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Understanding the National Policy Dimension: A case study of England

Cedefop project 'Changing nature and role of vocational education
and training in Europe' - Working paper 4

DRAFT

The changing nature and role of VET in Europe

This working paper forms part of the Cedefop project 'The changing nature and role of vocational education and training (VET) in Europe'.

The purpose of the project is to improve our understanding of how VET is changing in the countries belonging to the European Union (as well as Iceland and Norway). The project will, over a 3-year period (2016-2018) analyse how vocationally oriented education and training has developed and changed in the last two decades (1995-2015) and on this basis point to the main challenges and opportunities facing the sector today and in the future. Work is divided into six separate but interlinked assignments:

1. The changing definition and conceptualisation of VET.
2. The external drivers influencing VET developments.
3. The role of traditional VET at upper secondary level.
4. VET from a lifelong learning perspective.
5. The role of VET at higher education levels.
6. Scenarios outlining alternative development paths for European VET in the 21st century.

The study takes as its starting point that vocationally oriented education and training is something more than the traditional VET delivered at upper secondary level (in the form of school based education or training, apprenticeships, or combinations of these). Due to the requirements of lifelong learning we can in many countries observe a diversification of VET where new institutions and stakeholders become involved. We furthermore observe an expansion of VET to higher education areas, partly through a reform of existing institutions, partly through the emergence of new institutions. Caused by factors internal to the education and training system as well as by external pressures linked to demographic, technological and economic changes.

The 'Changing role of VET in Europe project is coordinated by Jens Bjornavold and Hanne Christensen, Cedefop. Working paper 4 has been prepared by Lynn Gambin and Terence Hogarth.

This is a draft, not to be quoted

Understanding the National Policy Dimension: A case study of England

1. Introduction

Skill is a derived demand. It derives from a number of inter-related factors including technical and organisational change, globalisation, demographic change and so forth. All countries, to a greater or lesser extent, face the same set of factors driving change in the demand for skills. The effectiveness with which countries respond to the drivers of change will, according to some, explain much about their economic performance. This is explicit in the European Commission's A New Skills Agenda for Europe where the opening paragraph says: "Skills are a pathway to employability and prosperity. With the right skills, people are equipped for good-quality jobs and can fulfil their potential as confident, active citizens. In a fast-changing global economy, skills will to a great extent determine competitiveness and the capacity to drive innovation. They are a pull factor for investment and a catalyst in the virtuous circle of job creation and growth. They are key to social cohesion." (p.1). In an age when countries have access to the same technologies, skills, however defined, may be the main driver of productivity and competitiveness.¹ If skill is a key differentiator of national competitiveness, then there is a need to understand the way in which effective skill formation takes place. In other words, how do national systems respond to the external economic and social environment to deliver the skills that will not only meet current and projected future business demand, but also confer some form of competitive advantage upon a country? In many respects, it is not just about ensuring skill demands are met, but in ensuring that they are met in a way that will allow relatively high value segments of the global market to be captured. There is increasing interest in the role vocational education and training (VET) can play in this regard. Apparent across many countries is an increasing vocational element being introduced in to education at all levels,² and there is now much more policy interest in seeking to promote traditional forms of vocational education and training, such as apprenticeships,³ in bringing about a better match between the demand for, and the supply of, skills.

Even if the external challenges that countries face are more or less the same – though to differing degrees – the way in which their VET systems have responded varies considerably. This in large part reflects the differing historical trajectories along which VET systems have developed at a national (or even at a sub-national) level, as well as the differing policy regimes in place. Before exploring this further, there are some definition issues to be cleared up.

¹ Jorgenson, D. W.; Fraumeni, B. M. (1992). Investment in Education and U.S. Economic Growth. *Scandinavian Journal of Economics*, Vol. 94, Supplement, pp. 51–70.

² Gambin, L. et al. (2016) *Evaluating the Impact of Higher Education Providers' Employability Measures*. London: Quality Assurance Agency

³ European Commission (2016) A New Skills Agenda for Europe (2016) *Working together to strengthen human capital, employability and competitiveness* {SWD(2016) 195 final}

The first issue to consider is what is meant by the VET system. Amongst other things this is likely to include:

- the means used to anticipate emerging skill needs and plan future provision;
- curriculum and course design;
- qualification systems and means used to accredit skills;
- the means used to deliver skills (including both teaching / learning methodologies, and the emphasis placed on workplace based learning); and
- funding mechanisms and incentives.

With regard to what is meant by national policy regimes, the ‘varieties of capitalism’ school of thought has made some progress in this regard.⁴ Very much in this tradition is the typology of VET systems that Markowitsch and his colleagues have developed (see Table 1). This typology reflects the degree to which the governance of VET is dependent upon the collaboration between the various stakeholders present in most VET systems: from market based systems with stakeholders having relatively little influence over policy, to ones where they are actively involved in the process of determining the content of the VET system.⁵

Table 1: **Types of skill governance systems**

Type	Characteristics
Liberal	A low degree of coordination where feedback between VET providers and the labour market is mainly regulated through the market
Statist	A strong state regulation of education and weak links between education and the labour market in terms of formal communication
Participatory	Allows for the participation of social partners in the processes, but mainly in a consultative role
Co-ordinated	Social partners are the drivers of renewal processes and play an active role in its implementation.

Source: CEDEFOP 2013

When thinking about the common external factors with which VET systems have had to grapple, the key ones include:

- demographic change (including migration);
- a relatively sharp business cycle;
- globalisation / offshoring;

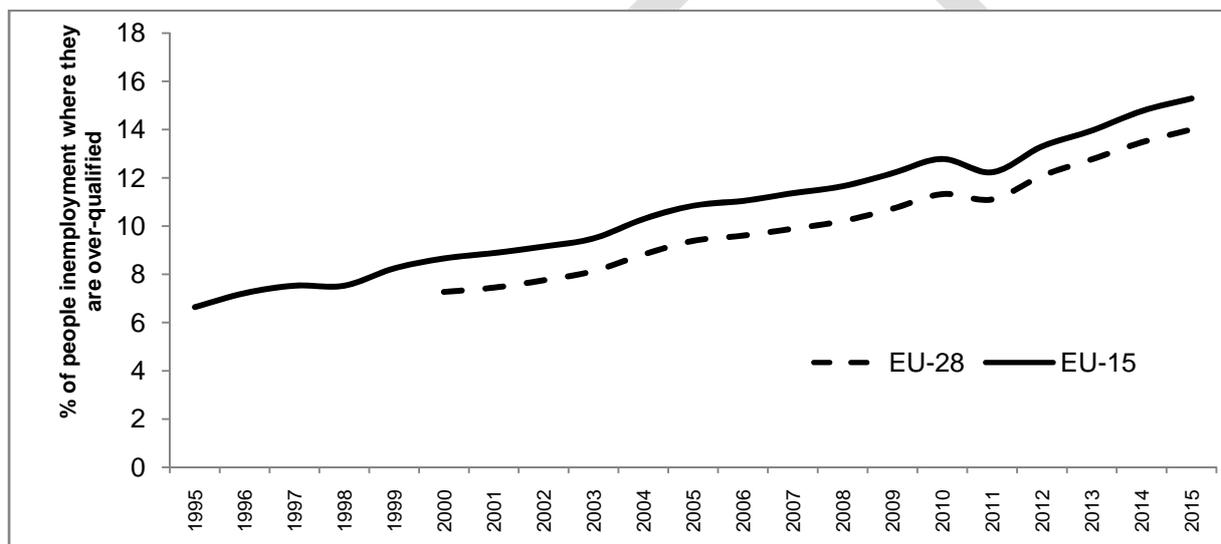
⁴ Estévez-Abe, M.; Iversen, T.; Soskice, D. (2001). ‘Social Protection and the Formation of Skills: A Reinterpretation of the Welfare State’. In: Hall, P./Soskice, D. (eds.). *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University

⁵ CEDEFOP (2013) *Renewing VET provision Understanding feedback mechanisms between initial VET and the labour market*. CEDEFOP Research Paper No.37. Luxembourg: Publications Office of the European Union

- technical change / digitisation / robotics that has affected the demand for certain skills; and
- organisational change within workplaces and within sectors (including sectoral restructuring, etc.).

Amongst others, one concern is that VET systems – and education systems in general – have faced an increasingly complex range of challenges in meeting the skill needs of the labour market. This has manifested itself, in many countries, with respect to rising levels of skill mismatches, particularly skill surpluses. Skill mismatches are notoriously difficult to measure and no single indicator fully captures this phenomenon.⁶ Various surveys, however, point to increasing levels of surpluses arising (see Figure 1), at the same time as skill shortages exist for certain occupations (e.g. ICT related ones). This may reflect a failure of VET systems to respond in a sufficiently agile way to various external factors, or may simply reflect the pace of change in many advanced economies.

Figure 1: **Indication of over-qualification in the EU, 1995 – 2015 (people qualified to tertiary level but not working in managerial, professional or associate professional occupation)**



Source: Eurostat [lfsa_egised]

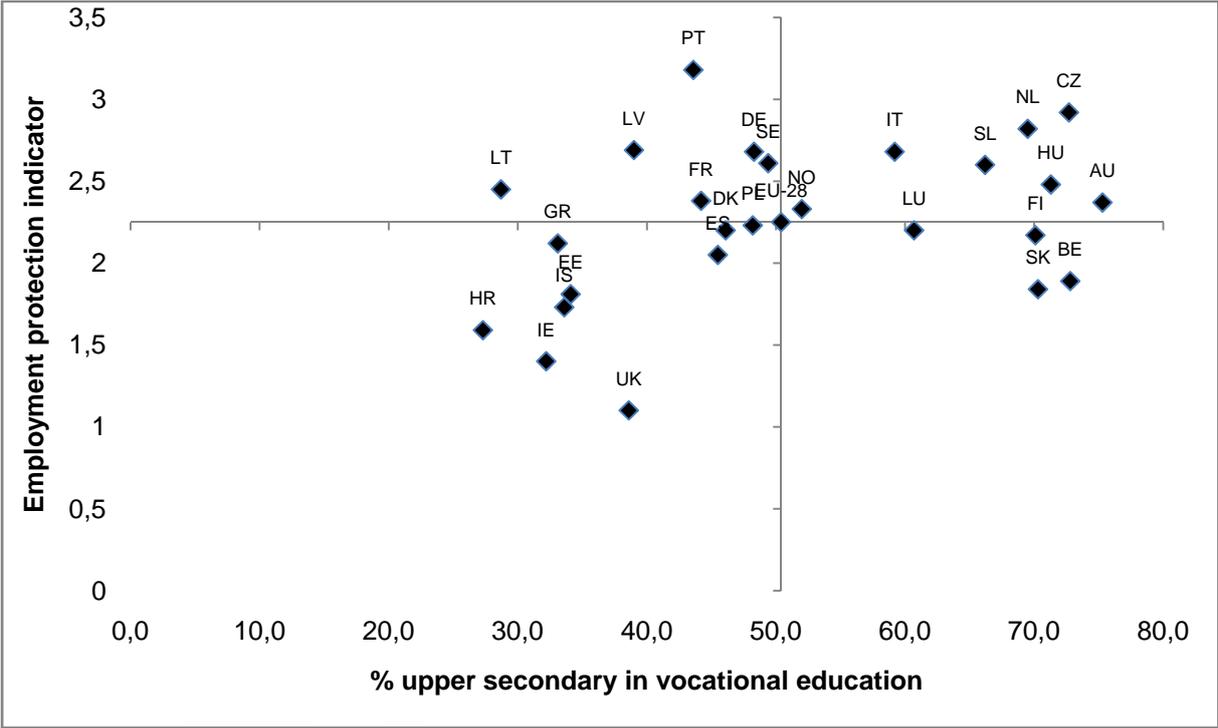
It will be the agility with which VET systems can respond to the external challenges that will determine the extent to which long-term, persistent skill imbalances can be avoided. In order to show how the national policy context affects the VET provision an example is provided of England.⁷ According to the classification in Table 1, England is very much an example of liberal approach to VET provision. Figure 2 provides an indication of where England (UK) stands in relation to policy and VET provision compared with other countries in Europe. It is one which displays a high degree of labour market flexibility but with modest levels of

⁶ Gambin, L. et al. (2016) Research to Understand the Extent Causes and Impact of Skill Mismatches on the Economy. BIS Research Paper 265. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/522980/BIS-16-260-research-skills-mismatches-in-the-economy-May-2016.pdf

⁷ The study will go on to look at other countries with differing policy regimes so that comparisons can be made.

participation in VET. Arguably, in more flexible labour markets employers and individuals may be more circumspect when making investments in skills because of concerns about appropriating the returns on that investment. This is something that has affected the propensity of employers to provide apprenticeships, especially those that require a relatively high degree of employer investment. England, then, is an interesting case in a European context.

Figure 2: **Labour market regulation and training (Protection against dismissal and percentage of students taking the vocational pathway through upper secondary education)**



In the remainder of this paper an analysis is provided of the way in which the general approach to public policy has shaped approaches to VET and how various market failures have been anticipated or mitigated.

2. VET policy formulation: the case of England

2.1 The VET system in England

The VET system in England is not readily defined. A major review of the system undertaken in 2010 made the following observation:

There is no formal definition of 'vocational education' in England, and the term is applied to programmes as different as the highly selective, competitive and demanding apprenticeships offered by large engineering companies and the programmes which recruit highly disaffected young people with extremely low academic achievement. Some submissions to the review were concerned that using the term 'vocational' for the latter was wrong, and damaged the former. Others insisted that low-achievers needed vocational programmes and vocational qualifications and argued for their protection. The many ways in which the term vocational is used reflect the many different purposes which 14-19 education serves and its large and diverse student body. Some qualifications are highly specific, oriented to a particular occupation. Others are more general, and are referred to sometimes as vocationally-related or pre-vocational. Some are very difficult and demanding, others not. A particular qualification can serve different groups, some with a clear career goal and others without, just as for a particular individual, a combination of the highly specific and the highly general may be more appropriate than just one or just the other.

Source: Wolf Review of Vocational Education, 2011, p.23

Given that VET in England has no formal definition there is a need to develop a working or operational definition for the purposes of this study. This might also be the case for other countries too (this issue is returned to below).

In the system – excepting the higher education sector for the time being - one can make a distinction between vocational education delivered to:

- 14-15 year olds in compulsory education;
- 16-19 year olds in the upper-secondary education sector;
- those aged 19-24 working towards vocational qualifications in further education;
- those aged 25 years and older.

These divisions are important not only because they make a distinction between compulsory and post-compulsory education but also because they are related to funding rates which has an impact on training provider behaviour. Public funding levels relate to the subject studied (not the student) and to outcomes (i.e. whether or not the student passes). A further distinction can be made between: (i) full-time / part-time study in vocational schools; and (ii) apprenticeships (the government's preferred vocational pathway).

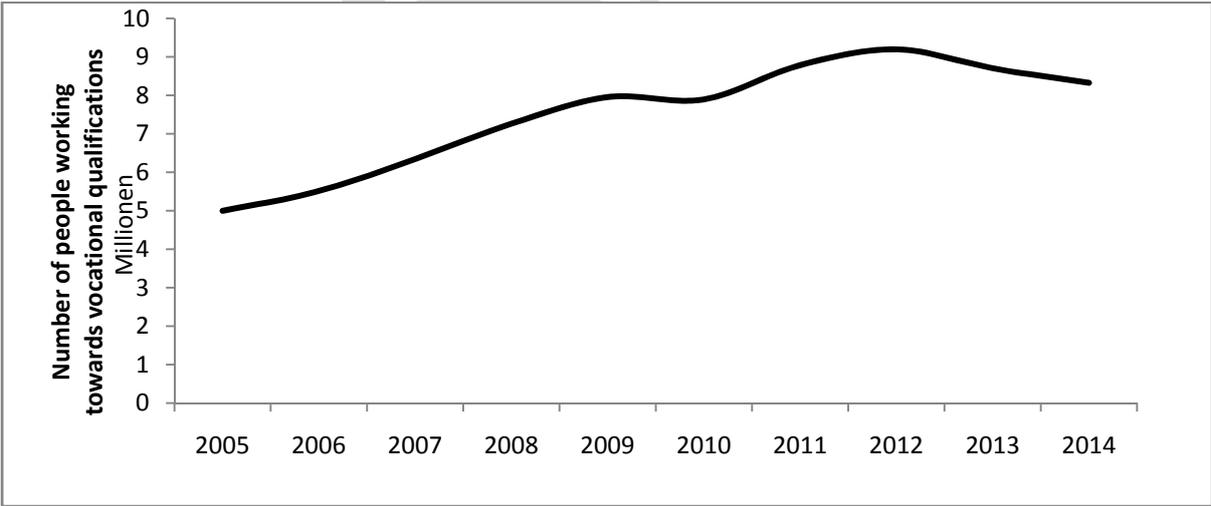
The VET system is also comprised of a range of qualification awarding bodies and a large number of qualifications. Note that an apprenticeship will typically have a qualification embedded within it. Qualifications and their awarding bodies are regulated centrally by a quasi-autonomous non-governmental body – Ofqual. The VET system, or parts thereof, are periodically subject to sometimes swinging reforms affecting the qualification system, curriculum development, introduction of new qualifications, training providers, funding levels, etc. It is a highly dynamic system. As will be explored in more detail below, there is also a tension in the system between giving training providers autonomy to cater to the needs of the labour markets they serve versus central government wanting to retain control over ensuring that certain levels of educational attainment are achieved (e.g. the target of three million apprenticeship starts between 2015-2020).

Usually a distinction can be made between initial (IVET) and continuing (CVET) forms of VET, but programmes that might be considered as primarily a form of IVET in some countries are typically used as a form of CVET in England. Nowhere is this more apparent than in the case of apprenticeships which, in some sectors of the economy, are a de facto form of CVET where existing employees of companies, sometimes longstanding ones, are trained via apprenticeships. In 2015, 38 per cent of employers offering apprenticeships provided them to existing employees.⁸ Improving the operation of the VET system in England is becoming defined with reference to apprenticeships, the government’s preferred means of delivering VET. In large measure because of the relatively high wage returns associated with this form of training – even though it still comprises a small share of overall participation in VET.

The higher education (HE) sector has traditionally offered a range of vocational courses at bachelor level and higher. More recently there has been a policy shift to develop apprenticeships at QCF levels 5+. Whether this means that there will be more apprentices moving from apprenticeships at QCF levels 3 and 4 to those at higher levels is a moot point. At the moment few apprentices make such a transition – around 15 per cent of apprentices moved from FE into HE within seven years of completing their apprenticeship, but only 7 per cent did so at a university.⁹

Whilst it is possible, though far from easy, to outline the broad contours of the VET system, it is difficult to give an indication of its scale. If the VET system is defined with reference to people participating in the study of vocational qualifications then this gives an approximation of its size (see Figure 3). But this will include people of all ages. Approximately 40 per cent of those working towards completion of a vocational qualification are in the 15-24 age group – which gives a proxy measure of those likely to be engaged in IVET. It is certainly the case that the preferred route through upper secondary education is the general / academic one rather than vocational; it is the former that is associated with, other things being equal, higher employment and wage returns.

Figure 3: **Participation in vocational education in England 2005 - 2015**



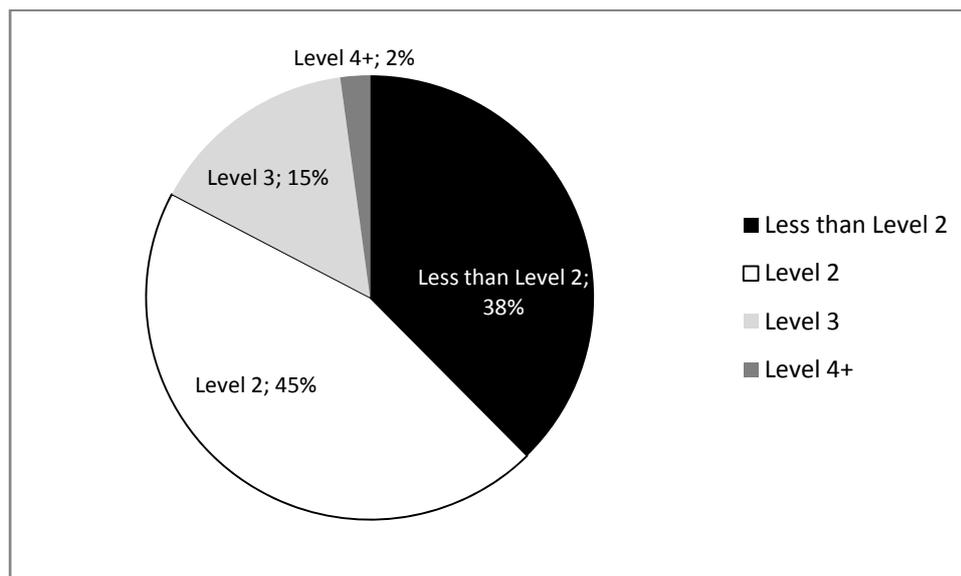
Source: DfE Vocational Qualifications Participation Data

Much of the attainment in vocational qualifications is typically at a low level: most being lower than QCF level 3 (see Figure 4).

⁸ Winterbotham, M, et al. (2016) *Apprenticeship Evaluation – Employer Summary Report 2015*. BIS Research Paper No. 288

⁹ Joslin, H. and Smith, S. (2013) *Progression of Apprentices to Higher Education*. BIS Research Paper No.107

Figure 4: **Participation in vocational education in England by QCF Level, 2014/5**



Source: DfE Vocational Qualifications Participation Data

2.2 The historical development of VET in England

Much of the policy debate relates to concerns that England is stuck in a low-skills equilibrium: that the demand for skills is weak and the supply-side has responded accordingly such that the system has become locked into a vicious spiral.¹⁰ This has manifested itself, historically and currently, in relatively low productivity rates compared with countries such as Germany, France and the Netherlands. While this hypothesis was first aired in the late 1980s, its roots stretch back much further. As long ago as 1882 the Royal Commission on Technical Education (the Samuelson Report) diagnosed relatively poor technical skills development as a cause of the UK's eroding competitiveness.¹¹ Successive government reports over the course of the 20th century bemoaned the failure to sufficiently develop technical skills amongst school pupils. The Spens Report in 1938, for instance, noted that clever pupils preferred to take the academic route through grammar schools so that they could gain access to professional occupations. The two-tier system of grammar schools with an academic bent and secondary modern schools with a vocational and technical one, effectively confined VET to being 'second best'. Not that much technical or vocational education was necessarily taking place in secondary modern schools, with the Newsom Report in 1963 drawing attention to these schools provided remarkably little of either. Even with the introduction of comprehensive schools in the 1970s, vocational education tended to be limited to woodwork, metalwork, and domestic science. With little in the way of further education being available, if pupils failed to acquire vocational skills in school, then their chances of gaining them thereafter was largely dependent upon provision by their employer.

There was deep concern by the 1970s that insufficient post-secondary education was taking place and that the existing apprenticeship system at the time was not delivering the skills the country needed. During the 1970s the then Manpower Services Commission (MSC) sought to tackle the long running lack of investment in skills by both employers and individuals.

¹⁰ Finegold, D. and D. Soskice (1990). "Britain's failure to train: analysis and prescription" in D. Gleeson (ed.), *Training and its Alternatives*, Open University Press: Buckingham

¹¹ Harbourne, D. (2010) "School-based technical and vocational education in England" in Gatsby Foundation (2010) *Technical Education in the 21st Century*. <http://www.gatsby.org.uk/uploads/education/reports/pdf/7-technician-conference-report.pdf>

Whereas many countries had developed strong apprenticeship systems in the post-1946 period, by the 1960s and 1970s in the UK they were offered by few employers and taken up by few of those leaving compulsory education. They were time served and often used to delay the time at which a young person would move over from apprenticeship to adult wage-rates. So, from the 1970s onwards, the MSC set in train a radical overhaul of the skills system.¹²

A range of vocational qualifications were introduced that could be delivered by further education (FE) colleges. This meant that vocational education and training was no longer as dependent as it once was upon employers to deliver it. Moreover, these vocational qualifications would be competence based – as soon as someone could demonstrate their competence they would be accredited – thereby potentially increasing the efficiency with which skills were delivered. And by publicly funding VET in FE, employers were incentivised to engage with the new system since they were potentially being offered a ‘free good’. It was this development, more than any other, that saw the provision of apprenticeships decline even further during the 1970s and 1980s.

Concerns, however, persisted that the skills system was not sufficiently attuned to delivering those skills that would drive up competitiveness and provide young people with employment. During much of the 1980s, youth unemployment was a persistent problem. So there was a return to apprenticeships with the launch of the Modern Apprenticeships programme in 1994. Government had become convinced that by combining training with work that included the award of a vocational qualification, an improved system of VET would be available for young people. Employers were to be at the centre of the new system. By allowing employers – via sector skills councils – to be involved in the design of apprenticeships and vocational qualifications more generally there was a better chance that they would meet labour market demand. During the final decades of the 20th century there were substantial increases in levels of participation in VET by both learners and employers. Despite this, concerns remained that demand – in the sense that skills supply was responsive to a real need in the economy – was not being met. This was seen as a supply-side problem because – as outlined in the Leitch Review¹³ – the VET system was seen to be dominated by the interests of training providers. From this point on there was more emphasis on using funding mechanisms to ensure that supply met demand. It should be noted that the government at the time was not quite ready to allow the market to determine the overall level of demand for skills. There were qualification targets, set by government, to be achieved (though subsequently abolished). This was because, ostensibly, the level of demand for skills needed to be increased in the first instance.¹⁴

The longer-term plan, however, was that of equipping employers and learners with information about the value attached to various qualifications and training programmes, as well as the quality of training provision, and on the basis of this they could make informed investment decisions. Essentially, funding would follow the learner and employer rather than providers being funded directly. And there was an expectation that much more training would be delivered through apprenticeships. Employers could develop their own apprenticeships (c.f. Trailblazers – employer-led groups developing apprenticeship

¹² Haxby, P. and Parkes, D. (1989) "Apprenticeship in the United Kingdom: From ITBs to YTS". *European Journal of Education*, Vol. 24, No. 2, pp. 167–181

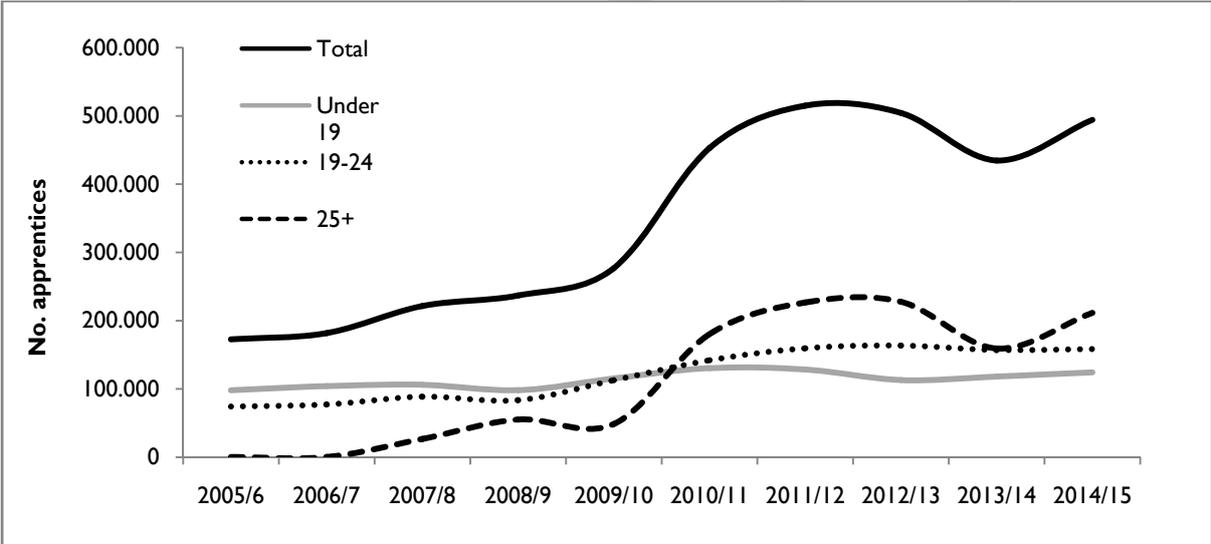
¹³ HM Treasury (2006). *Leitch Review of Skills: Prosperity for all in the global economy - world class skills* - Final Report. London: HM Treasury

¹⁴ Keep, E. (2006) 'State control of the English VET system – playing with the biggest trainset in the world'. *Journal of Vocational Education and Training*. Vol 58, No 1. pp47–64.

standards)¹⁵ and they would be given more purchasing power with respect to training providers (c.f. employer routed funding). Employers would have a much greater say in the design and structure of the Apprenticeships, but in return they would be expected to meet a greater share of the overall cost of the apprenticeship training. The rationale being that if employers have more of a financial stake in the training they are investing in and delivering, then they are more likely to ensure that it meets their needs.¹⁶ Whether employers will be willing to bear a greater share of the overall cost is an interesting question. Employers are not always aware of the amount of public subsidy they receive when they take on apprentice so have little idea of what co-investment might look like in practice.¹⁷

The evidence in relation to apprenticeships reveals that it has proven difficult to push up demand (see Figure 5). Increasingly, the target group for apprentices has been those aged 24 years and under and this is where public funding has been concentrated. But growth in apprenticeship starts has been driven in large part by those aged 25 years and over, many of whom were already sometimes longstanding employees of the company that was about to train them. The concern here is that apprenticeships have been used as a human resource management practice designed to improve recruitment and retention and drive-up employee motivation rather than as a skills intervention.

Figure 5: Apprenticeship Starts in England, 2005 to 2015



Source: Statistical First Release – Apprenticeship Starts by age

In international comparison, the extent to which people are engaged in workplace-based learning suggests that England is rather middling on this measure (see Figure 6). The general picture to emerge is that in upper secondary education that most students take the general route, and where they take the vocational one, they are more likely to be on a full- or part-time course in a vocational school. The response to the above findings led, in 2015, to the announcement that an apprenticeship levy would be introduced whereby all employers

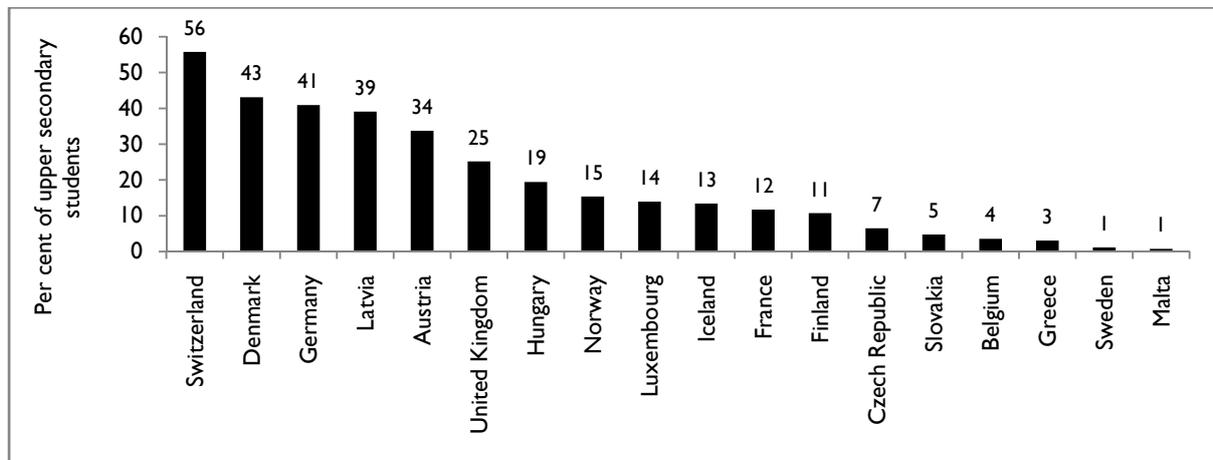
¹⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487350/BIS-15-632-apprenticeships-guidance-for-trailblazers-december-2015.pdf

¹⁶ Banks, C. (2010) *Independent review of fees and co-funding in further education in England: co-investment in the skills of the future*. Coventry: Skills Funding Agency

¹⁷ Hogarth, T., Adams, L., Gambin, L., Garnett, E., Winterbotham, M. (2014) *Employer Routed Funding: Employer Responses to Funding Reform*, BIS Research Paper number 161; Keep, E. (2015) *Unlocking Workplace Skills: what is the role for employers?* CIPD Policy Report

with a payroll over £3m would pay 0.5 per cent of that payroll in the form of a levy which they could reclaim depending upon how many apprentices they were prepared to train.

Figure 6 **Percentage of upper secondary school in work-based programmes**



Source: Pupils enrolled in upper secondary education by programme orientation, sex, type of institution and intensity of participation [educ_uae_enrs04]

2.3 The Emerging Policy Mix

UK policy, certainly since the election of a Conservative Government in 1979, has been very much based on seeking market-based solutions to various public policy issues, and for markets to work there needs to be competition. Consistent with this approach has been a desire to see public policy limited to that of making sure that market failures are avoided. This is a gross over simplification of the public policy mix that has been pursued since 1979 but it captures the essence of what has been pursued over the past 30 to 40 years. In relation to VET, the role of public policy has been, amongst other things, to:

- underwrite the costs of training faced by young people (to overcome the difficulties young people face in meeting the costs of their training);
- provide a VET infrastructure including the regulation of qualifications and awarding bodies;
- subsidise the costs faced by employers in funding young people via apprenticeships (to fund general training that employers typically are unprepared to fund); and
- provide information on the returns to completing various qualifications (to overcome the information market failure) and ensure that people have access to that information.

It is explicitly stated that it is not the role of public policy to tell individuals or employers which skills to invest in; rather it is the role of the market to determine that outcome. As noted above, the Leitch Review wanted to create a demand led system whereby employers articulated their demand for skills which local training providers would respond to, subject to the quality of teaching and the qualifications the providers offered meeting minimum standards set by government agencies. Training providers would be funded according to the number of learners they were able to attract to particular courses rather than receiving core funding which they could then use to attract learners. But government, until relatively recently, wanted to retain targets to ensure that a certain percentage of people were trained to a given level.

It should be noted that there is also a market for qualifications / awarding bodies. Training providers have a degree of choice over which qualification or awarding body to use when

they are considering delivering a course in a particular subject. This is one of the reasons behind the large number of qualifications that are on offer in the VET system. There is also competition between training providers with consumers (learners / employers) having a degree of choice between which organisation they select.¹⁸ The very large number of vocational qualifications available has been subject to much criticism (see below).¹⁹

Funding mechanisms have proven to be one of the main means used in public policy to ensure that skills supply meets demand. Creating a market for VET requires individuals and employers to regard skills as an investment good. Consumer theory indicates that purchasers will be more likely to make rational choices if they bear the cost of any choice. But if they are to make that choice they need a full set of information about the likely future returns from making any investment. Hence the emphasis placed on providing labour market information (LMI) on the returns to investing in various vocational qualifications and skills. There is also an increasing emphasis – in part resulting from the desire to reduce the current account deficit but also reflecting the general direction of travel – on the beneficiaries of VET bearing proportionately more its cost. Hence the introduction of training loans for those aged over 24 years and the requirement that employers meet proportionately more of the overall cost of apprenticeships (via employer routed funding).²⁰ In relation to employers making a cash-contribution, there is an expectation that they will achieve better value for money from training providers.

In return for employers being expected to meet proportionately more of the overall cost of apprenticeship training, they have been granted more influence over the content of training. Hence through their representative organisations – sector skills councils – they are able to develop apprenticeship standards – i.e. the training requirement related to a specific occupation. The upshot of this may be a large number of apprenticeship standards being available (at the moment there around 220 apprenticeship frameworks). It is interesting in this respect that Wolf, in her review of VET, said that there were many thousands of qualifications, awarded by many different organisations, the value of which was difficult to gauge, though the suspicion was that many delivered little value to those studying them, in part because they were over narrowly focused on a particular occupation that the learner subsequently did not enter.²¹ Moreover, the report notes that efforts to cull the number of qualifications on offer had often proved difficult to achieve.

2.4 The external challenges facing the VET system

The above sections have outlined how the VET system, and the policies that have shaped its development, have changed over the recent past. How that system has been able to respond to range of challenges is set out below, concentrating on how it has responded to demographic and economic pressures.

¹⁸ Frontier Economics (2016) *Understanding the Further Education Market in England*. BIS Research Paper No.296

¹⁹ Wolf, A. (2011) *Review of Vocational Education*. London: DfE

²⁰ Hogarth, T., Adams, L., Gambin, L., Garnett, E., and Winterbotham, M. (2014) *Employer Routed Funding: Employer Responses to Funding Reform*, BIS Research Paper No. 161

²¹ Wolf, A. (2011) *Review of Vocational of Vocational Education*. London: DfE

2.4.1 The demographic challenge

One of the factors driving change is the changing age structure of the population (i.e. its ageing of the population). There were dire warnings in the 1980s of a demographic time bomb given the ageing of the population structure, but this has been offset to some degree by immigration to the UK which has increased the percentage of younger people in the population.²² Nevertheless, as Figure 7 demonstrates, the age structure of the population in the future will be one with, proportionately, more older people. Though the pension age has risen to 68 years, and is perhaps likely to continue to rise further, if life expectancy continues to increase, it is expected that the dependency ratio between retired people and those still economically active will increase.

The impact the changing demographic structure will have on VET is potentially fourfold.

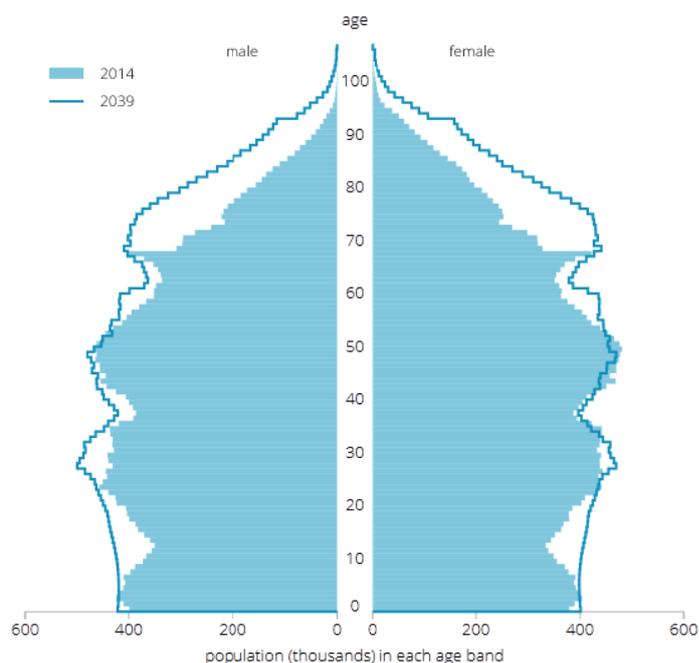
1. The need to fill those jobs which people retiring from the labour market will exit. It has been observed that the replacement demands even in jobs where the overall number of people is expected to decline over the next 10 years can be high.
2. Being able to equip people with lifelong learning in their later years to prevent their skills becoming obsolescent. The skills people acquire in what might be referred to as their initial, initial vocational education in their early years is even less likely than in the past to carry them through the labour market to their retirement. This is because the age of final exit from the labour market is expected to increase.
3. There are questions about the future financial well-being of older people which might induce them to continue working beyond the age at which they become eligible for a state pension. This might place pressure on the employment and VET systems to equip people with the skills that will grant them access to jobs that older people – especially at the upper end of the age distribution of the economically active – are willing to take.
4. The demand for people to work in jobs that related to the ageing of the workforce (including social care jobs many of which are relatively poorly paid in countries such as England).

These types of issue are being dealt with generally through age-discrimination legislation, but more specifically in relation to VET they are being addressed through provision of labour market information and granting access to publicly funded VET programmes, such as apprenticeship, to people of all ages. As noted above, publicly funded programmes such as apprenticeships are open to people of all ages. While the government has a preference for public funding to be directed towards younger people, this does not preclude older people engaging in public programmes as well. As Figure 5 above demonstrates, many of those starting apprenticeships are aged 25 years and over. Arguably, however, the migration of young skilled workers to the UK has eased many of the pressures that would otherwise bear down on the labour market and VET system.

As the next sections will show, the real pressure on policy makers has been to create a sufficiently large tranche of relatively skilled, high waged employment. Whilst this is a demand side policy, it has created pressures on the VET system to provide high value skills, increasingly through the apprenticeship system.

²² CIPD (2015) *Avoiding the demographic crunch: Labour supply and the ageing workforce*
<http://www.cipd.co.uk/binaries/avoiding-the-demographic-crunch-labour-supply-and-ageing-workforce.pdf>

Figure 7 **Age structure of UK population, mid-2014 and mid-2039**



Source: Office of National Statistics National Population Projections: 2014-based Statistical Bulletin

2.4.2 Technological change and the hollowing out of the labour market

Technological change is generally seen as having a positive impact upon employment though it does tend to give rise to new forms of employment and thereby skill needs.²³ As explained above, an abiding concern of policy makers has been the flexibility with which the VET system has been able to adapt to changes in skill demand. More recently, the debate has tended to regard technological change as having a less benign impact on employment and skills. First there has been the debate about robots and the extent to which they will substitute for employment at a rate which outstrips their positive impact on economic growth to create new jobs.²⁴ The risk here is that robots (essentially an advanced form of automation) reduce the demand for good jobs whilst leaving humans to undertake relatively low skilled, low paid ones.²⁵ In other words, there is a de-skilling effect. To some extent this is a recasting of the task-based technological change explanation where technological change is seen to have most impact on routine jobs, which do not require their incumbents to respond to outside stimuli. Accordingly their jobs can be replaced by technology, which automates the tasks they once carried out.²⁶ Goos and Manning observed that routine jobs, susceptible to being replaced by automation, are typically found in the middle of the

²³ Simon, H. A. *The Shape of Automation (for Men and Management)* New York: Harper and Row, 1965.

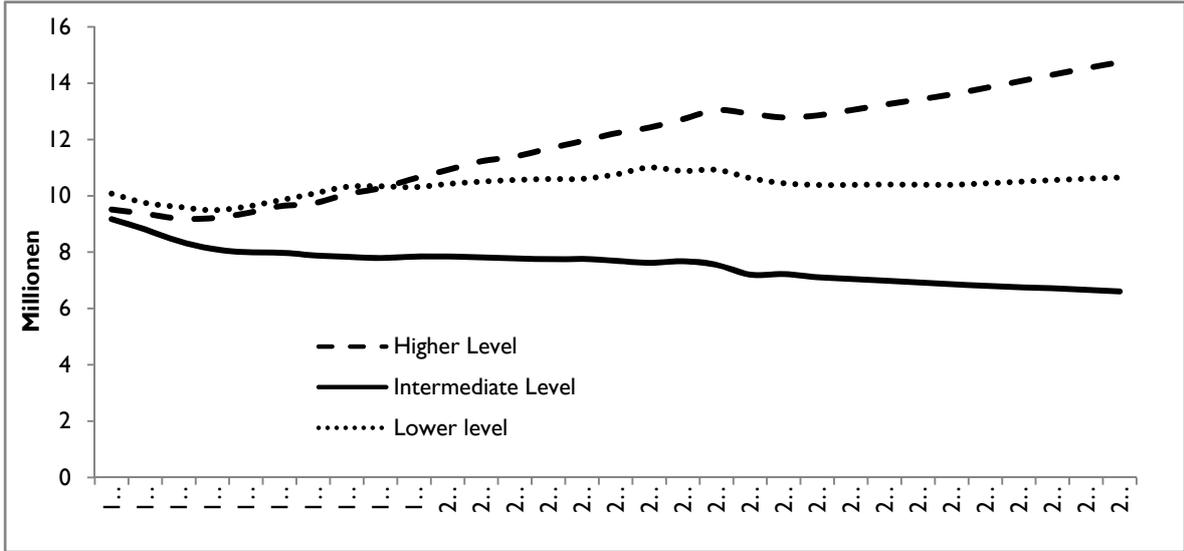
²⁴ Brynjolfsson, E., McAfee, D. (2012). *Race against the Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy*. Lexington, MA: Digital Frontier Press

²⁵ Freeman, R.M. (2015) Who owns the robots rules the world Workers can benefit from technology that substitutes robots or other machines for their work by owning part of the capital that replaces them. IZA World of Work.

²⁶ Autor, D., Levy, F. and Murnane, R. (2003). The skill content of recent technological change: an experimental exploration. *Quarterly Journal of Economics*. 118(4), 1279-1333

occupational structure: administrative jobs and skilled production jobs.²⁷ Higher level skilled jobs which require their incumbents to utilise cognitive skills cannot be so readily substituted by automation, and lower skilled jobs, such as those found in hospitality, require their incumbents to interact with customers such that these jobs too are not readily substituted by automation. The impact of this is to bring about a hollowing out of the skill / occupational structure that sees a growth in high skill jobs and low skill ones, but not much in between (see Figure 8). This appears to be a phenomenon that is more apparent in the UK and USA than other countries in the EU.²⁸

Figure 8: **Change in the occupational structure, 1990-2005**



Source: Working Futures Database

The implication of the above is that the demand for VET – notwithstanding replacement demands – becomes bifurcated. Rather than being seen as a natural consequence of technical change, the hollowing out of the labour market may result from the combination of industrial and employment policy. And it is apparent that there are attempts to redress this in some way by encouraging employment growth in the middle layer of the occupational structure through increasing the number of technicians (i.e. people working in para-legal occupations). Employment at this level is seen as important to boosting labour productivity.²⁹ Hence there are pressures on the VET system to provide more training at an intermediate level (equivalent to upper secondary education), especially through apprenticeships. Accordingly, there has been the creation of apprenticeship standards at Level 4 (sub-bachelor degree level). The flexible labour market can make employers risk averse when it comes to making investments in intermediate level skills. The structure of training at this level inevitably leaves employers with a net cost at the end of the formal training period, but in a flexible labour market they are not guaranteed of appropriating the

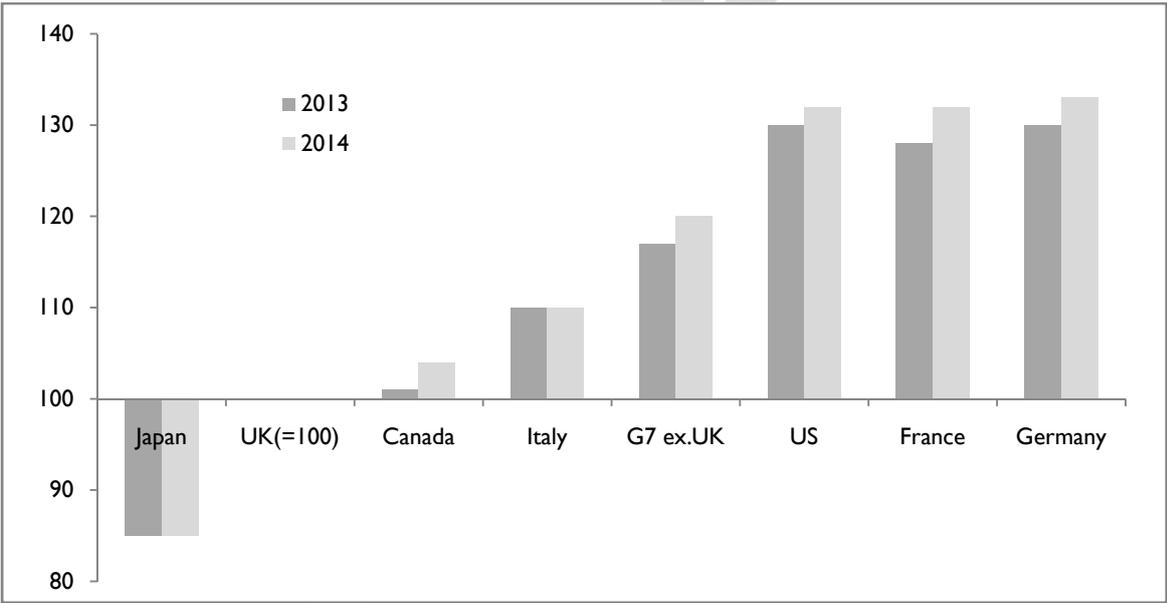
²⁷ Goos, M. and Manning, A. (2007). “Lousy and lovely jobs. The rising polarization of work in Britain”. *The Review of Economics and Statistics*, 89(1), 118-133.
²⁸ Eurofound (2016). *What do Europeans do at work? A task-based analysis: European Jobs Monitor 2016*, Publications Office of the European Union, Luxembourg
²⁹ Report of the Independent Panel on Technical Education (Sainsbury Review). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/536046/Report_of_the_Independent_Panel_on_Technical_Education.pdf

return on that investment.³⁰ Accordingly they are reluctant to make the investment unless they are sure they can retain the former apprentice / trainee. The policy response is to provide more public funding to employers to train at this level, but even then the employer is expected to bear some of the risk of the training investment under the rules regarding co-funding of apprenticeships. The policy levers available are those of preferential funding and the relay of information to would-be trainees and employers about the economic benefits of investing in training at this level.

2.4.4 The productivity challenge

Much of the current skills debate is concerned with raising productivity levels. The immediate outcome of the economic crisis was to see the UK's productivity levels fall against many of its competitors. As will be explained below, many of the reforms that have been unleashed upon the VET system have drawn attention to the UK's lack of competitiveness compared with many countries such as Germany, the USA, and France. In the post-crisis period, productivity declined; as shown in Figure 9, productivity per hour compares relatively poorly with many G7 countries (it is lower than that of the rest of the G7 by 20 percentage points). This appears to be a feature of the post-recession period given that compared with many countries productivity improved over the 2000s in the UK.

Figure 9: **Productivity comparisons with selected G7 countries (UK = 100)**



Source: ONS Productivity Statistics Q2 2015

The causes of the decline in relative productivity are complex, but central to the government's response has been the reform of the skills system and the introduction of an apprenticeship levy to drive up demand for this form of VET.³¹ Part of the concern is that the VET system as currently configured produces too many people with the qualifications / skills that do not meet the demands of the labour market.³² Consequently, public funding is being

³⁰ Gambin L. and T. Hogarth (2016) 'The Costs and Benefits of Apprenticeships to Employers: Policy, Funding and Training Quality', in Human Resource Management, Innovation and Performance, Editors: H Shipton P Budhwar P Sparrow A Brown, Palgrave Macmillan
³¹ HM Treasury (2015) *Fixing the Foundations: Creating a more prosperous nation*. London: HM Treasury Cm9098
³² Wolf, A. (2011) *Review of Vocational Education*. London: DfEReview of Vocational of Vocational Education.

wasted. So an increasing emphasis is being placed on vocationalism with particular reference to increasing the number of people engaged in apprenticeships. As noted above, the rationale is that by persuading employers to contribute to the costs of vocational training, there is a guarantee that training will be more closely tied to meeting business needs.

More nuanced analyses of the extent of skills mismatch using a range of indicators – including relative wage real wage growth, occupational wage differentials, employee and employer reports of skills shortages / surpluses – suggests that there are relatively few skill shortages in the UK.³³ And this offers a clue to major challenge facing the VET system: the long-run economic development of the economy is one that has allowed the education and training system to readily meet the demand for skills. The key problem policy makers have identified is that demand is insufficiently high – c.f. the low skills equilibrium argument.

2.4.3 Reduced public expenditure on VET

The macroeconomic situation has had a twofold impact on the VET system:

1. the economic crisis has potentially dampened the demand for skills generally and posed particular problems to young people making the transition from school to work; and
2. the need to reduce public expenditure has resulted in real term reductions in public funding for the further education sector.

Growth has struggled to pick up in the post economic crisis period, but this has not had the impact on employment that was initially feared when the economy was seen to shrink by six per cent in 2007/8 in the England. It would appear that employers were reluctant to make people redundant because of fears over recovering lost skills when the economy recovered and because, in a relatively flexible labour market, wages were able to adjust more readily than they had been able to do so in previous recessions. But it did result in a situation where employers sometimes had a surplus of labour or, where they were recruiting, were able to readily select from relatively experienced applicants.³⁴ This all conspired to reduce the opportunities for young people (i.e. the real price of hiring a young person increased relative to that of recruiting an experienced one). Given that growth in the economy has remained sluggish in the period up to 2016 – and considerable uncertainties persist about the future – this has placed a considerable onus on policy makers to ensure that young people are engaged in training activities that are likely to confer upon them skills which are of value in the labour market. A concern has been, and continues to be, that too many vocational qualifications offer pupils / students a poor return. The initial response of policy has been to place more emphasis upon apprenticeships and using funding mechanisms to ensure that the supply of skills meets demand. But this needs to be seen in the context of less public funding being made available for VET.³⁵ It has been observed that the adult skills budget – i.e. that available to train those aged 19 years and over – grew in real terms during the economy's boom years during the early 2000s boom years, was static from 2004 to 2010,

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/180504/DFE-00031-2011.pdf.

³³ **Gambin** L, Hogarth T, Murphy L, Spreadbury K, Warhurst C, Winterbotham M (2016) 'Research to understand the extent, nature and impact of skills mismatches in the economy', BIS Research Paper number 265

³⁴ Hogarth, T., Owen, D.O., **Gambin, L.**, Hasluck, C., Lyonette, C. and Casey, B. (2009) *The Equality Impacts of the Current Recession*, Equality and Human Rights Commission Report No.47, Equality and Human Rights Commission (EHRC): Manchester

³⁵ Wolf, A. (2015) *Heading for the precipice: Can further and higher education funding policies be sustained?* London: Kings College

then received a single year boost in 2010, before falling such that by 2012 it was below its 2002 level. The government has signalled its intention to further reduce public funding for adult skills as part of its overall package of reforms to reduce the current account deficit but, at the same time, wants to raise skill levels. Inevitably this means that the costs of training will be passed on to employers and learners. The impact of this on training volumes remains to be seen.

3. Conclusion

The example of England is that of a market-based system, underwritten by minimum standards established by public policy, which is expected to respond to various exogenous stimuli. It is apparent that the provision of LMI and the use of funding mechanisms are designed to ensure that the system is responsive to labour market demand. If the VET system is more responsive to labour market demand – reflected in relatively high returns to learners / apprentices – then there is an expectation that this will increase the attractiveness of VET to both individuals and employers. But at the moment, there is a preference from young people to take the general / academic pathway through post-compulsory education and a reluctance of employers to invest in apprenticeships. So, on the one hand, the VET system is configured so that it is responsive to various exogenous factors – so long as the market is able to adequately signal demand – but on the other, it is less clear how the system might increase the labour market demand for publicly funded VET (or at least with the speed policy makers might want).

Clearly other countries have developed different policy approaches. Sometimes this reflects the particular impact that the exogenous factors have had upon their economies and labour markets (e.g. the impact of the financial crisis and its continuing repercussions affected some countries more than others), but it will also indicate particular policy preferences that are deep rooted within a country (e.g. the preference for market based solutions in England). So one can begin to identify the extent to which the various common factors affect a particular country and group them accordingly, and then further group them according to the particular policy mixes that they have adopted.

The discussion provided above has somewhat skirted the issue of CVET. Given the emphasis on lifelong learning in the context of increased life expectancy and time likely to be spent in the labour market, this is an important issue. Aside from active labour market policies designed to assist those out-of-work to enter employment, this is often regarded as a largely private matter. It is notable that in the case of England, the adult skills budget (for training those aged 19 years and over) has been reduced in real terms with much of the budget targeted on providing relatively low level functional skills to allow people to be work-ready. In some countries a secular decline in CVET has been observed, so an important issue is how policy has been used – if at all – to stimulate this form of training in response to various external factors that shape the demand for skills in the labour market.