

The Net Costs and Benefits of Training To Employers Series of Studies in England: Estimating the costs of Apprenticeship training to employers

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Costs and benefits of apprenticeship

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WARWICK INSTITUTE *for*
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The Net Costs and Benefits of Training to Employers Series

Since 1996, the University of Warwick Institute for Employment Research (IER) has recurrently undertaken a study to estimate how much it costs the employer to train an apprentice to the completion of his or her Apprenticeship

The studies have used a consistent method though some modifications have been made over the years to reflect changes in the funding of Apprenticeships and improve the collection of data

The latest study was completed in 2012 (the Fifth Costs and Benefits study):

- Hogarth, T., Gambin, L., Winterbotham, M., Koerbitz, C., Hasluck, C., Baldauf, B. (2012) ***Employer Investment in Apprenticeships and Workplace Learning: The Fifth Net Benefits to Employers Study***, London: Department for Business Innovation and Skills, Research Report 67 - <https://www.gov.uk/government/publications/employer-investment-in-apprenticeships-and-workplace-learning-the-fifth-net-benefits-of-training-to-employers-study>

Lots of spin-off studies too that have looked at the situation in specific sectors:

- Health – <http://www.apprenticeships.org.uk/About-Us/~/media/Documents/Publications/Net-Benefits-to-Employers-of-Apprenticeships-in-He.ashx>
- Accountancy - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/310017/bis-14-788-employer-investment-in-higher-apprenticeships-in-accounting.pdf

And in for public and private sector companies

History and Context

The emphasis initially was very much on cost. This reflected two public policy concerns:

1. How much the State should contribute to the overall funding of Apprenticeships
2. Persuading employers of the cost of investing in Apprenticeships may be less than they think once the productive contribution of the apprentice is taken in to account

Over time the policy emphasis changed with more emphasis given to understanding the break-even point:

3. At what point post-completion would the employer have fully recouped their investment in an Apprenticeship

Accordingly, the 2008 and 2012 studies sought to estimate a payback period

The Objectives of the Net Costs and Benefits Series

To identify the costs and benefits relating to specific types of Apprenticeship (e.g. at Level 3 in Engineering)

Providing an overall cost-benefit estimate for Apprenticeships overall, or for all at Level 2 or 3, is questionable given the huge variety between Apprenticeships (e.g. a Level 3 in retailing is very different to one at same Level in Construction)

So have tended to concentrate on specific types of Apprenticeship where there are a substantial number of Apprenticeship starts:

- 1. Engineering
- 2. Construction
- 3. Hospitality
- 4. Retailing
- 5. Logistics
- 6. Financial services
- 7. Information Technology
- 8. Business Administration
- 9. Social Care

Typically have looked at costs and benefits at Levels 2 and 3 - according to the UK qualifications structure at the time - but have also begun to look at costs and benefits at higher Levels (e.g. Accountancy at Level 5+)

Data are collected through a series of employer case studies – detailed semi-structured interview schedule (can be supplied on request) plus collection of quantitative estimates from employers

Providing an estimate of the overall net cost to the employer

The next slide shows the accounting framework used to estimate the net cost / benefit to the employer

- An important element of the accounting framework is estimating the productive contribution of the apprentice while training
- This is estimated by asking those involved in the training of apprentices about what proportion of the fully experienced worker's job the apprentice is able to undertake at various stages of the Apprenticeship
 - This proportion is then used to produce an estimate of the productive contribution: proportion of the fully experienced worker's tasks that can be undertaken by the apprentice X labour costs of the fully experienced worker
 - A further correction is made to account for the time spent off-the-job training where the apprentice's productive contribution is zero.
- The accounting framework also accounts for drop-out. For example, if two apprentices need to be trained in order for one to complete, then the cost of training the single apprentice needs to be weighted accordingly (depending upon when the apprentice drops out).

The Net Costs and Benefits Accounting Framework

	Year 1	Year 2	Year...n	Total
Total number of trainees				
Number of trainees who drop-out without completing				
Trainee salary (£ p.a.)				
Salary of Fully Experienced Worker (£ p.a.)				
Trainee productivity (% of skilled workers)				
Supervision (per trainee)				
% of Training Manager's time spent training				
% of Line Manager's time spent training				
% of Supervisor's time spent training				
Training Manager's Salary (£ p.a.)				
Line Manager's Salary (£ p.a.)				
Supervisor's Salary (£ p.a.)				
Total training costs per apprentice or trainee (£)				
Costs of recruiting the apprentice				
Course fees				
Supervision costs				
Trainee salaries				
Employer's NI contributions				
Administrative costs				
Total cost				
Total training benefits per apprentice or trainee (£)				
Trainee product				
Other income (please specify)				
Total benefit per trainee				
Net cost per apprentice				
Net Cost including drop out				
State funding for Framework (from Government data)				
% of total cost met by Employer				

Summary of Costs and Benefits

Sector	Apprenticeship		
	Level 2	Level 3	Level 2 and 3 combined
Engineering			£39,600
Construction			£34,600
Retailing	£3,000		
Hospitality	£5,050		
Transport and Logistics	£6,200		
Financial Services	£7,250	£11,400	
Business Administration	£4,550		
Social Care	£3,800		

Note: Data have been rounded to nearest £50.

Source: Hogarth et al., 2012

Estimated Total Cost of Training Met by the Employer: For 19-24 year olds

Sector	Apprenticeship		
	Level 2	Level 3	Level 2 and 3 combined
Engineering			79%
Construction			71 %
Retailing	59%		
Hospitality	62%		
Transport and Logistics	67%		
Financial Services	73%	75%	
Business Administration	67%		
Social Care	60%		

Source: Hogarth et al., 2012

Estimating the payback period - 1

- Estimating the costs / benefits to the employer of training apprentices to the completion of their Apprenticeship tends to reveal net costs
- There is also an interest in identifying the longer-run benefits that the employer obtains from the apprentice post-Apprenticeship
- This is difficult to estimate because, for example, after a certain time the benefits employers obtain from their former apprentices may result from other training activities in which the former apprentices have participated
- In order to get around this issue, a means was found to estimate the period over which employers are able to recoup the costs of an Apprenticeship once the formal training period has been completed. That is, after how many years or months, does the employer break even on the Apprenticeship investment
- The means to derive the estimate is provided in the next slide. The estimation assumes that the gain to the employer equals the difference between the wage of the apprentices at the start of their training and the wage the apprentices will obtain as fully experienced workers.
- For further details see: Gambin, L., Hasluck, C. and Hogarth, T. (2010) 'Recouping the costs of apprenticeship training : employer case study evidence from England', *Empirical Research in Vocational Education and Training*, 2 (2), 127 - 146

Estimating the Payback Period - 2

The net present value of an Apprentice (NPV_{app}) is calculated by summing the future benefits derived by the business from employing an ex-Apprentice (denoted by S) and then, deducting the total net costs of training Apprentices (NC_{total}).

Since the benefits (S) occur in the future they must be discounted by some discount rate (r) to a present value

The employer's benefit from employing an ex-Apprentice, S , arises here due to the employer paying a wage to the ex-Apprentice that is somewhat less than the newly trained employee's actual marginal product in order to recoup the investment in training

The productivity gap between Apprentices and experienced workers indicates the magnitude of the productivity gains (this varies by sector).

$$NPV_{app} = \sum_{t=1}^n \left(\frac{S_t}{(1+r)^t} \right) - NC_{total}$$

Estimated Payback Periods

Sector	Apprenticeship Level	Payback period
Engineering	Level 3	3 years, 7 months
Construction	Level 2+3	2 years, 7 months
Retail	Level 2	2 years, 3 months
Hospitality	Level 2	10 months
Transport (driving)	Level 2	6 months
Financial Services	Level 3	2 years, 6 months
	Level 2	3 years, 8 months
Business Administration	Level 2	9 months
Social Care	Level 2	3 years, 3 months

Source: Hogarth et al., 2012

Conclusions

- Where there are strong internal labour markets, employers invest relatively high amounts in their apprentices
- Where those internal labour markets are not well developed, with high degrees of labour turnover, employers look to ensure that the costs of Apprenticeship training reach break close to the completion of the Apprenticeship
- This has implications for the structure of training even at the same Level (i.e. some employers need to obtain higher level of productive contribution from their apprentices)
- In general the evidence demonstrates that employers can readily recoup the cost of their investment in Apprenticeships

Further Information

- At IER, Terence Hogarth and Lynn Gambin lead the Net Costs and Benefits of Training to Employers programme of research Further information can be obtained from:
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