



City &
Guilts

Believe you can

**THE ECONOMIC VALUE OF
APPRENTICESHIPS**

1 FEBRUARY 2012

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EXECUTIVE SUMMARY

1. City & Guilds, the leading vocational education organisation, commissioned this report to assess the potential economic value from Million Extra – the campaign to ensure one million apprenticeship starts from 2011 to 2013. The report focuses on the benefits that completion of apprenticeships brings to individuals, to employers and to the country as a whole.
2. Based on 2010 levels, the ambition of Million Extra is for an approximate increase of 75,000 apprenticeship starts per year over the three years 2011-2013 over and above the baseline of 225,000 starts in 2009/10. Approximately three-quarters of these additional starts are expected to be at Level 2, with most of the remainder at Level 3.
3. This report projects that individuals who complete their Level 2 apprenticeships can expect to experience significant average increases in their annual earnings over the seven years following completion. The expected increase in annual earnings by 2020 is expected to be £2,721 per annum for a completer (in 2011 prices). Moreover, for an apprentice, the expected increase in earnings compared to those who complete other forms of Level 2 vocational training (£1,524 p.a. by 2020) is still very significant.
4. For individuals completing a Level 3 apprenticeship the expected increase in earnings is even more substantial. The average annual increase by 2020 is expected to be £3,477 compared to individuals who do no training, and £1,634 p.a. compared to individuals who complete other forms of Level 3 vocational training.
5. Other benefits to individuals of achieving apprenticeships include higher rates of employment, reduced benefit dependency and higher levels of job satisfaction.
6. The report also projects substantial benefits for employers from apprenticeships. These benefits derive from improved labour supply, more efficient staff recruitment and retention and productivity gains from workers with the 'right' skills and who have embraced company values.
7. In quantitative terms, the potential gains to business from the targeted increase in apprenticeship starts over the 2011-13 period could be worth £602 million per annum in gross terms by 2017, and be worth £4.37 billion to business over the 2012-2020 period (all figures in 2011 prices).
8. These estimates are 'gross' because they assume that no other training would have been offered. Evidence suggests that about half the time some other vocational training would be offered to workers (the proportions are slightly different for Levels 2 & 3). If we take this into account, the net benefits to businesses are still very large indeed: this report estimates net benefits to be potentially worth £322 million p.a. to business by 2017, and that the cumulative value over the period 2012-2020 would be worth just over £2.35 billion in aggregate terms.

9. In sectoral terms, the largest beneficiaries of these net additional gains would be engineering (£267 million of net benefits 2012-20), construction (£259 million), customer services (£201 million) and business administration (£180 million).
10. Apart from benefits to individual apprentices and their employers, the wider economy stands to benefit hugely from the targeted increase in apprenticeships.
11. To begin with, the economy as a whole would benefit from the increased spending power of workers whose earnings have risen as a result of their apprenticeship. We estimate that the income multiplier impacts from the additional apprenticeships would be worth some £55 million per annum to the UK economy by 2020, and that the cumulative value would amount to some £415 million over the 2012-2020 period (all in 2011 prices, and all net additional). The business gains can also be expected to result in additional supply chain activity, estimated to be worth some £31 million p.a. by 2020 (and £226 million cumulatively by then). All of these figures relate to the extra apprenticeships targeted to start in 2011-2013, and are on top of the baseline stream of benefits associated with baseline levels of apprenticeship provision.
12. We estimate that the aggregate impact of the targeted additional apprenticeship starts (taking into account a proportion of non-completions) would be to increase earnings-related tax and national insurance contributions by around £162 million per annum by 2016. Taking into account the likelihood that in the absence of the apprenticeship a proportion of completers would have received other forms of vocational training (and their earnings would also have increased as a result), we estimate that the net increase in tax contributions will be at least £86 million per annum by 2016.
13. Tax receipts (VAT and excise duties) related to consumer expenditure can also be expected to increase as incomes increase.
14. Government income can also be expected to increase as a result of the expansion of business activity and increases in corporate earnings.
15. The UK Exchequer will also benefit from reduced benefit dependency and reduced eligibility for income support.
16. The targeted increase in apprenticeships can also be expected to provide social and community benefits, including increased levels of youth engagement, reduced levels of crime and social disorder, expanded degrees of active citizenship and community participation among young people, and improved health outcomes for individuals who start apprenticeships.

1: INTRODUCTION

- 1.1 SQW have prepared this report on behalf of City & Guilds to assess the scale of the economic value that apprenticeships bring to the UK. The issue is particularly salient because of rising and persistent joblessness in the UK in the aftermath of the post-credit crunch economic recession and subsequent sluggish economic recovery.
- 1.2 Youth unemployment is currently at record levels, with just over 1 million 16-24 year olds unemployed in the three months to October 2011. This represents an increase of 54,000 compared to the preceding quarter. The unemployment rate for young people in this age group is now about 22 per cent.
- 1.3 As a response to the growing problem of worklessness, policy-makers and industry in the UK have both placed increasing emphasis on providing young people and adults with effective routes into sustainable employment. By the end of the current Parliament the Government is committed to supporting an additional 250,000 apprenticeships compared to the previous Government. To this end, the Government has committed more than £1 billion on apprenticeships through the National Apprenticeships Service.
- 1.4 Research commissioned by City & Guilds has identified that many individual businesses recognise the value that investment in apprenticeships can bring. Nearly 90 per cent of over 500 companies interviewed in January 2011 see apprentices as key to business success over the 2011-2012 period.¹ The CBI has also acknowledged the benefits of apprenticeships, describing them as “an invaluable route into employment” for young people in a recent report.²
- 1.5 The potential social benefits of apprenticeships have also been acknowledged. The Work Foundation, for instance, has argued that apprenticeships help avoid the ‘scarring’ effects of youth unemployment on long-term employability.³
- 1.6 In July 2011, the Prime Minister when announcing additional funding for higher apprenticeships said:

We are investing in Apprenticeships because we know they work – they are good for people who want to get ahead, good for business and good for the country⁴.
- 1.7 This report aims to put some flesh on this statement, by quantifying as far as possible the benefits of investment in apprenticeships – to the apprentice, to the employer, and to the UK economy as a whole.

¹ City & Guilds: *Building Business through Apprenticeships*, February 2011

² CBI: *Action for Jobs*: October 2011

³ Lee N., Morris K. and Jones A. (2009), *Recession and Recovery: How UK Cities can respond and drive the recovery*, Work Foundation, London, January; see also Gregg P. and Tominey E. (2005) ‘The Wage Scar from male youth unemployment’, *Labour Economics*, 12 (14), 487-509

⁴ <http://www.number10.gov.uk/news/pm-announces-25m-boost-for-higher-apprenticeships>.

2: ECONOMIC VALUE OF APPRENTICESHIPS TO THE INDIVIDUAL

- 2.1 Apprenticeships are paid jobs that involve elements of both on-the-job and off-the-job learning and which lead to a recognised qualification at National Vocational Qualification (NVQ) Level 2 or NVQ Level 3.
- 2.2 There are nearly 200 apprenticeship frameworks in the UK, each containing three related elements:
- a knowledge based component, providing the underpinning theory for the job
 - a competence based component, usually certified through an NVQ
 - a general education component, providing sufficient levels of literacy and numeracy⁵.
- 2.3 Nearly 280,000 people started apprenticeships in 2009/10, an increase of nearly 17 per cent on the previous year. This was the last full year of confirmed data that is available for the period prior to the period (2011-2013) for which the Million Extra campaign is concerned, and for that reason we have used this year to establish a baseline position. Completion rates have also tended to increase over time, and are now averaging around 64 per cent⁶.

Benefits from Apprenticeship Training

- 2.4 The importance of apprenticeship training can be viewed from a number of perspectives, but for an individual two key issues are (1) employability and (2) earnings potential. This is because apprenticeships can be a key route to the acquisition of skills that allow individuals not only to remain in employment but to progress in the labour market.
- 2.5 A recent report for the Department for Business Innovation and Skills (BIS) has estimated the long term effects on apprentices from gaining Advanced (Level 3) and Intermediate (Level 2) apprenticeships (as well as other vocational qualifications)⁷. In terms of sustaining access to employment, the BIS research found that both Intermediate and Advanced apprenticeships conferred significant employment impacts on those who had completed them. In the case of both levels of apprenticeship, the proportion of completers who were in employment was 4-6% greater than a reference cohort of non-completers.

⁵ Institute for Public Policy Research: *Rethinking Apprenticeships*, November 2011

⁶ Hogarth et al, 2009

⁷ BIS Research Paper 47: *The Long Term Effect of Vocational Qualifications on Labour Market Outcomes*, June 2011

- 2.6 The research found that the earnings impact of completing a foundation apprenticeship in the first year following completion was about 24 per cent compared to a non-completer. Although this increase in relative earnings tends to fall after the first year, over the medium term the increase in completer earnings still averaged 15 per cent per annum over seven years following completion.
- 2.7 A similar trend was also observed with respect to those individuals who acquired an advanced apprenticeship. Here, the medium term average increase in earnings for a completer compared to a non-completer was about 20 per cent per annum over seven years.
- 2.8 It is also notable that a recent report by Skandia estimates that lifetime earnings for jobs that offer apprenticeships range from £1.03 million to £1.50 million.⁸ Construction and engineering are the sectors offering the greatest potential for career span earnings.

Quantifying Income Benefits from Million Extra

- 2.9 The Million Extra campaign aims to ensure one million apprenticeship starts by summer 2013. Based on 2009/10 levels, this implies an approximate increase of 75,000 apprenticeship starts per year over the three years 2011-2013.
- 2.10 Recent research from Institute for Public Policy Research⁹ provides data on the framework breakdown of apprenticeship starts for 2009/10. We have assumed that the proportion of additional starts that might be achieved over the 2011-2013 period would be similarly distributed. The proportionate composition of targeted additional starts over the three year campaign period is, therefore, assumed to be as set out in the table below:

Table 2-1: Sector framework composition of Targeted New Starts: 2011-2013

Sector	New Starts ('000s)
Health & social care	14.6
Hospitality & catering	17.6
Customer service	24.1
Retail	13.8
Childcare	16.5
Hairdressing	13.3
Business administration	22.1
Active leisure & learning	9.3
Engineering	12.3
Construction	11.5

⁸ Skandia: *First Steps to Wealth: a study of career and earning opportunities for young Britons*, January 2012, page 16

⁹ IPPR: *Rethinking Apprenticeships*, November 2011

Sector	New Starts ('000s)
Other - industrial, etc.	17.5
Other - service sector	52.5
Total	225.0

Source: SQW, based on IPPR: *Rethinking Apprenticeships*, (2011)

- 2.11 The 12 categories used in the table relate to the top 10 sector framework codes for apprenticeship starts in 2009/10, with the remaining 32 per cent of starts allocated to either 'other service sectors' or 'other industrial sectors'.
- 2.12 Completion rates are assumed – following Hogarth (2009) – to average 64 per cent for both levels of apprenticeship. Data on average salary levels (for 2010) in relevant sectors were obtained from the annual survey of hours and earnings and other sources, including the Skandia research cited previously.
- 2.13 It was assumed that Level 2 apprenticeships for most service sector frameworks were achieved, on average, after one year, with a Level 3 apprenticeship achieved on average after 2 years. For other sectors (including engineering and construction) it was assumed that Level 3 apprenticeships were achieved on average after 3 years. The assumptions regarding the split of apprenticeships by sector for each level are as set out in the table below.

Table 2-2: Proportion of Level 2 and Level 3 Apprenticeship Completions by Sector Framework

Sector	Level 2	Level 3
Health & social care	0.68	0.32
Hospitality & catering	0.87	0.13
Customer service	0.78	0.22
Retail	0.89	0.11
Childcare	0.56	0.44
Hairdressing	0.75	0.25
Business administration	0.69	0.31
Active leisure & learning	0.78	0.22
Engineering	0.48	0.52
Construction	0.78	0.22
Other - industrial	0.73	0.27
Other - service sector	0.73	0.27

Source: IPPR, *Rethinking Apprenticeships*, November 2011, page 11

- 2.14 Given these assumptions, we estimate that the targeted recruitment of an additional 225,000 apprenticeship starts over the 2011-2013 would produce a substantial impact on the incomes of the proportion of starters who achieve both completion and are in employment.

2.15 The methodology used to estimate incremental increases in employee earnings following the completion of apprenticeships was as follows:

- estimation of the numbers of apprentice starts and completions by skill level and by sector
- estimation of baseline average earnings by skill level for each sector
- estimation of average earnings gains following the completion of apprenticeships, by skills level, by sector and over a seven year period following completion.

2.16 The summary figures in the table below are presented on both a gross and a net basis: that is, they provide estimates of future earnings increases for apprenticeship completers compared to:

- **Gross:** individuals who undertake no other form of vocational training leading to qualifications.
- **Net:** individuals who undertake other Level 2 and Level 3 vocational qualifications.

2.17 First, for those achieving a Level 2 apprenticeship, the estimated impacts are as set out in the table below:

Table 2-3: Expected increase in Income for Level 2 Completers in Employment

	Average 2012-2020	Cumulative, 2012-2020
Gross	£2,721	£24,490
Net	£1,524	£13,715

Source: SQW

2.18 That is, for those starters who complete their apprenticeships at Level 2, the average increase in additional earnings for those completers in employment compared to those who do no training is expected to average £2,721 per annum over the 2012-2020 period. The expected cumulative increase in income for those individuals who remain in employment over the period is expected to total £24,490 over this period. These expected increases in income – along with all other financial values that area used in this report – are expressed in terms of 2011 prices. That is, the expected increases in incomes are *real*: they do not take into account the effects of inflation-related wage adjustments over the period.

2.19 The estimated increases in real income compared to those who do other forms of vocational training are also substantial both annual average (£1,524 p.a.) and cumulative (£13,715) terms.

- 2.20 Next, for those achieving a Level 3 apprenticeship, the expected rewards are greater still.

Table 2-4: Expected increase in Income for Level 3 Completers in Employment

	Average 2013-2020	Cumulative, 2013-2020
Gross	£3,477	£27,816
Net	£1,634	£13,074

Source: SQW

- 2.21 Note that the average and cumulative results for Level 3 apprenticeships are given for the 2013-2020 period, rather than the 2012-2020 period as was the case for Level 2 in the previous table. This is because it is assumed that on average a Level 3 apprenticeship will take an extra year to complete.
- 2.22 For Level 3 completers in employment, the average real increase in additional earnings for those completers in employment compared to those who do no training is expected to average £3,477 per annum over the 2013-2020 period. The expected cumulative increase in real income for those individuals who remain in employment over the period is expected to total £27,816 over this period, compared to those who do no training.
- 2.23 For Level 3 completers in employment, the average increase in additional real earnings for those completers in employment compared to those who do achieve other forms of Level 3 vocational qualifications is expected to average £1,634 per annum over the 2013-2020 period. The expected cumulative increase in real income for those individuals who remain in employment over the period is expected to total £13,074 by 2020.
- 2.24 Recent Government information also supports the finding that apprenticeships offer better returns than other Level 2 and Level 3 vocational qualifications. According to BIS, those completing a Level 2 apprenticeship can expect an increase in lifetime earnings of around £73,000, compared to those with an equivalent level qualification or below. For a Level 3 apprenticeship, the expected lifetime increase was estimated to be £105,000¹⁰.

Other Benefits to Individuals

- 2.25 The estimates of benefits for individuals presented so far have focused on the income benefits of apprenticeships compared to no training or other forms of vocational training.
- 2.26 It is also the case, of course, that individuals completing apprenticeships have a much greater prospect of remaining in employment compared to others who either lack any qualifications, or who have other forms of vocational qualification.

¹⁰ Department for Business, Innovation and Skills (BIS), 2011, quoted in IPPR: *Rethinking Apprenticeships*, November 2011

- 2.27 The recent BIS study cited earlier in this Chapter estimated that individuals with Level 2 and Level 3 apprenticeship were 4 per cent to 6 per cent more likely to be in employment compared to individuals with other types of vocational qualification.
- 2.28 Moreover, data from the annual population survey suggests that the average employment rate for individuals who have completed trade apprenticeships is currently 78 per cent, compared to 41 per cent for individuals with no qualifications.

3: ECONOMIC VALUE OF APPRENTICESHIPS TO EMPLOYERS

The Business Case for Apprenticeships

- 3.1 What is the business case for investing in apprenticeships for an employer? A number of elements are relevant, particularly:
- improved internal (and external) labour supply
 - better management of recruitment and retention; and
 - productivity gains.
- 3.2 There are also a number of 'softer' but related benefits, such as:
- instilling company values in young people; and
 - increased job satisfaction.
- 3.3 Improved labour supply benefits an employer by providing the business with the skills it needs at a lower price than if it had to recruit from the external labour market. If the company did have to recruit from the external labour market, there are potentially significant costs to consider, such as those relating to recruitment and training that may need to be provided to new workers.
- 3.4 In practice, provision of apprenticeships provides an employer with a supply of skills that is greater than it otherwise would have been had the apprenticeship training not taken place. The company that invests in apprenticeship training possesses the skilled labour it needs, whereas those that do not have to entice those employed elsewhere to join them. If the company with apprentices has in place a balanced package of retention policies then other companies would encounter difficulties in trying to prise their recruits away from them.
- 3.5 The benefits also relate to recruitment. In those sectors where it is possible for a new recruit to undertake a job without the formal, structured training provided by an apprenticeship, then by offering to train the prospective recruit – and, concomitantly, some career progression beyond the formal training period – then this makes the company that trains a more attractive proposition to the job seeker.
- 3.6 Productivity gains arise from (1) savings on recruitment and (2) having employees better able to do their jobs compared with workers recruited externally. To some extent the latter might accrue from apprentices being more loyal to the company once trained and being more careful in how they go about their jobs.

3.7 Based on case study evidence, the Apprenticeship Ambassadors Network (2008) identified 10 key business benefits from Apprenticeships, as follows:

- **cost effectiveness** – it is less costly to recruit apprentices in the long run than to recruit adult, experienced workers;
- **aided recruitment** - in a strong labour market, employers feel they have to offer potential recruits an incentive to choose them as their employer;
- **improved retention** – people who have trained with a company are more likely to stay with that company;
- **training to meet business needs** – employers recognise that work based training is geared to the needs of the business as well as the individual apprentice;
- **contribute to the pool of skilled people** – employers might lose apprentices to other companies at some point but, by contributing to the pool of skilled people in a local area, supply would improve over the longer-term;
- **instil company values** in young people – an employer can more readily imbue apprentices with good working practices and instil the ‘culture of the company’;
- **offset skill-shortages** – improved labour supply and better retention ensure that companies possessed the skills they needed to meet their current and future business goals;
- provide a workforce for the future at all levels of the organisation where this is linked to structured **career development**;
- **contribute to quality** – instilling company values into young people, backed up by good quality training, ensures that apprentices are attentive to the quality of the work they perform;
- **improve productivity** – all of the above contribute to productivity and performance gains more generally.

3.8 The qualitative evidence from the IER Net Costs of Training series¹¹ suggests that employers obtain a return on investment in apprenticeships through:

- obtaining a better fit between the skills possessed by the apprentice and those required by the company

¹¹ Hogarth, T., Hasluck C. and Daniel W. W. (2005) *Employing Apprentices: The Business Case*, Apprenticeship Task Force;

Hogarth, T. and C. Hasluck (2003) *Net Costs of Modern Apprenticeship Training to Employers*, DfES Research Series, Report No. 418;

Hogarth, T. *et al.*,(1998) *Employers’ Net Costs of Training to NVQ Level 2*, DfEE Research Report RR 57, Stationery Office, London;

Hogarth, T. *et al.*,(1996) *Employers’ Net Costs of Training*, DfEE Research Report RR 3, HMSO

- improved employment retention rates
- providing a relatively cost-effective alternative to recruiting often hard-to-find skills from the external labour market.

3.9 The evidence also points to employers being able to recoup their training investments over a relatively short-space of time, such that there is relatively little risk attached to employer investments in apprenticeships¹².

Quantifying Business Productivity Gains from Million Extra

3.10 The Million Extra campaign aims to ensure one million apprenticeship starts by summer 2013. Based on 2009/10 levels, this implies an approximate increase of 75,000 apprenticeship starts per year over the three years 2011-2013. However, not all of these starters will complete their courses: based on evidence cited in Chapter 2, we assume that there would be approximately 153,000 net additional completers by 2015, of whom approximately 74% would be at Level 2 and the other 26% at Level 3.

3.11 Based on evidence from Hasluck et al¹³, the average gains in productivity by business sector for an apprentice is an uplift of between 11% to 50% of an experienced person's wage, compared to a non-completer. The specific assumptions used in our estimations of sectoral productivity gains are set out below:

Table 3-1: Marginal Productivity Gains : Apprentice vs. Non-completer

Health & social care	20%
Hospitality & catering	20%
Customer service	20%
Retail	11%
Childcare	20%
Hairdressing	20%
Business administration	22%
Active leisure & learning	20%
Engineering	50%
Construction	50%
Other – industrial	50%
Other – service sector	20%

Source: SQW

¹² Hasluck, C. and Hogarth T., et al. (2008) *The Net Benefit to Employer Investment in Apprenticeship Training*, Apprenticeship Ambassadors Network, London

¹³ Hasluck C., Hogarth T., Baldauf B and Briscoe G. (2008), *The Net Benefit to for Employer Investment in Apprenticeship Training*, Report for the Apprenticeship Ambassadors Network

- 3.12 It is perhaps worth noting the lower expected productivity gains in retailing, which is very much a non-traditional sector for apprenticeships. The research (Hasluck et al) which identified this finding appears to attribute this result to retail apprenticeships typically comprising short-duration on-the-job training which while providing quick returns to the employer, do not result in large increases in sustained average productivity increases per employee.
- 3.13 Information on average salary levels by sector was obtained from the annual survey of hours and earnings, supplemented with current sector specific information.
- 3.14 The table below provide estimates of expected average annual productivity gains for businesses, based on the distribution of apprenticeship starts that has already been set out in Chapter 2 of this report. The results in the table assume that an average of 78% of apprentice completers will be in employment for each of the years following the completion of their apprenticeship, up to 2020. This assumption is based on the average employment rate for individuals who have completed a trade apprenticeship. The gains in productivity are, in the first instance, presented on the basis of the uplift expected compared to the situation where none of the completers would have received alternative forms of vocational training and achieved alternative Level 2 or Level 3 qualifications.

Table 3-2: Gross Annual and Cumulative Productivity Gains for Employers, by Sector Framework (£ millions, 2011 prices)

Sector	P.A., by 2014	P.A., by 2017	2012-2020
Health & social care	32	36	278
Hospitality & catering	28	29	229
Customer service	44	48	371
Retail	14	15	115
Childcare	14	17	127
Hairdressing	15	16	123
Business administration	39	44	336
Active leisure & learning	16	18	137
Engineering	39	80	516
Construction	42	70	477
<i>Other - industrial</i>	63	109	735
<i>Other - service sector</i>	113	121	930
Total	459	602	4,375

Source: SQW

- 3.15 That is, the gross expected benefits of the additional Million Extra apprenticeship starts is expected to be worth £459 million per annum in gross terms to businesses by 2014 (2011 prices), rising to £602 million per annum (also 2011 prices) by 2017.

The cumulative value of those benefits over the 2012-2020 period is expected to be worth just over £4.37 billion to the sectors in current prices.

- 3.16 However, the estimates of gross business productivity benefits set out in the above assume that the individual beneficiaries of apprenticeships would have received no other vocational training had the apprenticeship not been available. Research evidence from business surveys¹⁴, however, suggests that 44% of Level 2 apprentices and 53% of Level 3 apprentices would have been offered some other form of vocational training if apprenticeships are not available or offered.
- 3.17 If we take that into account, the net productivity gains resulting from investment in apprenticeships compared to other types of Level 2 or 3 vocational training that might be provided as an alternative are estimated as follows:

Table 3-3: Net Annual and Cumulative Productivity Gains for Employers, by Sector (£ millions, 2011 prices)

Sector	P.A., by 2014	P.A., by 2017	2012-2020
Health & social care	17	19	148
Hospitality & catering	15	16	126
Customer service	24	26	201
Retail	8	8	64
Childcare	8	9	66
Hairdressing	8	9	67
Business administration	21	23	180
Active leisure & learning	9	10	74
Engineering	21	41	267
Construction	23	38	259
Other -industrial	34	58	396
Other - service sector	61	65	505
Total	250	322	2,352

Source: SQW

- 3.18 That is, the net expected benefits of the additional Million Extra apprenticeship starts is expected to be worth £250 million per annum to businesses by 2014 (2011 prices), rising to £322 million per annum (also 2011 prices) by 2017.
- 3.19 The cumulative value of those benefits over the 2012-2020 period is expected to be worth just over £2.35 billion in aggregate across all sectors, in current prices.

¹⁴ Anderson, T. and Metcalf H. (2003) *Modern Apprenticeship Employers: Evaluation Study*, Department for Education and Employment Research Report No. 471

- 3.20 In apprenticeship sector framework terms, the largest net beneficiaries are expected to be engineering (£267 million of benefits 2012-20), construction (£259 million), customer services (£201 million) and business administration (£180 million).

4: BENEFITS TO THE WIDER ECONOMY

- 4.1 Apart from the benefits to individuals – through greater levels of employability, higher earnings and increased job satisfaction – and to businesses via increased productivity, investing in skills through apprenticeships has the potential to confer significant additional benefits to the UK economy as a whole.
- 4.2 In this chapter we consider some of the main sources of additional benefits above and beyond the gains to individuals and to businesses that have already been covered in this report.

Multiplier Impacts

- 4.3 The aggregate income and business output benefits discussed in the two preceding chapters are valuable, but only part of the story. A proportion of the first round income gains by individuals would be used to fund consumption expenditure, which would in turn benefit the businesses (and their employees) who receive that spending.
- 4.4 The benefits of additional spending by individuals would thus ripple out to the rest of the economy via the effect of the income multiplier mechanism.
- 4.5 We estimate that the income multiplier effects of net additional spending resulting from the targeted increase in apprenticeship completions associated with the Million Extra campaign (that is, the estimated 153,000 additional completers that are expected to result from the campaign) could be worth some £55 million per annum to the UK economy by 2020. We also estimate that the cumulative value of these impacts could amount to some £415 million over the 2012-2020 period (all in 2011 prices).
- 4.6 These estimates of income multiplier benefits are net additional. That is, the estimates take into account the likelihood that a proportion of the completers would probably have received alternative vocational training had they not gone down the apprenticeship route, and that additional income and spending benefits (albeit reduced compared to apprenticeships) would have accrued as a result.
- 4.7 Another source of indirect benefit to the economy would derive from the enhanced productivity and competitiveness potential conferred by the skills investment. A portion of the stimulus to businesses that results from a more productive workforce would be manifested in increased production and output. This in turn will deliver benefits to the businesses' supply chain, resulting in additional turnover for those businesses and, potentially, additional income for their employees.

- 4.8 We estimate that the potential value of this stimulus could be in the order of £31 million per annum to the UK economy (net additional, and in 2011 prices) by 2020. The net cumulative impact could be worth £226 million over the 2020 period.

Regional Impacts

- 4.9 By considering the regional distribution of production and employment by sector, we are able to estimate the potential distribution of quantifiable benefits across the standard GB regions, including Scotland and Wales. The table below sets out the estimated regional distribution of the main streams of benefits considered in this report.

Table 4-1: Expected Regional Distribution of Cumulative Net Additional Benefits, 2012-2020, £millions

	North East	North West	Yorks	East Mids	West Mids	East	L'don	South East	South West	Wales	Scot
Net business output gains	105	281	213	193	223	207	298	299	203	119	212
Supply chain benefits	10	27	20	19	21	20	29	29	19	11	20
Income multiplier benefits	19	50	38	34	39	36	53	53	36	21	37
Total	134	357	271	245	284	263	379	381	258	151	269

Source: SQW

- 4.10 For example, North East England is expected to receive a total of £134 million of net additional benefits over the 2012-2020 period. These comprise £105 million of direct business output gains, £10 million of supply chain impacts and £19 million of income multiplier benefits.

UK Economic Competitiveness

- 4.11 The UK economy suffers a long-standing productivity deficit compared to key European and OECD trading partners that has been recognised as a challenge by successive Governments. A 2007 report prepared by HM Treasury¹⁵ estimated that although some of the gap had been reduced over the previous decade, factor productivity in the UK still lags significantly behind that of the US, Germany and France.
- 4.12 One of the key determinants of total productivity is labour productivity, which can be influenced directly by the skills and qualifications of the workforce. The 2007 HMT report presented evidence that around 80 per cent of the growth in UK productivity over the previous decade had derived from growth in the productivity of labour.
- 4.13 The CBI has identified that by 2020 over two-thirds of jobs in the UK will require skills at intermediate level or above, but that the country currently lags in 18th position in

¹⁵¹⁵ HM Treasury: *Securing Long-term Productivity*, November 2007

the OECD with respect to intermediate skills.¹⁶ The CBI highlights in particular shortages of skills relevant to the knowledge-intensive parts of the economy: science; technology and advanced engineering.

- 4.14 The UK still needs to do more to address the productivity gap, and it is fully acknowledged that additional investment in skills is only one of the interventions that is needed, but investing further in the skills of its working age population – adults as well as young people – such as through the expansion of the numbers starting apprenticeships represents an important step forward that would benefit the economy and society as a whole.

Exchequer Benefits

- 4.15 We have already presented evidence in this report that investment in apprenticeships would benefit the economy through the raising of the incomes of workers who gain vocational qualifications. These direct benefits to workers (via increased earnings) would also benefit the rest of the economy through income multiplier effects.
- 4.16 These impacts can also be expected to generate significant tax revenue benefits for Government through the taxation of additional incomes (via Income Tax and employee National Insurance contributions).
- 4.17 We estimate that the aggregate impact of the targeted additional apprenticeship starts (taking into account a proportion of non-completions) would be to increase earnings-related tax contributions by around £162 million per annum by 2016. Taking into account the likelihood that in the absence of the apprenticeship a proportion of completers would have received other forms of vocational training (and their earnings would also have increased as a result), we estimate that the net increase in tax contributions will be at least £86 million per annum by 2016.
- 4.18 Additional consumption by individuals and additional expenditure by businesses would also benefit the Exchequer through sales taxes and duties (such as VAT).
- 4.19 Similarly, the benefits that flow to businesses through increased productivity (and, ultimately, profitability) is very likely to benefit the Exchequer via businesses taxes and profits distributed to shareholders.
- 4.20 Another anticipated Exchequer benefit relates to the potential reduction in Government expenditure on benefits for individuals who – as a result of apprenticeship training – either gain employment or raise their income above thresholds that reduce their eligibility for income support.
- 4.21 Recent evidence in a report published by BIS provides evidence that the acquisition of apprenticeship reduces individual's benefit dependency. For example, the research concluded that the acquisition of a Level 2 apprenticeship reduces the proportion of calendar days an individual was in receipt of Job Seekers Allowance by 4 per cent, and reduces incapacity benefit by 1.3 per cent.

¹⁶ CBI: *You're Hired: More Apprenticeships for Business*, July 2010

- 4.22 We have not attempted to estimate the potential value of increased tax receipts or savings in Government expenditure on benefits as a result of the targeted increase in apprenticeship starts and completions. Both effects have the potential to be substantial over the period up to 2020. This is a particularly important consideration given the current pressures on Government spending in the UK.

Social benefits

- 4.23 Previous research has identified a range of social and community benefits from apprenticeships, as well as other forms of vocational training.¹⁷
- 4.24 Indeed, since the Middle Ages apprenticeships have been seen as a route for young people to achieve greater levels of responsibility and financial independence. Moreover, governments have frequently emphasised and resourced youth training and apprenticeships at times of high unemployment and/or social tension (as was the case with the 1981 riots, and again following the disturbances during the summer of 2011).
- 4.25 The potential social and community benefits of greater levels of employment and higher levels of education are manifold, including reduced levels of crime and social disorder, expanded degrees of active citizenship and community participation among young people, and improved health outcomes for individuals. Apprenticeships can be a way for many young people – who are not attracted to other training and/or education routes – to access these benefits.
- 4.26 Apprenticeships can also be viewed as a means by which community can achieve wider acceptance of the contributions of young people to society.
- 4.27 Finally, a successful apprenticeship system can also be seen as a method of providing a structured vocational route into further education post-16 for those who prefer not to continue their education along the general route into A-levels.

¹⁷ For example, Preston & Green (2003): *The Macro-Social Benefits of Education, Training and Skills*, *The Centre for Research on the Wider Benefits of Learning*

5: SUMMARY AND CONCLUSIONS

Introduction

- 5.1 SQW have prepared this report on behalf of City & Guilds to assess on the scale of the economic value that apprenticeships bring to the UK. The issue is particularly acute because of rising levels of joblessness in the UK: youth unemployment is currently at record levels, with just over 1 million 16-24 year olds unemployed in the three months to October 2011.
- 5.2 Policy-makers and industry in the UK have both placed increasing emphasis on providing young people and adults with effective routes into sustainable employment. By the end of the current Parliament the Government is committed to supporting an additional 250,000 apprenticeships compared to the previous Government.
- 5.3 In July 2011, the Prime Minister when announcing additional funding for higher apprenticeships said:
- We are investing in apprenticeships because we know they work – they are good for people who want to get ahead, good for business and good for the country¹⁸.*
- 5.4 This report has estimated the potential benefits of investment in apprenticeships – to the apprentice, to the employer, and to the UK economy as a whole.

Value of Apprenticeships to the Individual

- 5.5 For an individual, the principal benefits from the completion of apprenticeship training are improved employability and increased earnings potential. That is because apprenticeships are an acknowledged route to the acquisition of skills that allow individuals not only to remain in employment but to progress in the labour market.
- 5.6 A recent report for the Department for Business Innovation and Skills (BIS)¹⁹ provided evidence that the proportion of apprenticeship completers who were in employment was 4-6% greater than a reference cohort of non-completers. The same report suggested that the medium-to-long term impact on earnings was 15-20 per cent for completers of apprenticeships compared to non-completers.
- 5.7 The Million Extra campaign aims to ensure one million apprenticeship starts by summer 2013. Based on 2009/10 levels, this implies an approximate increase of 75,000 apprenticeship starts per year over the three years 2011-2013.

¹⁸ <http://www.number10.gov.uk/news/pm-announces-25m-boost-for-higher-apprenticeships>

¹⁹ BIS Research Paper 47: *The Long Term Effect of Vocational Qualifications on Labour Market Outcomes*, June 2011

5.8 SQW have modelled the potential impacts of the Million Extra targets for increased numbers of apprenticeship starts. In doing so we have used assumptions based on up-to-date data and evidence with respect to:

- the sectoral composition of the additional apprenticeship starts
- completion rates
- duration of apprenticeships
- average earnings for each sector post-completion for apprentices
- average earnings for individuals with other forms of vocational qualification at Level 2 and Level 3 respectively.

5.9 Evidence from BIS and elsewhere confirms that apprenticeship completers are significantly more likely to be in employment. In terms of the impact that this has on potential earnings, our analysis concludes that:

- for those starters who complete their courses and gain apprenticeships at Level 2, the average real increase in additional earnings for those completers in employment compared to those who do no training is expected to average £2,721 per annum over the 2012-2020 period.
- the expected cumulative increase in income for Level 2 completers who remain in employment over the period is expected to total £24,490 over the 2012-2020 period.
- the increases in real income for Level 2 completers compared to those who do other forms of vocational training are smaller, but still significant in both annual average (£1,524 p.a.) and cumulative (£13,715) terms.
- for Level 3 completers in employment, the average real increase in additional earnings for those completers in employment compared to those who do no training is expected to average £3,477 per annum over the 2013-2020 period.
- the expected cumulative increase in real income for those individuals who remain in employment over the period, compared to those who do no training, is expected to total £27,816 by 2020
- for Level 3 completers in employment, the average increase in additional real earnings for those completers in employment compared to those who do achieve other forms of Level 3 vocational qualifications is expected to average £1,634 per annum over the 2013-2020 period.

- the expected cumulative increase in real income for those individuals who remain in employment over the period is expected to total £13,074 over this period.

Value of Benefits to Businesses

- 5.10 Businesses benefit from apprenticeships as they provide an employer with the skills it needs at a lower price than if it had to recruit from the external labour market. The company that invests in apprenticeship training possesses the skilled labour it needs, whereas those that do not have to entice those employed elsewhere to join them. If the company with apprentices has in place a balanced package of retention policies then other companies would encounter difficulties in trying to prise their recruits away from them.
- 5.11 Productivity gains from investment in apprenticeships arise from (1) savings on recruitment and (2) having employees better able to do their jobs compared with workers recruited externally. To some extent the latter might also accrue from apprentices being more loyal to the company once trained, and being more careful in how they go about their jobs.
- 5.12 The Million Extra campaign aims to help ensure one million apprenticeship starts by summer 2013. Based on 2009/10 levels, this implies an approximate increase of 75,000 apprenticeship starts per year over the three years 2011-2013. However, not all of these starters will complete their courses and gain apprenticeships: we assume that there would be approximately 153,000 net additional completers by 2015, of whom approximately 74% would be at Level 2 and the other 26% at Level 3.
- 5.13 We estimate that the gross expected benefits of the additional Million Extra apprenticeship starts to be worth £459 million per annum in gross terms to businesses by 2014 (2011 prices), rising to £602 million per annum (also 2011 prices) by 2017. The cumulative value of those benefits over the 2012-2020 period is expected to be worth just over £4.37 billion to the sectors in current prices.
- 5.14 These estimates assume that the individual beneficiaries of apprenticeships would receive no other vocational training. Research evidence from business surveys²⁰, however, suggests that 44% of Level 2 apprentices and 53% of Level 3 apprentices would have been offered some other form of vocational training if apprenticeships are not available or offered.
- 5.15 If we take that into account, the net expected benefits of the additional Million Extra apprenticeship starts is expected to be worth £250 million per annum to businesses by 2014 (2011 prices), rising to £322 million per annum (also 2011 prices) by 2017. The cumulative value of those benefits over the 2012-2020 period is expected to be worth just over £2.35 billion in aggregate across all sectors, in current prices.

²⁰ Anderson, T. and Metcalf H. (2003) *Modern Apprenticeship Employers: Evaluation Study*, Department for Education and Employment Research Report No. 471

- 5.16 In apprenticeship sector framework terms, the largest net beneficiaries are expected to be engineering (£267 million of benefits 2012-20), construction (£259 million), customer services (£201 million) and business administration (£180 million).

Value of Apprenticeships to the Wider Economy

- 5.17 An increase in the number of apprenticeships also has the potential to provide substantial additional benefits to the economy as a whole, some of which can be readily estimated:

Multiplier effects of benefits to individuals and businesses

- 5.18 We estimate that the income multiplier effects of net additional spending resulting from the targeted increase in apprenticeship completions associated with the Million Extra campaign could be worth some £55 million per annum to the UK economy by 2020. We also estimate that the cumulative value of these impacts could amount to some £415 million over the 2012-2020 period (all in 2011 prices). These estimates are net additional: that is, they take into account the likelihood that a proportion of the completers would probably have received alternative vocational training had they not gone down the apprenticeship route, and that additional income and spending benefits (albeit reduced compared to apprenticeships) would have accrued as a result.
- 5.19 Another source of indirect benefit to the economy would derive from the enhanced productivity and competitiveness potential conferred by the skills investment, a portion of which would benefit other business through additional procurement and supply chain activity. We estimate that the potential value of this stimulus could be in the order of £31 million per annum to the UK economy (net additional, and in 2011 prices) by 2020. The net cumulative impact could be worth £226 million over the 2020 period.

Addressing the UK Productivity Gap

- 5.20 The UK economy suffers a long-standing productivity deficit compared to key European and OECD trading partners that has been recognised as a challenge by successive governments. One of the key determinants of total productivity is labour productivity, which can be influenced directly by the skills and qualifications of the workforce. The UK still needs to do more to address the productivity gap, but investing further in the skills of its working age population – adults as well as young people – through the expansion of the numbers starting apprenticeships represents an important step forward that would benefit the economy and society as a whole.

Exchequer Benefits

- 5.21 The expectation that the completion of an apprenticeship would increase an individual's income can also be expected to generate significant tax revenue benefits

for Government through the taxation of additional earnings (via Income Tax and employee National Insurance contributions).

- 5.22 We estimate that the aggregate impact of the targeted additional apprenticeship starts (taking into account a proportion of non-completions) would be to increase earnings-related tax contributions by around £162 million per annum by 2016. Taking into account the likelihood that in the absence of the apprenticeship a proportion of completers would have received other forms of vocational training (and their earnings would also have increased as a result), we estimate that the net increase in tax contributions will be at least £86 million per annum by 2016.
- 5.23 Additional consumption by individuals and additional expenditure by businesses would also benefit the Exchequer through sales taxes and duties (such as VAT).
- 5.24 Similarly, the benefits that flow to businesses through increased productivity (and, ultimately, profitability) should also benefit the Exchequer via businesses taxes and profits distributed to shareholders.
- 5.25 Another anticipated Exchequer benefit relates to the potential reduction in Government expenditure on benefits for individuals who – as a result of apprenticeship training – either gain employment or raise their income above thresholds that reduce their eligibility for income support.
- 5.26 We have not attempted to estimate the potential value of spending related tax receipts, or savings in Government expenditure on benefits as a result of the targeted increase in apprenticeship starts and completions, but both effects have the potential to be substantial over the period up to 2020. This is a particularly important consideration given the current pressures on Government spending in the UK.

Social Benefits

- 5.27 The potential social and community benefits of greater levels of employment and higher levels of education are manifold, including reduced levels of crime and social disorder, expanded degrees of active citizenship and community participation among young people, and improved health outcomes for individuals. Apprenticeships can be a way for many young people – who are not attracted to other training and/or education routes – to access these benefits.
- 5.28 Apprenticeships can also be viewed as a means by which community can achieve wider acceptance of the contributions of young people to society.
- 5.29 Finally, a successful apprenticeship system can also be seen as a method of providing a structured vocational route into further education post-16 for those who prefer not to continue their education along the general route into A-levels.

MILLION EXTRA

Our mission is to lead a talent revolution by helping to ensure that one million people start an Apprenticeship by Summer 2013, and shine and grow through them. Million Extra is how we're going to make this happen. We are creating a range of inspiring programmes and support for our training centres, employers and learners.

From the most demanded and effective Apprenticeship qualifications, to a million hours of cutting-edge content and support for our training centres – it's all dedicated to helping build the sustainable skills the economy needs, and creating opportunities and equipping learners for lifelong success.

Business is key to helping to achieve this ambition. That's why we promise to listen, respond and support employers in helping overcome barriers in order to open up more Apprenticeship places. Our mission depends on commitment and collaboration. Only together, with you, can we make Million Extra happen.

Find out more on how to play your part at
www.million-extra.co.uk

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