribution may reduce the upfront costs to be paid to a training provider or provide a reimbursement over and above the value of such costs.

Before exploring the impact that these instruments have on training outcomes (in section 2.4), the qualitative evidence on barriers to efficient implementation and take up is considered.

2.3 Administration and uptake of co-funding instruments

The absence of monitoring and evaluation studies in many cases, means the review is unable to identify clear patterns associating a particular type of co-funding instrument with higher levels of uptake. The literature also pays little attention to the impact of awareness raising and information campaigns on rates of uptake or levels of training.

There is however broad agreement - among the experts consulted and literature reviewed - that the more that specific groups are targeted and the more in which eligibility conditions are applied to ensure quality, the more administratively expensive the co-funding instrument will be (Stone and Braidford, 2008; Cedefop, 2008a).

In order to be efficient and attractive to employers, the eligibility conditions and restrictions attached to co-funding incentives need to be carefully traded off against administrative costs. There is also a recognised need for administrative simplicity in order for target beneficiaries to understand the incentive and comply with any conditions.

To date, there have also been no systematic attempts to quantify the costs of the administrative burden of the various instruments on employers and the Exchequer. Researchers have instead relied on qualitative information based on reported experiences or comparative analysis. The findings can be organised around those mechanisms which make use of the tax system and those which do not.

2.3.1 Tax expenditures

In a comparative analysis of tax incentive schemes in Austria, France and the Netherlands, Cedefop (2009) reports that take-up of tax concessions by enterprises are 'quite high'. In the Netherlands, for example, an evaluation in 2007 suggested that around 80 per cent of eligible enterprises made use of the refundable lump-sum tax credit. The

remaining 20 per cent were unable to meet the necessary requirements. This suggests that the administrative burden rather than a lack of awareness was the main cause of the lack of take-up (Gelderblom et al. 2007).¹³

The offsetting of training costs against profits in company tax returns are considered easy to apply and inexpensive to administer. It also enables employers to decide on who will be trained and how (Stone, 2010). Similarly, tax allowances, credits or levies routed through established payroll tax systems are also considered as being relatively light on administrative burden.

In utilising the existing tax infrastructure, Torres (2012) found that the Austrian tax incentive scheme is associated with low administrative costs (both for government and employers). In Austria firms could deduct the costs of training plus an extra 20 per cent from their taxable profits or alternatively claim a 6 per cent refundable tax credit. The introduction of the option of taking up a 6% refundable tax credit meant that firms not making profits could be included. This is seen as particularly advantageous to start-ups and other non-profit making firms (Cedefop, 2009).

Also in Austria, an incentive to support employers taking on apprentices created virtually universal uptake. Almost 100 per cent of eligible companies are thought to have claimed the tax incentives for taking on apprentices (Cedefop, 2009).¹⁴ However, this apprenticeship tax credit scheme was abolished in 2008 and replaced with a grant system. The reason for abolishing the tax-based support system is that it did not allow for differentiated and well-targeted support. It is argued that the tax-based support did not take into account the duration of apprenticeships or the total costs to the employer. The new grant-based system relates subsidies to quality criteria in training which would not have been possible under the tax-based system (Cedefop, 2009).

From a government perspective, Torres (2012) also highlights that there are limits as to how much Exchequers are able to audit tax incentive systems. In addition, monitoring processes can often be costly, cumbersome and/or difficult. The tax office may also lack sufficient expertise of training or the accreditation system here to perform robust assessment of the eligibility of any claim (Torres, 2012).

From the employers' perspective, the tax system is understood relatively well, particularly by large employers. That notwithstanding, the tax experts consulted, as part of the study, suggest that where the complexity of claiming is high employers will not bother claiming or will make mistakes. This, in turn, places a greater administrative burden on the Exchequer. Taken together this raises the potential for problems of compliance among employers or leave room for fraudulent activity that may go undetected in the absence of costly processes to monitor and audit.

¹³ The Dutch scheme of co-funding is examined in further detail in chapter 3.

¹⁴ A refundable tax credit of €1,000 (£833) per year per apprentice plus an additional €400 (£333) a month during year one of the apprenticeships, €200 (£167) in year two and €100 (£83) in year three was available. A bonus of €3,000 (£2,500) per apprentice was granted where apprentices successfully took a quality test.

2.3.2 Direct subsidies and levy systems

In Australia, direct grant payments are used to support employer investment in apprenticeships. In their analysis of this scheme, Karmel et al. (2010) found that actual expenditure on incentive payments in 2004-05 represented 83 per cent of the total amount employers were eligible to receive. The uptake of completion incentives is slightly higher with between 90 and 92 per cent of eligible employers claiming.¹⁵

Relatively little is known about the rate of uptake regarding subsidy and levy systems. A problem common to each of these systems is that while the number of claiming firms or member companies may be monitored, the proportion of eligible firms out of the total number of employers is either unknown or unreported.

In the case of levy-grant and direct subsidy arrangements, funding typically entails case-by-case decisions and management to ensure specific quality objectives are met. This necessarily increases the cost of administration.

Alternatively, the lack of sufficient guidance and monitoring processes can lead to greater abuse or non-compliance. In an assessment of the Australian training guarantee levy scheme (abandoned in 1996), a survey of over 6,000 employers found that a lack of clarity in the guidelines and reporting requirements undermined both the effectiveness and the reputation of the program (Fraser, 1996).¹⁶ Smith and Billet (2006) argue that levy-exemption schemes, such as this, serve only to highlight the costs of training to firms, rather than persuade them that expenditure on training was itself a worthwhile investment.

In a comparative analysis of international levies and subsidy instruments, universal schemes were often found to be inefficient in ensuring an equitable distribution of training opportunities. The unavoidable administrative procedures needed to claim reimbursements often discourage uptake, especially among smaller firms (OECD, 2009).

A criticism of mandated approaches, such as levies, is that they tend to be resisted or complied with only superficially (Smith and Billet 2006). For example, under the levy system in France, firms were reportedly reluctant to spend beyond the minimum required by the levy (Giraud, 2002).

Training funds based on sector-specific or local levies are seen as relatively more effective since they are typically negotiated as part of collective agreements and give employers control over the fund (OECD, 2009). Smith and Billet (2006) also note that the French experience suggests firms are more accepting of sectoral or regional levies, particularly where firms have representation on the bodies that disperse the training funds. The importance of social institutions and norms in influencing employer 'buy-in' to engage and invest in training are widely recognised.

¹⁵ The Australian scheme of co-funding is examined in further detail in chapter 3.

¹⁶ Large enterprises were required under the scheme to spend at least 1.5 per cent of their payroll costs on eligible training or pay the shortfall to the Australian Taxation Office.

Intermediary agencies and networks may also provide a means of managing the administrative burden and ensuring efficiency for employers. At Government level, specialist intermediary State agencies responsible for managing, monitoring and auditing financial support are often established and may relieve some of the burden of assessment and ensuring compliance on employers. Similarly from an employers' perspective, employer associations, social partners or other networks may also be established to ease the administrative burden and support employer claims. In England there already exist statutory bodies that could undertake this role. The Skills Funding Agency for example makes funding and support available in order to help businesses and individuals access the training they require.

Key findings: A trade-off exists between the targeting of additional training outcomes and the conditioning of finance on certain outputs with the costs and administrative burden that this places on employers and government. The evidence on the rates of uptake and employer awareness of a particular incentive and government support is mixed and relatively under-explored. The positive effects of achieving employer 'buy-in' through direct employer involvement in administering the scheme is widely recognised. The detailed case study analysis in chapter 3 seeks to fill these gaps and investigates the issue in more detail.

2.4 Evidence of impacts

Overall, robust, quantitative evidence on the impacts of co-funding instruments is sparse. There is, however, mostly qualitative evidence available across the full range of delivery models. Relatively speaking, research and evaluations on the effectiveness of particular co-financing models or policy instruments cover levy and subsidy schemes more extensively – and also more intensively – than tax incentives.

On the one hand, the lack of research on the influence of tax incentives may be indicative of the challenges researchers and policymakers face in monitoring and evaluating the impact of such measures. From another perspective, the lack of research and evaluations of tax expenditures may reflect the lack of public scrutiny of foregone revenues. Here, issues of confidentiality may also preclude public evaluation or external assessment of the effects of tax incentives on education and training. In addition, any assessment of tax incentives may be subject to delays due to the time lag from obtaining data on tax returns.

This lack of evidence notwithstanding, it is possible to draw lessons for the delivery of taxes from research into other schemes, which in many cases route funding through tax instruments. For example, tax incentives also operate as a form of indirect subsidy.

The international evidence base covers schemes which are aimed at all firms, though SMEs are often particularly targeted. The low skilled and those with no or low qualifications are also often the focus of additional support. The co-funding arrangements and incentives cover all types of training, ranging from apprenticeships and traineeships, continuing work-based learning and on-the-job training.

Across the many and varied types of co-funding model identified, there is a relatively limited amount of high quality evidence available. Few studies include a control group or investigate the counterfactual (what would have happened otherwise). The majority of the studies rely instead on descriptors of what the incentive is, and what the outcomes are

before and after the instrument is introduced without controlling for other possible explanatory factors.

Most of the identified impacts rely on self-reported information or are based on secondary evidence and subsequent inference of causal relationships. A select few studies, base their assessments of impact on analysis of administrative data, robust survey evidence or by establishing a control group or series of controls, to assess the impact of policy variables.

The following section explores the impacts of co-funding instruments drawing from on high quality evaluative studies available.

Overall these studies have more to say about impacts on the quantity and quality of training and the differential impacts across different target groups. There is less focus on the impacts on the wider provider and delivery infrastructure and the responsiveness to employer needs, and where they are there is a reliance on qualitative information.

2.4.1 Effects on the incidence and intensity of training

Across the literature, evidence suggests that while training subsidies and incentives tend to be associated with increased employer investment in training, their impact on employers and individuals who would not have otherwise engaged in training is mixed.

Participation in training activities

How the quantity of investment in training is measured (in number of workers trained, time spent on training, the frequency of training, training expenses, or the number of training firms etc.) has little influence on the overall estimated effects of subsidies on the amount of training. In fact, given the imperfect measures of training available to researchers, it is often not possible to provide a precise interpretation of whether the findings relate to an increase in the intensity of training, the incidence of training, or indeed both.

In a comparative assessment of the impact of training grants in Ireland, Goerg and Strobl (2006), find evidence that grant funding contributed to significantly greater overall expenditure on training in both domestic and foreign-owned firms. But whether this is due to increases in the quality or quantity of training is unknown. This positive relationship holds even after having controlled for other possible determining factors and in comparing outcomes with those of an established control group.¹⁷

The levels of training among firms in receipt of training subsidies through the Job Skill Development Program in Korea, is significantly higher than those in equivalent 'unsubsidised' firms (Lee, 2004). Furthermore, when the levy rate was reduced, the share of companies providing training programmes fell significantly. This demonstrates that few companies had introduced training programmes on their own initiative.

¹⁷ A valid counterfactual is established by comparing a sample of assisted firms to those a sample of firms that did not receive assistance but otherwise share similar characteristics (i.e. via a matching estimator and difference-in-difference techniques).

Exploiting the regional differences to evaluate the impact of training subsidies in Italy, Brunello et al (2012) report a statistically significant, yet moderate increase in the number of distinct episodes of formal vocational training. In an analysis of the impact of the now defunct apprenticeship subsidies in Denmark, additional demand for apprentices is estimated to have been 7 per cent larger than without the subsidy (Westergaard-Nielsen and Rasmussen, 1997).

Such a positive relationship between direct subsidies and increased quantity of employer investment in training has also been found when training vouchers rather than cash incentives are used. In the case of the regional initiative of North Rhine Westphalia in Germany, Goerlitz (2010) estimate an additional 5 per cent increase in the proportion of establishments investing in training as a result of the subsidy. This finding can be interpreted as meaning that either training investments occur more frequently or that the fraction of firms willing to invest in training increases, or both. The evidence on the intensity of training is however inconclusive (Goerlitz, 2010).

Not all co-funding instruments have been successful in inducing greater training efforts however. In particular, there is limited evidence that levy-exemption instruments - in which companies that are unable to demonstrate sufficient investment in training must pay a penalty - are successful in inducing greater training efforts (Fraser, 1996 and Goux and Marin, 2000).

Due to a lack of monitoring and comprehensive evaluation, there is also limited robust evidence on the effectiveness of tax expenditures in stimulating increased employer training efforts (Muller and Behringer, 2011). An illustrative example of the difficulty in establishing a causal relationship between co-funding instruments and training outcomes is provided in Box 3 below.

Box 3: Difficulties of controlling for impact: the case of sector training funds

In the case of sector training funds in the Netherlands, Kamphuis et al. (2010) find no significant difference in the levels of regular and apprenticeship training in Dutch firms in sectors where a fund is present than in those without a fund. However while no difference in training outcomes is observable it remains possible that the sector training funds are effective.

On the one hand, the lack of any observed impacts could be due to the financial incentives being insufficient to trigger an investment in training; or to a lack of awareness or bureaucracy that may impede their effective use.

On the other hand, the lack of any observed outcome may be due to incentives being used to stimulate training particular sectors which have low levels of training. Levels of training may have been even lower without the funds.

This lack of ability to construct an appropriate counterfactual is an inherent difficulty in assessing the effectiveness of levy-based arrangements, since they tend to be universally applied (either across sectors or across employers within a particular sector) thereby making it difficult to identify a suitable control group against which comparisons can be drawn.

Source: developed by ICF GHK based on Kamphuis et al. (2010)

While it is accepted that greater financial inducements tend to be associated with increases in employer participation and investment in training, no study has sought to analyse the price sensitivity of training and rates of training uptake (Wolter, 2008). Furthermore, when subjected to more intensive scrutiny, there is often also accompanying evidence of substantial displacement or deadweight effects attached to a particular initiative.¹⁸

In Austria, for example, Wacker (2007) finds that 70 per cent of companies benefitting from the apprenticeship tax credits did not create additional apprentices. In England, Abramovsky et al. (2011) find no statistically significant impact of the Employer Training Pilots programme on the proportion of employer provision of qualification-based training or on the fraction of eligible employees undertaking qualification-based training. Instead the pilot attracted 'a considerable number of employers who would also have provided this type of training' in its absence (Abramovsky et al. 2011, p.157).

Any financial mechanism targeted towards employers to support the demand for training will necessarily engender at least some deadweight. Comparative analyses carried out by Muller and Behringer (2011) and Cedefop (2009) suggest that the magnitude of deadweight may vary among financial mechanisms. Tax incentives and levy-exemption schemes in particular are often associated with higher levels of deadweight loss.

The different ways in which public investment or support of training may represent deadweight or added value are explored in Box 4 below.

¹⁸ Deadweight is defined as the extent to which government-funded training generates outcomes that are not additional to what would have occurred in the absence of such provision. Displacement relates to instances where the positive outcomes promoted by government policy are offset by negative outcomes of the same policy elsewhere. Issues of deadweight and displacement are considered in more detail in box 4.

Box 4: Considerations of additionality and deadweight

In the context of co-funding instruments used in relation to FE and training, '**deadweight**' is the term applied to the extent to which the identified outcomes (e.g. employer investment in training) would have occurred anyway in the absence of the government intervention. The inverse of deadweight is '**additionality**' i.e. the outcomes which can be attributed to the government support.

Additionality may take several forms depending on the intended objective of the policy intervention. Broadly speaking, additional training outcomes may relate to:

- Industry level: industries who would not have otherwise invested in comparable training activities (or not to the same degree);
- Firm-level: enterprises or establishments who would not have otherwise invested in comparable training activities (or not to the same degree);
- Individual level: individuals who would not have otherwise participated in comparable training activities (or not to the same degree).

At each of these levels of analysis, **deadweight** may occur when the industries, firms or individuals that would have engaged in some comparable form of training receive public funding for the training instead. Public funding in this sense simply replaces or '*crowds out*' private investment in other forms of training.

Rather than displacing private funding, public interventions may instead lead to substitution, in which there is a change in the profile of the industries or employers that engage in training activities or in the profile of employees that receive it. Positive outcomes promoted by government policy may also be **displaced** or offset by negative outcomes of the same policy elsewhere.

Additionality may also be qualitative in nature and relate to increases in particular types of training activity or to higher quality training activities in which industries or firms would otherwise have under-invested (relative to the benefits to the industry or firm that would be accrued, or to socially optimal levels).

Source: developed by ICF GHK based on BIS (2012c)

Industry-level effects

Evidence from the literature demonstrates that universal levy, subsidy and tax incentives have differential impacts on sectors. Uptake of incentives can also differ markedly across industrial sectors (Jin and Lipsman, 2011 and Gelderblom et al. 2007) but there is however little consistent evidence of heterogeneous effects (Abramovsky et al. 2011).

In their analysis of the influence of Danish employer subsidies for apprenticeships on a random sample of 1,000 workplaces, Westergard-Nielsen and Rasmussen (1997) find that the positive impacts of the Danish apprenticeship subsidy are limited to Offices, Manufacturing and Trade industries. Construction and Restaurant industries instead employ a number of apprentices irrespective of the subsidy. Further, they find that the observed positive impacts are largely driven by sector performance, indicating that economic activity drives demand for apprentices more than the level of subsidies. During

times of economic prosperity, more employees are taken on by employers to meet the increased demand. Firms are also less likely to be hampered by cash-flow problems during a boom, and thereby more able to invest in training new and existing staff alike (Westergard-Nielsen and Rasmussen, 1997).

In any given context, there are different drivers - structural weaknesses, exposure to competition - which will affect sectors differently and it may not be possible to accurately predict *a priori* which sectors are most likely to benefit from the introduction of any new or revised co-funding instrument.

Cully (2008) suggests that the effects on industry will be influenced by the value of the incentive as a share of the total costs of training in the sector. The implicit value of the Australian Apprenticeship subsidies on this basis was noted to be greatest (representing up to 20 per cent of the total costs) in retail trade, accommodation and restaurants – areas in which youth unemployment rates are high.

Employer-level effects

In view of the particular challenges for SMEs to engage and invest in training for their employees, many of the identified instruments of co-funding include specific objectives to increase the uptake of training among this group of employers. However, even in such cases where small firms are explicitly targeted through subsidies, little or no impact on small firms is observed. Instead much greater impacts on large and mid-sized companies are found (Goerlitz, 2010, Brunello et al. 2012). Tax incentives trialled in Korea in the 1990s, despite their relatively generous levels, were also found to have little impact on smaller firms (Stone, 2010).

In particular it is noted that grant-based systems and subsidies channelled through contestable funds tend to favour larger firms who can more readily manage the administrative burden (Brunello et al. 2012) or are more aware of the available incentives (Goerlitz, 2010). In France the requirement for a company to have a formal training plan in order to access the levied training funds means that SMEs *de facto* subsidise the training of larger firms (Cour des comptes, 2007).

The way in which tax credits and allowances are delivered may also impact on different groups of employers. Wastable tax credits that deduct a certain sum or fraction of a training investment from the corporate tax liability without being able to reduce the amount of tax owed to less than zero, or tax allowances which deduct the costs of training investment from taxable profits, necessarily favour corporations making large profits. Non-wastable or refundable incentives on the other hand mean that firms can still claim money even if no profits are made - in effect acting as grants. This can be particularly advantageous to start-ups and social enterprises (Cedefop, 2009).

The Skillnets Training Network Programme in Ireland, whereby co-funding instruments support the development of networks of firms by sector or region, and may go some way to help smaller firms access training through a group training approach. Here, 94 per cent of the member companies are small firms (Circa Group, 2012).¹⁹

¹⁹ The Irish scheme of co-funding is examined in further detail in chapter 3.

Individual-level effects

There is often a virtuous circle of training whereby the more highly paid or qualified receive the most training. Temporary and low-qualified employees receive the least as the returns on investment are seen to be lower. Evidence of this 'Matthew Effect'²⁰ is seen to be particularly pronounced in cases where the decision not to invest in training is met with a penalty (Fraser, 1996 and Goux and Marin, 2000).

Goerlitz (2010) and IGF (2011) found that subsidies led to increased training for employees already holding a vocational or other degree and not for those with low or no qualifications. The evidence from the ETPs in England also indicates a limited impact on take-up among hard-to-reach target groups, such as the low skilled (Abramovksy et al. 2011). Giraud (2002) also finds that the French levy has not been able to influence how training funds are spent within enterprises noting that the distribution of training between better and less-educated workers is unaffected.

A possible exception to this finding is based on qualitative analysis of the Skills Development Fund in Singapore. Here, the expenditures from the training fund (raised from a 0.25 per cent levy on the gross monthly remuneration of all employees) apply only to programmes that seek to raise the education levels of low-skilled workers. As a result, Low (1998) finds that national investment in training among employees in this group increased to 4 per cent of payroll. It is not clear if such an increase would have happened in the absence of the levy fund. The Singaporean success in raising employer investment in the low skilled may however have been a one-off, and a special result of its small size and strong collective identity (Low, 1998). Smith and Billet (2006) report that the Singapore model has been unsuccessfully translated to Malaysia where employer 'buy-in' proved more difficult to achieve (Smith and Billet, 2006).

While not being particularly successful at reaching the low skilled, co-funding instruments may have a wide range of objectives. In a comprehensive empirical assessment of the impact of the tax deduction on training for the over 40s, Leuven and Oosterbeek (2004) found that the proportion of employees in this target group receiving training increased significantly. However this increase was more than offset by a decline in training for employees who were slightly below the 40 year old threshold. The tax deduction for firms appears to have led to postponement of training activities for those just below the age threshold and a negative net effect overall.

Key findings: *The available evidence suggests that financial instruments haven't been particularly successful in increasing engagement among groups under-represented in training activities and that incentive mechanisms may often lead to unintended consequences – even when these are explicitly targeted at specified equity goals. Once again, employer 'buy-in' appears to have a positive effect on the impact of different schemes. Before looking at the evidence on the effects of the quality of training, it is therefore worthwhile considering the evidence on the efficiency of allocation with respect to the different mechanisms of delivery.*

²⁰ "For whosoever has, to him shall be given, and he shall have more in abundance" (Matthew 13:12).

2.4.2 Effects on training quality

A funding scheme that supports employer investment and participation in training only makes sense if the training is of sufficient quality. A key consideration in this respect is the degree to which the training undertaken is quality assured and recognised by industry or approved national qualification frameworks.

Accreditation and certification

By comparing the training outcomes in Germany and the Netherlands, Allaart et al. (2009) find evidence that greater prevalence of formal training courses leading to accredited qualifications in the Netherlands: 'might be a result of the specific institutional framework conditions' since only the expenditures for formal further training qualify for tax deduction (Allaart et al. 2009). There is however no evidence of a significant impact on educational attainment as measured by qualifications in the case of the Employer Training Pilots in the UK (Abramovsky et al. 2011).

However, as Brunello et al. (2012) highlight, it remains possible that the higher incidence of formal accreditation of training does not produce any additional training, but instead reflects a substitution between non-formal and formal training. However, a lack of available data on non-formal training makes it difficult for international research to empirically establish the extent to which such substitution occurs. In any case, whether additional or not, the induced shift to accredited forms of training is often in line with government objectives to provide the workforce with portable skills and results in more employers being engaged with the national qualification frameworks, as end users.

Based on anecdotal evidence, some researchers have gone further in suggesting that as a result of specific conditions on co-funding, less relevant training may be pursued that maximises incentives rather than productive returns to training. Based on evaluations of the Australian Apprenticeship Initiatives Programme (AAIP) and the Netherlands tax credits for training scheme (in which similar levels of subsidy are available for a variety of training types and levels) firms are seen to have pursued the low intensity / shorter training programmes. This enables them to maximise the amount of incentives they can receive at the lowest cost (Deloitte, 2012; Berkhout et al. 2012).

In the case of the levy-exemption penalty system, an empirical assessment of the impacts of the train-or-pay instrument in Quebec (based on a sample of 5,500 enterprises) concluded that facing the choice between using their revenue for training or simply losing it, employers are less concerned with the quality of training. A possible effect of the Quebec training levy has therefore been to reduce the average quality of training (Smith and Gagnon 2005).

It follows that any co-funding instrument and delivery mechanism should pay careful consideration to the possible substitution or displacement effects and perverse incentives towards the quality of training. Ultimately however, financial instruments have a rather limited determining impact on quality. Instead, this tends to be determined by quality assurance processes, the value attached to training, and the quality of the trainers. A further consideration is that training quality is not the same across sectors – as industry norms and standards, the ability to attract and retain quality teaching staff differs, while the underlying perceptions and attitudes towards training in different sectors may often be embedded or entrenched within wider society.

From an employers' perspective, the most important attribute of quality with regard to training is arguably its relevance and responsiveness to the firm's needs – an issue explored in Box 5 below.

Box 5: Responsiveness to employer needs

In moving to a more employer-focused model of investment in training in England, the only arbiter of quality of training that matters in such a model is arguably the employer. Employers are likely to be concerned with the relevance of the training to meeting their needs in terms of the skills and competences developed and the technologies and tools employed as well as more practical issues such as the timeliness, duration and location of the training offer (BIS, 2012a).

There is, however, little concrete evidence of a direct impact of co-funding instruments on the responsiveness of provision to employer needs. Consultation with VET experts supported by available qualitative evidence suggests that this is instead determined by the context in which the co-funding model operates, and particularly whether employers are directly involved in the design and administration of co-funding and have direct influence over the systems of accreditation and certification (Banks, 2010).

Source: developed by ICF GHK based on expert consultations

Key findings: Robust evidence on the role of co-funding instruments and delivery mechanisms in supporting quality training outcomes is relatively limited, with experts suggesting that the wider training infrastructure, investment and supporting regulatory approaches are more important.

2.4.3 Economic impacts and the impacts on the wider skills system

Productivity and wage returns

In terms of the economic benefits that are derived from the additional training associated with the co-funding instruments, there is only limited evidence available of positive marginal impacts on wage or productivity effects of training (Jin and Lipsman, 2011 and Brunello et al. 2012). Here, measurement of the impacts of training is compromised by issues of endogeneity.²¹

In one of the few assessments of the outcomes of co-funding instruments, a qualitative survey of responses from 704 member companies of the Skillnets training programme in Ireland found that most of the employers agreed that the training had contributed to improved productivity. Furthermore, many of the companies surveyed stated that the network training activities had made a significant or high impact on productivity. These outcomes are explored in more detail in a case study in chapter 3.

²¹ An endogenous variable is one that is related to and determined by other variables also in the model. Training decisions can be endogenous for two reasons: on the one hand, there can be unobservable characteristics, such as managerial quality and attitudes that determine both training and socio-economic outcomes. On the other hand, training may be a choice variable, so that idiosyncratic shocks at firm or industry level affect both training decisions and outcomes such as productivity (Colombo and Stanca, 2008).

In the US State of Iowa, an econometric study found that the training tax credits for new recruits are estimated to have helped employers retain skilled employees and retain workers 6 months longer than non-participants. The marginal impact of the training program on the participating firm revenues was positive, but statistically insignificant.

Generally speaking, there is a wealth of evidence emerging from the wider literature that has shown that the rewards to firm sponsored training are high, but that not all of the benefits are captured by the firm providing the training (Cedefop, 2011b). Instead these are shared between the individual, the firm and the wider economy. From an individual perspective, relatively more highly trained/skilled workers receive higher wages, and are less frequently unemployed (and for less time).

In Switzerland, for example, in a cost-benefit analysis of apprenticeship training, Dionysius et al. (2009) demonstrate that the training is largely beneficial to the firms even during the training period itself as well as when the apprentice graduates to become a full employee.

In a similar report on the benefits of apprenticeship training in England, BIS (2012b) finds that beyond identified productivity benefits, employers also report further positive impacts on training. Such benefits include the inflow of new skills, the ability of firms to meet current and future recruitment needs, the increased ability to recruit new and retain existing staff, to reward and motivate employees, and also to keep up with the competition. In addition, the support of training aimed at the unemployed, disadvantaged or young groups is also considered to enable firms to build brand awareness and loyalty, as well as fulfil corporate social responsibility goals (BIS, 2012b).

Effects on the Exchequer

It is notable from evaluations of fiscal impact that the productivity gains, higher wages and shorter periods of unemployment associated with training provides some return to public funding costs (Circa Group, 2012 and Jin and Lipsman, 2011). Limited evidence on the cost effectiveness of the various international instruments has however been established.

In the context of growing fiscal pressures and public scrutiny of government budgets, the possibility to manage the total government liability and the potential impacts that this may have on the efficiency and effectiveness of the co-funding allocation mechanisms are considered in Box 6.

Box 6: Limiting the Exchequer's fiscal liability: the role of funding caps

There are limited examples of measures to cap the fiscal burden, where tax and subsidy co-funding mechanisms are used. On the available evidence, it appears that a fiscal cap is typically applied on the level of incentives for an individual learner, employer or employers' network rather than across the whole scheme.

Whilst no explicit fiscal caps at programme level have been identified a natural fiscal cap will be maintained, for example, where a limited number of apprenticeship places are available.

Critiques of funding caps cite that in principle, incentives can at best influence behaviours at the margin so in capping any expenditure it effectively limits the support to training investments that would have occurred anyway. In relation to the ETP, the capped amount of funding available during the evaluation period is considered to have limited the scale of the program and its ability to lead to additional training outcomes (Abramovsky et al. 2011).

For levy-grant and levy-access systems, the extent to which these are self-financing will act as a natural cap on expenditures. Here, it should be noted that levy arrangements funded on the basis of payroll or firm size will be pro-cyclical since the funds will grow as firms recruit more staff. In such cases it may be necessary to agree to an additional limit on maximum and minimum expenditure. This will ensure that funds are available to be drawn down in a recession and that expenditure remains prudent in an upturn.

However the accumulation of reserves in times of economic prosperity can be seen as an indication of the limited efficiency of these funds (Kamphuis et al. 2010). Employers, in particular, may begin to question where the money has gone. Indeed, in the case of universal compulsory levies in Cyprus and Hungary the consulted experts highlighted the risk that employers perceive that their compulsory contribution gets 'lost in the system'. In a recession, the opposite may hold, and support for collective investment in training may be limited when the individual firms themselves may struggle to meet the upfront costs of training finance.

Source: developed by ICF GHK based on expert consultations

Delivery and training infrastructure

The evidence base on the wider impacts of co-funding instruments on the delivery and training infrastructure is largely anecdotal and qualitative in nature. Concretely, the redirection of training away from on-the-job to more formal and external provision relating to the need for documentation / costing, has contributed to the development of the skills system in France (Smith and Billet, 2006) and the Netherlands (Berkhout et al. 2012).

In a comparative analysis of nine models of levy finance, Gasskov (2002) concludes that sector training funds can provide an opportunity to develop national or sectoral training policies and activities. Based on an evaluation of Skillnets in Ireland, this may extend to other forms of network-based model. Here, the use of contestable funds aimed at groups of employers, has supported the creation of new industry, regional and cross-sector employer networks. Such networks may in turn be better able to collectively determine training needs and make provision more responsive. The process of open procurement of

training is also seen as supporting the customisation of training and can feed into the renewal of existing accreditation (Circa Group, 2012).

In placing funding directly in the hands of employers, it is also considered likely that providers will need to develop innovative mechanisms for the delivery of localised and distance training (Parsons et al. 2006). There is also evidence from the UK evaluation of national skills academies. Based on 2,000 employer interviews, it is reported that employer engagement on the academy boards has contributed to training provision which corresponds to employers' needs to fill skill gaps (Johnson et al. 2011).

As a final consideration, as employers invest more in training and are increasingly required to pay the upfront costs for training, it is possible that more may seek to secure returns on these investments. Employer-routed funding and co-investment, may thereby lead to the unintended consequence of the increased introduction of payback clauses in employee contracts. In England the provision of such clauses are currently unregulated and left to each employer to decide upon (Cedefop, 2012). Alternative retention mechanisms may also be sought.²²

Key findings: There is some limited evidence of positive marginal impacts on productivity and wages from the additional training induced by co-funding instruments. While insofar as the schemes establish new or reinforce existing models of dialogue and engagement of employers in the training system, further qualitative benefits may emerge.

2.5 Conclusions

This section has focused on three overarching types of mechanism for delivering co-funding incentives to employers:

- Direct subsidies – grant payments and training vouchers;
- Tax expenditures – tax allowances, credits, exemptions and reductions; and
- Levy systems – levy- access, exemption, grant and reimbursement mechanisms

The variety of tax expenditures, subsidies and levy-grant mechanisms adopted are fundamentally similar, insofar as they route government funding through employers. The extent to which their impacts differ is more often guided by the context in which they are delivered and the detail of specific conditions attached.

The main conclusions from this chapter are that:

²² Burke (2002) identifies several tools that may contribute to increase a firm's ability to retain trained workers, while recouping the benefits of their investment. These include: contracts of employment such as apprenticeships; superannuation schemes; the provision of permanent employment; and career development structures.

- Governments around the world recognise the need to promote employer co-investment in training and employ a wide range of instruments to this end.
- The receipt by employers of larger amounts of subsidy is associated with increased levels of investment in accredited training. The effects however tend to be differentiated by industry sector.
- Achieving the balance between the targeting of additional outcomes and the administrative burden presents a real challenge.
- Employer-routed funding may not be the most effective way to target training among the low-qualified and disadvantaged groups. Instead greater levels of employer co-investment may reinforce the observed trend that the more highly skilled employees are more likely to receive training.
- The use of existing infrastructure, and industry and locally-oriented support mechanisms can be useful to promote employer 'buy-in' and support SMEs in submitting claims for government funding.
- Consideration of the wider issues of employer perceptions on the benefits of training and supply side conditions are needed – factors which are likely to differ on a sector-by-sector, or even a firm-by-firm and individual basis. Caution is needed to limit negative substitution effects that may arise due to changes in the delivery of funding.

Far-reaching conclusions are difficult to establish on the basis of a thin evidence base the findings of which are likely to be closely related to the nuances in approach and specificity of each instrument, as well as the wider context in which they sit. The sheer diversity in approaches one observes in itself suggests either that there is little consensus over what works or rather that it is the small details which matter.

In order to dig deeper into the issues outlined above and draw out further lessons for the development and implementation of co-funding in an English context, chapter 3 presents the findings of in-depth case study analysis. Case studies were carried out to investigate the efficiency and effectiveness of subsidy, levy-grant, and tax instruments for co-funding in Australia, Ireland and the Netherlands respectively.

3 Case study analysis

This section presents analysis of three case studies of co-funding schemes. The schemes were selected in order to identify the advantages and disadvantages of different approaches co-funding and draw lessons for the development and delivery of an English model of employer routed co-funding.

Box 7: Summary of case study analysis

Three different case study incentive schemes were selected in order to identify the advantages and disadvantages of different co-funding approaches: direct subsidy (Australia); levy system (Ireland), and; tax expenditures (Netherlands).

Australia Apprenticeship Incentive Programme (AAIP)

The AAIP is one element within a wider, evolving and complex system of incentives and support provided by the Commonwealth and State governments.

The AAIP provides a staged, tax-free incentive to employers worth up to A\$4,500 (£3,000) in 2012. The incentive is designed to cover the costs for the employer of recruiting, employing and training an apprentice. It is paid for all apprenticeships, although payments vary depending on whether the employee is a new or existing worker, and whether the occupation is on the National Skill Needs List. Off-the-job training must be delivered through a Registered Training Organisation. Apprentices and their employers can also receive a range of other financial and pastoral support. Elements of the AAIP are also designed to create a more demand-led apprenticeship system, and a more responsive provider network.

The benefits of the AAIP are:

- **High apprenticeship commencement rates.** The AAIP has significantly increased employer take-up of apprentices.
- **High levels of satisfaction.** Satisfaction levels amongst employers and apprentices are high.
- **High rates of progression into employment.** Job outcomes of apprentices are high including those of targeted disadvantaged groups.

However, the drawbacks of the AAIP are:

- **Low completion rates.** AAIP completion rates are comparatively low.
- **Limited impact on competition between providers.** A preference for traditional providers and high costs of market entry limits competition among providers.
- **Administratively complex.** The AAIP is seen as an administratively complex and burdensome system of apprenticeship funding.

Ireland Skillnets Training Network Programme

Skillnets, like the AAIP, has been in existence since the late 1990s. Its main aim is to support and develop training amongst SMEs, especially amongst those who do not or

Box 7: Summary of case study analysis

under-invest in training. It now covers both employees and jobseekers.

There are currently 55 networks organised on a geographic, sectoral or cross-sectoral basis. Skillnets match funds employer contributions (up to 50%) that are raised by a levy of participating employers deducted from the payroll. The networks identify training priorities for their members and use the funding to commission provision through a competitive tendering process. Network members can then access these programmes at a much reduced rate.

Skillnets covers over 10,000 companies, of which half are micro businesses. Over 42,000 people participated in one of the 5,700 training programmes. Three quarters of training was linked to the National Qualifications Framework or industry accredited, while one quarter were new programmes.

The advantages of the Skillnets training network programme are:

- **Employer ownership.** Skillnets is an employer-driven, flexible and needs based approach.
- **Added value.** Skillnets is associated with relatively high levels of additionality, with training activities taking place that would not have occurred otherwise.
- **Development of formal training.** The majority of training is formally accredited and certified. Open systems of procurement also promote innovative training responses that can be mainstreamed into the wider system.
- **Reduced administrative costs of training for employers.** The costs of administering the training for individual employers are low.

The disadvantages of Skillnets are:

- **It limits the duration of training.** Skillnets has an annual budget which focuses attention on short training courses of less than one year.
- **Managing the networks is expensive.** Managing the networks requires a number of dedicated full-time staff.
- **Employers are unaware of the true costs of training.** Lack of awareness of a 0.7 per cent levy on payroll means that many employers are unaware of the full amount they contribute towards the cost of training.
- **Emphasis on short courses.** Annual budgeting requirements tend to favour short, standalone courses. This may preclude the extension of the scheme to more widespread and generic forms of provision such as apprenticeships.

Netherlands Payment Reduction for Education (*Wet vermindering afdracht, WVA*)

The Netherlands WVA was developed to compensate employers for the loss of working time of employees whilst they are training. It is one incentive amongst several intended to increase employer investment in training.

Employers receive a tax credit if they invest in certain forms of training up to a maximum of €3,274 (£2,728) per employee. Initially aimed at intermediate vocational training (e.g. apprenticeships) the WVA now covers a wider range of training (ISCED levels 2-6). The tax credit is returned to the employer via the payroll tax system.

Box 7: Summary of case study analysis

The system is administratively simple, supports all employers and a wide range of training as long as the qualification it is registered in the Central register of vocational training. Despite this freedom, about three quarters of the funds are spent on apprenticeship training, although the quality of training has been criticised.

The advantages of the Netherlands WVA are:

- **It is administratively efficient.** Programme administration costs are very low.
- **It supports employer co-investment in apprenticeships.** Despite the freedom afforded to employers, most use the tax subsidy to fund apprenticeship training.
- **It has improved employer awareness and attitudes to training.** It has encouraged employers, especially SMEs, to invest in training.

The disadvantages of the Netherlands WVA are:

- **High levels of deadweight.** Almost two thirds of companies would have provided the training in the absence of the tax subsidies.
- **Concerns over the quality of training.** Independent evaluations have reported issues over the general quality of training due, in part, to the lack of quality guidelines.
- **The lack of control over total expenditure.** This means there is no limit placed on the total amount of funding from the Exchequer.
- **Duplication of funding from other training schemes.** Employers have been able to claim funding for trainees from multiple sources.

Comparative assessment

There are a range of mechanisms available with associated trade-offs in their strengths and limitations. These are often the result of trade-offs between particular aims and objectives as the administrative burden is a natural consequence of stricter quality controls or increased levels of targeting. Generally speaking, the more that quality controls or targeting is desired or considered necessary, the less it is appropriate to use the tax system to deliver employer-routed co-funding in training.

In all cases, the financial incentives for employer investment in training cannot however be isolated from the wider topography of skills policies and programmes. Whichever delivery mechanism is adopted, employer 'buy-in' is vital. The acceptance for a given scheme and the corresponding willingness to invest time and money in it is also shaped by the economic climate as well as social norms and the perceived need for training.

The role of price can also not be disassociated from the quality of provision and these social 'norms'. Since these variables tend to differ amongst groups of employers, substitution effects are an inevitable consequence of any reform. Furthermore, although the case studies only place a limited amount of purchasing power in the hands of employers, the balance of evidence suggests that this is insufficient to deliver quality and responsive training on its own.

In order to induce employers who do not usually invest in training, the case study evidence suggests that higher value incentives are required as well as mechanisms to shift the administrative burden away from business.

3.1 Case study selection and methodology

The literature review identified more than 40 different incentive schemes in 24 countries (see table 2). Summary details of all of these schemes were presented to the BIS project steering group. In consultation with the steering group, a 'long list' of 13 schemes from 8 countries were selected according to what extent and in what way they help to substantiate the expected benefits of a particular co-financing approach that is appropriate to England. However, no single scheme or model of co-funding matches entirely the guiding principles of a new delivery model of co-funding for FE and skills in England as identified in recent reviews and policy statements. Given this, five criteria were used to further refine the selection.²³ This process culminated in the selection of three case studies in Australia, Ireland and the Netherlands.

The in-depth case study research involved a further review of documentary evidence. This informed the development of semi-structured telephone interviews with country experts. The interviews focused on answering the research questions outlined in section 1.1 as well as identifying the practical challenges of implementation. A total of 14 interviews were carried out with research analysts, evaluators, policymakers, and employer and employee representatives.²⁴

²³ The five criteria used were:

- Information - the availability of clear and well documented evidence of the co-funding model.
- Relevance - to policy priorities in England in terms of employer investment and employer engagement.
- Efficiency - where there is an efficient allocation of funding and low costs on the Exchequer.
- Effectiveness - evidence of net benefits for learners, employers, and the wider skills system.
- Replicability - to the English FE and skills training system.

²⁴ Full details on the method of case study selection and assessment are provided in Appendix 2.

3.2 International context

Table 3: Summary employment and education statistics, 2011

Country		UK	Australia	Ireland	Netherlands
Population (15-64), million		41	15	3	11
Unemployment rate, %		8	5	15	4
Youth unemployment rate (15-24), %		20	11	30	8
Part time employment, %		25	25	26	37
Educational attainment, % ²⁵	High	35	38	40	33
	Medium	44	35	39	42
	Low	21	27	21	25

Sources: OECD (2012a and 2012b); Note: All percentages are given as a share of the total labour force

While England and the three case study countries witnessed a downturn in 2008 during the global financial crisis, the impact on unemployment across the 4 countries has been notably different. In Ireland and the UK, rates of unemployment - and youth unemployment in particular - are relatively high, in the Netherlands and Australia, unemployment rates were below 6 per cent in 2011.

As well as low rates of unemployment, the Netherlands labour market is also characterised by relatively high rates of part-time employment (37 per cent of the total labour force) compared to rates of 25 per cent in the other countries in the analysis.

In terms of the levels of educational attainment, the structure of the four economies is broadly similar. Although it is perhaps notable that in Australia more than 1 in 4 workers has attained only a low level of qualification (ISCED 0-2).

With these contextual factors in mind, an overview of the assessed schemes is provided in table 4 below. The co-funding instruments and delivery models provide insight into the advantages and disadvantages of three different approaches to co-funding:

- Direct grant payments to businesses for the purpose of training in Australia;

²⁵ Low qualifications correspond to ISCED levels 0-2, Intermediate qualifications to ISCED 3-4 and High qualifications to ISCED 5-8. An indicative mapping of the English education system against ISCED 2011 is provided in Appendix 3.

- A network based levy-access scheme in Ireland; and
- A lump sum, wastable tax credit in the Netherlands.

The selected approaches whilst not identical to the guiding principles of implementing co-funding reforms can provide pointers as to the likely effectiveness of the co-funding model which is being considered in England. Table 5 below presents a comparative overview of the case studies analysed based on the six guiding principles outlined in the introduction to this research (see section 1.2.3). In short:

- The Australian co-funding model is most similar to the prevailing model of co-funding in England. In addition, there are a range of direct incentive payments to businesses to offset part of the costs of apprenticeships and traineeships. The case study examines the effects of this partial employer-routed funding through a system of direct grant payments.
- The Irish co-funding model is based on an employer-led approach to training provision that involves the use of market pricing mechanisms. The case study tests the principles of employer ownership of skills training.
- The Dutch co-funding model provides employers with tax credits to cover part of the costs of training, while leaving the choice of provision to the employer. The case study analyses the effects of this partial employer-routed funding through the payroll tax system.

Table 4: An overview of employer co-funding instruments in Australia, Ireland and the Netherlands

Country		Australia	Ireland	Netherlands
Name of initiative		Australia Apprenticeship Incentive Programme (AAIP)	Skillnets training programme	Payment reduction for education (WVA)
Instrument type		Direct grant payment	Network based levy-access scheme	Lump-sum, non-refundable tax credit
Timescale		1998 - present	1999 - present	1995 - 2013 (<i>set to expire</i>)
Use of the tax system		No	Yes. Financed by tax levy on payroll	Yes. Tax deductions on payroll
Target workforce	Strategy	New entrants and existing workforce	Emphasis on existing workforce	New entrants and existing workforce
	Level	ISCED 3-5	ISCED 2-7	ISCED 2-8
	Equity	Indigenous population; disabled	Jobseekers	Jobseekers
Conditions of funding / provision	Firm	No conditions	No public or third sector organisations	Only accredited training enterprises
	Provider	Only registered providers	Unspecified – at employers' discretion	Only registered providers
	Trainee	No age restrictions; new and existing workforce	No age restrictions; new and existing workforce, and unemployed	No age restrictions: new and existing workforce
	Training	Apprenticeships and traineeships; external training only.	No statutory training; aligned with identified needs.	Internal and external training.
Key provisions		Up to A\$4,500 (£3,000) per apprentice / trainee.	Employers contribute 50% of cost.	Up to €3,274 (£2,728) per apprentice / trainee.
Uptake of instrument		82 per cent	Over 10,000 companies	80 per cent

Table 5: Comparative overview of co-funding delivery mechanisms

	England	Australia	Ireland	Netherlands
Name of initiative	The prevailing English model of co-funding.	Australia Apprenticeship Incentive Programme (AAIP).	Skillnets programme.	Payment reduction for education (WVA).
Main instrument(s) for State funding	Direct subsidy of providers; pilot training funds.	Direct subsidy of providers.	Contestable fund financed by a levy on firms' payroll.	Direct subsidy of providers; sectoral training funds.
Instrument for co-investment	Assumes the expected employer's fee is collected.	Direct grant to employers.	Network membership fee and payment of training fees.	Lump-sum, non-refundable tax credit.
State funding routed through:	Providers via the Skills Funding Agency. Limited employer routing.	Providers via User Choice. Some employer routing.	Employer-led networks.	Providers from State budget. Some employer routing.
Market value pricing	Limited. Price mechanism for specialised / tailored training.	Limited. Price mechanism for specialised / tailored training.	Yes. Fees payable represent around 50 per cent of costs.	Limited. Price mechanism for specialised / tailored training.
Employer choice	Yes. Provider funding follows the employer.	Yes. Provider funding follows the employer.	Yes. Network procurement of training.	Yes. Training decision left to the employer.
Output or outcome-oriented support	Limited use of incentive payments.	Additional incentive payments upon completion.	Staged incentive payments based on performance.	Full payment at outset until 2012. No links to performance or quality.
Accredited programmes	Yes.	Yes.	Some. Around 70 per cent of training is accredited.	Yes.
Affordability and fiscal control	Limited by annual budget.	No overall programme limit. Limit for each training type.	Limited by extent of levy finance and annual budget.	No overall programme limit. Limit for each training type.

3.2.1 Australian Apprenticeship Incentive programme

The Australian co-funding model is most similar to the prevailing model of co-funding in England. In addition, there are a range of direct incentive payments to businesses to offset part of the costs of apprenticeships and traineeships. The case study examines the effects of this partial employer-routed funding through a system of direct grant payments.

Context

Although undoubtedly weakened as a result of the 2008 global financial crisis, the Australian labour market has remained relatively robust relative to other OECD countries (Giernalczyk, 2012, p. 6). In reflection of Australia's relative economic resilience, maintaining and improving its competitiveness on the world market is an important current and future challenge. In parallel, the overall trend of an ageing population is thought to exacerbate this challenge as the existing workforce retires and skills are at risk of becoming obsolete (Hoeckel et al. 2008).

The Australian VET system in adjusting and updating the skills of the existing workforce and those of new entrants has a key role to play in meeting two main challenges: maintaining and improving Australia's competitiveness on the world market, and; meeting the 'replacement demand' of skills as older workers retire (Hoeckel et al. 2008).

Both industry and trainees/apprentices have shown a high level of support for the VET system (NCVER, 2007a and NCVER, 2007b). There is direct employer involvement in developing the National Skills Needs List (NSNL) which is used by the Department of Education, Employment and Workplace Relations to identify skills needs and bottlenecks (Australian Apprentices Taskforce, 2009).

The most striking parallels between England and Australia are the priorities attached to: increasing overall skills, making the system more demand-driven and increasing competition amongst providers (OECD, 2009). As has traditionally been the case in England, apprenticeships are highly valued in Australia and as they provide a link between formal training and employment (IPPR, 2011). The high levels of Commonwealth and State investments reflect this. Their value is seen as having a dual purpose to benefit individuals and society 'through the impact on two key drivers of economic growth – productivity and participation – and the impact on social inclusion' (Deloitte, 2012).

Furthermore, industry is now strongly involved in the definition of training needs and standards. The National Quality Council responsible for developing and monitoring the Australian Quality Training Framework is made up of representatives from government, industry groups, unions, employee organisations and training providers. 11 Industry Skills Councils collect information about industry training needs from employers, unions and professional industry associations (Giernalczyk, 2012).

This has led to Australia's VET system being characterised as a partnership between businesses and providers on the one hand and the national and state governments and government agencies on the other (Cully et al. 2009, p. 23).

Reflecting the need to meet its skills challenges and increase the overall skills base, the government (Commonwealth and States) contribution to Australia's apprenticeship and

traineeship system is substantial. The total cost to the public purse of a four-year apprenticeship in a recognised trade was estimated in 2008-09 at A\$28,324 (£18,883)²⁶ and at A\$7,081 (£4,721) for a one-year traineeship (NCVER, 2010a). The financial incentive to employers is worth up to A\$4,500 (£3,000).

Rationale of the Australian Apprenticeship training model

The AAIP in its current form commenced on 1 January 1998, with the introduction of New Apprenticeships, which for the first time combined apprenticeships and traineeships. For the purposes of this case study the two types of training are together referred to as apprenticeships. Within the apprenticeship/traineeship categories, we will refer to the former as traditional apprenticeships as they mostly involve craft and skilled manual occupations.

Traineeships were introduced in the 1990s to address high youth unemployment rates (Snell, and Hart, 2007). Similar to England, they expanded the apprenticeship model to sales, service and clerical occupations (Giernalczyk, 2012). Historically, the Australian conception of a traineeship emphasised the transition to employment of disadvantaged youth rather than skills acquisition but this is no longer the case (Committee of Inquiry into Labour Market Programs, 1985; Cully, 2008; and NCVER, 2010b).

Traineeships generally have lower skill requirements and shorter periods of off-the-job training (Knight and Mlotkowski, 2009), and as a result usually last 1-2 years whereas traditional apprenticeships last 3-4 years. In addition, traineeships also tend to be delivered by private training providers whereas traditional apprenticeships tend to be delivered by Technical and Further Education (TAFE) institutions. They all lead to Certificates at Level III (ISCED 4 equivalent) on the Australian Qualifications Framework (AQF), or in the case of some traditional apprenticeships to certification at Level IV (ISCED 5 equivalent).

The nature of the AAIP apprenticeship has a number of similarities with apprenticeships in England:

- An employer and an apprentice/trainee enter into a legal contract determining the training wage and conditions. The employer also defines an on-the-job and off-the-job training plan, endorsed by a Registered Training Organisation (RTO), and around 20 per cent of time is spent in off-the-job training (Giernalczyk, 2012).
- RTOs can be public or private as the training market has been opened to private registered RTOs and Group Training Organisation (GTOs) in order to increase competition in training markets (Giernalczyk, 2012).²⁷ Most traditional apprenticeships are delivered by TAFE providers while traineeships are typically delivered by private training providers.

²⁶ Exchange rate of AU\$1.5 = £1, based on average annual exchange rates for the year to March 2013 (HMRC, 2013).

²⁷ As of 2012, out of the 5,000 RTOs in existence, 3,700 are private providers and the rest are public training providers, mainly TAFE institutes (Giernalczyk, 2012).

- There are no penalties if the employer or apprentice/trainee breaks the contract. An apprentice or trainee is thus not bound to the employer as was once the case, instead s/he is able to continue with another employer.
- Access to Australian apprenticeships is not restricted by age, and from 2002 to 2008, more than 48 per cent of trainees were 25 years or older (NCVER, 2011a).²⁸ As in England, the large proportion of adult apprentices has been criticised as not in keeping with the notion of an apprenticeship as providing new skills rather than accrediting existing ones.
- The apprenticeships also apply to new entrants and existing workers, working both full- and part-time. In 2008, 33 per cent of trainees were existing workers (those who were already employed by their current employer), while 37.2 per cent of trainees were employed part-time (Karmel et al. 2008).

In this model, two agencies have been established to mediate and manage resources between employers, providers and the different levels of government:

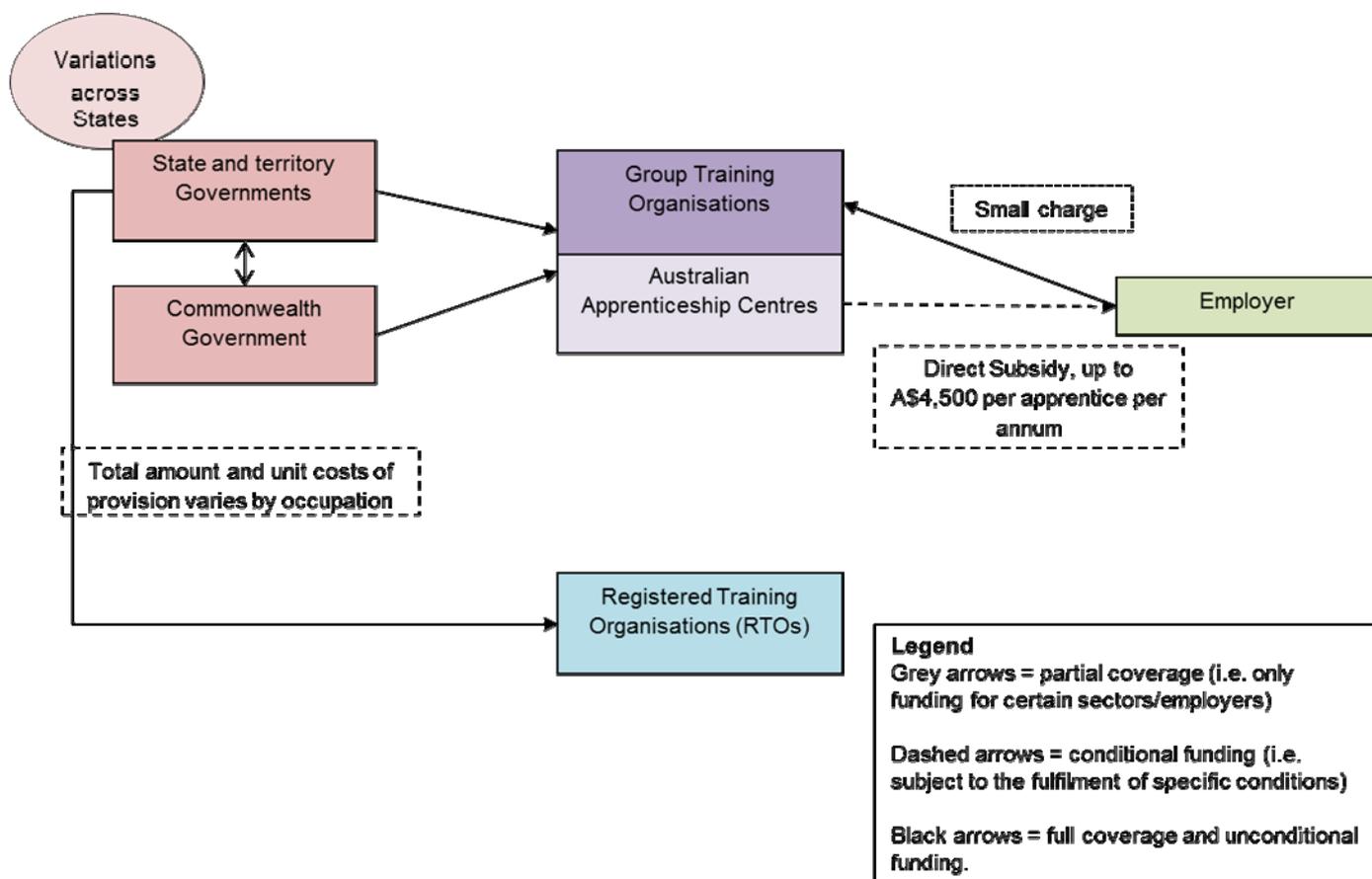
- Australian Apprenticeship Centres are contracted by the Australian government to administer incentive payments to employers and personal benefits to apprentices, assist in the signing of training contracts and generally promote apprenticeships in the local area. They are generally hosted by GTOs.
- GTOs support the employment of apprentices and trainees for short and broken periods of employment notably where there are insufficient full time places available, especially amongst small firms (Giernalczyk, 2012). Their role is to select apprentices for host employers and to monitor the internal and external training, and as such GTOs reduce employers' administrative costs and burdens and provides flexibility if an employer cannot support an apprentice for the whole period of the apprenticeship.
- The UK Government has previously identified these agencies as effective at reducing the administrative costs of training and thereby relieving employers of a considerable burden. They are also seen as playing a particularly important role in supporting SMEs, which often lack the necessary capacities to identify and hire suitable trainees (House of Commons, 2012, pp. 43-46).

Delivery of the co-funding model

The physical flows of cash within the Australian system of apprenticeship training between the actors are illustrated in Figure 3 below.

²⁸ The proportion of apprenticeship starters aged 25 and over in England was 44 per cent in 2011/12 (Evans, 2013).

Figure 3: Australian model of co-funding of training



Source: developed by ICF GHK

Key aspects of the co-funding model in Australia are:

- Under the 'User Choice' policy, employers and their apprentices are free to choose the RTO for off-the-job training and this choice governs the flow of public funds to RTOs. This approach is similar to the prevailing English funding system which is also responsive to employer and learner training decisions.
- The value of the corresponding provider-routed subsidies is also dependent on national skills needs, as defined by the NSNL. High priority skills areas receiving a full 100 per cent subsidy of the costs of training, and low priority skills areas receive match-funding on a 50 per cent cost basis.
- State governments cover close to all the cost of the formal, off-the-job training delivered by private or public RTOs to apprentices and trainees (Deloitte, 2012).
- GTO operations are jointly supported by the Commonwealth state and by territory governments as well as by a small charge paid by host employers.
- The Commonwealth Government supports declared apprenticeships and traineeships through direct subsidies. Employers can claim these incentives subject to eligibility conditions such as the requirement that the training is certified. These subsidies are

intended to compensate employers for the non-training costs of hiring and supporting apprentices. Such incentives have become more tightly targeted on occupations in shortage.

- In parallel, to the incentives provided to employers, States also generally exempt the wages of apprentices and trainees from payroll taxes.
- Employers often pay tuition fees for their employees but ‘there is no ready way to estimate what proportion of fees this represents’. This direct contribution from employers is likely to be modest (Karmel and Rice, 2011).

Incentive schemes under the AAIP

The AAIP provides tax free incentives to the employer which effectively subsidise employer’s costs of employing, supporting and training an apprentice. These incentives are in addition to the overarching system of largely state-funded provision of off-the-job training.

Incentives are paid in stages: at the commencement or recommencement (in the case of those returning to work-based training) and completion of the apprenticeship or traineeship, with larger amounts for apprentice completion of qualification (A\$2,500, £1,667). There has been a shift from incentives being predominately paid on commencement to being predominately paid on completion (Deloitte, 2012). As of 2012, for ‘new worker’ and ‘existing worker’ apprenticeships (which appear on the NSNL), the ratio of payments is 38 per cent on commencement and 62 per cent on completion.

- Additional incentives are also available to apprenticeships leading to one of the 57 trades currently listed as national skill shortage occupations under the NSNL or which relate to targeted populations or areas: Mature Aged Workers Incentives (45 and over), Declared Drought Area Incentives, Rural and Regional Skills Shortage Incentive, Assistance for Australian Apprentices with Disability.
- Apprentices also receive a range of financial and pastoral support to offset part of the effects of low wages during training, notably by supporting transport and accommodation costs, but these are beyond the scope of this study.

An overview of some of the main incentives paid to apprentices is provided in Table 6 below.

Table 6: Main incentives paid to the employer for Australian Apprentices²⁹

Employer Incentives (amounts shown in A\$) ³⁰	Certificate II (ISCED 3)	Certificate III / IV, (ISCED 4/5)	Diploma / Advanced Diploma, (ISCED 5)
Commencement incentive			
• New worker	\$A1,250 (£833)*	\$A1,500 (£1,000)	\$A1,500 (£1,000) ⁺
• Existing worker - NSNL	nil	\$A1,500 (£1,000)	nil
Recommencement incentive			
• New worker	nil	A\$750 (£500)	A\$750 (£500) ⁺
• Existing worker - NSNL	nil	A\$750 (£500)	nil
Completion incentive			
• New worker	nil	A\$2,500 (£1,667)	A\$2,500 (£1,667) ⁺
• Existing worker - NSNL	nil	A\$2,500 (£1,667)	nil
• Existing worker - Not NSNL	nil	A\$3,000 (£2,000)	A\$3,000 (£2,000) ⁺
• Part-time	nil	A\$1,500 (£1,000)	nil

Source: Australian Government (2012) Notes: *Nominated Equity Groups only; ⁺Where the qualification is in the aged care, childcare, or enrolled nurses sectors

Assessment of impacts and experience to date

Whilst commencement statistics have been considered as impressive (300,000 commencements a year in a workforce of about 12 million (NCVER, 2011a), completion rates are low. Contract completion rates are around 45 per cent for trade and 52 per cent for non-trade occupations (NCVER, 2011a, 2011b, 2011c) – with considerable variation by occupation, as well as by employer size and the type of employer (private sector, group training organisations, and government employer).

There are a number of reasons suggested for the relatively low completion rates. Firstly, the Australian VET system is modular and competence-based and thereby allows students to attend single courses without completing an AQF qualification. Nonetheless, high rates of attrition have remained a concern (Giernalczyk, 2012).

²⁹ Incentives are also available to provide additional support to workers in particular sectors or areas (Australian Government, 2012). Additional incentives paid to the employer may also be available at State level.

³⁰ Exchange rate of AU\$1.5 = £1, based on average annual exchange rates for the year to March 2013 (HMRC, 2013).

The retention/completion incentives provided are seen as ineffective. An econometric analysis conducted by Deloitte (2012) found that incentives under the AAIP³¹ were more effective in incentivising additional commencements than incentivising additional completions.³² The analysis also revealed that timing matters - an incentive targeted at young people has a larger effect at summertime, on account of the higher supply of potential Apprentices at the end of the school year. The impact of government incentives paid to employers has had a differentiated effect on traditional apprenticeships and traineeships. In the case of traditional apprenticeships, government incentives have been considered as negligible in comparison to the costs of taking an apprenticeship on. In some cases, employer incentives constitute as little as 2 per cent of those costs (Karmel et al. 2008). An NCVER case study on electrical and plumbing apprentices found that the largest part of costs for employers are apprentice supervision costs and as such that the effect of government incentives was minimal. Compared to traditional apprenticeships, the incentives for traineeships are financially more significant given the lower average wages and the shorter training duration (Deloitte, 2012). Thus under traineeships, incentives have acted as a significant subsidy on the total costs of training, and as such have significantly impacted on traineeship numbers (Karmel, et al., 2008).

It is difficult to disentangle the effects of *one particular incentive scheme* from changes in larger macroeconomic variables and/or changes to other incentives schemes, including state-based ones (Deloitte 2012). In fact, economic, institutional and personal factors have a stronger influence (Karmel et al, 2008) than financial incentives on the take-up and completion of apprenticeships and traineeships. An economic downturn can lead to improvements in completion rates, as lack of alternative employment opportunities make apprenticeships attractive (NCVER, 2011d). Conversely, employers are likely to under-invest in training during weak economic conditions in view of the lower labour demand (Deloitte, 2012).

Employer size, management and recruitment practices (IPPR, 2011), and support mechanisms for the apprentice/trainee and the employer, such as mentoring and pastoral care, were important determinants of the quality of the apprenticeships and therefore of retention and completion. The fit between the apprentice and the employer or the occupation is also an important in the completion of the training (Deloitte, 2012).

In terms of the quality of the training, the majority of employers and apprentices have been satisfied with the training received. Based on a 2009 employers' survey, only 10 per cent of those with apprentices were dissatisfied with the training provided (NCVER, 2009).³³ Similarly high levels of satisfaction were reported by individual learners. According to the

³¹ The report is limited to the presentation of results for the following employer incentives: Support for Mature Age Apprentices (SMAA); Support for Mid-Career Apprentices (SMCA); Support for Adult Australian Apprentices (SAAA); Apprentice Kickstart Bonus (AKB); and Apprentice Kickstart Extension (AKE).

³² The econometric model developed revealed that all the incentives offering more than A\$1,000 (£667) in the first year proved to have a significant, positive effect on commencements, other things being equal (Deloitte, 2012).

³³ A sample of 30 000 employers was selected from the Australian Bureau of Statistics Business Register. A total of 5 244 interviews were conducted with an overall response rate of 69.3 per cent.

2010 Apprentice and Trainees Destination Survey, 87 per cent of completers and 50 per cent of non-completers were satisfied with their apprenticeship (NCVER, 2010c).³⁴

Notwithstanding overall positive feedback on satisfaction over training provided and received, the quality of the traineeships is seen as a cause for concern. Increasing competition between providers through the User Choice policy has not been seen as effective in improving the quality of training provision. The desire of most states to maintain the viability of their TAFE institutions and high entry costs for providers, has limited the potential benefits of increased competition (Knight and Mlotkowski, 2009, p. 38). Experts believed that traditional apprenticeship delivery is relatively immune to competition as market entry costs are higher (for example, because traditional apprenticeships need more capital equipment). The fact that employers can 'shop around' for whichever provider they prefer has not impacted on the responsiveness of provision or quality for apprentices but has reduced the price of training trainees.

In terms of impact on employment for graduates of apprenticeships, the employment rate of apprentices who completed their apprenticeship was 86 per cent. According to the 2010 destination survey 71 per cent of those who completed training were employed in the same occupation as their apprenticeship (NCVER, 2010c). Although there are reported benefits to the targeted equity groups in terms of positive employment outcomes, it is likely - given the higher levels of support offered - that these benefits derive more from the specifically targeted individual support that they receive (Deloitte, 2012).

Finally, experts were divided on the effectiveness of the AAIP in supporting skill shortage areas, with some pointing to increases / decreases in take-up as occupations were included or removed from the NSNL. Other experts, however, discerned no impact. The only independent research conducted into this matter found that a little over one-third of incentive payments went to skill shortage areas; and suggests that these provide insufficient incentive to translate into supply of workers in the areas of greatest skills need (Karmel et al. 2008).

Overall, the Australian system of support for apprenticeships is seen as complex and administratively burdensome, particularly because there are several discrete components to it, Use Choice, NSNL, different incentives and different organisations (Commonwealth of Australia, 2010). This is supported by experts interviewed. There are regular revisions to the apprenticeship system, especially during the current period as Commonwealth, state and territory governments seek to rein in public expenditure.

Advantages and disadvantages of the co-funding instrument

The main advantage of the AAIP is that that it has led to a rise in the number of Australian apprentices.

- There has been a significant rise in the number of traineeships. Incentives towards traineeships have acted as a significant subsidy on the total costs of training, and as such have significantly impacted on traineeship numbers.

³⁴ A sample of 20,266 apprentices and trainees were selected with the aim of achieving 6 026 interviews. Interviews were completed with 6,228 apprentices and trainees with an overall response rate of 45 per cent.

- Whilst incentives for traditional apprenticeships are relatively lower, the AAIP has ensured the maintenance of the apprenticeship system in skill priority areas. The User Choice component of the AAIP has brought in a large number of new training providers into the market, albeit for delivering traineeships. There are high levels of satisfaction amongst employers and apprentices.

The main disadvantages of the AAIP concern completion rates, quality and impact.

- The impact of the AAIP on traditional apprenticeships is viewed as low due to the relatively low level of incentives compared to the large supervision and training costs. Other factors, such as, wages, employer size and wider macroeconomic variables are seen as having a greater impact on take-up and completion rates than incentives. The impact on skill shortage occupations is questionable and wider macroeconomic factors – international competitiveness and replacement skills demands - are seen as much more influential. Evidence on the overall quality of the traineeships is mixed with competition between providers through the User Choice policy has driven down costs of provision but not necessarily improved quality.
- The AAIP is seen as a complex and administratively burdensome system. This is largely due to the number of discrete components such as User Choice, the use of the NSNL, and the wide range of different incentives and institutional organisations.

Lessons from Australia

There are many similarities between the aims and objectives, and components of the Australian and English apprenticeship systems. Therefore, the lessons from the AAIP as it has developed over a number of years are important learning points for the implementation of employer incentives/subsidies:

- *The trade-off between administrative simplicity and pursuing a wide range of objectives.* The AAIP is seen as administratively complex but this is because it is trying to achieve a wide range of objectives: creating a more demand-led system; improving provider responsiveness; addressing national skills shortages; supporting apprentices across a wide range of diverse occupations and sectors. The balance in these priorities has also changed over time. For example, in the current economic downturn, value for money is seen as a major priority. In addition, jurisdictional differences (between Commonwealth and State level) and interventions and differences on those across States (wage subsidies, GTO funding, RTO funding) make for a more complex and administratively burdensome system.
- *Achieving greater provider responsiveness in a complex system.* The institutional landscape is not only complex but also volatile. On the one hand, this reflects the innovative policy environment and responsiveness of the system to anticipated or identified challenges. On the other hand, the complexity of the Australian co-funding delivery system may make it more difficult for employers to access the support available and assess the labour market value of pursuing a particular qualification.
- *Matching incentives to cost differences in apprenticeships.* Incentive payments for skill shortage areas have not translated into supply of workers to match these needs.

Incentives need to be sufficiently important to significantly subsidise the total costs of training. To this end, larger and more differentiated incentives may be needed which reflect the length and intensity of training as well as the wage differential on offer at the end of the apprenticeship or traineeship. Their size must therefore be tailored to reflect the relative benefits of different types of training and the total (direct and indirect) costs associated with these i.e. incentives should depend on the certificate category or the type of trade/occupation that the VET leads to. This need for differentiation is reinforced by the notion that providing incentives in all areas will dampen the effect of the price signal to undertake and complete training in an area of skill shortage. However, this would make the system even more complex and bureaucratic.

- *Balancing coverage and quality.* Take-up of shorter traineeships has been positive but there are concerns over quality. A substantial increase in competition between training providers with expected improvements on the quality in services (as expected under the User Choice policy) has effectively been limited by TAFE's predominance and high entry costs (e.g. capital equipment) for newcomers. This is more marked for training providers in the apprenticeships market.
- *The limited role of financial incentives to influence behaviour.* Institutional and human resource management practices relating to recruitment, supervision and career development as well as personal factors have a stronger influence on training outcomes than financial incentives and need to be taken into account. Influential human resource or personal factors may for example include employers' as well as apprentices or trainees' attitudes and motivation as well as the levels of mentoring and support in place.
- *Targeting skill shortage areas.* A key element of the AAIP is using incentives to address skill shortage areas. The process by which skills shortages are determined is seen as effective. However, it raises the broader question of why the state should intervene in supporting training where the returns for both the employer and the individual are greater than training in other skill areas. In addition, the fact that these are nationally determined leaves no flexibility for different skill shortages at a state level.
- *Using intermediary agencies to reduce the administrative burden on employers.* Intermediary agencies such as GTOs can support employers in recruiting apprentices and in accessing external training provision and thereby relieve employers of a considerable administrative burden.

3.2.2 Ireland Skillnets Training Programmes

The Irish co-funding model is based on an employer-led approach to training provision that involves the use of market pricing mechanisms. The case study tests the principles of employer ownership of skills training.

Context

Ireland's labour market is facing a number of related challenges following the dramatic setback of the global financial crisis in 2008. As a small, highly open and trade-dependent economy, Ireland's ability to recover from the crisis depends highly on the future of its trading partners and their ability to recover (ESRI, 2013). Faced with rates of youth

unemployment around 30 per cent and continuing long term unemployment, achieving recovery in the labour market is seen as Ireland's greatest challenge (DJEI, 2012).

Although in general, the supply of labour is greater than demand, the 2013 Action Plan for jobs (DJEI, 2013) recognises that shortages continue to exist in certain areas (ICT, engineering, science, healthcare, finance). To contribute to this priority of employment growth, there is consequently a recognised need to better align skills to identified enterprise needs. Recognising this need, an extensive range of adult learning programmes is prioritised in the National Skills Strategy (EGFSN, 2005).

As part of a wider agenda of structural reform to simplify the vocational training system in Ireland, FE ('adult lifelong learning') and vocational training ('post-leaving certification courses') are being brought together into a formal structure in 2013. This reform entails the dissolution of the National Training and Employment Authority (FÁS), and the establishment of a new Further Education and Training Authority (SOLAS). Further, the disparate set of Vocational Education Committees (VECs) are being restructured into 16 Education and Training Boards (ETBs). Under the new reformed system, SOLAS will be responsible for the co-ordination and funding of training and further education programmes around the country, in a role similar to the Skills Funding Agency in England. ETBs will ultimately be responsible for the delivery of publicly-funded FE and training programmes (DES, 2012).

In Ireland FE and vocational training take several forms (Cedefop, 2011c). These include:

- Second chance/re-entry by adults into further non-tertiary or higher non-university level continuing education;
- Ongoing publicly funded occupational and general skills training provided by public training and educational institutions;
- Self-funded education and training and general part-time provision; and
- Education and training for unemployed and inactive persons.

Rationale of the Skillnets training network model

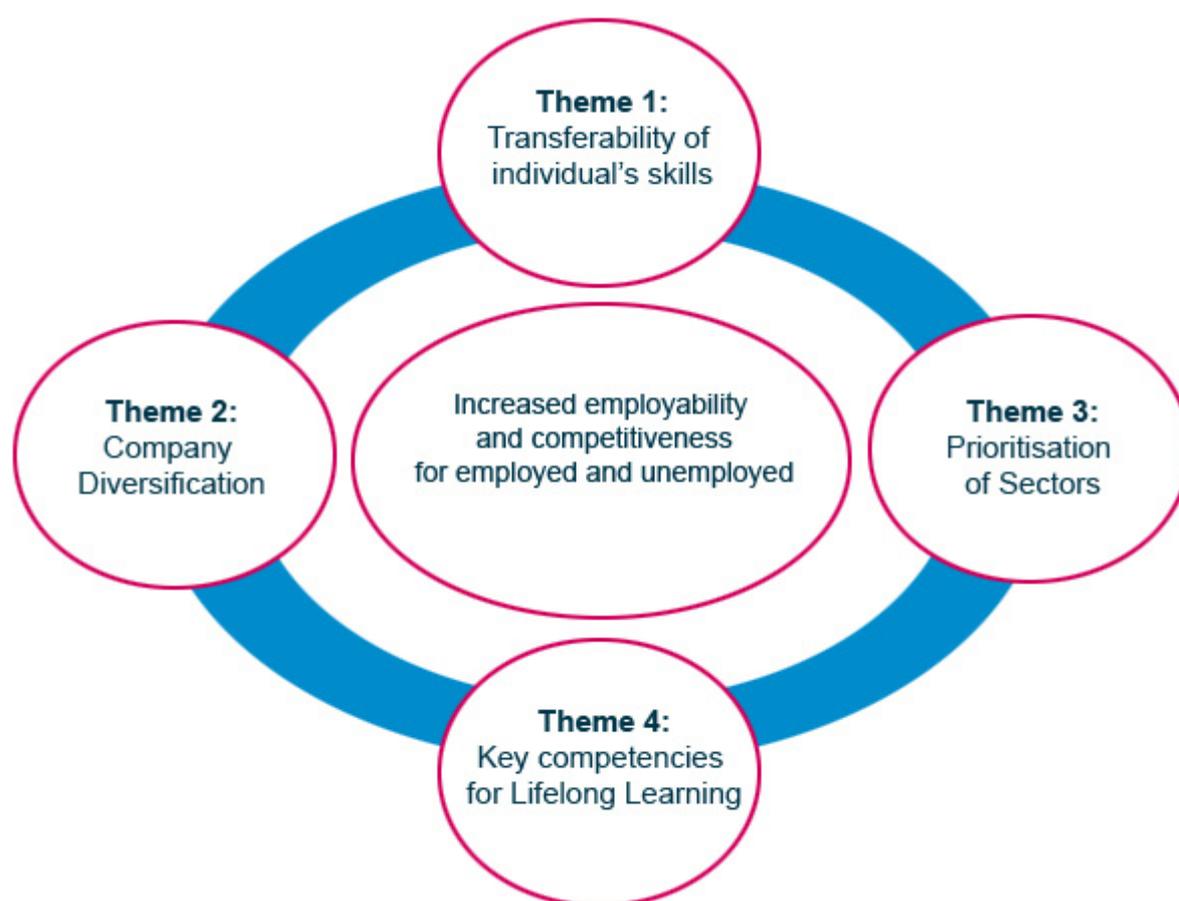
The Skillnets Training Network Programme provides a means for groups of employers to contribute private funding and resources to support skills training of the labour force. Through the procurement of training the employer-led networks seek to also increase competition between providers of education and training and bring about innovations in training delivery and design that correspond to industry needs.

The overall emphasis is on the delivery of training network plans and activities that address the needs of multiple companies. This focus of interventions towards groups of companies is consistent with a strategy to increase industrial and regional competitiveness. It is also consistent with the view that State support for training should focus on "general" training, rather than specialised training specific to the needs of a single company.

This remit has since been extended to offer network training opportunities to jobseekers with the aim of enhancing their employability (and thereby expand the pool of available labour). To this end, since 2011, networks are required to demonstrate that a minimum of 10 per cent (and maximum of 30 per cent) of the total trained in each year are unemployed. In 2011, Skillnets was set overall targets of training 40,000 persons of whom 8,000 are either unemployed or part-time workers (PER, 2011a). These targets were broadly achieved (Circa Group, 2012).

Since 2011, the renewed mandate also aims to closely align network activities to strategic areas of emphasis based on the four themes illustrated in Figure 4.

Figure 4: Skillnets priority funding areas 2012/13



Source: Skillnets (2013)

Delivery of the co-funding instrument

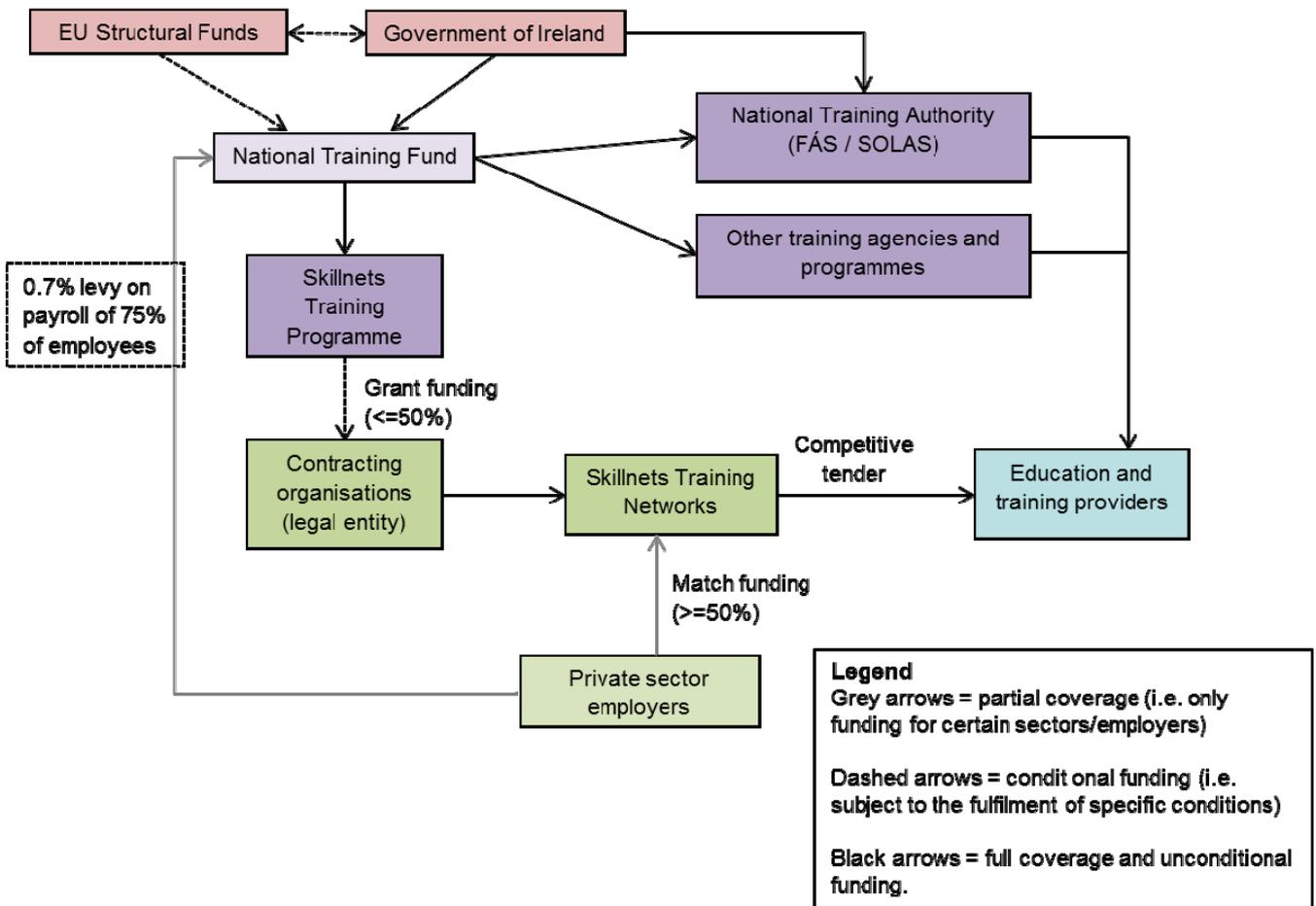
Since 1999, Skillnets has supported training networks that are mostly established by employers and organised on geographical, sectoral or cross-sectoral bases. The programme is based on a tripartite agreement between government, business representatives and trade unions.³⁵ Consistent with a demand-led approach, companies

³⁵ The programme board includes ministerial representatives as well as representatives of the employer bodies, Irish Business and Employers' Confederation (IBEC), Chambers Ireland, Construction Industry

and their employees are directly involved in the identification, design, delivery and evaluation of training processes either as lead bodies or in partnership with other organisations.³⁶

The physical flows of finance between the actors and programmes involved in Ireland's Skillnets model of skills training are illustrated in Figure 5 below.

Figure 5: Irish model of co-funding of training



Source: developed by ICF GHK

The government contribution to Skillnets, representing (at most) 50 per cent of the total costs of eligible network activities is funded through the National Training Fund (NTF). This funding represents just 4 per cent of the total value of the NTF.³⁷ Notably, the training fund

Federation (CIF), the Small Firms Association (SFA) and representatives of employee bodies through the Irish Congress of Trade Unions (ICTU).

³⁶ 'Other organisations' may include state agencies, advisory groups, certifying bodies, educational establishments, training providers and so on.

³⁷ The NTF instead largely funds the work of FÁS responsible for the delivery of apprenticeships, traineeships, and community training as well as employability programmes for the unemployed.

is budgeted separately from Voted Exchequer expenditure.³⁸ Instead the levy receipts are maintained in an investment account and drawn down subject to agreement between the Minister for Education and Skills and the Minister for Public Expenditure and Reform. Limits on maximum annual expenditure are also set in this process.

The NTF is itself supported by a training levy on employers of 0.7 per cent of the payroll for eligible groups (covering approximately 75 per cent of employees).³⁹ The compulsory levy is simple to administer as it is collected automatically through the Pay-As-You-Earn (PAYE) system. It was introduced at the same time as a simultaneous 0.7 per cent decrease in employer social security contributions. This approach averted any resistance, but also means that individual employers are largely unaware of their direct contribution to the NTF.

Following the recession in Ireland, the level of state support to the network was reduced from a 75 per cent government contribution to a 50 per cent matched contribution. Under the current 2012-13 programme, Skillnets provides networks with up to 50 per cent of the cost of all eligible training activities, worth €15m (£12.5m).⁴⁰ The total cost to the State is estimated at €289 (£241) per trainee (Circa Group, 2012).

In reducing the level of government funding, no significant impact on the level of training activities was identified. That notwithstanding, the main casualty of the cutbacks has been the ability for new certified training programmes to be developed. These require greater government support as there is effectively 'nothing to sell' during the set-up phase. To fill this gap, two channels of further designated funding were established in 2011:

- Future Skill Needs Programme - to develop courses for new skills in priority sectors;
- New Certified Programme Development - to stimulate further investment in certification.

These programmes provide additional government funding (of up to 80 per cent) to existing networks based on competitive proposals. This provides networks with a form of 'seed money' or start-up finance to support innovations in training.

Employer co-investment in training is a central part of the Skillnets co-funding model. Company funding at the level of the network contributed €10.5m (£8.75m) to accompany the €15m (£12.5m) of Skillnets funding in 2011. The main components of an individual network are as follows:

³⁸ Voted expenditure refers to the ordinary services of Government Departments and Offices, both capital and noncapital, the money for which is voted by the Dáil (the lower house of the Irish parliament) on an annual basis (PER, 2012, p. 5).

³⁹ The use of the payroll system to finance the NTF necessarily excludes the self-employed from contributing to the full costs of training. The self-employed remain eligible to participate in network activities.

⁴⁰ Exchange rate of €1.2 = £1, based on average annual exchange rates for the year up to March 2013 (HMRC, 2013).

- Access to a contestable fund supported by matched funding from the State, with the possibility of 'over-matching' by the employer-led network.
- Applications to funds are led by a contracting organisation that manages the network. These are typically groups of employers.
- Network funding is confirmed on an annual basis, providing no guarantee of funds in year two.
- Participating companies contribute match funding in the form of membership fees (an access levy) and payment of the fees set for the training courses. The precise 'business model' of the network is freely determined.
- Membership fees payable either annually or monthly (via direct debit) enables networks to have some certainty over cash-flows and sends a signal of collective interest.
- Flexible training fees ensures that the cost of membership remain accessible and allows companies to select training which meets their needs by creating a value proposition for the firm.
- Roughly 80 per cent of the network costs relate to learning activities (trainer fees, training materials, evaluators, certification costs etc.), with the remainder spent on network events (seminars, conferences), communications (website, reports, publicity materials etc.) and management.
- The network may also seek sponsorship of events / publications / websites to fund the non-training aspects of the network.
- Networks issue calls for tender to procure training tailored to the identified needs for the sector /geography which it represents.

Eligibility conditions and operational requirements

Each network is approved a match-funding budget which covers the training costs plus the management of the network. In 2011, overall State funding on management costs was €2.1m (£1.8m). Each approved network has a maximum management ratio of 25 per cent of overall expenditure.

Once an approved network begins to operate, there is a requirement to provide information on how the agreed budget is being spent and how the required cash matching is being collected. This is achieved through an online reporting system which is updated with details on income and expenditure. In addition to this on-going reporting requirement, funded networks must submit an Independent Accountants Report at the end of the funding period. This is used to demonstrate that all income and expenditure have been properly recorded and are eligible for inclusion.

A dedicated Skillnets programme support manager works closely with a full-time Network Manager to support and monitor the performance of the network. Further quality assurance consists of a yearly compliance visit, data monitoring and auditing including checks on the eligibility of recorded incomes and the procurement process.

The following eligibility conditions apply to network funding:

- Since 2009, government co-funding can only be used to fund the direct costs of training. In-kind costs were previously eligible, but this proved too complicated and difficult to police.
- All match funding, including training course fees, is paid by the participating companies, not the employees. Job-seekers are also not required to contribute to the costs of network activities and therefore, this addition has meant that networks have needed to stretch the government co-funding further.
- Public or voluntary sector entities are ineligible for Skillnets funding.
- All types of training are eligible for support except for training that is mandatory by law.
- Funding is made available through grants to approved networks enabling member companies to benefit from discounts on market training rates.
- There are no formal restrictions on the types of provider which can deliver the training, other than those established at the network's discretion.
- Funding is provided to the networks in tranches: initial pre-financing (20 per cent), with the remainder payable in interim (40 per cent) and final (30 per cent) stages based on performance in relation to the targets established in the annual training plan. A retention payment (10 per cent) is payable at the start of the following period once accounts have been signed off.
- All payments are subject to stringent conditionality requirements at each stage, relating to administrative, financial and reporting requirements, quality controls and performance measures.

Assessment of impacts and experience to date

Circa Group (2012) conducted an independent evaluation of the reported data and information from Skillnets proposals, Annual Reports and plans, and the on-line system for reporting activity management. This evaluation of activities in 2011 'generally confirms' that the Skillnets model is efficient in terms of resource deployment and effective in delivering the agreed planned outcomes (Circa Group, 2012, p. 116).

There is however limited evidence of impact of the effectiveness of the achievement-based element of funding. Anecdotal evidence from programme managers however suggests that this is an effective tool to speed up operational compliance. Some degree of initial upfront payment is seen as necessary to enable sufficient investment in establishing and procuring training courses and prevent cash flow issues from being a deterrent to employer engagement.

The employer-led network approach in Ireland has been successful in achieving its aims of increasing employer engagement and investment in training. In Ireland, where the funding for training is channelled through employer-led networks and the training decision steered

by the member companies, there is evidence of an associated greater take-up of training as almost 40,000 trainees participated in Ireland's training network activities in 2011.

Among the 70 training networks in operation in 2011, 10,151 companies were actively involved in a training network. Of these, over 90 per cent of the companies were SMEs, and roughly 50 per cent are microbusinesses employing up to 9 people (Circa Group, 2012). The active participation of smaller firms is seen as testimony to the low administrative burden that the co-funding model places on the member companies.

It is also suggested that the development of networks of SMEs and large companies on a local and sector basis, facilitates the transfer of knowledge between firms. At a high level, executives participate in the Steering Groups of networks to identify and specify training needs of the industry or region at large. Their interactions on these boards with trainers, academia and other advisors, and the support of the Programme Support Officers can also promote the sharing of best practices. On the ground, the joint participation in training activities of employees from a range of companies and jobseekers can also promote the knowledge transfer. There is however only anecdotal evidence of such positive impacts.

In the current 2012-13 period, 55 training networks operate across Ireland, down from the 70 networks in operation in 2011. This reduction is largely a result of network mergers based on an appreciation of common cross-industry or inter-regional challenges and needs. Moreover, mergers arise in order to take advantage of economies of scale – both in terms of managing the administration and in terms of the volume of training activities.

In 2011, nearly 5,700 courses were undertaken and over 42,000 individuals received training, 16 per cent of which were jobseekers. This surpassed the established government target of training 40,000. In light of the cuts in the government contribution (from 75 to 50 per cent of costs), the resilience of employer investment in training reflects the success of the programme in leveraging (and retaining) employer 'buy-in'. Interviewed experts suggest that the accumulated employer experience of the benefits of training from previous funding rounds was a determining factor.

In the most recent independent evaluation of the Skillnets programme, online surveys were conducted involving 86 per cent of network managers, 15 per cent of trainees and just 8 per cent member companies (Circa Group, 2012). The findings here corroborate the perception that employers experience benefits from the training that they pay for (at subsidised rates). A large majority of respondent companies reported to be satisfied or very satisfied with the quality of the training, its relevance and its cost. Trainees also reported high levels of satisfaction with the training courses and agreed that it 'helped them do their job better and will continue do so in the future.'

From a government perspective, the intention is to support training that would not have happened otherwise. Based on employer feedback, the evaluation reports low levels of deadweight – a large majority of employers would have 'otherwise trained less or not at all' (Circa Group, 2012). The government contribution to financing skill needs is seen by the interviewed stakeholders as a necessary condition for including support to the unemployed, as well as more basic forms of entry-level or low level skills training as part of network activities. There is little evidence to suggest that firms are wary of investing in accredited training due to the consequent portability of these skills, and thereby engendering a fear of 'poaching'. On the contrary, accreditation may be perceived as a

sign of quality training (and therefore potential employer returns). The framing of the training as a means to promote industrial competitiveness of the region or industry sector groupings may also serve to foster a collective interest in training.

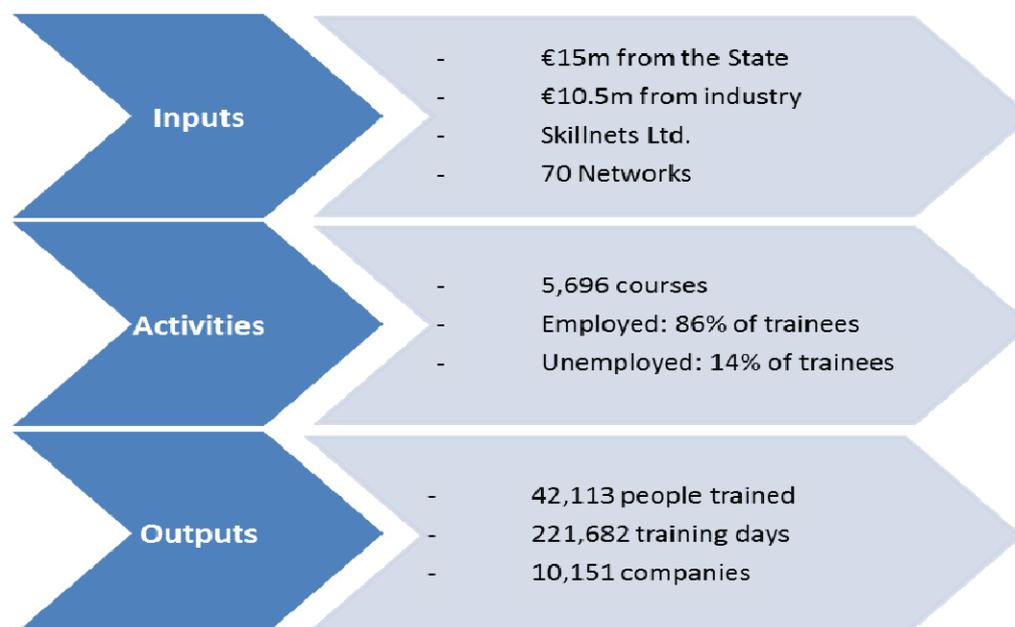
Perhaps more importantly given the aim of the programme to support training applicable across multiple companies, 74 per cent of all training activities undertaken in 2011 were linked to the National Framework of Qualifications (NFQ) or industry certified accreditation. 25 per cent of training courses delivered were instead entirely new programmes, providing evidence that the networks contribute to innovation in training provision (UKCES, 2009). For example, new tertiary level vocational qualifications have been developed in Sustainable Energy Finance (Summit Finaus Network, 2013).

Interviewed stakeholders report that the improved access to accredited training is particularly beneficial for certain sectors. In particular, those service industries with a previous emphasis on non-formal training, such as hotels and catering. Anecdotal evidence also suggests that as employers engage in the network model and invest in training, issues over the quality and relevance of training becomes more important over time.

A further benefit of the employer-led network approach is purported to be the purchasing power that the networks derive. The process of procuring training appears to have a positive influence on customising training to suit the needs of employers: 80 per cent of courses run were adapted to the needs of networks (UKCES, 2009).

In the 2011 evaluation, Circa Group (2012), almost all of the companies agreed that the training has helped them to fill skill gaps, whilst a similarly large majority agreed that it has contributed to improved productivity. A high proportion of respondents also reported that Skillnets training contributed to market developments such as enhancements to products and services. In some cases, employers also reported that the training received (and the networking opportunities provided therein) has helped them to expansion in existing markets or entry into new markets.

An overview of the inputs, activities, outputs and estimated impacts based on the 2011 independent evaluation are presented in Figure 6 below.

Figure 6: Evaluation of the Skillnets programme

Source: adapted by ICF GHK from Circa Group (2012)

Advantages and disadvantages of the co-funding instrument

The advantages of the Skillnets programme are:

- Employer-driven, tailored training is based on identified industry needs. This contributes to promote greater relevance and timeliness of training. The demand-led approach and lack of restrictions on the nature of provision, promotes the piloting of new, innovative training and delivery methods.
- Close cooperation between the social partners, providers and government actors and the introduction of a dedicated stream of funding supports the renewal of existing accreditation.
- The multi-employer training model reduces administrative costs – which helps SMEs who may otherwise lack in-house capacity to train or suffer from cash flow problems to cover the full upfront costs of training. SMEs, in particular, also benefit from the increased bargaining power vis-à-vis training providers. Finally, all firms benefit from ‘network effects’ of knowledge transfer.
- The continued operational success of the programme when the Government’s share of co-funding decreased from 75 to 50 per cent is testament to the ability of the model to leverage employer ‘buy-in’.
- The eligibility criteria ensure that the needs of jobseekers, more basic, low-level skills needs are explicitly addressed as well as the need for more technical skills.

- At the level of the NTF, further advantages are derived from the fact that spending does not need to be voted on. This provides flexibility to respond to urgent needs and review programme funding mid-year. There is also minimal administrative burden on employers as the levy is deducted directly from payroll.

The disadvantages of the Skillnets programme are:

- Annual award of grant finance all but rules out use of the scheme to develop training responses of a longer duration. This leads to an overwhelming emphasis on short or standalone courses and may preclude the extension of the scheme to more widespread and generic forms of training provision such as apprenticeships.
- While the burden on employers is kept low, the administrative burden at the level of the networks and on government is significant. As such there is risk of non-essential bureaucracy. It can also be timely and costly for new networks to establish employer 'buy-in' to its business model since it is more difficult to sell a concept than a product. Managing the networks in order to mitigate this administrative burden requires the funding and creation of permanent positions.
- Continuous monitoring and evaluation is also required to avoid issues of provider non-compliance. This is needed to mitigate the risk of providers defrauding networks by charging high rates for customised training. As such, providers are now required to justify any charges and may be subject to spot checks or random inspections.
- At the programme level, employers are largely unaware of the 0.7 per cent levy on payroll which directly contributes to the NTF. While this reflects a minimal administrative burden on the one hand, it also reflects a lack of employer awareness of the full costs of training.⁴¹
- A disadvantage of funding training through the NTF, which is essentially a form of hypothecated tax, is that the available revenue is pro-cyclical: the higher the level of employment, the higher the revenue that is available. This generates the risk that less funding is available in a downturn.⁴²

Lessons from Ireland

The Skillnets approach is to develop an infrastructure of employer 'buy-in' alongside a levy system which is matched by government funding. This has important lessons for similar approaches which are being trialled in England, for example, through the Employer Ownership Pilot. The main lessons from Ireland Skillnets network approach and the National Training Fund are:

⁴¹ Employer associations are however aware of this levy and their representation on the board may help to ensure the funding is directed to where it is considered most needed.

⁴² This is somewhat restricted by any limits placed on the fund in the annual budgeting process, and could in theory, be overcome by implementing a rule to ensure that government's percentage contribution increases in an economic downturn.

- *The impact of employer engagement on quality.* Employer ownership and procurement is widely perceived as having had a positive impact on the quality of training and relevance to employer and wider industry needs in terms of both its content and delivery. Open systems of procurement can also promote innovative training responses, which can be mainstreamed into the wider system. This is however conditional on employers being aware of what their collective short- and long-term needs are and their ability to communicate or signal these needs to providers. Employer involvement in the design and administration of co-funding is also associated with a greater willingness to train.
- *Involving the social partners.* Employer representatives and trade unions can be used to support firms in analysing training needs and developing training plans. Employers with limited experience of training, in particular may require such support in order to identify their skill needs, establish a training budget or plan and communicate their needs to providers.
- *Leveraging greater employer investment.* Employer 'buy-in', developed through positive experiences and perceptions of training, is necessary for the introduction of price to not be seen as a further deterrent or barrier to training. Once employer 'buy-in' has been achieved, there may be potential to leverage further employer investment.
- *The use of networks to reduce the administrative costs to employers.* Networks or group training that can pool together employers can help SMEs achieve a stronger bargaining position vis-à-vis training providers. Networks of employers have greater bargaining power with providers. The networks reduce the administrative costs of training and thereby relieve employers of a considerable burden.
- *Conditional finance can support timely operational compliance.* Some upfront support may be necessary in order to avoid cash-flow problems. 'In-kind' match funding was found to be too complicated and difficult to police. Small firms may struggle to finance training at market value due to cash-flow issues and may require further upfront support. Upfront support may also be needed to support employer engagement in establishing and/or the renewal of training programmes, as for providers there is effectively 'nothing to sell' during the set-up phase.
- *The continued need for government support.* A government contribution is necessary to assist the management of the networks. It is also necessary to support the training of target groups such as jobseekers and the low-skilled.
- *The potential administrative efficiency of a payroll levy.* A compulsory levy arrangement need not be intrusive. The training levy's introduction led to no net change in tax requirements. This presents a minimal administrative burden of collecting the levy and help ensures a smooth path to its introduction. This does however contribute to limited awareness of the levy contribution among employers.
- *Budgetary processes affect the types of training which can be supported.* Annual budgeting requirements favour short courses up to a maximum of 1 year, and generally preclude training provision of a longer duration. While supporting a prudent use of

finances, annual budgeting processes and caps may respectively preclude the development of training courses that last longer than a year and ultimately limit the scale of the programme.

3.2.3 Netherlands Payment Reduction for Education

The Dutch co-funding model provides employers with tax credits to cover part of the costs of training, while leaving the choice of provision to the employer. The case study analyses the effects of this partial employer-routed funding through the payroll tax system.

Context

The well performing labour market in the Netherlands has continually delivered relatively low rates of unemployment, even during the global financial crisis in 2008. The Dutch labour market is however 'divided into a small flexible segment and a large more rigid segment', with limited job security for the former. At the same time, rates of labour utilisation are relatively low due to a high frequency of part-time employment and a low effective retirement age (Gerritsen and Hoj, 2013).

For those employed in the more rigid segment the combination of employment and wage protection legislation (which increase with age) gives individuals strong incentives to retain the same job as long as possible, this has the effect of reducing the return on (non-firm specific) human capital accumulation (Gerritsen and Hoj, 2013). As a result, 39 per cent of all employees are involved in training - which is more than are involved in training in the UK (31 per cent) - but still only half the share observed in Denmark, and Sweden (Euwals et al. 2009).

In the Netherlands, collective labour agreements play an important role in providing and financing further training. Financial arrangements in collective agreements are made through funds which are intended to keep the skills and competences of employees at a high level. The most prominent of these funds are the sector based training and development funds ('*Opleidings- en Ontwikkelingsfonds*', O&O funds), which are typically financed through a levy on the gross wage bill of the firms in the respective sector. These funds mainly focus on informally acquiring sector specific skills, instead of accredited general training that can facilitate labour mobility between sectors and particularly out of declining sectors (Gerritsen and Hoj, 2013).

Since training is typically a joint decision in the Netherlands between employers and individuals, employer incentives should also be considered in view of the institutional framework underpinning this decision making process. In the Netherlands this includes training leave arrangements, and other individual incentives, such as individual learner accounts.

Rationale of the Payment Reduction for Education model

In 1998, the law for tax relief for training costs – Payment Reduction for Education ('*Wet vermindering afdracht loonbelasting en premie voor de volksverzekeringen*', WVA) - was adopted as part of a broader law reducing remittance tax and national insurance contributions. The package included two other types of tax deductions for training investments including a tax law allowing 40 per cent deduction on training expenditures for

workers above age 40, which was abandoned in 2004 due to the unintended substitution effects (Leuven, Oosterbeek, 2004).

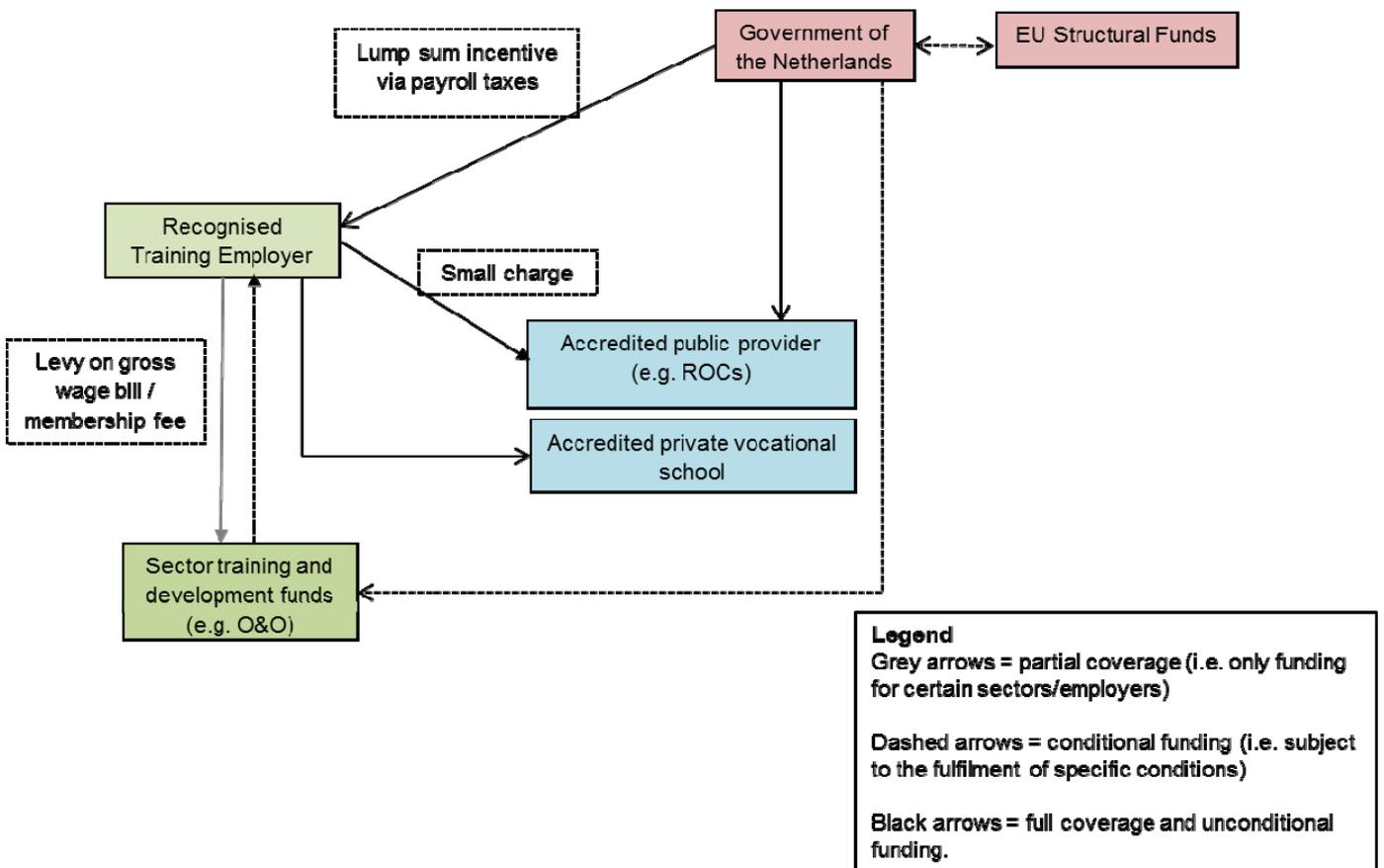
The WVA introduced a tax credit paid via payroll to cover part of the costs of a worker, a trainee or a student-employee participating in certain types of education or training. The purpose of the tax credit is to persuade more employers to invest in vocational training. The policy was adopted at a time when vocational training was not high on the agenda for employers, due to a lack of influence on training content and the general quality of training. Alongside the introduction of the WVA were reforms of VET system in order to address the employer responsiveness and quality of training.

In principle, the WVA seeks to compensate employers for the costs they incur due to the loss of working time of the employee. The relief is not intended to directly cover the costs spent for training courses, which employers are expected to bear. Investment and co-funding in training is seen as strategic tool by governments and employers to increase international competitiveness (Berkhout et al. 2012; Leuven, Oosterbeek, 2004).

Delivery of the co-funding instrument

Figure 7 below sets out the model of co-funding together with additional subsidies that can be claimed by the employer via sectoral training funds to pay for specific training courses.

Figure 7: Dutch model of co-funding of training



Source: developed by ICF GHK

Alongside the incentives aimed at employers (outlined below), the Government subsidises regional training centres (*'Regionaal Opleidingen Centrum'*, ROCs) by approximately €3m (£2.5m) each year. The amount paid to individual ROC depends on the number of students enrolled each year and the range of courses offered.

Employer subsidies and support for training may also be available from the sector-based O&O funds, most of which focus on formal sector-specific training courses. There are also sectoral O&O funds that solely distribute European Social Fund (ESF).⁴³ In some sectors the subsidies for training coming from O&O funds can be quite substantial, for example in the metal sector the O&O fund provides a subsidy per employee of up to €1,500 (£1,250) (Donker van Heel et al. 2008). The O&O funds and other available subsidies are compatible and complementary with the wastable (non-refundable) tax credit. In effect, the employer can claim multiple subsidies for the same trainee.

According to the National Statistics Office (*'Centraal Bureau voor de Statistiek'*) the government funds 61 per cent of the shared costs for apprenticeship (*'Middelbaar beroepsopleiding'*, MBO, ISCED level 3-4) training, with 33 per cent funded by the companies and 6 per cent by households (Vogler-Ludwig et al 2012). Employers pay an unspecified amount to training providers for work based vocational training pathway (*'Beroepsbegeleidende Leerweg'*, BBL)⁴⁴ and school based vocational training pathway (*'Beroepsopleidende Leerweg'*, BOL),⁴⁵ though the amount is rather small and does generally not exceed the €1,000 (£830) limit.

Studies have found (Detmar and De Vries, 2006) that companies overall expenditure for a BBL trainee in 2005 was €11,556 (£9,630) and in 2008 the amount rose to €12,213 (£10,178). During this time, the maximum amount of the tax relief was €2,566 (£2,138). The tax subsidy therefore represents around 15-20 per cent of the total costs of work-based apprenticeship training.

Tax relief and employer training costs

The wastable tax credit is essentially a lump sum grant payment that gets delivered through the payroll tax system. The amounts that can be claimed vary according to the type of training, in reflection of the different levels of associated direct and indirect costs. This channel for employer-routed funding is additional to the direct public funding of ROCs.

The scope of the WVA has been revised over the years, and at the outset, the WVA was mainly applicable to apprenticeships or higher secondary school vocational training

⁴³ In total, out of the 80 O&O funds representing 78 per cent of workers, 78 per cent of the funds provide subsidies for training activities, in one way or another. A complete list of all available O&O funds is available at Agentschap SZW (2013).

⁴⁴ Trainees work 60 to 80 per cent of the time training on-the-job and the rest of the time in a public or private vocational training school.

⁴⁵ Trainees spend 20 to 60 per cent of their time at a company for practical learning and the rest of the time at a public or private vocational training school. The student/or school can choose whether the student will spend 1 day at the company each week or whether block internships will be done over the whole period of training. Training will last between 1-3 years to reach level 4.

(‘*Middelbaar beroepsonderwijs*’, MBO, ISCED level 3-4) and has been successively extended to include further types of job-related training and lifelong learning. Table 7 shows the applicable maximum deduction amounts per student per year in 2013.

Table 7: Tax credits available for training under the WVA

Eligible type of training	ISCED level	Value ⁴⁶
Basic qualification level (unemployed)	2	€3,274 (£2,728)
Lower secondary vocational training (‘ <i>Vorbereidend Middelbaar Beroepsonderwijs</i> ’, VMBO)	2	2,728 (£2,273)
Procedure recognising acquired professional competences (‘ <i>Erkenning Verworven Competenties</i> ’, EVC)	-	€327 (£273)
Work- and school-based vocational training pathways (‘ <i>Middelbaar beroepsonderwijs</i> ’, MBO)	2-4	€2,700 (£2,250)
Initial tertiary vocational training (‘ <i>Hoger Beroepsonderwijs</i> ’, HBO)	5	€2,700 (£2,250)
Doctoral training paths (PhD)	8	€2,728 (£2,273)

Source: Government of the Netherlands (2013)

The rates in Table 7 are used to calculate a reduction in the employer’s payroll tax, depending on the level and duration of training, and how many hours the employee works. An example calculation is provided in Box 8 below.

⁴⁶ Exchange rate of €1.2 = £1, based on average annual exchange rates for the year up to March 2013 (HMRC, 2013).

Box 8: Calculating the tax relief

Example 1

Suppose that the employee follows higher vocational training in the course 'HBO Communication' for example. The employee is not enrolled as a full-time student and it is a three year degree.

The employee is employed for 24 hours a week. The part-time factor is 24/36 (full-time). The tax reduction for education is therefore an annual lump sum payment of $24/36 \times \text{€}2,700 = \text{€}1,800$ (£1,500).

The tax credit should normally be applied for 24 months, but due to the employee working part-time, the claiming period is extended to $36/24 \times 24$ months = 36 months. The employer can claim a deduction for three years of €5,400 (£4,500).

Source: adapted by ICF GHK from NTI (2013)

Eligibility conditions

In order to claim the tax credit, the employer is required to make a simple request to the tax authorities when submitting payroll slips, at any time of the year. The eligibility criteria tend to be unrestrictive:

- There are no restrictions regarding the type of company (except for the HBO training which is limited to specific sectors).
- The student needs to have a trainee-employment contract and a training agreement signed by the training provider, the trainee and the employer indicating the diploma to be reached and courses to be followed.
- For students in the MBO pathway, the employer has to be recognised as a company that can train students by one of the 17 sectoral training bodies (*'Kenniscentra Beroepsonderwijs'*) that determine the training topics and standards for the MBO diplomas for each profession. This requires some investments in personnel who are responsible for supporting and supervising future apprentices.
- The work-based (BBL) diploma is particularly flexible regarding the practical learning content within companies and the courses to be followed in the school – with various combinations possible.
- The course delivered by the training provider must be registered in the Central register of vocational training (*'Centraal register beroepsopleidingen'*), which includes all training courses recognised by the Ministry of Education or Economy.⁴⁷

⁴⁷ In the Netherlands there are 43 specific regional training centres (ROCs) which have this accreditation, along with some other private schools. The content of the training is fixed by the Ministry of Education and the sectoral training bodies – which include social partner representatives in their advisory board.

For other types of training no accreditation is needed although the sectoral O&O funds may establish industry level accreditation for specific training courses for adult education. Most of the ROCs also have a private training institute or commercial department through which they provide continuing adult training programmes. Control is not always ensured whether these private institutes or subcontracted training experts dispose of state accreditation.

In case of controls by the tax authorities the employer needs to retain a number of documents including the trainee-employment contract, the training agreement, a certificate that granting permission to train students and proof that the employee actually followed the training.

Assessment of impacts and experience to date

The Dutch Ministry of Education has commissioned two evaluations for the periods 2000-2005 (Gelderblom, 2007), and 2006-2011 (Berkhout et al. 2012).

The overall aim of providing more apprenticeship places over time was effectively reached. From 2007 to 2011 approximately 20 per cent more enterprises were accredited to undertake vocational training and 53 per cent more funded apprentices (Berkhout et al. 2012). Whether the increase of number of places is an effect of the tax relief itself is however difficult to assess.

The tax authorities have not kept exact data on the proportion of funding received by the various types of training but it is estimated by the government that approximately 75 per cent of the claimed tax credits was spent on apprenticeship (MBO) pathways.⁴⁸ Under this pathway, 28 per cent of students are below 18 years while 72 per cent of students are aged over 18. It therefore follows that most of the claims are likely to relate to lifelong learning and adult apprenticeships. BBL – MBO level 2 funding can also be used for the unemployed that need the diploma to enter the labour market. In such cases the employer is able to effectively combine funding from the two tax credits which doubles the maximum level of the tax deduction.

To establish the impact of the WVA on employer investments in training, Gelderblom (2007) interviewed more than 1,300 companies. The evaluation suggests that the tax credit provides an incentive to take-up apprenticeships among SMEs. In particular, the incentives were found to have a positive impact on the uptake of training when there are 5 or more trainees per company, and lower level qualifications are pursued, such as the VMBO diploma.

The fiscal incentives have less effect on training outcomes the higher the level of qualification and the larger the company. In practice, companies still chose not to train lower skilled apprentices or students with learning difficulties since this typically incurs additional costs of supervision and mentoring. In general, companies chose trainees very carefully, taking into account the overall costs of the training (Gelderblom, 2007).

⁴⁸ It is notable that while the BBL route to apprenticeships accounts for the largest share of funding, it is not the most common type of MBO pathway chosen by students. Instead the majority follow the BOL pathway. In 2011/12, two thirds of MBO students registered for school-based routes (BOL).

During the period 2006-11, Berkhout et al. (2012) report that the amounts claimed by social work, healthcare and temporary agency workers rose most over the evaluation period. De Jong (2012) estimates that the average amount spent on training on individual employees in these sectors increased from €681 (£568) to €1,152 (£960) from 2009 to 2012. The WVA instrument may help to explain part of this increased employer investment, as around a quarter of temporary workers follow BBL apprenticeships. The O&O fund for the temporary agency workers however increased substantially over the evaluation period. Here, subsidies accounted for 28 per cent of the agency costs for training in 2012 compared to 15 per cent in 2009 (De Jong, 2012).

According to the interviewed experts, businesses greatly appreciate the public support provided through the WVA tax credits. It is also believed to have influenced the current level of BBL apprenticeships (Gelderblom, 2007). Though the tax credit is associated with higher rates of training, high levels of deadweight are reported. More than half of the interviewed companies reported that they would have provided the same amount of places without the WVA. The largest effect was confined to sectors such as construction, hospitality, and the car industry. Here, the number of trainee places provided is driven primarily by the general economic situation rather than the incentives on offer (Gelderblom, 2007).

The WVA has had little positive impact on the *quality* of training provision. It may however have contributed to the *quantity* of training providers. While there was a 20 per cent rise in the number of companies that are accredited training providers, compliance issues and displacement effects have been noted. Berkhout et al. (2012) identifies an increase in claims for BBL training occurred while the numbers of students following BBL training remained the same or even decreased. This leads to the conclusion that claims under WVA for BBL trainees were used for ineligible training activities, such as general language courses (Berkhout et al. 2012).

This displacement was able to occur due to the absence of any rigorous quality criteria. Within the WVA, training providers are accredited by the sectoral training bodies and the Ministry of Education but only on the hours of training and some obligatory content. The quality of the content is not accredited as such, nor is the composition of the training specified.⁴⁹ Furthermore, the tax authority does not control whether the training followed actually leads to a successful higher qualification level. Berkhout et al. (2012) report that the training providers did not always provide for high quality standards or deliver training that led to further qualification.

In the absence of a cap on overall expenditures, the government's total fiscal liability for the WVA significantly increased between 2001 and 2011. By 2011, claims had more than doubled to €387 million (£323m) compared to €198 million (£165m) in 2002. According to the Dutch Ministry of Finance analysis (see table 8), in the absence of further reforms the budget cost of the tax credits are projected to increase to €436 million (£363m) by 2017.

⁴⁹ The Ministry of Education has set out an action plan for the period 2011-2015 to improve the quality of the diplomas in MBO pathways.

Table 8: Tax expenditures and projections under the WVA, 2001-2017

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2017*
Tax claimed, € millions	198	210	201	187	202	25	306	361	386	387	436
Claiming companies, 000s	:	:	:	:	30	36	38	40	42	42	:

Sources: Gelderblom (2007) for period 2000-2005; Berkhout et al. (2012) for period 2006-2011; *Ministry of Finance projections, (:) no data available.

Berkhout et al. (2012) provides two reasons to explain the steady annual increases in the WVA budget. Firstly, information campaigns carried out in the period 2006-2011 generated greater interest from employers for investment in training. Secondly, whilst companies' budgets for training have decreased during the recent economic crisis, their will or need for training is thought to have stayed the same. Therefore it is likely that the tax credit has helped to maintain a culture of training during the downturn.

The 2006-11 evaluation found that the number of companies claiming the WVA with increased the most amongst those with annual wage costs in excess of €1 million (by 46 per cent in the period 2006-2011). Furthermore, the number of companies claiming more than €1 million under the WVA each year had increased from 8 to 21 companies in the period 2006-2011. This means that some individual companies benefited substantially from the tax credit.

At the end of 2012 the Dutch Government decided that the WVA will be abandoned from the end of 2013. The government is currently discussing the introduction of a subsidy instrument in order to more carefully monitor public budgetary costs spent under the WVA.⁵⁰

Advantages and disadvantages of the co-funding instrument

The main advantages of the Dutch tax credit are:

- The WVA is efficiently administered through the payroll tax system. In addition, there is no delay in receipt of the credit since requests can be made at the same time the training starts.
- The tax credit has had a positive impact on SMEs as it often represents a substantial share of the relative wage costs for a trainee.

⁵⁰ The new subsidy is likely to be similar in nature to that of a previous initiative, Subsidy for Apprenticeship Education ('*Bijdrageregeling Vakopleiding Leerlingwezen*' BVL). The BVL subsidy was abandoned in favour of the WVA in 1995 due to the limited budget which meant that not all companies could be reached (Jacobs, 2004).

- The scheme is flexible from a policy point of view. Over the years different types of training schemes have been added or removed from the scope of funding. This has allowed the WVA to be adapted according to the labour market situation, employer demand and forecasts of skills needs.
- The number of accredited training companies has increased and the general awareness and attitude of employers towards investments in training has changed in a positive way.

The following drawbacks can be noted:

- There are high levels of reported deadweight. The majority of the employers interviewed for the evaluation period 2000-2006 report would have provided an apprenticeship place without making use of the WVA.
- Unintended or ineligible use of the WVA was observed between 2006 and 2011. However, it is not possible to estimate its full extent or its consequences as there is little monitoring of claims.
- No further quality criteria have been introduced into the scheme to guarantee that the training followed is eligible and adds value to the level of skills or education of the worker.
- Interviews with the tax authority showed that control over the tax credit has been difficult and time intensive due to the complexity of the training and education market.
- No studies have been undertaken to assess the impact of the WVA and the benefits for employees undertaking the training. In an analysis of a similar tax credit scheme aimed only at the over 40s, Leuven and Oosterbeek (2004) found no impact on wages for workers in this group that participated in training.

Lessons from the Netherlands

Of the three co-funding models reviewed in detail, the Dutch WVA system is the most general and administratively efficient. The main implications for co-funding in England are:

- *Increasing employer awareness of investing in training.* The tax credit is associated with increased number of accredited training enterprises and may have increased awareness of the benefits of training. The provision of the tax credits has become a tool for employers to determine the general training plan for the company. Though this has not however necessarily increased the incidence of training, the tax credits may have helped to maintain levels of investment in training during the economic crisis.
- *Keeping the administration light.* The administrative burden for employers has been kept to a minimum as requests for tax credits can be made directly via the payroll system and no further application documents need to be provided to the tax authority. A few documents however need to be retained by the employer for ex-post controls.

- *Policy design needs to consider the potential for monitoring and controls.* A strict definition of the costs that are eligible under the tax credit and a mechanism to monitor these is required to help the Exchequer administer the tax incentive. Ex-post controls by the tax authorities have also proved quite costly and time consuming. This has been heightened by the frequent changes in the scope of eligibility for certain types of training.
- *The delivery method can impact on perceptions of the rationale of the funding.* Funding via lump-sum payments on payroll means that the tax incentive is effectively seen as a form of wage subsidy. However the WVA was not intended to be a wage subsidy, but rather an incentive for companies to support accredited training of their employees.
- *The availability of alternative funding routes and the potential for duplication.* The availability of incentives for the same trainee/apprentice from alternative sources such as sector training funds makes it difficult to isolate the impact of the tax incentives. The potential for interactions and overlaps between different sources of funding need to be taken into account.
- *Open eligibility criteria compounded the lack of a cap on expenditure.* The absence of a mechanism in place to cap expenditure has led to spiralling costs for the Exchequer. This has been compounded by the openness of the eligibility criteria.

3.3 Case study conclusions

This section has focused on three co-funded programmes:

- Australia Apprenticeship Incentive Programme – a direct grant payment;
- Skillsnet and National Training Fund (Ireland) – a network based levy-access scheme;
- Payment reduction for education (Netherlands) – a lump sum, wastable tax credit.

None of the identified co-funding models are identical to the type of co-funding model that could be deduced from recent reviews and policy statements, for example, the Richard Review and the Government's response to it. However, in keeping with such intentions, all are aimed at increasing employer investment in appropriate and high quality FE and skills training in order to increase workplace productivity and thereby international competitiveness.

The evidence from the three case studies on what works well, and less well, is summarised in Table 9 below.

Table 9: A comparative assessment of impacts and what works

	Australia	Ireland	Netherlands
The costs of administration	Administratively complex system. Group training and intermediary agencies to reduce employer burden.	Network and dedicated State support relieve the burden on employers. The payroll levy presents a minimal administrative burden.	Use of existing tax system supports administrative efficiency. Monitoring and auditing are however timely and costly.
Employer 'buy-in'	High levels of reported satisfaction with training.	Positive experiences of training reinforce employer 'buy-in' particularly among SMEs.	Increased awareness of investing in training. Increased numbers of employers that are accredited as training providers.
Take-up and investment in training	Positive take-up of training, particularly shorter traineeships.	Greater willingness to train and pay for training.	Increased take-up of training, particularly work-based learning pathways.
Completion of training	Limited impact due to non-financial factors.	High rates of completion.	Not monitored. No evidence of impact.
Equity of provision	Limited impact. Equity concerns are instead affected by learner-routed incentives.	Training aimed at jobseekers and part time workers.	Not monitored. No evidence of impact.
Quality of provision	Competition is impeded by high entry costs for newcomers and the dominance of established providers.	Tailored courses, delivered according to specified needs.	Lack of controls and checks on the quality of provision.

The main conclusions drawn from the three case studies are that:

- Financial incentives are but one of a variety of tools aimed at increasing employer investment in training and cannot be treated in isolation. The size of the incentives and costs of training are important factors in employer decision making along with quality and norms. However, the influence of each of these variables varies for different employers and points in time. Higher levels of incentives or support are necessary to attract employers who do not normally invest on training, especially SMEs.
- There are a range of mechanisms available with associated trade-offs in their strengths and limitations. These are often the result of trade-offs between particular aims and objectives as the administrative burden is a natural consequence of stricter quality controls or increased levels of targeting. Loose eligibility criteria have the benefit of

making the incentive accessible to businesses but the disadvantage of not promoting improvements in the quality of training or training completion rates.

- Systems with greater controls in place and higher administrative burden are associated with more prudent, relevant and higher quality training. The more that incentives are targeted at specific sectors, occupations, individuals, skills, types and levels of training the greater are the monitoring requirements in order to ensure that the aims and objectives are met.
- Employer 'buy-in' has an important influence on the amount, responsiveness and relevance of training, irrespective of the design of the co-funding model. It is important that employers are involved in the design and administration of the programme. This can however be achieved through a variety of mechanisms and with differing levels of employer engagement.
- Government support and employer-routed financial incentives are associated with higher levels of take up of training in all three cases but there is also evidence of deadweight and displacement effects. The issue is not that deadweight occurs but that the level and nature of deadweight is acceptable and this is a political decision (BIS, 2012c, p. 12). Displacement effects tend to occur as a result of the conditions of finance that establish which types of training and individual are eligible.
- Providing employers with, albeit limited and partial, purchasing power is not sufficient to achieve high quality training provision. Further controls on the supply side are also necessary. Attempts to create a responsive market of training provision driven by employer demand have tended to drive down the costs of provision but, in the absence of sufficient monitoring and control, this is often at the expense of quality.

4 Conclusions

This chapter summarises the evidence relevant to the research aims described in section 1.1. It also provides implications to consider when designing a policy of co-funding to increase employer investment in skills-oriented training.

4.1 Summary of available evidence

Governments around the world recognise the need to promote employer co-investment in training and employ a wide range of instruments to this end. However, the lack of robust empirical evidence on the impacts of co-financing schemes on training and the wider skills system means that any recommendations must be formulated with caution.

The variety of tax expenditures, subsidies and levy-grant mechanisms examined are fundamentally similar, insofar as they route government funding through employers and thereby seek to increase employer investment in training, and the relevance and quality of training. The extent to which their effects on training outcomes differ is more often guided by the context in which they are delivered and the detail of the specific conditions attached. Consideration of the wider issues of employer perceptions on the benefits of training and supply side conditions are also needed - factors which are likely to differ on a sector-by-sector, or even a firm-by-firm and individual basis.

Evidence on the effectiveness of co-funding arrangements are by no means conclusive and even a more detailed analysis of three specific cases provides only notional guidance and lessons to think about in considering the approach to funding in England (see section 4.2).

With these limitations and caveats in mind, the high level findings from the evidence review are that:

- The economic cycle, institutional and personal factors have a stronger influence than financial incentives on the take-up and completion of training. Fiscal incentives are more likely to impact on employers who already invest in training.
- Increasing the investment in training of employers who rarely or never invest in skills training is unlikely to come from financial incentives but rather from communicating or demonstrating the returns on investment in training. Experts suggest that firms are also more likely to invest in training, the more that they are involved in decisions about its design and delivery.
- Attempts to target incentives necessarily increase the administrative costs as such schemes need to be managed and monitored more closely. However, allowing freedom as to which types of employers receive public funding and what type of training is supported may not be in line with Government priorities.

4.2 Lessons for policy implementation from abroad

The key lessons emerging from this review of the design and delivery of co-funding instruments are presented below.

Influencing employer decisions

The emphasis of the research evidence presented in the paper suggests that a perceived focus only on the costs and funding mechanism for training is insufficient. Instead there is a need to place greater emphasis on the benefits of training, and consider the full range of mechanisms to encourage more employers to invest in high quality training for more of their workers. In order to overcome attitudes and habits that are less favourable towards investment in training, incentives should not be implemented in isolation. Instead greater account of motivations to train and other non-financial barriers to training should also be addressed. To reflect the differentiated attitudes to training, concerted efforts should be taken to develop understanding of where the benefits for training lie and communicate the benefits of training to the actors concerned.

The administrative burden

There are a range of mechanisms available with associated trade-offs in their strengths and limitations. These are often the result of trade-offs between particular aims and objectives as the administrative burden is a natural consequence of stricter quality controls or increased levels of targeting. Loose eligibility criteria have the benefit of making the incentive accessible to businesses but the disadvantage of not promoting improvements in the quality of training or training completion rates. Broadly speaking, the more that quality controls or targeting is desired or considered necessary, the less it is appropriate to use the tax system to deliver employer-routed co-funding in training.

The analysis has identified several possible ways to minimise or offset the administrative burden on employers:

- The use of existing tax infrastructure to raise or distribute funds can relieve the employer of additional costs in compliance that a new system may bring. This assumes that levels of tax compliance are high and that employers largely understand the tax system. Further support and communication may however be required. The efficient use of the tax system is also conditional on the ability of the tax system to control and sufficiently monitor compliance. It may only be suitable in the case of training that is easy to verify. Based on the experience in the Netherlands, this approach may result in displacement effects between different types of training on the basis of the timeliness and ease of verification.
- Given the difficulty and cost for tax authorities to carry out ex-post controls, it may be necessary for a specialist funding agency to assess the eligibility or validity of any claims. Industry and locally-oriented support mechanisms can also be useful to support firms in submitting claims for government funding.
- Staged payments may be used to establish timely compliance of firms but would need to be sufficiently large to influence the likelihood of completion, which are driven by

other economic, institutional, social and personal factors. Where support is output oriented, employers may factor in the risks of non-completion that are beyond their control.

- The costs of administering a network-based system or competitive training fund are relatively high. The experience of Skillnets in Ireland and the AAIP in Australia suggest that the burden can be shifted away from employers and onto specialist agencies. By designating a limited amount or proportion of funding to the management of a training network in Ireland, a dedicated government agency and individual network managers act as intermediaries between employers, the network and external providers. A critical condition for the success of such an approach is the degree of employer 'buy-in'.

Employer 'buy-in'

In all cases, the financial incentives for employer investment in training cannot be isolated from the wider topography of skills policies and programmes. Co-funding models are but one of a variety of instruments aimed at increasing employer investment in training and cannot be treated in isolation.

Whichever delivery mechanism is adopted, employer 'buy-in' is vital. The acceptance for a given scheme and the corresponding willingness to invest time and money in it has an important influence on the amount, responsiveness and relevance of training, irrespective of the design of the co-funding model. Employer 'buy-in' may be developed based on positive experiences and perceptions of training. This is particularly necessary in order that the introduction of a price (more direct and tangible costs) does not deter investment in training. Those employers with negative or no experience of training will most likely be deterred by the higher costs. Experience in Ireland suggests that social partner involvement can help to generate and maintain employer 'buy-in'. In particular, the Skillnets approach supports firms in analysing training needs, developing training plans or budgets and in communicating these needs to providers. Such support is likely to be particularly important with employers or sectors that have limited experience of training or rapidly emerging training needs.

While this report considers only the direct costs of training, experience in Australia highlights that the costs (and availability) of supervision, and other indirect costs associated with training may present barriers to smaller firms in particular. Some countries, including Ireland and Australia, reduce these costs by introducing intermediary bodies to take care of the administrative duties involved in procuring and organising training. These bodies may also be responsible for routing government funding into employer hands or selecting potential trainees to suit the needs of employers. Such bodies can play a particularly important role for SMEs and often focus on a particular industry, or a particular region.

Networks or group training is also often used so that firms can pool resources and share the burden of the costs of training. These networks can also facilitate greater employer involvement in the design and administration of the co-funding instrument which is seen to be associated with a corresponding greater willingness to train in all cases.

Finally, employer ‘buy-in’ is likely to be limited in the case of a co-funding model that is based on punitive measures such as levy-exemption schemes. The imposition of a compulsory universal levy or tax on employers to finance training is also likely to be met with resistance. The experience of the National Training Fund in Ireland suggests that a compulsory levy arrangement need not however be intrusive. Here, the introduction of a training levy on payroll led to no net change in tax requirements. This presents a minimal administrative burden of collecting the levy and helped to ensure a smooth path to its introduction. This approach however has contributed to limited awareness of the levy contribution among employers.

Co-funding mechanisms, such as the Skillnets model in Ireland, that support the development of training plans and include an active role for different stakeholders may lead to improved attitudes towards training through peer-learning or network effects. Involvement of stakeholders, including employer representatives and trade unions at industry or local level, can also help to generate and maintain employer and industry ‘buy-in’. Such support is likely to be particularly important with employers or sectors that have limited experience of training.

The added value of government funding

Employer-routed co-funding systems do increase participation in training but there are always associated deadweight effects. The issue is not that deadweight occurs but that the level and nature of deadweight is acceptable. The level of deadweight considered acceptable is a political decision (BIS, 2012c, p. 12). A more pragmatic approach suggests that it may be a case of looking to leverage ‘qualitative additionality’. That is to say that the Government contribution should look to increase uptake of higher quality training activities in which industries or firms would otherwise have under-invested (and which accrue positive economic and social outcomes).

To encourage employers to increase investment in quality training, a primary concern should be to overcome the barriers to training and make it easier for employers to engage. From a supply side perspective, sufficient control mechanisms are also needed to guarantee the quality of training delivered in companies and training centres. These are however unlikely to affect non-training firms’ decision to train.

Reform to the English co-funding model, may also seek to address equity concerns that arise as a result of the observed ‘Matthew Effect’ – whereby firms invest more in training for the highly qualified employees. In several cases, the government contribution to financing of skill needs is directly linked to particular groups or made conditional on a certain proportion of the training activities being linked to more basic forms of entry-level or low level skills training. Given the high levels of associated administrative burden in monitoring, the employer-routed funding does not appear to be the most effective way of targeting training among the low-qualified or disadvantaged groups of individuals. Instead a wider package of individual incentives, rights and support mechanisms would be needed.

The quality and responsiveness of provision

Although the three case studies only place a partial amount of purchasing power in the hands of employers, the balance of evidence suggests that this is insufficient to deliver

quality and responsive training on its own. Attempts to create a responsive market of training provision based on employer demand in Australia have tended to drive down the costs of provision but often at the expense of quality.

The role of price can also not be disassociated from the quality of provision and social 'norms' or training habits. Since these variables tend to differ amongst groups of employers, substitution effects are a typical consequence of any co-funding reform. However, the influence of each of these variables varies for different employers and points in time and the outcomes can be difficult to assess ex ante.

4.3 Policy considerations in an English setting

The preceding analysis has highlighted a number of lessons for implementation based on the observed interactions between different co-funding models and the wider skills system.

- Whichever delivery model is adopted, employer 'buy-in' is important to the amount, responsiveness and relevance of training. It is important that employers are involved in the design and administration of the programme. As explored above, this can be achieved through a variety of mechanisms and differing levels of employer engagement. In order to make effective decisions, employers need however to be aware of competing training offers and able to easily compare their strengths and weaknesses
- Employer ownership is widely perceived as having had a positive impact on the quality of training and relevance to employer and industry needs in terms of content and delivery in Ireland. This finding is conditional on at least two key factors. From the demand side, it is necessary that employers are aware of what their collective short- and long-term needs are and able to communicate or signal these to providers. It also requires providers and experienced trainers that are able to adapt their offers and respond to employer needs.
- In Australia, demand-led and employer-routed funding is however seen as insufficient to generate true competition in the market for training provision. In particular, the high costs of market entry for providers, including the high fixed costs of specialist equipment and technologies for training, may deter (or delay) them from responding to employer demand.
- The role of the provider infrastructure on the impact of various incentives has not been explored by the literature but may have a significant impact. Models in which spending power is concentrated in the hands of employers report high levels of satisfaction in the quality and relevance of training. These however tend to be relatively small and focused schemes and may not be scalable.
- Any substantial shift in funding away from providers and into employer hands may also limit the development of new training without additional support. Since for providers there is effectively 'nothing to sell' during the set-up phase of a new course. In Ireland, the introduction of a dedicated funding stream to support the design of new courses seeks to curtail such a development. With any reform to the English model of co-

funding, it will be desirable to monitor and ensure that the college and training provider network is not destabilised by any changes in the routing of funding.

- While staged payments may be a useful tool to ensure timely compliance and completion, upfront support is also necessary. In particular, experts in Ireland suggest that the upfront support is necessary to support employer engagement in the design of training. Some firms may also require further upfront support as they may struggle to finance training at market value due to cash-flow issues in the current economic climate.

References

Evidence review of co-funding instruments

- Abramovsky, L., Battistin, E., Fitzsimons, E., Goodman, A. and Simpson, H. 2011, 'Providing Employers with Incentives to Train Low-Skilled Workers: Evidence from the UK Employer Training Pilots', *Journal of Labor Economics*, 29, pp. 153-193
- Allaart, P., Bellmann, L. and Leber, U. 2009, 'Company-provided further training in Germany and the Netherlands', *Journal of Empirical Research in Vocational Education and Training*, 1, pp. 103-121
- Australian Apprentices Taskforce, 2009, 'Australian Apprentices Taskforce Final Report', Australian Government
- Bassanini, A., Booth, A., Brunello, G., De Paola, M. and Leuven, E. 2007, 'Workplace training in Europe, in *Education and Training in Europe*, Oxford University Press: Ch. 8-13
- Berkhout, A., Schreijenberg, A. and Kruis, G. 2012, 'Evaluatie Afdrachtvermindering onderwijs WVA – periode 2006-2011', commissioned by the Ministry of Education, Regioplan Consulting, Amsterdam
- Brunello, G. Comi, S. and Sonedda, D. 2012, 'Training Subsidies and the Wage Returns to Continuing Vocational Training: Evidence from Italian Regions', *Journal of Labour Economics*, 19:3, pp. 361-372
- Burke, G. 2002, 'Financing lifelong learning for all: an international perspective', Centre for the Economics of Education and Training (CEET), Australia
- Cahuc, P., Ferracci, M. and Zylberberg, A. 2011, 'Formation professionnelle: pour en finir avec les réformes inabouties', Institut Montaigne, France
- Cedefop, 2008a, 'Sectoral training funds (STFs) in Europe', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki
- Cedefop, 2009, 'Using tax incentives to promote education and training', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki
- Cedefop, 2012a, *Payback clauses in Europe: supporting company investment in training*, European Centre for the Development of Vocational Training (Cedefop), Thessaloniki
- Circa Group, 2012, 'Evaluation of Skillnets Network Programmes 2011', Skillnets Ireland
- Commonwealth of Australia, 2011, 'Apprenticeships for the 21st Century Expert Panel Paper', Australian Government
- Cour des comptes, 2007, 'Rapport public thématique « La formation professionnelle tout au long de la vie »', Cour des comptes, France

- Cox, A., Hillage, J., Sumption, F. and Sloan, J. 2009, 'Review of Employer Collective Measures: Policy Review', UK Commission of Employment and Skills (UKCES)
- Cully, M. 2008, 'Youth wages, training wages and productivity: the economic anatomy of traineeships', National Centre for Vocational Education Research, Australia
- Deloitte, 2012, 'Econometric Analysis of the AAIP', Report for the Department of Education, Employment and Workplace Relations, Australia
- Delort, A. 2011, 'La dépense nationale pour la formation professionnelle et l'apprentissage en 2009', Ministry of Employment, France
- Dickerson, P. and Wilson, R. 2009, 'The incidence and intensity of employer-provided training in Britain', *Sheffield Economic Research Paper Series*
- Dietrich, H. 2012, 'The dual training system - Integration of young people into the labour market', Mutual Learning Programme, European Commission
- Van Elk, K. and Gelderblom, A. 2005, 'Lifelong learning and employer provided training', European Commission
- Falch, T. and Oosterbeek, H. 2011, 'Financing lifelong learning: Funding mechanisms in education and training', *European Expert Network on Economics of Education (EENEE), Analytical Report No. 10*, European Commission
- Field, S., Hoeckel, K., Kis, V. and Kuczera, M. 2009, 'Chapter 4 - Taking Advantage of Workplace Training' in *Learning for jobs: OECD policy review of vocational education and training: Initial report*, Organisation of Economic Cooperation and Development (OECD)
- Fleischer, V., Hefler, G. and Markowitsch, J. 2011, 'Nachfrageorientierte Förderprogramme der beruflichen Weiterbildung für Unternehmen und Beschäftigte Länderreport Österreich', *Working paper No.7*, German governmental research project on the effects of national funding programmes for workplace training
- Fraser, D. 1996, 'Training guarantee: its impact and legacy 1990-1994', Department of Employment, Education, Training and Youth Affairs, Australia
- Gasskov, V. 2002, 'Financing enterprise training by payroll levies', Conference Paper - Forschungsinstitut für Bildungs- und Sozialökonomie, Germany
- Gelderblom, A. de Koning, J. and Tannis, O. 2007, 'Evaluatie van de Afdrachtminderingsonderwijs van de WVA', Report by SEOR, Erasmus University Rotterdam for the Ministry of Education, Science and Culture, the Netherlands
- Goerg, H. and Strobl, E. 2006, 'Do Government Subsidies Stimulate Training Expenditure? Microeconomic Evidence from Plant Level Data', *Southern Economic Journal*, 72:4, pp. 860-876
- Goerlitz, K. 2010, 'The effect of subsidising continuous training investments - evidence from German establishment data', *Labour Economics*, 17:5, pp. 789-798

Gospel, H. 2012, 'Understanding training levies', UK Commission for Employment and Skills (UKCES)

Goux, D. and Maurin, E. 1997, 'Train or Pay: Does It Reduce Inequalities to Encourage Firms to Train their Workers', National Institute for Statistics and Economic Studies (INSEE), Paris

Goux, D. and Maurin, E. 2000, 'Returns to firm-provided training: evidence from French worker-firm matched data', *Journal of Labor Economics*, 7, 1-19

Greenhalgh, C. 2001, 'Does an employer training levy work? – the incidence of and returns to adult vocational training in France and Britain', SKOPE Research Paper No. 14

Haack, C. 2003, 'Weiterbildung in kleinen und mittleren Betrieben ein deutsch dänischer Vergleich', Wissenschaftszentrum Berlin für Sozialforschung, Germany

Hall, R., Buchanan, J. and Considine, G. 2002, 'You Value What You Pay For: Enhancing Employers' Contributions to Skill Formation and Use', Discussion Paper for the Dusseldorf Skills Forum

Hoeckel, K. 2008, 'Costs and Benefits in Vocational Education and Training', Organisation of Economic Cooperation and Development (OECD)

Hoeckel, K. 2010, 'Learning for Jobs OECD Reviews of Vocational Education and Training: Austria', Organisation of Economic Cooperation and Development (OECD)

IGF, 2011, 'Rapport du Comité d'évaluation sur les dépenses fiscales et les niches sociales: 210311 Crédit d'impôt en faveur de l'apprentissage', Inspection Generales de Finances (IGF), France

Jin, Z. and Lipsman, M. 2011, 'Iowa New Jobs Training Program (260E): Part 2: Economic Impact Analysis; Tax Credits Program Evaluation Study', Iowa Department of Revenue

Johanson, R. 2009, 'A Review of national training funds', *SP Discussion Paper No. 0922*, World Bank

Johnson, C., Hillage, J., Miller, L., Bellis, A., Oakley, J. and Sumption, F. 2011, 'Evaluation of national skills academies', UK Government Department for Business, Innovation and Skills (BIS)

Kamphuis, P., Glebbeek, A. and van Lieshout, H. 2010, 'Do sectoral training funds stimulate training?' *International Journal of Training & Development*, vol. 14:4 pp. 273-290

Karmel, T. and Rice, J. 2011, 'The economics of apprenticeships and traineeships', National Centre for Vocational Education Research, Australia

Karmel, T., Blomburg, D. and Vnak, M. 2010, 'The effectiveness of the traineeship model', National Centre for Vocational Education Research, Australia

- Lee, B. H. 2004, 'Is levy-grant scheme for employer-provided training effective? The experience of Korean employment insurance system', *Seoul Journal of Economics*, 17:2, pp. 235-253
- Leuven, E. and Oosterbeek, H. 2004, 'Evaluating the Effect of Tax Deductions on Training', *Journal of Labor Economics*, 22:2, pp. 461-488
- Muller, N. and Behringer, F. 'Subsidies and levies as policy instruments for employer-provided training', Organisation of Economic Cooperation and Development (OECD)
- Oosterbeek, H. and Patrinos, H. 2009, 'Financing lifelong learning', *Empirical Research in Vocational Education and Training*, 1, 25-43
- Parsons, D., Barry, J., Thomas, R., Rowe, V. and Walsh, K. 2006, 'Employer investment and co-funding in publicly funded training', UK Department for Education and Skills (DfES)
- Saskatchewan Apprenticeship & Trade Certification Commission, 2005, 'The Impact of Apprenticeship Training Tax Credits in Saskatchewan', the Department of Learning and the Department of Finance, Canada
- Schneeberger, A. and Mayr, T. 2004, 'Beruflicher Weiterbildung in Oesterreich und im Europaeischen Vergleich', *Working paper No. 126*, Federal Ministry of Research and Labour, Germany
- Sels, L. 2009, 'Heeft Vlaanderen nood an 'meer'? Evaluatie van instrumenten voor stimuleering van opleidingsinspanningen', Report, Social Economy Institute KU Leuven
- Sgier, I. 2011, 'Nachfrageorientierte Förderprogramme der beruflichen Weiterbildung für Unternehmen und Beschäftigte Länderreport Österreich', *Working paper No.4*, German governmental research project on the effects of national funding programmes for workplace training
- Smith, A. and Billet, S. 2006, 'Mechanisms for Enhancing Employer Investment in Training: A Comparative Perspective', *Research in Post-Compulsory Education*, 11:1, pp. 1-18
- Smith, M. and Gagnon, M. 2005, 'The effects of a training levy on training outcomes: the case of Quebec', Institute of Social and Economic Research, Canada
- Stone, I. 2010, 'Encouraging small firms to invest in training: learning from overseas', *Praxis*, 5, 1-36
- Torres, C. 2012, 'Taxes and Investment in Skills', *OECD Taxation Working Papers No. 13*, Organisation for Economic Cooperation and Development (OECD) Publishing
- Van den Berg, N., Meijers, F. and Sprengers, M. 2006, 'More Vocational Education and Supplementary Training through Equalization of Costs: An Analysis of a Training and Development Fund in The Netherlands', *Human Resource Development International*, 9:1, 5-24

Wacker, K. 2007, 'Tuere neue Lehrstellen: Eine Untersuchung zur Effizienz des Blum-Bonus', Kammer für Arbeiter und Angestellte Niederösterreich, Switzerland

Westergard-Nielsen, N. and Rasmussen, A. 1997, 'Apprenticeship training in Denmark - the impact of subsidies', Centre for labour market and social research, Denmark

Wolter, S. 2008, 'Die steuerliche Behandlung der Kosten für die Aus- und Weiterbildung', Schweizerische Koordinationsstelle für Bildungsforschung (SKBF) & Universität Bern & CESifo & IZA, Small inquiry for a report from the tax administration, Switzerland

Additional references cited in main text

Banks, C. 2010, 'Fees and Co-funding in Further Education in England: Co-investment in the skills of the future', A report to Ministers in the UK Department for Business, Innovation and Skills

BIBB, 2009, 'In-company vocational training: a worthwhile investment for enterprises - Findings from the 2007 BIBB Cost-Benefit Survey', Federal Institute for Vocational Education and Training (BIBB), Germany

BIS, 2011a, 'Skills Investment Statement' UK Department for Business, Innovation and Skills

BIS, 2011b, 'Skills for sustainable growth', UK Department for Business, Innovation and Skills

BIS, 2012a, 'Employer Choices, Motivations and Barriers to Skills Acquisition', Report by the Institute for Employment Studies for the UK Department for Business, Innovation and Skills

BIS, 2012b, 'Employer Investment in Apprenticeships and Workplace Learning: The Fifth Net Benefits of Training to Employers Study', Report by the Warwick Institute for Employment Research (IER) for the UK Department for Business, Innovation and Skills

BIS, 2012c, 'Assessing the Deadweight Loss Associated with Public Investment in Further Education and Skills', Report by London Economics for the UK Department for Business, Innovation and Skills

BIS, 2013, 'Continuing Vocational Training Survey – CVTS4', UK Department for Business, Innovation and Skills

BIS and DfE, 2013a, 'The Future of Apprenticeships in England: Next Steps from the Richard Review', UK Department for Business, Innovation and Skills and the UK Department for Education

BIS and DfE, 2013b, 'Rigour and responsiveness in skills', UK Department for Business Innovation and Skills and the UK Government Department for Education

Cappelli, P. 2012, 'Why Good People Can't Get Jobs: The Skills Gap and What Companies Can Do About It', Wharton Digital Press, Philadelphia

Cedefop, 2007, 'European Training Thesaurus', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki, available at:

<http://libserver.cedefop.europa.eu/ett/en/tr320.htm>, accessed on 01/04/13

Cedefop, 2008b, 'Initial Vocational Education and Training in Europe Review', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki

Cedefop, 2010, 'The Skill Matching Challenge', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki

Cedefop, 2011a, 'VET in Europe – Country report: UK', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki

Cedefop, 2011b, 'The benefits of vocational education and training', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki

Cedefop, 2013, 'Cedefop forecast online data tool', [online]

<http://www.cedefop.europa.eu/skillsForecast>, accessed on 24/04/13

Colombo, E. Stanca, L. 'The Impact of Training on Productivity: Evidence from a Large Panel of Firms' Department of Economics, University of Milano-Bicocca

Delsen, L. 2007, 'Education and training: from consumption goods to investment goods', Nijmegen Centre for Economics, Radboud University Nijmegen

Dionysius, R., Muehlemann, S., Pfeifer, H., Walden, G., Wenzelmann, F. and Wolter, S. 2009, 'Cost and Benefit of Apprenticeship Training: A Comparison of Germany and Switzerland', *Applied Economics Quarterly*, 55:1, pp. 7-36

European Commission, 2001, 'Making a European area of lifelong learning a reality', November 2001, European Commission (2001)

Felstead, A. Green, F. and Jewson, N. 2012, 'The impact of the 2008-09 recession on training at work', Briefing Paper, UK Commission for Employment and Skills

Giraud, O. 2002, 'Firms Further Training Practices and Social Exclusion: Can Industrial Relations Systems Provide Greater Equality? Theoretical and Empirical Evidence from Germany and France' in *Education, Training and Employment Dynamics*, Schomann, K. and O'Connell, P., Elgar, E. pp. 303-330

HMRC, 2013, 'Exchange Rates – Yearly Lists: Average for the year to March 2013, HM Revenue and Customs (HMRC), [online] <http://www.hmrc.gov.uk/exrate/exchangerates-1213.pdf>, accessed on 08/04/13

HM Treasury, 2011, 'The Magenta Book: Guidance for Evaluation, [online] http://www.hm-treasury.gov.uk/d/magenta_book_combined.pdf, accessed on 08/04/13

Hoeckel, K., Cully, M., Field, S., Halász, G. and Kis, V. 2009, 'Learning for Jobs: England and Wales' in *OECD Reviews of Vocational Education and Training*, Organisation for Economic Cooperation and Development.

Kahneman, D. and Tversky, A. 1979, 'Intuitive prediction: biases and corrective procedures', *TIMS Studies in Management Science*, vol. 12, pp. 313–327

Lin, Z. and Tremblay, J. 2003, 'Employer-Sponsored Training in Canada: Policy-Research Key Knowledge Gaps and Issues', *HISSRI Working Paper Series*, Industry Canada

Low, L. 1998, 'Jobs, technology and skills requirements in a globalized economy: Country study in Singapore', International Labor Organisation, Geneva

Mason, G. and Bishop, K. 2010, 'Adult Training, Skills Updating and Recession in the UK: The Implications for Competitiveness and Social Inclusion', Centre for Learning and Life Chances in Knowledge Economies and Societies

Mohrenweiser, J. Backes-Gellner, U. Zwick, T. 2011, 'Poaching and Firm-Sponsored Training: First clean evidence', Economics of Education Working Paper Series, Institut für Strategie und Unternehmensökonomik

Mühlemann, S. Wolter, S., Fuhrer, M. and Wuest, A. 2007, 'Lehrlingsausbildung ökonomisch betrachtet: Ergebnisse der zweiten Kosten-Nutzen-Studie', *Beiträge zur Bildungsökonomie*, Vol. 3, Rüegger Verlag, Zürich

OECD, 2005, 'Education at a Glance: 2005' Organisation for Economic Cooperation and Development (OECD), pp. 319-320

OECD, 2012a, 'Employment and Labour Markets: Key tables from OECD', Organisation for Economic Cooperation and Development, [online] http://www.oecd-ilibrary.org/employment/employment-and-labour-markets-key-tables-from-oecd_20752342, accessed on 25/04/13

OECD, 2012b, 'Education at a glance: 2012', Organisation for Economic Cooperation and Development

Ofqual, 2012, 'Qualifications and Credit Frameworks', Office of Qualifications and Examinations Regulation, [online] <http://www.ofqual.gov.uk/qualifications-and-assessments/qualification-frameworks>, accessed on 25/04/13

Pouliakas, K. 2012, 'The skill mismatch challenge', in *Employment and Social Developments in Europe 2012*, European Commission, pp. 351-438

Redding S. 1996, 'The Low-Skill, Low-Quality Trap: Strategic Complementarities between Human Capital and R&D', *The Economic Journal*, 106, pp. 458-70

Richard, D. 2012, 'The Richard Review of Apprenticeships', Report to the Department for Business, Innovation and Skills

Ritzen, J. and Stern, D. 1991, 'Introduction and overview' in *Market failure in training: New economic analysis and evidence on training of adult employees*, Studies in Contemporary Economics, Springer-Verlag Berlin Heidelberg, pp. 1-15

Stevens, M. 1996, 'Transferable Training and Poaching Externalities', in Booth, A. and Snower, D. *Acquiring Skills - Market Failures, Their Symptoms and Policy Responses*, Cambridge University Press, pp. 19-37

Stone, I. and Braidford, P. 2008, 'Engaging small employers in continuing training: an international review of policies and initiatives,' Sector Skills Development Agency

UKCES 2010, 'National Employer Skills Survey for England 2009: Main report', UK Commission for Employment and Skills

UKCES, 2011, 'Employer Ownership of Skills: securing a sustainable partnership for the long term', UK Commission for Employment and Skills

UKCES, 2012a, 'UK Commission's Employer Skills Survey 2011: England Results', UK Commission for Employment and Skills

UKCES, 2012b, 'Understanding Training Levies', UK Commission for Employment and Skills

UKCES, 2013, 'Employer Ownership of Skills: Building the Momentum', UK Commission for Employment and Skills

UNESCO, 2012a, 'International Standard Classification of Education: ISCED 2011', United Nations Educational, Scientific and Cultural Organisation (UNESCO)

UNESCO, 2012b, 'ISCED 1997 Mappings', United Nations Educational, Scientific and Cultural Organisation (UNESCO), [online]
<http://www.uis.unesco.org/Education/ISCEDMappings/Pages/default.aspx>, accessed on 25/04/13

Wolter, S., Mühlemann, S. and Schweri, J. 2006, 'Why some firms train apprentices and many others do not,' *German Economic Review*, 7:3, pp. 249-264

Australia case study references

Literature sources

Australian Apprentices Taskforce, 2009, 'Australian Apprentices Taskforce Final Report', Australian Government

Australian Government, 2012, 'Summary of the Australian Government Australian Apprenticeships Incentives Program from 23 October 2012', [online]
http://www.australianapprenticeships.gov.au/faq/Documents/SummaryoftheAustGovntAIP_Oct2012.pdf, accessed on 26/03/13

Committee of Inquiry into Labour Market Programs, 1985, 'Report of the Inquiry', Australian Government Publishing Service, Canberra

Commonwealth of Australia, 2011, 'Apprenticeships for the 21st Century Expert Panel Paper', Australian Government

Cully, M., Knight, B., Loveder, P., Mazzachi, R., Priest, S., and Halliday-Wynes, S. 2009, 'Governance and architecture of Australia's VET sector: Country Comparisons, Report prepared for Skills Australia', National Centre for Vocational Education Research, Australia

Cully, M. 2008, 'Youth wages, training wages and productivity: the economic anatomy of traineeships', National Centre for Vocational Education Research, Australia

Deloitte, 2012, 'Econometric Analysis of the Australian Apprenticeships Incentives Program', Report by Deloitte for the Department of Education, Employment and Workplace Relations

Evans, J. 2013, 'Apprenticeship statistics', House of Common Library Standard Note, SN/EP/6113, [online] <http://www.parliament.uk/briefing-papers/SN06113.pdf>, accessed on 25/04/13

Fraser, D. 1996, 'Training guarantee: its impact and legacy 1990-1994', Department of Employment, Education, Training and Youth Affairs, Australia

Giernalczyk, H. 2012, 'International approaches to the development of intermediate level skills and apprenticeships', UKCES

House of Commons, 2012, 'Apprenticeships: Fifth Report of Session 2012–13', Business, Innovation and Skills Committee, UK

Institute for Public Policy Research, 2011, 'Rethinking Apprenticeships', edited by Dolphin T. and Lanning, T.

Karmel, T., Blomburg, D. and Vnak, M. 2010, 'The effectiveness of the traineeship model', National Centre for Vocational Education Research, Australia

Karmel, T., Cully, M., Knight, B. and Mlotkowski, P. 2008, 'The efficiency and effectiveness of apprenticeship and traineeship incentives', National Centre for Vocational Education Research, Australia

Karmel, T. and Rice, J. 2011, 'The economics of apprenticeships and traineeships', National Centre for Vocational Education Research, Australia

Karmel, T. and Mlotkowski, P. 2011, 'The impact of wages and the likelihood of employment on the probability of completing an apprenticeship or traineeship', National Centre for Vocational Education Research, Australia

Knight, B., Mlotkowski, P. 2009, 'An overview of vocational education and training in Australia and its links to the labour market', National Centre for Vocational Education Research, Australia

NCVER, 2007a, 'Australian Vocational Education and Training Statistics: Student Outcomes 2007', National Centre for Vocational Education Research (NCVER), Australia

NCVER, 2007b, 'Australian Vocational Education and Training Statistics: Employers' Use and Views of the VET System', National Centre for Vocational Education Research (NCVER), Australia

NCVER, 2009, 'Australian vocational education and training statistics: Employers' use and views of the VET system 2009', National Centre for Vocational Education Research (NCVER), Australia

NCVER, 2010a, 'Report 1: Overview of the Australian apprenticeship and traineeship system', Report by the National Centre for Vocational Education Research (NCVER) for the Australian Government

NCVER, 2010b, 'Report 4: The economics of apprenticeships and traineeships', Report by the National Centre for Vocational Education Research (NCVER) for the Australian Government

NCVER, 2010c, 'Apprentice and trainee destinations 2010', National Centre for Vocational Education Research (NCVER), Australia

NCVER, 2011a, 'Australian vocational education and training statistics: Apprentices and trainees, 2010 Annual', National Centre for Vocational Education Research (NCVER), Australia

NCVER, 2011b, 'Completion and attrition rates for apprentices and trainees', National Centre for Vocational Education Research (NCVER), Australia

NCVER, 2011c, 'Experimental completion and attrition rates for latest commencing apprentices and trainees', National Centre for Vocational Education Research (NCVER), Australia

NCVER, 2011d, 'The economics of apprenticeships and traineeships', Report by the National Centre for Vocational Education Research (NCVER) for the Department for Education, Employment and Workplace Relations

OECD, 2008, 'Learning for Jobs', *OECD Reviews of Vocational Education and Training: Australia*, Organisation for Economic Cooperation and Development (OECD)

Smith, A. and Billet, S. 2006, 'Mechanisms for Enhancing Employer Investment in Training: A Comparative Perspective', *Research in Post-Compulsory Education*, Vol. 11, No.1, pp. 1-18

Snell, D. and Hart, A. 2007, 'Vocational training in Australia: is there a link between attrition and quality?' in *Education & Training*, Vol. 49, No. 6

Interviews

Daniel Owen, General Manager, Australian Apprenticeships Branch, Department of Industry, Innovation, Science, Research and Tertiary Education, Government of Australia, interviewed on 01/02/13

Gerald Burke, Adjunct Professor, Monash University, Melbourne, Australia, interviewed on 01/02/13

Simon Walker, Executive Director Policy Planning and Innovation, Government of Western Australia Department of Training and Workforce Development, interviewed on 08/02/13

Sue Fergusson, General Manager, National Centre for Vocational Education Research, Australia, interviewed on 22/01/13

Tim Shipstone, Industrial Officer, Australian Council of Trade Unions, interviewed on 04/02/13

Ireland case study references

Literature sources

Cedefop, 2011c, 'VET in Europe – Country Reports: Ireland', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki

Circa Group, 2012, 'Evaluation of Skillnets and Finuas Network Programmes 2011', Report to Skillnets Ltd

Department for Education and Skills (DES), 2010, 'An Action Plan for SOLAS: The new Further Education and Training (FET) Authority', Ireland

DJEI, 2012, 'Action Plan for Jobs 2012', Department for Jobs, Enterprise and Innovation (DJEI), Ireland

DJEI, 2013, 'Action Plan for Jobs 2013', Department for Jobs, Enterprise and Innovation (DJEI), Ireland

EGFSN, 2005, 'National Skills Strategy', Expert Group on Future Skills Needs (EGFSN), Ireland

ESRI, 2013, 'Irish Economy', [online] Economic and Social Research Institute (ESRI), http://www.esri.ie/irish_economy/, accessed on 25/04/13

PER, 2011a, 'Comprehensive Spending Review 2011', Department of Education and Skills submission to the Department of Public Expenditure and Reform (PER)

PER, 2011b, 'Labour Market Activation and Training, Thematic Evaluation Series in: Comprehensive Spending Review 2011', Department of Public Expenditure and Reform (PER)

Department of Public Expenditure and Reform (PER), 'Government Expenditure', [online] <http://govacc.per.gov.ie/files/2012/05/Section-B.pdf>, accessed on 25/04/13

Skillnets, 2008, 'The Training Networks Programme Summary Report 2006-2007', Skillnets, Dublin

Skillnets, 2011, 'Annual Report 2011', [online] http://www.skillnets.ie/sites/skillnets.ie/files/pdf/annual_report_2011.pdf, accessed on 25/04/13

Skillnets, 2013, 'Skillnets Themes', [online] <http://www.skillnets.ie/content/skillnets-themes>, accessed on 25/04/13

Summit Finaus Network, 2013, [online] <http://www.summitfinuasnetwork.com/coursecategories/>, accessed on 25/04/13

UKCES, 2009, 'Review of Employer Collective Measures: Policy Review,' Report by IES for the UK Commission of Employment and Skills (UKCES)

Interviews

Aviné McNally, Acting Director, Small Firms Association (SFA), interviewed on 06/02/13

Niall Monks, Skills Development Division, Department of Education and Skills, interviewed on 07/02/13

Alan Nuzum, Chief Executive Officer, Skillnets Ltd, interviewed on 05/02/13

Paul O'Brien, Labour Market Policy Unit, Department of Education and Skills, interviewed on 06/02/13

Skillnets Network Manager, interviewed on 31/01/13

Netherlands case study references

Literature sources

Agentschap SZW, 2013, 'Erkende O&O-fondsen', [online]
http://www.agentschapszw.nl/subsidies/esf_d/lijst-erkende-o-en-o-fondsen, accessed 3/05/13

Allaart, P., Bellmann, L. and Leber, U. 2009, 'Company provided further training in Germany and the Netherlands', *Empirical Research in Vocational Education and Training*, 1:2, pp. 103 -121

Berkhout, A., Schreijenberg, A. and Kruis, G. 2012, 'Evaluatie Afdrachtvermindering onderwijs WVA – periode 2006-2011', commissioned by the Ministry of Education, Regioplan Consulting, Amsterdam

Centraal Bureau voor de Statistiek, Claessen, Nieuweboer, 2010, *Bedrijfsopleidingen 2010, Sociaaleconomische trends*, 3e kwartaal 2012, Den Haag

Cedefop, 2009, 'Using tax incentives to promote education and training', European Centre for the Development of Vocational Training (Cedefop), Thessaloniki

COB Commissie Onderwijs en Bestuur Beroepsonderwijs en Volwasseneneducatie, 2010, *Naar meer focus op het MBO*, advice commissioned by the Ministry of Education.

De Jong, G., Vermeulen, H. and Warmerdam, J. 2012, 'Opleidingsmonitor Flexbranche 2012', ITS Radboud Universiteit Nijmegen, commissioned by 'De Stichting Opleiding & Ontwikkeling Flexbranche' (STOOF)

Detmar, B. and De Vries, I. 2006, 'Beroepspraktijkvorming in het MBO', Dijk 12 Consulting, commissioned by Midden- en Kleinbedrijf (MKB) and the Confederation of Netherlands Industry and Employers (VNOCW)

Donker van Heel, P., van Velden, J., Siegert, J., Groenendijk, R., de Kogel, E. and Singer, E. 2008, 'Hoe werken sectorfondsen?', Ecorys Consulting, commissioned by the Ministry of Social Affairs and Employment

Euwals, R., de Mooij, R. and van Vuuren, D. 2009, 'Rethinking Retirement – From participation towards allocation', CPB Special Publication No. 80

Gelderblom, A. de Koning, J. and Tannis, O. 2007, 'Evaluatie Afdrachtvermindering onderwijs WVA', Sociaal-Economisch Onderzoek Rotterdam (SEOR Institute), commissioned by the Ministry of Education

Gerritsen, M. and Hoj, J. 2013, 'The Dutch Labour Market: Preparing for the Future', *OECD Economics Department Working Papers*, No. 1012, Organisation for Economic Cooperation and Development (OECD) Publishing

Government of the Netherlands, 2013, 'Afdrachtvermindering loonbelasting', [online] <http://www.rijksoverheid.nl/onderwerpen/belastingtarieven/loonbelasting/afdrachtvermindering-loonbelasting>, accessed on 25/04/13

Jacobs, A. 2004, *Labour Law in the Netherlands*, Wolters Kluwer, The Hague, 2004, pp.123-124

Leuven, E. and Oosterbeek, H. 2004, 'Evaluating the effect of tax deductions on training', *Digital Academic Repository*, University of Amsterdam

NTI, 2013, 'Subsidies en fiscale voordelen', Nederlands Talen Instituut (NTI), [online] <http://www.nti.nl/nti-zakelijk/subsidies-en-fiscale-voordelen/>, accessed on 31/03/13

Poortman, C., Nelen, A., de Grip, A., Nieuwenhuis, L. And Kirschner, P. 2012, 'Effecten van leren en werken in het mbo: en review study', *Pedagogische Studien*, 89, pp. 288-306

Van den Berg, N., Meijers, F and Sprengers, M. 2006, 'More vocational education and supplementary training through equalization of costs: An Analysis of a training and development fund in the Netherlands', *Human Resource Development International*, 9:1, pp. 5-24

Vogler-Ludwig, K., Giernalczyk, H., Stock, L. and Hogarth, T. 2012, 'International approaches to the development of intermediate level skills and apprenticeships', Econometrix Research & Consulting, UK Commission for Employment and Skills, Evidence Report 42

Interviews

Bram Berkhout, Regioplan Consulting, interviewed on 28/01/13

Chantal Huinder, The Training and Development Fund for Temporary Agency Workers ('De Stichting Opleiding & Ontwikkeling Flexbranche', STOOF), interviewed on 12/02/13

Ministry of Finance, Government of the Netherlands, Response to questionnaire, 06/02/13

Ruud Barda, Foundation for Cooperation Vocational Education, Training and the Labour Market (*'Samenwerking Beroepsonderwijs Bedrijfsleven'*, S-BB), interviewed on 06/02/13

Appendix 1: Review protocol

The review protocol set out a detailed understanding of the goals and scope of the evidence review identified the questions to be explored the sources that are expected to provide material for the review. The protocol, presented below, essentially consisted of a detailed methodology for the literature review, including the approach towards the identification, extraction and interpretative analysis of information on co-funding instruments and evidence of their impact.

The literature review followed eight key steps:

1. Detailed analytical research questions were defined to narrow the scope.
2. A pre-defined search strategy and inclusion criteria was established, to conduct database searches using combinations of keywords in English, French, Dutch, German, Italian and Spanish languages.
3. Key inputs of English-language references provided by BIS were collated.
4. Complementary web-based searching, use of the 'snowballing' technique, and the targeting of evaluative assessments of identified co-funding schemes sought to fill gaps in the evidence base.
5. Consultations with known experts in the research field were conducted to identify emergent research material and establish their viewpoints on key issues.
6. Quality assurance techniques were employed, ensuring that the emphasis of the review was placed on high quality research, including peer review by 4 external experts.
7. Data was extracted according to a template derived from the key analytical questions.
8. A synthesis of key findings from the available evidence was developed.

The Review Protocol

Specific review questions

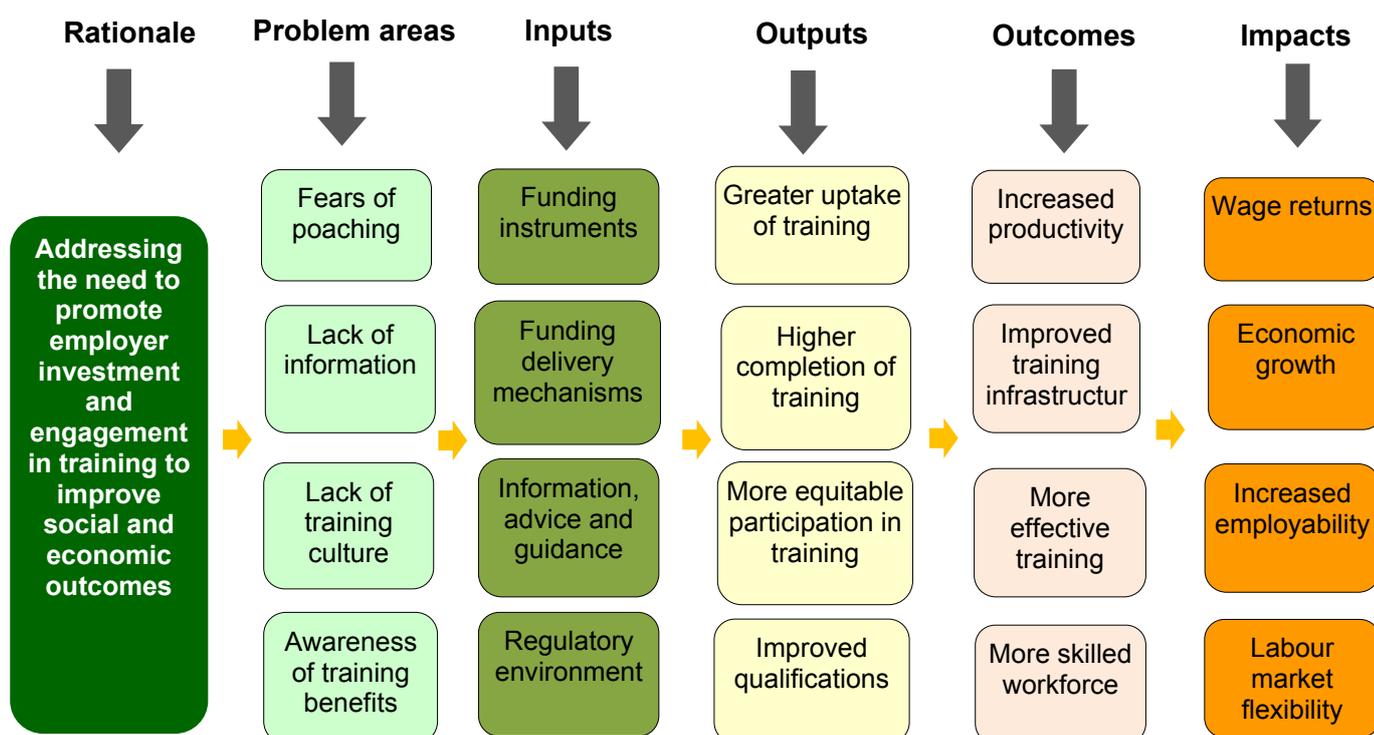
The aim of the international review was to establish the underlying evidence base for employer-focused co-funding approaches in order to answer the following research questions:

1. What delivery models are used for co-funding (e.g. grant, levy, tax system)?
2. What types of businesses/employees are targeted?

3. What types of training / skills are targeted (e.g. basic, higher level and management skills)?
4. What are the impacts on the overall take-up, incidence and quality of training? Does this vary by the nature of the intervention or businesses/training targeted?
5. What is the nature of impacts (short- and long-term) of the training supported (e.g. productivity gains, reductions in low skill levels, etc.)?
6. Are the co-funding policies cost-effective? Does this vary by the nature of the support or businesses/training targeted?
7. Are there any deadweight effects, if so, what are their size and nature?
8. Are there any substitution effects or other unintended consequences?
9. How does the level of awareness of co-funding policies affect the take-up rate of incentives and the amount of work-related training?
10. What are the gross and net revenue effects of a co-funding policy incentive?

In short, the research team sought to explore the targets and underlying rationale of the various instruments and models of co-funding and evaluate their efficiency and effectiveness on the basis of the evidence presented. This research was guided by the underpinning logic model illustrated in Figure 8 below.

Figure 8: Intervention Logic



Source: developed by ICF GHK

- The rationale and problem areas are discussed in section 1.2;
- The funding instruments and delivery mechanisms are explored in sections 2.2 and 2.3;
- Evidence on training outputs is examined in sections 2.4.1 and 2.4.2; and
- Evidence on outcomes and impacts is presented in section 2.4.3.

The logic model in Figure 8 above also guided the structure of the case study analysis presented in chapter 3.

Given the range of review questions and wide scope of co-funding mechanisms under examination, the search strategy followed a pragmatic and iterative process.

Given the anticipated dearth of robust, peer-reviewed evidence available on the theme, the review sought to draw not only on peer-reviewed journal articles, but also on non-peer reviewed academic research, government commissioned research, evaluations and other forms of grey literature.

Inclusion parameters and database searches

The defining parameters set out in Box 9 below were established to ensure inclusion of a wide range of sources and perspectives in the literature in order for the reviewers to examine the evaluative evidence of international approaches to foster employer investment in training.

In an iterative process, as the review and literature search progresses, the emerging evidence was mapped against the identified research propositions, in order to identify gaps, and better target and refine searches. In order to uncover articles to fill evidence gaps that might otherwise not be found, reviewers employed the 'snowballing' technique, in which the reviewer is pointed in the direction of potentially informative work from the references section of work under review.

Further, we chose not to employ strict quality criteria in the initial selection process. Typically, these might include assessments of theory robustness, methodology, generalisability, contribution etc. Instead, we did not to exclude a priori contributory work from practitioner and policy communities whose 'quality' might be determined by different criteria, and which might provide more practical insights. It was therefore considered important to review the outputs of relevant government research and commissioned projects.

Box 9: Search strategy and inclusion parameters for identifying literature

Historical antecedents

The study, while not being specifically constrained by any particular dates, focused on recent literature since 2001, due to the desire to capture the under-pinning evidence base for existing tax incentive and co-funding mechanisms. Seminal papers were also included, since their findings should still be robust.

Language and geographic scope

International experiences to inform the review, with focus on countries/States at similar levels of development to England. Database searches to be conducted in English, Dutch, French, German, Italian and Spanish, with sources in other major European and Asian languages to be included in the review where these are identified. Emphasis to be placed on non-English sources in order to build on existing evidence base.

Types of incentive and co-funding model

Includes all schemes that seek to incentivise employer co-funding through voluntary or compulsory measures, including but not exclusively those which use the tax system for delivery.

Populations

All sectors and occupations, the full population of firms (large companies and SMEs), and the training of both new and existing staff are within scope.

Specified key words

Key words will be developed to reflect the review questions specified and the full range of types of initiative and programme within scope. Boolean terms will be used. Indications of possible key word combinations are:

- “co-financ*” OR “co-fund*” OR “firm-sponsored” OR “employer fund*” OR
- “incentive” OR “tax” OR “levy” OR “subsidy” AND:
- “vocational training” OR “work based learning”; OR “apprenticeship” OR “traineeship” OR “further education”; OR “skills” AND
- “programme evaluation”; “project evaluation”; “policy evaluation” OR
- “uptake”; “efficiency”; “cost effectiveness”; “access”; “benefits”.

Literature sources

- Desk-based search of EBSCO Host databases, including EconLit with full text, and RePEc, to identify peer-reviewed journal articles, book chapters and non-peer reviewed academic research
- Cedefop’s bibliographic database, VET-Bib considered the most accurate tool for supporting evidenced based policy making in the field of VET in Europe. This source includes a dynamic bibliography devoted to the theme of “Improving

Box 9: Search strategy and inclusion parameters for identifying literature

efficiency, quality and levels of VET funding”

- National level research can be identified by consulting the work of key research centres such as the OECD, the Centre for the Development of Professional Training (Centre INFFO) based in France, the Federal Institute for Vocational Education and Training (BIBB) based in Germany, the Korea Research Institute for Vocational Education and Training (KRIVET), National Centre for Vocational Education Research (NCVER) based in Australia, and other national VET centres.
- Grey literature of international sources identified by the ICF GHK team and from previous BIS research and cross-government material is also incorporated into the evidence review to ensure the review builds on, rather than duplicates, the existing evidence base.

Consultation

Stakeholder consultations will fulfil two key purposes: to provide further review material (e.g. grey literature), and offer verbal and expert evidence, assessment and viewpoints on the key issues related to the review questions.

Data Extraction Template

For the recording of content from the literature, the research team made use of a ‘data extraction’ template common to each study, which sets a number of categories derived from the specific review questions. This approach guided readers to focus content on the review questions and issues of relevance for appraisal of the evidence, while the use of a common template reduced inconsistencies and improved validity and reliability.

The data extraction template was piloted to ensure that it worked effectively to facilitate analysis of both academic and grey literature sources – and enabled evidence gaps to be identified early and for continual identification of the sub-group of literature to form the basis of case study material. A database was created that summarises each study according to the criteria shown in Box 10 below.

Bibliographic information, as well as notes on the purpose and focus of the study under review was extracted based on an initial scan of study abstracts and executive summaries. A more detailed reading of the identified sources then sought to identify the evidence associating the programme or incentive mechanism with different benefits or successful outcomes and impacts.

To inform the comparative assessment of the available evidence, the reviewer also extracted information on the methodology used, the main results of the study in terms of impact, as well as any policy recommendations therein.

Box 10: Data extraction template

<p>Reference</p> <p>Reference No.</p> <p>Author, Year</p> <p>Study Title</p> <p>Journal / Institution</p> <p>Peer Reviewed (Yes/No)</p>	<p>Study purpose</p> <p>Purpose</p> <p>Geographic Scope</p> <p>Other scope (firms, sectors, levels of learning, types of training)</p> <p>Type(s) of co-funding model</p>
<p>Review of Methodology</p> <p>Methodology (RCT, Empirical, Survey, Literature, Review, Case studies, etc.)</p> <p>Sample size and appropriateness</p> <p>Analysis and assessment of impact (Yes/No)</p> <p>How impact measured e.g. per cent of employers or employees</p> <p>Analysis and assessment of unintended consequences (Yes/ No)</p> <p>Analysis of comparative approaches – cross-country (Yes/ No)</p>	<p>The impact of co-funding models on:</p> <p>Quantity of training (incidence, duration)</p> <p>Quality of training (accreditation)</p> <p>Employer engagement in training</p> <p>Responsiveness of training to skills needs</p> <p>Provider and delivery infrastructure</p> <p>Efficiency of allocation of funding</p> <p>Access to training for specific groups of firms (firm size, industry sector etc.)</p> <p>Access to training for specific groups of individuals (age, gender, schooling etc.)</p> <p>Public revenue</p> <p>Employer benefits</p>
<p>Details on co-funding model</p> <p>Scheme type</p> <p>Aims and objectives of instrument</p> <p>Type of training targeted</p> <p>Timescale</p> <p>Main provisions</p> <p>Restrictions</p> <p>Evidence sources (link to supporting data via reference numbers)</p> <p>Assessment of information (based on level of available evidence)</p>	<p>Quality assessment</p> <p>Counterfactual evidence</p> <p>Statistical robustness of evidence</p> <p>Evidence of bias</p> <p>Use of study in data synthesis (Y/N)</p> <p>Reason for non-inclusion</p> <p>Role in synthesis (context, evidence base, case study)</p>

Quality assessment

Upon completion of the analysis, the research team undertook a comparative quality assessment of each study, again using the criteria established as part of the review protocol. The relative robustness of each study was identified. Where, uncertainties on particular studies exist, the peer review group of technical experts was asked for specific

comment. This quality assessment involved consideration of the strength of evidence, explores whether any observed effects are consistent across studies, and investigated possible reasons for any inconsistencies.

The quality assessment process was also supported by the expertise of the peer review team where uncertainty over significance and robustness was encountered. Studies judged to be of relatively poorer quality were not necessarily discounted; rather their limitations were made clear.

Detailed results

The review protocol led to identification of:

- 89 publications addressing the research propositions, of which 63 were judged to be within the scope of the study;
- 40 international examples of co-funding schemes; and
- A total of 9 consultations with academic, research and policy experts able to offer further insight into the key issues related to the review questions.

Sources include international reviews by the European Commission, Cedefop, World Bank and the OECD, Government and departmental reviews, programme-level evaluations, court of auditors' reports, academic articles, research working papers, conference papers, and briefings.

Given the wide range of research questions under investigation, the review does not reflect exhaustive coverage of the international literature. Instead, the systematic review was undertaken with pragmatic considerations in mind, in order to inform the policy reforms of FE and training finance in England as well as the development of robust and credible case study assessments.

List of external experts consulted

The following experts on training finance were consulted through semi-structured telephone interviews. These consultations sought to identify relevant evidence sources and draw in further insights regarding the context of co-funding and the use of tax incentives to encourage employer investment in training.

Prof. Giorgio Brunello, University of Padova, Italy

Dr. Dieter Dohmen, Institute for Education and Socio-Economic Research and Consulting (FiBS), Germany

Patrycja Lipińska, European Centre for the Development of Vocational Training (Cedefop)

Kathryn Hoeckel, Harvard Graduate School of Education and the Organisation for Economic Cooperation and Development (OECD)

Peter Szovics, Institute of Banking Education, Slovakia

Sue Fergusson, National Centre for Vocational Education Research, Australia

Anonymous Experts on International Tax Policy and Administration

Anonymous Expert on International Training Finance

Appendix 2: Case study selection method

Based on the evidence review, data on the main provisions, eligibility requirements and restrictions and findings from evaluative assessments of the co-funding programmes and policies presented was extracted. This process generated a dynamic shortlist of 40 case studies from which we assessed the case studies against the selection criteria noted below, and drew recommendations on the final case studies to be investigated.

Three schemes were then selected in order to identify the advantages and disadvantages of different approaches co-funding and draw lessons for the development and delivery of an English model of employer routed co-funding. The methodology for case study selection, presented below, includes details on the operationalisation of qualitative assessment criteria.

Case study selection

By combining the evidence from the literature review with the dynamic shortlist, the research team established the degree to which evaluative information is available for the different schemes. This enabled a preliminary assessment of the relative efficiency, effectiveness, relevance and replicability of the international co-funding measures.

The rationale for selecting case studies was based on five criteria, of which a key guiding factor was the need to draw lessons for the renewal of the English model of co-funding.

Criteria	Description
Relevance	Where the co-funding models are intended to encourage employers to invest in training, and the rationale for development is in line with priorities for further education funding reform in England
Replicability	Can co-funding arrangements be taken as a model and applied to the English context
Efficiency	Does the evidence point to an efficient allocation of funding and low costs on the Exchequer
Effectiveness	Does the evidence point to net benefits for learners, employers, and the wider FE and skills system
Information	Where there is available, clear and well documented evidence of the co-funding model

Information and relevance were considered the most important criteria, and the assessment was weighted towards these criteria accordingly. This serves to ensure that case studies were selected based on the best available evidence, and on those

considered to be the most relevant to apprenticeship funding reform. Detailed information on how these criteria were operationalised is provided below.

Relevance

While all of the identified incentive and co-funding models identified were within scope, case studies bearing relevance to the English priorities of funding reforms in apprenticeships via tax and subsidy systems were considered most highly relevant from an English policy perspective. Given that there is essentially a voluntary system of employer engagement in training in England, universal levy arrangements based on compulsory contributions collected via taxes on payroll or channelled through various industry organisations were considered to be less relevant. Reflecting the principles of reform of the English model, the assessment of relevance considered two broad dimensions. Firstly, relevant models were those that allow for employer choice in training decisions and promote employer engagement. Secondly, relevant models were those systems in which there is employer investment in the direct costs of training.

A further key consideration was also the timescale of the co-funding model: here, expired policies and newly implemented policies are considered less relevant, on the basis of a need to consult informed policymakers and stakeholders who can readily relate to our lines of questioning.

Replicability

Given the focused nature of many incentive systems, one criterion for replicability was the co-funding and tax regimes that incentivise education and training in-line with the UK Government's skills priorities. Another policy priority is hard to reach individuals and employers, such as SMEs. There is a virtuous circle of learning whereby training begets more training, and incentives that break people and firms into this virtuous circle were prioritised. Therefore, it was considered appropriate to include as case studies those co-funding and tax incentives which stimulate investment in skills in these areas.

For each case study, an assessment of replicability considered a number of factors associated with the identified co-funding incentives including:

- the type of co-funding model;
- geographic coverage;
- the targeting of specific sectors, occupations and levels of learning;
- agents and actors involved in realising the training outcomes;
- its position in the broader skills system, such as, the provider infrastructure;
- relationship to employment and tax legislation more generally; and
- the compatibility with the key principles guiding UK FE and skills training reform.

Effectiveness

The case studies sought to focus on approaches that work. They must have met their aims and strategic objectives without significant levels of deadweight, substitution or other intended consequences. How well the programme fit into the strategic, institutional and operational context was also considered. The assessment did not however unconditionally preclude programmes which have failed to realise operational targets, since these may be afflicted by optimism bias or the so-called planning fallacy (Kahneman and Tversky, 1979).

The additionality of an intervention was also considered particularly important. This served to avoid a focus on incentives that have been effective in raising levels of training amongst certain target groups at the expense of training amongst other groups.

Efficiency

The case studies prioritised support and incentives that are cost effective. Though due to data limitations no strict definition of what constitutes 'cost effective' was adopted, the financial efficiency (cost effectiveness) of particular incentives was assessed by the extent to which they deliver the desired outcomes and at what cost. Accordingly, those incentives that the analysis revealed to be ineffective were excluded from the efficiency assessment altogether (along with those which are unable to be tested due to lack of information), while those incentives that did appear to be effective are assessed in terms of their cost per additional commencement or cost per additional completion, where such information was available. In the absence of such information, based on the literature review, we were able to at least provide a ranking of the value added of different approaches.

Information

The operationalisation of the criteria above required information to assess their relevance, replicability, effectiveness and efficiency. We were unable to compare the additionality, deadweight and displacement of different approaches where such information is lacking.

In addition, given the reliance of the review on secondary evidence, the more evaluative information sources there were about a given co-funding programme or incentive scheme, the more informative the case study was assessed to be. Reliance on a single evidence source for evidence was considered to be problematic, particularly where this may have been subject to bias and had not undergone peer review.

Case study assessment

The criteria were assigned a value of high, medium/high, medium or medium/low or low. In turn the values assigned by the case study researchers were translated into a corresponding three-point scale (0-2) to limit the risk of subjectivity in the individual assessments from influencing case study selection and detailed follow-up.

The application of the information assessment restricted the shortlist to 18 studies. Sufficient evidence and evaluative material on which to make an assessment was unavailable for 22 of the 40 schemes. A further 5 cases were excluded as they expired more than 10 years ago. France's three levy systems have also been combined in the outputs of the assessment, summarised in Table 10 below.

Within countries, there are often a number of different levers and measures used to promote employer investment in training. In France, for example, there are number of disparate levies, tax incentives and contractual obligations which all interplay within a wider system. In such cases, it is often not possible to consider the impacts of any one component in isolation. Several such cases were therefore considered as a group.

Table 10: Case study assessment

Country	Delivery Mechanism	Scheme Name	Information	Relevance ⁺ (Choice)	Relevance ⁺ (Finance)	Effectiveness	Efficiency	Replicability	Score*
Australia	Direct subsidy	Australian Apprenticeship Initiative Program (AAIP)	1.5	1.5	0.5	0.5	0.5	1	9
Austria	Tax credit	Apprentice tax credit	1	0.5	0.5	0.5	1.5	0	5
Denmark	Direct subsidy & levy-access	Employers' trainee reimbursement	0.5	1	2	0.5	0	0	7.5
France	Various levies	Levy funds; train-or-pay	1	0.5	1.5	0	0.5	0	6.5
France	Tax credit	Apprentice tax credit	0.5	0.5	0.5	0.5	0.5	0.5	5.5
Ireland	Levy-access	Skillnets	0.5	1.5	1.5	1.5	1.5	1	11
Korea	Levy-grant	Job Skill Development	0.5	0	1	1	1	0.5	5
Netherlands	Levy-access	Sectoral levy funds	1	0.5	1	0.5	0	1	6.5
Netherlands	Tax credit	Payment reduction for education (WVA)	1.5	1	0.5	1	1	1	9
Netherlands	Tax credit	Deduction for over 40s	1.5	0.5	0.5	0	0	1	6
US (Iowa)	Tax allowance	New jobs training	0.5	1	0	1.5	1	1	6.5

Notes: * High = 2, Medium = 1, Low = 0. ⁺ Scores on information and relevance are double weighted. The three selected studies are highlighted in bold.

Appendix 3: Comparative Classification of Qualifications

The 2011 International Standard Classification of Education (ISCED) is mapped onto the equivalent qualifications in England, and the Qualifications and Credit Framework (QCF) in table 11 below. The mapping is indicative only.

Table 11: Mapping of English qualifications onto ISCED 2011

Qualification level	ISCED 2011 level	Equivalent qualifications in England	QCF Level	
Low	0	Pre-primary education	Early Years Foundation Stage	-
	1	Primary education	Key Stage 1-2	Entry
	2	Lower secondary education	GCSE, NVQ levels 1 and 2	1-2
Medium	3	Upper secondary education	A-levels, NVQ level 3	3
	4	Post-secondary non-tertiary education	Access courses (e.g. HNC)	3
High	5	Short-cycle tertiary education	Foundation degrees and HND	4-5
	6	Bachelor or equivalent	Undergraduate degrees (e.g. BA, BSc)	6
	7	Master or equivalent	Postgraduate degrees (e.g. MA, MPhil, PGCE)	7
	8	Doctoral or equivalent	Doctoral (e.g. PhD)	8

Sources: developed by ICF GHK based on UNESCO (2012a and 2012b) and Ofqual (2012)

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