Prisoners' Education Trust

PRO BONO ECONOMICS

An impact assessment of funding educational resources for prisoners

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[1] This report has been drafted by Paul Oxley and Helen Ferguson. Both authors are economists at Ofcom, although the content of the report is that of the authors solely and is not formally endorsed by or affiliated with Ofcom.

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Foreword

On behalf of Pro Bono Economics, a charity for which I am patron, I am delighted to introduce this report for Prisoners' Education Trust (PET).

The cost to society of prisoners reoffending is huge – as I pointed out in my book Prisonomics – and I know from my own personal observation how education can have a hugely beneficial impact on the lives of individual prisoners. But as an economist, I want to see soundly based research and analysis. As a long time supporter of both PBE and PET, I am so very pleased to see an economic assessment of the impact of their educational programmes for prisoners, undertaken by a team of volunteers from Ofcom, building on a statistical analysis by the Ministry of Justice's Justice Data Lab.

This report examines whether the benefits of PET's educational funding programme are worth the costs in terms of reducing reoffending. A statistical analysis by the Ministry of Justice Data Lab found that those involved in PET programmes were six to eight percentage points less likely to reoffend within one year of release from prison when compared with a statistically-matched control group that had not received PET support. However encouraging these results, it is not possible to say with certainty that the support from PET directly causes the observed reduction in reoffending. For economists and policy-makers alike, what is of most interest is whether giving out the grants and investing resources in setting up the application process is good value for public money.

PBE volunteer economists have examined the economic and social costs of different types of crime. Since PET only provides grants for prisoners serving sentences of six months or more, they reason that reductions in reoffending among these longer-sentence prisoners are likely to be more valuable, since the crimes prevented are likely to be more serious. Using evidence that the average cost of more serious offences in the UK is about £35,000, and the average cost of PET support is about £350 per award, there would only need to be a one percentage point reduction for one year in order for investing in the award to be worthwhile. If the effect lasted longer than a year, or if other benefits from participating in education could be taken into account (e.g. improved prisoner wellbeing or improved employability) the effect on reoffending could be much less than this for the public value of PET awards to be greater than the cost.

On an individual level, PET offers crucial support to individuals that find themselves trapped in the criminal justice system with few pathways out. This, in my opinion, both strengthens and augments systems of rehabilitation currently offered by the government. I hope that this report will enable PET to continue to make the case to both the government and its funders that supporting offenders through educational programmes and skills acquisition is both necessary and effectual for the individual and for society as a whole.

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Patron of Pro Bono Economics

Acknowledgments from authors

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Executive Summary

Prisoners' Education Trust (PET) is a charity providing support services to prisoners. Its main activity is funding access to educational resources, ranging from studying for formal academic qualifications, to arts and crafts materials, to prisoners.

The Ministry of Justice's Justice Data Lab conducted a statistical analysis of the reoffending rates of prisoners who engaged with PET services.[2] It found that prisoners who received funding via PET were between six and eight percentage points less likely to reoffend than a statistically-matched control group who did not apply to PET. It also found that prisoners who applied for funding but who ultimately were not awarded any, reoffended between four to nine percentage points less than their own statistically-matched control group.

This analysis demonstrated that prisoners who applied for a PET service exhibited reductions in propensity to reoffend regardless of whether they actually received an award, when compared to a statistically-matched control group. The precise cause of the reduction in reoffending cannot be derived clearly from the statistical results themselves. Taking advantage of PET's educational opportunities appears related to lower levels of reoffending. However, the effect may be caused by one or a combination of factors, some of which are not the result of being granted access to education opportunities, such as:

1. the prior characteristics of the individuals who apply to PET, such as their intrinsic motivation; or
2. engagement with the opportunities offered by the service and making the commitment to change via the application process; or
3. the impact of the help awarded in supporting desistance from crime;[3] or
4. another factor that could not be controlled for.

Although there is some evidence in the Justice Data Lab results that prior characteristics are a less likely explanation of the effect, and there is qualitative research evidence which supports the view that access to PET's distance learning has positive impact on

[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/459470/prisoners-education-trust-report.pdf

[3] Statistical analysis showed some differences between those awarded and groups who applied but were not awarded (for example the statistical analysis shows that those who were awarded help went longer before committing an offence). However, the evidence is insufficient to be confident of such an effect or to quantify it.

participants,[4] the results do not provide a clear basis for estimating the proportion of the six to eight percentage point reduction in reoffending that can be definitely ascribed to the impact of the PET help as opposed to other factors. Therefore, our report estimates the magnitude of the impact that would be required for the funding of current schemes to be considered good value for money from a social perspective. This is known as a break-even analysis—an estimate of the size of effect needed for the scheme to break-even from a social value perspective. This estimate of minimum necessary impact can be considered by PET, other experts and potential funders to see if it seems at all likely that such a magnitude of impact is likely.

There are many potential benefits from education, including increased skills and productivity and better health in the longer-term. We focused more narrowly on the economic benefits of the reduction in offences likely to have been committed by participants compared with a counterfactual scenario in which statistically similar prisoners did not receive PET funding.

To put an economic value on the estimated reduction in reoffending, we considered the extensive existing literature estimating the cost of crime. We have reviewed many of these studies, but ultimately use updated values from a Home Office study and current statistics on crime levels to estimate a weighted average cost per offence. These costs include estimated costs to the victim, the Criminal Justice System and wider society. We estimate the cost at roughly £5,000 per crime committed averaged across all crimes in the UK (regardless of whether recorded or not).

Next we recognise that prisoners held in custody long enough to have received a grant from PET are unlikely to have committed, or to commit in future, crimes that are representative of the profile of crime committed in general. Given these prisoners are serving a custodial sentence, their past offences are likely to be more serious than average. We recognise that past offences are not the same as potential future offences, however, we expect there to be some correlation. We therefore re-estimate the cost of crime based on the offences of prisoners who receive a custodial sentence of 6 months or greater (the minimum sentence length before PET may consider granting an award). Using this weighting for crimes (which places less weight on crimes like shoplifting and more weight on higher-cost crimes such as violent offences) we estimate that the average cost per crime is much higher at approximately £35,000.[5]

We have then estimated the average cost of PET's services on a fully allocated basis to be around £350 per funding award. This estimate is lower than the cost per prisoner since some prisoners may receive more than one award. However, given we do not have information on the relationship between the number of awards per prisoner and the impact on reoffending; we assess the case of the impact of a single award.

Based on the conservative £35,000 estimate of the cost of crime, if the PET award were to lead to a reduction in reoffending of one percentage point then this would be sufficient for the benefits (to potential victims, the CJS and wider society) to outweigh the costs even

[4] See Annex 2 for more details.

[5] This may in itself be an underestimate since New Economy (Manchester) suggest that solely the fiscal cost saving to the Criminal Justice System would also be of this magnitude (without taking into account victim and other costs).

without taking account of any benefits that accrue to the recipient of award themselves The JDL analysis of the groups of prisoners who were awarded and refused grants did not explicitly compare these groups, but the results did not rule out this possibility.

Because we do not have evidence on the other impacts of more education on prisoners helped by PET grants, this estimate of necessary minimum impact for social value is extremely conservative. If the education received could be shown to increase skills and productivity of ex-offenders on re-entry to the labour market, or their health and wellbeing, the minimum necessary impact would be considerably less than one percentage point, especially when considered over the life-course of ex-offenders. .

This analysis has been based on the assumption that the effect on reoffending lasts for only one year. If the benefit were to last longer than one year then the required reduction in reoffending for a net social benefit could be proportionately lower e.g. as low as a tenth of a percentage point if the benefits last for 10 years.

Further to the above we note that there may be merit in the existence of the application process itself. If engagement with PET through the process of writing an application brings about a commitment to change was responsible for a similar proportion of the reduction in reoffending observed in the statistical analysis (i.e. of the order of one percentage point or one tenth of one percentage point if the desistance effect continues over ten years) then the benefits of the PET service would break even on that basis alone.

In sum therefore, analysis by the Justice Data Lab shows that beneficiaries of the PET service go on to reoffend on release between six and eight percentage points less than the statistically-matched control group. If only one percentage point of this effect lasted for only one year and if it was definitely caused by the PET award or the behavioural effect of the opportunity for change offered by the PET service, then the costs of the scheme would be more than justified by the savings to society. And this estimate does not take into account the benefits accruing to the beneficiary themselves from the PET service or other wider economic benefits.

1. Introduction

Prisoners' Education Trust (PET) is a charitable organisation that provides support services to prisoners. Its main activity is funding access to educational resources for prisoners ranging from formal academic qualifications to arts and crafts materials. Prisoners wishing to use these resources submit applications to PET who then make funding awards on the basis of strength of application, suitability of the course and evidence of ability and commitment to complete it successfully.

PET has requested research and advice through Pro Bono Economics (PBE) to help aid its understanding of the value of its services. PET issued an initial briefing document to PBE, who have now engaged economists from Ofcom to conduct this analysis. PET's terms of reference requested a cost-benefit analysis (CBA) specifically of its Access to Learning programme which funds distance learning courses and other support for prisoners. Such an assessment requires a judgement whether there is a causal link from engaging with the services offered by PET to reducing reoffending, estimating the scale of that effect and quantifying the value of such a reduction and comparing this to the costs of PET's service.

PET has worked with the Ministry of Justice's (MoJ's) Justice Data Lab (JDL) team to estimate the impact of educational resources on reoffending.[6] This report focuses on using the results of that analysis in combination with estimated costs of crime from previous research and a literature review. In turn this can be compared to the costs involved in the scheme to assess the relative value for money of the intervention.

The report proceeds as follows:

- The impact on the reoffending rate—A brief summary of the MoJ work;
- Literature review on costs of crime—We have reviewed relevant government and academic papers to recommend a value for the costs of crime;
- Benefits of PET's interventions—We combine the above two types of analysis to quantify the benefits of PET's interventions;
- PET's costs—We view PET's finances to assess the costs involved;
- Impact assessment—We compare costs and benefits; and
- Conclusion.

2. Access to Learning's impact on the reoffending rate

JDL has analysed the reoffending rates of prisoners who were awarded grants to complete a distance learning course or to purchase learning materials by PET and compared them with other prisoners who were not identified in PET's database (i.e. implicitly they did not apply for or receive PET funding). It did this by matching the records of 5,846 recipients of PET

[6] Ministry of Justice (2015), 'Justice Data Lab Reoffending Analysis: Prisoners Education Trust, September, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/459470/prisoners-education-trust-report.pdf

help with information on their subsequent reoffending from MoJ's central datasets.[7] Their one year proven reoffending rates[8] were then compared with the records of 336,681 prisoners who had matched characteristics but were not found in the PET's database. The JDL analyses also covered prisoners who applied for a PET grant but were not awarded one compared to a similar matched control group.

The analysis found a statistically significant reduction in reoffending of between six and eight percentage points (this was the 95% confidence interval) for recipients of PET awards relative to a matched control group that did not apply for an award.[9] The research also found comparable levels of reduction in reoffending for those who made an application to PET but were refused of between four and nine percentage points for those refused not on a timing technicality and between four and thirteen percentages points for those refused on a timing technicality when compared to their respective matched control groups of similar offenders.[10,11]

The research then proceeded to compare those who were awarded a grant with those who applied but were refused (no statistically significant difference was found) and those who were awarded a grant with those who were refused on a timing technicality (those awarded were found to have a between 1 and 11 percentage points lower reoffending rate).

All of these findings are summarised in Table 1 below.

[7] Note that JDL was not able to match 100% of the original treatment so it is possible that some may be within the control group. See Ministry of Justice (2015), for full details.
[8] The one year proven reoffending rate is the proportion of offenders who commit an offence in a one year follow-up period which was proven through receipt of a court conviction, caution, reprimand or warning during the one year follow-up or in a further six month waiting period.
[9] Ministry of Justice (2015), Figure 1.
[10] Ministry of Justice (2015), Figure 2.
[11] Refused time technicality are those offenders who had their application refused on a timing technicality, because the application was made less than or equal to 6 months (180 days) before the offender's expected release date (a condition of PET awarding their grants). Those refused not on time technicality are those offenders who had their applications refused, excluding those where the application was refused on a timing technicality.

Table 1 Summarised impact on reoffending rates

Reference for this study	Treatment group	Comparison group	Treatment group (% reoffended)	Control group (% reoffended)	Percentage point impact on the reoffending rate (95% confidence interval)
Finding 1	Awarded	Matched control group of non-applicants	18	25	-8 to -6
Finding 2	Refused (not on time technicality)	Matched control group of non-applicants	16	23	-9 to -4
Finding 3	Refused (on time technicality)	Matched control group of non-applicants	24	32	-13 to -4
Finding 4	Awarded	Refused (all refused)	18	18	-3 to +2
Finding 5	Awarded	Refused (on time technicality)	18	24	-11 to -1

The interpretation of the findings summarised in Table 1 is quite complicated. Although those awarded a PET grant were significantly less likely to reoffend than those who did not apply for a grant, this was also found to be the case for those who applied but were refused the grant (on the time technicality alone, not those refused for any reason). This suggests that the grant itself is not responsible for all of the effect seen amongst those who were awarded the grant.

We therefore have identified three possible mechanisms in play that would be consistent with the above results, but accept that the above statistics cannot highlight which of these is the case.

1. **Unobserved motivational or other effect –** It is possible that some or all of the change in reoffending behaviour is caused by some characteristic that applicants to PET share that has no causal connection to the PET offer and that this group would reoffend less regardless of whether the PET service offer existed. One possible factor is the level of academic attainment achieved before applying to PET. Distance learning requires a level of literacy and PET recommends that prisoners should have level 2 literacy and numeracy or equivalent before applying. However it is also worth noting that no similar requirement attaches to applications for the arts and hobby

materials that are also associated with reduced reoffending as shown by the Justice Data Lab results[12]. Alternatively a factor could be some form of intrinsic motivation that has encouraged prisoners to apply to PET but also, separately, leads them to be less likely to reoffend anyway.

2. **Unobserved application effect –** It is clear that those who went through an application process to PET, whether or not they were successful, did reoffend significantly less than a matched control group of similar prisoners (findings 1-3). This suggests that there could be merit in the existence of the scheme itself and the process of application. For example, it is possible that the PET service offer prompted a commitment to change through aspiring to education (and for those awarded, reinforced by the education itself) that the individuals would not have made had that opportunity not been available and credible.
3. **Impact of the grant itself-** It is possible that the award of the grant (and the subsequent access to resources) did directly reduce prisoners impact of reoffending. This may be through gaining of a qualification or skill that helps the prisoner upon release, or simply that the process of learning aided the prisoner with their personal development away from crime. We note that those awarded were less likely to reoffend than those refused on a timing technicality (finding 5). It is also suggestive that, as the Justice Data Lab analysis showed[13], those who were awarded help went longer before committing an offence (a statistically significant effect), while the same effect was not found for those who applied but were not awarded. These indications could support the hypothesis that the award does have an effect.

It is therefore highly plausible, and there are some indications in the evidence, that factors 2 and 3 above do play a part in the observed reduction in reoffending and that the PET service does therefore have an impact; and this is supported by qualitative research studies of distance learners (see annex 2). But the Justice Data Lab evidence does not allow us to quantify it. On the basis of the above findings the precise impact of the PET service itself is unclear. It could range from zero (all the reoffending reduction is caused by a characteristic of applicants not influenced by and unrelated to the PET service – factor 1 above) to between six and eight percentage points (all the reoffending reduction is caused by the PET service and the offer to engage with it – factors 2 and 3).

Given this uncertainty we proceed with the rest of the report by focusing on identifying the threshold level of impact on reoffending that would render PET's services net positive in terms of benefits in reducing reoffending, rather than focus on comparison to a specific reoffending rate.

We now turn to our evaluation of the benefits of any possible reduction in reoffending.

3. Costs of crime and literature review

The main potential benefit of PET's interventions is a reduction in the likelihood of reoffending for prisoners that have taken materials funded by PET. A reduction in the

[12] See Ministry of Justice (2015).
[13] See Ministry of Justice (2015).

reoffending rate implies (but does not guarantee) a reduction in overall levels of crime.[14] To quantify this benefit it is necessary to estimate the costs of crime and hence to calculate the benefit of the avoided crimes.

The impact of a reduction in crime is wide spread and will accrue to different parties—those who are prevented from becoming victims, the criminal justice system and wider society. It may also be considered to benefit the potential perpetrator. We briefly outline these various effects below.

Benefits to prevented victims

A reduction in crime would be expected to reduce the number of people who fall victim to crime. Victims suffer a wide range of costs, some of which may also have knock-on effects to their families, which will vary depending on the crime but can include:

- Financial losses e.g. loss of property not covered by insurance;
- Loss of wages if the victim misses or loses work/education e.g. due to hospitalisation or post-traumatic stress;
- Pain and suffering (both physical and mental), with knock-on effects on quality of life;
- Legal costs associated with tort claims where these are not reimbursed in court.[15]

Even the risk of becoming a victim can create costs, as potential victims take steps to avoid crime e.g. precautionary expenditure on personal safety such as alarms, avoiding certain behaviours/areas. There is also a mental cost from fear of crime, even if the individual has not actually been a victim.

While some of these costs can be directly measured (e.g. financial losses, foregone wages), many are more intractable, such as the cost of pain and suffering or fear of crime. Methods which can be used to estimate these costs include stated preference and revealed preference studies (discussed further below).

Benefits to the criminal justice system

Operating and enforcing the criminal justice system creates substantial costs for government. Preventing the processing of crimes may reduce these costs.[16] This includes the costs of policing, prosecution, courts, legal aid and other legal fees, prison facilities and rehabilitation services. Many of these costs can be directly measured.

[14] There may be circumstances where the overall crime rate does not fall, or more likely falls by less than the reduction in reoffending. This could occur in two possible ways. First, if some offenders do not reoffend but other reoffenders see an increase in their frequency of reoffending. Second, this could occur if the reduction in reoffending increases incentives for new offenders. For example if a reduction in bicycle theft in an area increased the price of second-hand bicycles may increase the incentive for new thefts. We consider both of these effects are likely to be small (second-order) and have not examined either of these here.

[15] See Cohen and Bowles (2010), Table 8.1 for a comprehensive taxonomy of crime costs for different groups, including victims.

[16] While some may argue that large reductions here could have an adverse effect, for example, by reducing the need for the system and hence jobs. Economists would argue that either these resources could then be turned to other cases that are not currently covered or potentially other forms of service/ production in society which would then become a more allocative efficient way of deploying resources across the economy.

Benefits to wider society

Many of the costs of crime are not borne by specific individuals, but by society as a whole. These include:

- Costs of medical assistance provided by the NHS
- Cost of support for victims and witnesses
- Insurance premiums and the administration of insurance systems
- Spending on security measures to prevent crime e.g. CCTV
- Restrictions on legitimate activities to prevent accusations of criminal behaviour

In addition, many of the effects on victims can have wider negative externalities e.g. lost productivity, effect of fear of crime on community engagement and behaviour. In the same manner as for victim costs, while some of these costs can be measured directly, many must be inferred through other methods.

Impact on offenders

Offenders also suffer as a result of having committed crime. For example, incarceration leads to costs from lost productivity, loss of freedom and potentially higher risk of injury or death. There are also knock-on effects for the offender's family. In addition, the offender may face financial costs such as legal fees and compensation payments to victims or the court. However, for some types of crimes such as burglary, offenders may have benefited financially from committing crime to some extent.

Beyond these purely economic measures for the impact on crime, it can be argued that since the offender is the cause of the crime it is not appropriate to consider the effect on them as part of an evaluation. It can therefore be controversial to include costs which are borne purely by the offender and we do not do so in this study.[17]

These wide ranges of effects we have discussed have been extensively studied in the literature, sometimes separately and sometimes together, or are brought together as a result of meta-analysis. We now review the literature to consider the appropriate value to place on prevented crimes in this case.

Literature review

There is an existing large body of literature on the costs of crime from a range of perspectives, e.g. academic, government and other parties. We have reviewed a range of this literature with a view to determining which are the most suitable to apply to this particular case study. We note that while the authors of this paper are economists we do not have formal training in sociology or criminology and therefore have not extensively critiqued the papers per se, rather focused on their apparent suitability for the particular application at hand. Neither have we recommended any entirely new method.

We have needed to carefully consider which metrics are appropriate since there are a range of issues around estimates. Many of the studies estimate costs of crime only for broad categories of crime, in which case we have had to consider whether they are similar to the

[17] See also Ministry of Justice (2010), 'Cost-Benefit Framework', February.

categories of crime that have been able to be used in the JDL work. We also note that most of the studies have focused on the average cost of crime rather than the marginal cost of crime. This has particular consequences for estimates of the impact on the CJS where small marginal changes in crime levels may have little affect if there are large fixed costs associated with the system. It is therefore possible that some of the estimates of the impact of this particular scheme could be upper bounds. The same issue of marginal cost is less likely to apply to costs to victims since any prevented crime is likely to be similarly valuable.

We now describe the broad range of methods that studies have used to assess the cost of crime before our approach to reviewing the studies, a summary of the main results and finally our recommended estimates for this specific case.

Methods of estimating costs of crime

It is difficult to measure the costs of crime directly since the costs generally fall across a number of different parties as discussed above. More importantly, unlike economic goods, the consequences of crime (such as imprisonment for offenders or the effects of victimisation) are not traded in a market place and so there is no observable price to which we can refer. Researchers therefore need to rely on other techniques to infer the costs of crime.

Compensation awards

One approach to estimating the cost of crime is to consider the compensation awarded to victims of crime by courts (also known as jury awards). Dolan et al (2005) suggest that, where society uses the civil court system to redress victims, jury awards should in theory approximate society's assessment of the pain and suffering sustained by those victims. However, in the UK these awards tend to be made in line with a standard tariff (the Criminal Injury Compensation tariffs). Dolan et al note that it is not clear how these tariffs were set and so expressed doubts as to whether they truly reflect society's preferences. Cohen and Bowles (2010) also note that the CIC tariffs exclude healthcare costs (since these would most likely be covered by the NHS), and so may understate the social cost of injuries. Cohen and Bowles suggest a jury award approach may be more applicable in the US, given the expansive role of victim compensation.

Cohen and Bowles (2010) note that, to the extent jury awards value identical injuries the same regardless of their provenance, there is a risk they understate the pain and suffering specifically resulting from being a victim of crime (such as psychological trauma or fear of repeat victimisation).

Cohen and Bowles (2010) also note that, while jury awards give an estimate of the amount required ex post to 'make someone whole' having suffered a loss, this is not exactly aligned with what researchers are interested in – specifically, the ex-ante willingness to pay to avoid or reduce the loss i.e. to avoid or reduce crime. Cohen et al (2004) make a similar observation.

We also observe that many crimes may have a range of victims or corporate or government victims all of whom may not be compensated in the same way.

Stated preferences

An alternative approach is to ask, through surveys, what people would be willing to pay to avoid being a victim of crime (or conversely, how much compensation they would require to be willing to accept being a victim). This is known as a stated preference or contingent valuation approach. Dolan et al (2005) report that the British Crime Survey 1998 asked victims what reasonable financial sum would have compensated for the upset and inconvenience of the crime suffered, aside from the financial losses involved. However, they note it is far from clear respondents did actually disregard the financial losses sustained, particularly noting the value for crimes like loss from a vehicle were also high.

Dolan et al (2005) also noted that in the study by Atkinson et al (2001), responses on willingness to pay to reduce the risk of different types of assault varied widely, and were relatively insensitive to the severity of the physical and psychological harm.

Atkinson et al (2005) note a number of issues which can arise using a stated preference approach. First, it can be difficult cognitively and emotionally to consider and evaluate the physical and psychological effect of crime, and people may not be willing or able to do this in an interview. Second, they note there are well documented problems with valuing small risks. Third, crime is a topical and sensitive issue, and so responses may be influenced by the way the policy measure is described and the funding mechanism proposed.

More generally, contingent valuation studies can produce unreliable results when the willingness to pay is large relative to the respondent's budget constraint. In addition, there may be some form of selection bias in that those that suffer could potentially have paid some small amount to reduce the risk of becoming a victim of crime (e.g. improving security).

However, Cohen and Bowles (2010) note that, where done properly, contingent valuation methods can be useful.

Revealed preferences

Another approach to valuing crime through revealed preferences is to infer values from other contexts, such as wage-risk studies which estimate the wage premium associated with job fatality risks, or from road traffic valuations, or willingness to pay for security measures or insurance.

One particular form of revealed preference study is hedonic (house) price approach, which looks at marginal value based on current crime rates and small changes to this. Cohen and Bowles (2010) note that this has the benefit of using actual market transactions. However, they also note a number of drawbacks with hedonic pricing as a method for estimating the cost of crime. First, the data would usually be insufficient to isolate the costs of individual crime types. Second, these studies rely on assumptions about the competitiveness of the housing market and consumer information about neighbourhood crime rates. Third, there is a risk these types of studies ignore the effect of location-specific amenities (of which crime is one) on local wage rates.[18] Fourth, there is a risk that the values produce represent the 'ability to pay' rather than 'willingness to pay' for lower crime, since those on lower incomes

[18] Cohen et al (2004) also allude to this issue.

necessarily buy cheaper houses. However, Cohen and Bowles (2010) note that this risk applies to a number of methodologies.

Cohen et al (2004) also argue that using market data may not take into account all costs (e.g. insurance costs to third parties).

Dolan et al (2005) note there are a wide range of known issues with revealed preference approaches, such as the wide ranges typically produced, the extent to which perceived risks correspond to actual risks used in models, and theoretical debates about the correct model to use.

Dolan et al (2005) also note, where values produced in non-crime contexts are read-across to be used in the valuation of crime costs, this requires an assumption that there is no significant difference in the aversion to being a victim of crime rather than (for example) a road traffic accident or a work injury. This is also noted by Atkinson et al (2005).

Cohen and Bowles (2010) note that it may be difficult to incorporate non-fatal injuries and risks when using non-crime studies of willingness to pay for safety. Dolan et al (2005) suggest that, while it is possible to use a similar approach to value non-fatal injuries (such as from information on non-fatal traffic accidents), it is necessary for the researcher to ensure they are comparing similarly severe injuries. This may be difficult; for example, they note such studies do not usually extend to psychological trauma, and it is unlikely a traffic accident would produce a similar pattern of harm sustained in sexual assault. Atkinson et al (2005) also note the exact nature of injuries is likely to be different between different contexts.

As set out above, there are a number of different techniques for quantifying the cost of crime, each of which has different strengths and weaknesses. We take these into account in reviewing the studies to determine the appropriate measure.

Results from studies

We consider the value of the studies on the following basis:

- How comprehensive is the study in terms of the types of crimes and costs considered? While there are always likely to be certain costs which cannot be quantified, ideally our analysis should include as many of the different costs created by criminal activity as possible, to get as close to the true scale of benefit from reducing that activity. Similarly, our analysis should ideally include all types of crimes affected (i.e. avoided or reduced) by the intervention. If possible we would prefer to disaggregate this as far as possible, so as to have costs for each type of crime multiplied by the change in the number of each crime as a result of PET's intervention. However, this requires more information than is available as to the type of crime prevented and so we instead require a generic 'effect per crime' figure
- Is the study based on UK data? The valuation of crime reduction is likely to be country-specific, given differences in social attitudes, the justice system and other services affected by crime (e.g. health services, insurance provision) and the prevalence of different patterns of crime. While values from other countries may be interesting in terms of understanding orders of magnitude, they are unlikely to be easily applied to a UK context.

- Is the estimate derived in a crime context – while there is still debate around this, given the comments by Atkinson et al (2005) and Dolan et al (2005) that it is possible the effect of suffering certain incidents may vary depending on the context (for example, that there may be higher costs associated with being a victim of crime than of an accident producing the same injuries), it would seem preferable to be able to draw on estimates produced specifically in the context of the valuation of crime if possible.
- What approach is used in estimation? As set out above, there are a range of possible methods for deriving the cost of crime, each with advantages and disadvantages. Given that no one approach will perfectly capture costs, it would seem preferable to cross-check results using figures derived using a range of methods.

Home Office Guidance

A Home Office study has formed the basis for government recommendations of costs of crimes to be used in appraisal (as per the HM Treasury's Green Book).[19] The original report was published in 2000, officially updated values in 2005,[20] and again in 2011.[21] We understand that the study is currently being updated again.

We give extended discussion to this study here; since it has been used as the recommended approach within government we note upfront that it is likely to be relevant for the purposes of this study.

The study explicitly recognises that the purposes of cost of crime estimates can be to help determine evidence and cost effectiveness of different crime prevention measures and how to prioritise resources most effectively.

The Home Office work covers only certain types of crime meaning there are some crime types which are not covered. For example it does not cover public order offences or drug possession. However, given we are largely interested in crimes which may be avoided by reoffenders (who have by definition been imprisoned for a previous crime), less serious offences that may not lead to imprisonment may not need to have been covered.

The costs of crime estimated in the Home Office study incorporate all of the impacts including security expenditure, consequences of criminal actions (criminal damage), emotional and physical impacts and costs to the criminal justice system.

The study values are primarily based on a mix of stated preference (for victim costs) and revealed preference (for industry costs). It uses surveys of victims, such as the British Crime Survey and Commercial Victimisation Survey. Emotional and physical impacts of crime are estimated using figures for people's willingness to pay to avoid road traffic accidents. Market transaction data (industry turnover and costs) has been used to estimate the costs of factors such as security and insurance. Resource cost estimates for the criminal justice system were taken from a model developed by the Home Office to track flows and costs through the criminal justice process.

[19] Home Office (2000), 'The economic and social costs of crime', Home Office Research Study 217.
[20] Home Office (2005), 'The economic and social costs of crime against individuals and households 2003/04', Home Office Online Report 30/05.
[21] Home Office (2011), 'Revisions made to the multipliers and unit costs of crime used in the Integrated Offender Management Value for Money Toolkit', September.

We have also reviewed a number of academic papers which assess the cost of crime, details of which are set out in the Annex. Table 2 compares these studies with the Home Office Guidance.

Table 2: Summary of academic studies

Study	Types of cost	Types of crime	UK based?	Derived in specifically crime context?	Approach to estimation
Home Office (2000,2005,2011)	Costs in anticipation of crime, victim costs, criminal justice system costs	Multiple – including assault, sexual offences, burglary and other	Yes	Mixed	Stated Preference and Market Data
Atkinson et al (2005)	Not specified - willingness to pay to avoid being a victim	Common assault, serious wounding, other wounding	Yes	Yes	Stated Preference
Dolan et al (2005)	Intangible victim costs	Violent crime – murder, rape/sexual assault, common assault, serious wounding, other wounding and robbery	Yes	No – value of QALY taken from other contexts	Value of effect on QALY
Cohen et al (2004)	Not specified - willingness to pay to prevent 1 crime in 10	Murder, rape/sexual assault, armed robbery, serious assault and burglary	No – US	Yes	Stated Preference
Cohen (1998)	Victim costs, criminal justice costs, foregone earnings of incarcerated offenders	Includes crime-specific values for victim and justice system costs of murder, rape, robbery, aggravated assault, burglary, larceny ad	No – US	Yes	Cost of different components drawn largely from other studies which used various techniques (including evaluating data on

		vehicle theft			tangible costs such as medical expenditure and monetary losses, jury awards and productivity loss)
Cohen and Piquero (2009)	Victim costs, criminal justice costs, foregone earnings of incarcerated offenders	Simple assault, vandalism, fraud, arson, drunk driving offences and other minor status offences, as well as murder, rape, robbery, aggravated assault, burglary, larceny ad vehicle theft.	No – US	Yes	Uses similar 'bottom up' sources as Cohen (1998); also WTP estimates from Cohen et al (2004)

This suggests that none of these papers provides a sufficient basis to replace the Home Office information:

- Atkinson et al (2005) and Dolan et al (2005) focus on only specific types of crime (violent crime).
- Dolan et al (2005) only estimate intangible victim costs rather than all costs. It is also based on taking QALY values from other contexts, which may not add much to the Home Office study in terms of widening the range of estimation techniques used (although it is based on different estimates of QALY value).
- Cohen (1998), Cohen et al (2004) and Cohen and Piquero (2009) are all based on US information.

However, to the extent aspects of the crimes/types of cost estimated in these papers overlap with separable aspects of cost estimated by the Home Office, it may be useful to compare results using these estimates instead, particularly if these studies produce costs lower than those of the Home Office (as this will provide a more stringent test against which to judge the value for money of PET's interventions). However, note that the exact types of offences captured by the descriptions do not match exactly (and even where the same term is used, this may capture subtly different offences). The cost estimates from these different studies are shown in Tables 3 and 4 below.

Table 3: Home Office Estimates

	Unit cost (2010 prices)	Unit cost (2015 prices) (Scaled up for this study)
Homicide	1,774,681	1,985,289
Serious wounding	25,747	28,802
Other wounding	9,790	10,952
Sexual offences	36,952	41,337
Common assault	1,750	1,958
Robbery-personal	8,810	9,856
Burglary in a dwelling	3,925	4,391
Theft - not vehicle	763	854
Theft of vehicle	4,970	5,560
Theft from vehicle	1,034	1,157
Attempted vehicle theft	617	690
Criminal damage (personal)	1,053	1,178
Robbery - commercial	9,372	10,484
Burglary not in a dwelling	4,608	5,155

Commercial - theft of vehicle	10,043	11,235
Commercial - theft from vehicle	1,248	1,396
Commercial - attempted vehicle theft	617	690
Shoplifting	124	139
Criminal damage (Commercial)	1,838	2,056

Table 4: Estimates of crime costs from different studies (converted to 2014 sterling)

	Atkinson et al (2005)[22]	Dolan et al (2005)	Cohen et al (2004)	Cohen and Piquero (2009)
Murder	-	£683,163	$11.1-14.3m	$5.8-13.6m
Rape	-	£21,555	$242-409,000[23]	$173-335,000
Sexual assault	-	£6131	-	
Armed robbery	-	-	$227-410,000	$58-323,000
Robbery	-	£1,082	-	$27-45,000
Aggravated assaults	-	-	-	$64-98,000
Serious assaults	-		$74-112,000	
Simple assaults	-	-	-	$13-22,000
Common assault	£4,931-9,268/£852-1,603	£279	-	-
Serious wounding	£33,907-62,083/£5.860-10,706	£7,325	-	-
Other wounding	£29,348-53,332/£5,071-9,219	£1,210	-	-
Burglary	-	-	$27-39,000	$6-40,000

[22] 95% confidence interval around mean/median
[23] Captures both rape and sexual assault

Motor vehicle theft	-	-	-	$10-19,000
Larceny	-	-	-	$3,200-4,600
Drunk driving crash	-	-	-	$35-69,000
Arson	-	-	-	$69-133,000
Vandalism	-	-	-	$1-2,000
Fraud	-	-	-	$4,000-6,000
Other offences (prostitution, loitering, false statements, etc.)	-	-	-	$580-1,200

Choosing/combining estimates

Having conducted the literature review, in order to make use of it in the CBA we need to take a view on which estimates to use or how to combine them. Our options include:

- **Use the most recent official papers**—there may be a suitable government source we can reasonably use
- **Use a single estimate based on judgement of the most appropriate sources**—we may wish to pick the source that seems most appropriate.
- **Conduct a meta-analysis**—we could undertake some form of meta-analysis that produces some type of weighted average for the costs of crime.

We consider that for the purposes of the current analysis it is appropriate to rely on the Home Office estimates as the best available while recognising they have some limitations. We reach this conclusion since these are UK based, and they were constructed with a view of being used for assessing and prioritising schemes relating specifically to crime.

Forming a single estimate

In trying to estimate the benefits of reduced reoffending it is necessary to take a view over the cost of the average re-offence prevented. We have therefore had to take a view on the how to combine the costs of different types of crime into a single estimate.

A simple approach would be to assume any prevented offences are likely to be equivalent to the distribution of crimes that occur nationally. This would suggest that the average benefit that we estimate should be in proportion with the crimes that are committed (which we can estimate from recorded crimes multiplied by a multiplier to reflect that not all crimes are recorded).

We have constructed a single average cost of crime figure based on the proportions of each of the crime types for which we have quantified estimates of crime. In Table 5 we show how derived this estimate on the basis of the profile of all crimes committed in the UK.

Table 5 Deriving an average cost per crime

	Number of recorded crimes 2014-15 (pre-multiplier)	Number of crimes 2014-15 (post-multiplier)	Proportion	Unit prices 2015 £
Homicide	534	534	0%	1,985,289
Serious wounding	20,573	30,860	0%	28,802
Other wounding	351,504	527,256	3%	10,952
Sexual offences	88,219	1,226,244	8%	41,337
Common assault	292,832	2,313,373	15%	1,958
Robbery-personal	44,482	213,514	1%	9,856
Burglary in a dwelling	197,021	551,659	4%	4,391
Theft - not vehicle	666,066	865,886	6%	854
Theft of vehicle	70,417	91,542	1%	5,560
Theft from vehicle	237,414	830,949	5%	1,157
Attempted vehicle theft	0	0	0%	690
Criminal damage (personal)	433,631	2,558,423	17%	1,178
Robber - commercial	0	0	0%	10,484
Burglary not in a dwelling	214,433	407,423	3%	5,155
Commercial - theft of vehicle	0	0	0%	11,235
Commercial - theft from vehicle	0	0	0%	1,396
Commercial - attempted vehicle theft	0	0	0%	690
Shoplifting	326,464	5,256,070	35%	139
Criminal damage (Commercial)	50,613	298,617	2%	2,056
Average cost per offence	-	-	-	**5,018**

However, such an approach is likely to be imperfect because offenders who have been in custody (and particularly those with sentences long enough to have taken a PET course) are likely to have committed a different profile of crimes compared to the national profile — their crimes are likely to be more serious as reflected by their custodial sentences. We therefore consider it appropriate to weight by the types of crime that lead to custodial sentences of greater than six months. If we had more detailed data on the types of crime committed by

the PET treated reoffenders we could use a weighting based on the actual PET sample. Where we do not have an estimate for the cost of an individual type of crime, we exclude this from the weighted average cost of crime.

We should be clear there is an assumption here that there is a correlation between past crimes committed by an offender and potential future crimes committed by that individual. In Table 6 below we show the top 20 most prevalent crimes with custodial sentences of greater than six months.

Table 6 Top 20 crimes leading to custodial sentences >6 months

	Home Office classification	Number of crimes leading to a custodial sentence of >6 months	Proportion of all offences with sentence >6months	Re-weighted	Applied unit cost
28.2 Burglary in a Dwelling - triable either way	**Burglary in a dwelling**	5,403	14.0%	22.3%	4,391
92.09 Production, supply and possession with intent to supply a controlled drug - Class A	-	4,484	11.6%	-	-
34 Robbery	**Robbery-personal**	3,580	9.3%	14.8%	9,856
8.01 Assault occasioning actual bodily harm	**Serious wounding**	2,314	6.0%	9.5%	28,802
92.10 Production, supply and possession with intent to supply a controlled drug - Class B	**Serious wounding**	2,019	5.2%	8.3%	28,802
8F Wound / inflict grievous bodily harm without intent	**Serious wounding**	1,826	4.7%	7.5%	28,802
5A Wounding with intent to cause grievous bodily harm	**Serious wounding**	1,294	3.4%	5.3%	28,802

30A.2 Burglary in a Building Other than a Dwelling - triable either way	**Burglary not in a dwelling**	1,051	2.7%	4.3%	5,155
66.1 Affray	**Common assault**	882	2.3%	3.6%	1,958
802 Dangerous driving (MOT)	-	756	2.0%	-	-
53C Fraud by false representation: cheque, plastic card and online bank accounts	-	689	1.8%	-	-
19C Rape of a female aged 16 or over	**Sexual offences**	515	1.3%	2.1%	41,337
54 Handling Stolen Goods	-	477	1.2%	-	-
39 Theft from the Person of Another	**Theft - not vehicle**	468	1.2%	1.9%	854
10D Possession of article with blade or point	-	414	1.1%	-	-
86.1 Taking, permitting to be taken or making, distributing or publishing indecent photographs or pseudo photographs of children	-	369	1.0%	-	-
22.1 Sexual activity involving a child under 16 - indictable only	**Sexual offences**	363	0.9%	1.5%	41,337
1 Murder	**Homicide**	333	0.9%	1.4%	1,985,289
8.10 Breach of a restraining order	-	330	0.9%	-	-
61A.1 Possession of false documents -	-	321	0.8%	-	-

indictable only					
Total	-	27,888	72.3%	52.0%	-
Average cost	-	-	-	-	35,540

Source: Ministry of Justice, Criminal Justice System Statistics publication: CJS Outcomes by Offence 2004 to 2014.

Table 6 shows that are estimate of the average cost of a crime leading to a custodial sentence >6 months is around £35,540. As a form of sense check we have compared this to a unit cost estimate from New Economy Manchester.[24] That organisation estimates the unit costs to the Criminal Justice System only for an offence as £34,840. This suggests our estimate is of the appropriate order of magnitude, although it may be an underestimate since it incorporates all types of costs while the New Economy Manchester Estimate is only one part of these costs.

4. Costs of the intervention

The interventions that PET offers clearly involve costs being incurred. Due to its nature as a charity these costs are typically funded by donors to PET. The costs involve both the cost of funding itself (e.g. paying for enrolment on a course) and the costs of organising and administrating the scheme. These can be considered real economic costs, since they all have an opportunity cost.

PET has provided us with evidence on its costs taken from its annual accounts. Since the largest cost is the funding itself this has been easy to allocate. We have also worked with PET to determine how to allocate other costs of the organisation.

Table 7 PET Costs[25]

	2014
Total grants number	2,000
Total resources expended (Access for Learning) (£)	701,462
Total resources expended (Whole PET) (£)	1,134,958
Grants unit cost excl other contributions (£)	351

[24] New Economy Manchester, 'Unit cost database', http://neweconomymanchester.com/our-work/research-evaluation-cost-benefit-analysis/cost-benefit-analysis/unit-cost-database

[25] https://fbclientprisoners.s3.amazonaws.com/Documents/Governance%20and%20finance/2014%20ACCOUNTS%20PET%20FINAL%20WEBSITE.pdf

Unit costs excl other contributions (£)	567

Source: PET Annual Report and Accounts for year ending 31 December 2014.

The unit costs are based on the total cost of PET as an organisation taken from published accounts and expressed in 2014 prices divided by the total number of grants given to prisoners in that year. The grant unit costs therefore include the cost of purchasing courses from suppliers and are estimated as £351 per award. We also create an estimate including the cost of administering the applications for and payments of the grants and the total costs of the charity including governance, fundraising and other charitable activities such as research and engagement with the prison system. This gives an estimate of £567 per award.

We note that a grant unit cost will not immediately equate to a prisoner beneficiary unit cost as prisoners may have received more than one grant. On the other hand if there is an argument that the opportunity has a positive behavioural impact on those refused as well, there is a case for spreading the unit costs over those refused as well

5. Cost Benefit Analysis

In order to conduct a CBA we follow a standard HM Treasury Green Book type approach where we compare quantified costs and benefits.

Benefits

Using the JDL estimated reduction in reoffending rates (and sensitivities around this) and an estimated cost of crime from the literature are able to estimate the benefits from the scheme. The benefits would be reduced crime relative to the counterfactual where the prisoners had not received support from PET.

We note that focusing on the reoffending rate as the main benefit of PET support could overlook some other benefits e.g. if prisoners receiving support were also more likely to be in employment, there would be gains to the wider economy and then to the exchequer through greater tax receipts and/or lower benefit payments (and the local community through multiplier effects); there are also the wider general benefits of increased education such as social and democratic engagement.

In Table 8 below we compare the costs per prisoner with our average benefits per crime prevented. This shows that overall if an award reduced reoffending by one percentage point then this would provide net benefits from the scheme.[26] We have also split the benefits based on victim costs and CJS costs, using the split provided within the Home Office estimates.

[26] Note this may need to be caveated as the value of the existing interventions since the marginal benefit to other prisoners may well be lower, given not all prisoners will react in the same way and those with the most to gain from the intervention may already be those who receive it.

Table 8: Break-even analysis

	Wider societal costs	Victim costs	CJS costs	Total
Costs per award	351	351	351	351
Benefits per prevented offence	116	28,261	7,163	35,540
Break-even percentage point reduction on reoffending rate	302.66%	1.24%	4.90%	0.99%

The above analysis is a conservative approach since the benefits are based on a short-term impact—the benefits we have calculated are derived on the basis of the one-year proven reoffending rate, they do not capture any longer term impacts. If a reduction in the one-year proven reoffending rate also leads to longer term reductions in offending rates, then the benefits may well be larger. It is unclear whether such effects may persist. To test sensitivity to this we assessed a situation where the benefits persisted over a 10 year period and appraise benefits over time at the social discount rate.[27] In this case we find the impact on the reoffending rate need only be approximately one tenth of a percentage point.

This may be a reasonable approach since the general pattern of reoffending is that of those that do go on to reoffend a very high proportion do so in the first year and therefore no reconviction in the first year is a strong indicator of a more long-lasting effect with a greater reduction in crime than that of a single offence in the first year. An estimate based on a single offence is therefore likely to be a significant underestimate.

In order to test the assumption further we also examined the JDL estimated impact on the frequency of offence. This analysis found that the frequency of offending for those awarded a PET grant was 0.28 offences per person lower than a matched control group who did not apply for a PET grant. This in effect shows a greater reduction in reoffending than the original analysis on the one-year proven reoffending rate, since this figure implies a 28 percentage point reduction in total offending, compared to a six to eight percentage point reduction in a binary reoffending measure (see Table 1). This is likely to be due to an effect on some offenders who would otherwise commit multiple offences. This effect would be captured by the frequency measure but not by the one year proven reoffending rate measure.

A complication that arises from examining the frequency of reoffending is to ensure that the potentially prevented crimes and therefore the cost of crime estimate are consistent with the potential to commit multiple offences. As we discussed above different crimes are associated with different costs and in general crimes which are more likely to lead to a custodial sentence are more likely to more costly. The cost of crime we have estimated above is based on crimes with custodial sentences of more than six months. Clearly if a

[27] HM Treasury (2003), 'The Green Book', available here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

crime is committed that leads to a custodial sentence of this length, then this reduces the potential to commit other crimes. Therefore a reduction in the frequency of offence may simply reflect a reduction in the number of less serious crimes that do not lead to a custodial sentence. If this was true then an alternative estimate of the cost of crime should be used. As such, when examining frequency of crime below we use the estimate for all crimes given in Table 5 rather than that given in Table 6.

Using such an estimate we reassess the break-even point for the frequency of crime as follows in the Table 9 below. This shows that if there is a reduction of at least 0.07 offences per person then the PET scheme would break-even. By comparing the JDL finding of a reduction of 0.28 offences per person then this would suggest the PET scheme exceeds the threshold and has a net benefit. This supports the findings based on the one-year proven reoffending rate discussed above.

Table 9: Cost-benefit ratio analysis

	Total
Costs per prisoner (£)	351
Cost per crime (£)	5,018
Break-even reduction in offences per person	0.07

Other considerations unquantifiable impacts
We note that there are a number of other impacts that it is unlikely to be feasible to capture within the CBA itself.

- **Well-being impacts**—impacts on health, happiness and well-being will not be captured.
- **Impacts during the time in prison**—if access to learning materials benefits prisoners while in prison there may be other benefits, in terms of reduced disruption or cost to the prison itself. There may also be positive externalities to other prisoners. While these ideas posited here are speculative, it is clear that any impacts within prison would not be captured.
- **The impact only covers proven offences**—if crimes which are not recorded (or not proven) are prevented they would also contain a benefit. The benefit for those that are not recorded or proven would just encompass the benefits to victims and wider society but not the benefits to the criminal justice system, since in that case it would not have been invoked.

6. Conclusion

We have assessed the cost benefit trade-off for PET's Access for Learning scheme. While we have not been able to identify precisely its value we have instead identified the following key points.

By comparing the costs of the scheme to the unit costs of crime we find that if the scheme is able to account for a one percentage point reduction in the reoffending rate then it has a net benefit. The JDL analysis found that those who were awarded reoffending between six and

eight percentage points less than a control group. Therefore if at least one percentage point of that range of six to eight percentage points is accounted for by the award itself then the scheme provides net benefits.

The JDL evidence found that those who applied but were rejected also reoffended four to nine percentage points less than a control group. This range overlaps with the range found for those awarded, which means that while no statistically significant difference was found between the two there is certainly scope for there to be a one percentage point or greater difference due to the award itself.

Further to the above we note that there may be merit in the existence of the application process itself. If the existence of PET and the ability for prisoners to make a commitment to change (whether or not they are actually awarded a grant) is responsible for one percentage point reduction (as per the impact on award) in reoffending this would also be sufficient to demonstrate a net benefit from the scheme.

In addition if we take account of effects over a longer time period than just one year, then the award only needs to be responsible for a proportionately lower reduction in reoffending rates to have a net benefit.

Further all of the above analysis is focused on benefits to society and victims, without any focus on the impact on the offender. Since the offender is most likely to benefit directly from an award such benefits would further enhance the value of the scheme.

Annex 1: Summary of academic studies

Atkinson, G., Healey, A. and Mourato, S. (2005) "Valuing the costs of violent crime: A stated preference approach", *Oxford Economic Papers,* Vol. 57, p.559-585

Type of crime and cost estimated

Atkinson et al (2005) focus on willingness to pay to avoid three types of violent crime – common assault (no wounding), other wounding and serious wounding.

Data

Atkinson et al (2005) used a face to face survey approach, undertaking 807 interviews in 77 sampling points across England and Wales. The surveys were administered in the respondents' homes. The authors used a quota system based on the age, sex and socio-economic status of the main wage-earner in the household. They received 523 usable responses – the authors excluded 279 'protest responses' and five extreme outlying values.

Atkinson et al (2005) used the British Crime Survey to devise the description of the different injuries. They found there is no typical pattern of injuries for the different categories of crime, and it was not possible to determine the frequency with which injuries occurred together. Atkinson et al (2005) used a simplified pattern, informed by medical experts in this area.

Respondents were informed of the pre-policy risk of being a victim of the different types of assault (which were 4% for common assault and 1% for other and serious wounding, based on national average). The risk and risk change were presented visually to try and overcome insensitivity to changes in small risks, which has been found to be effective in other studies. However, the authors did not incorporate direct tests for risk insensitivity.

Respondents were asked the value to themselves of reducing the risk of being a victim of one of the different types of assault by 50%. The authors suggest this could give a conservative result to the extent people care about the utility of others in their household. This would be paid for by a one-off increase in local charges for law enforcement. The study used a payment card system with a value between £0 and £5,000.

Results

Figure 1 sets out the results of the implied cost of different crimes found by Atkinson et al (2005).

Figure 1: Summary of results from Atkinson et al (2005)

Table 9 Implied cost of statistical crimes (£ /household/ year)

Variable	Cost of statistical crime (based on parametric statistics) Mean (95% CI)	Median (95% CI)
WTP (Common assault)	£5,282 (£3,852–£7,241)	£913 (£666–£1,252)
WTP (Other wounding)	£30,908 (£22,928–£41,666)	£5,342 (£3,962–£7,202)
WTP (Serious wounding)	£35,844 (£26,490–£48,502)	£6,196 (£4,578–£8,364)

Notes: 1. Calculated using parametric statistics on WTP: see Table 6; 2. For WTP values under £3,000 only (5 observations excluded); 3. CI.: confidence interval; 4. 'Common assault' (no injury + short-term psychological distress: risk reduction 2%), 'Other wounding' (moderate injury + medium-term psychological distress: risk reduction 0.5%), 'Serious wounding' (serious injury + long-term psychological distress: risk reduction 0.5%).

The authors noted that the median is significantly lower than the mean for all categories, which indicates the mean is skewed by a small number of high values. The authors also noted that the value for serious wounding used by the Home Office was three times higher than that estimated by their study.

Read-across for PET study

For the purposes of the analysis for PET, Atkinson et al's study benefits from being a UK study. However, it focuses only on a relatively restrictive sub-set of crimes (common assault and serious and other wounding). By contrast, we are interested in a much broader range of crimes which may have been prevented through PET's intervention. We therefore consider there is limited value in applying these values to the PET analysis. However, the results provide an interesting contrast to some other studies – for example, despite being lower than the costs estimated by the Home Office study, Atkinson et al's estimates of costs are significantly higher than those estimated by Dolan et al (2005) for the same offences. As Dolan et al (2005) focus only on intangible victim costs, this could give an indication of the order of magnitude of these costs within the broader set of costs imposed by crime (although care must be taken in drawing too strong an inference from comparing across studies which use such different methodologies in this way).

Dolan, P., Loomes, G., Peasgood, T. and Tsuchiya, A. (2005) "Estimating the intangible victim costs of violent crime", *British Journal of Criminology,* Vol. 45, p.958-976

Type of crime and cost estimated

Dolan et al focus on realised intangible costs of violent crimes against the person (murder, rape/sexual assault, common assault, serious wounding, other wounding and robbery). They focus only on costs to victims, not friends and family of victims, witnesses etc., which they highlight as a possible further area for development.

Data

Dolan et al's approach required information on the injuries and trauma associated with the different offences, the likelihood that a victim of a particular crime would suffer one or more of those injuries and estimates of the duration of that suffering. These were then converted into a measure of QALY loss.

Most data on physical injuries comes from the British Crime Survey (BCS), although the authors also add in death, long-term disability and additional health consequences of rape. Psychological trauma they classify into acute anxiety disorder, mild PTSD and severe PTSD, and in case of rape, also factor in depression, anxiety and alcohol abuse.

The likelihood of suffering these different injuries is derived from the BCS. The probability of developing PTSD were taken from other academic studies ; and the probability of victims of serious wounding developing a long-term disability was arbitrarily assumed to be 10%.

The duration of different injuries was taken from the Global Burden of Disease study. The authors note some judgement was required in reading across the categories used above to this study. Information on ASD and PTSD was taken from other (academic) sources, and the duration of long-term disability was set equal to that of severe PTSD.

For the BCS list of injuries, the GBD gave the duration and disability weight. PTSD weights were taken from the Dutch National Burden of Disease study (as this is not included in the GBD); ASD was given the same weight as mild PTSD.

In converting to QALY figure for intangible cost, Dolan et al (2005) give results based on two QALY cost measures

- They suggest it is possible to derive the implicit value of a QALY from NICE decisions to be around £30,000 (although this is not explicitly stated in NICE decisions). However, the authors suggest this does not necessarily reflect the preferences of society so much as the preferences of NICE.
- They also use values elicited from members of the public and calculate QALY equivalents. They use information from Carthy et al (1999) which used four approaches to produce a weighted average value for 'injury W' [need to define]. This gives a QALY equivalent of £81,000.

Dolan et al suggest there is not yet sufficient confidence that the context in which injury/QALY reduction is sustained does not affect the value of that loss to be confident in reading across QALY values from other contexts. It posits there may be other losses not

associated with health outcomes which would not be captured by the QALY (e.g. increased feeling of vulnerability) which could create a 'crime premium'.

Results

Figure 2 sets out the results of Dolan et al's (2005) study in terms of the QALY loss of each crime, and the value of those losses based on both the implied NICE threshold and Carthy et al's weighted average results.

Figure 2: Summary of results from Dolan et al (2005)

TABLE 2 *Discounted QALY losses and money values for those losses*

Offence	Discounted QALY loss	NICE threshold (£)*	Carthy *et al.* weighted average W** (£)
Murder	17.791	533,721	–
Serious wounding	0.191	5,723	15,378
Other wounding	0.031	945	2,539
Common assault	0.007	218	587
Rape	0.561	16,840	45,256
Sexual assault	0.160	4,790	12,872
Robbery	0.028	845	2,271

* Values based on using £30,000 per QALY, inferred from decisions made by NICE.
** An injury with two to three days in hospital, with slight to moderate pain, followed by some pain/discomfort for several weeks, some restrictions to work and/or leisure activities for several weeks/months, but a return to normal health with no permanent disability after three to four months. Values based on using a weighted average of WTP and WTA for injury W of £3,000 (equivalent to about £81,000 per QALY), from Carthy et al. (1999).

Read-across for PET study

Dolan et al's study also uses UK data in their study. However, it focuses only on a subset of costs – namely, the intangible cost to victims from the physical and psychological injuries associated with a range of crimes. This range of crimes, while incorporating many of the most serious offences, is also not all-encompassing. We therefore consider there is limited value in applying these values to the PET analysis, other than as a cross-check of similar figures available from other sources (i.e. measures of intangible costs for victims of violent crimes).

Cohen, M.A. (1998) "The monetary value of saving a high-risk youth", *Journal of Quantitative Criminology,* Vol. 14, Iss. 1, p.5-33

Type of crime and cost estimated

Cohen (1998) estimates the lifetime cost of a career criminal. This involves estimating the following equation:

$$\text{Lifetime cost} = \sum_{ij} (1-\beta)^{j-1} \lambda_{ij} [\text{VC}_i + \text{CJ}_i + \text{CI} * T_i + W * T_i]$$

Where λ = mean number of crimes; VC = victim cost of crime; CJ = criminal justice investigation, arrest, adjudication; CI = cost of incarceration (days); *T* = average time served (days); β = discount rate; *W* = opportunity cost of offender's time; *I* = crime 1 though crime *I*; and *j* = year 1 through year *J* of crime.

Data

Figure 3 reproduces the assumptions set out in Table 1 in Cohen (1998) used in estimating the value of a criminal career. Cohen's methodology also extended to valuing the cost of drug abuse and dropping out of high school; we do not consider this to be relevant in the current context and therefore do not discuss these aspects of the study further.

Figure 3: Assumptions used by Cohen (1998) in estimating value of criminal career

Table I. Key Assumptions and Variables Used in Analysis

Variable	Estimates in paper	Explanation and sources	Notes/limitations/other estimates
Crime			
λ, median number of offenses per year	*Juvenile*: Range 1–4 per year, same distribution as adult *Adult*: 3 assaults, 1.25 robbery, 1.25 burglary, 2.5 larcenies, 2.5 MV thefts, 0.1 rape	*Juvenile*: Low end of range is average number of convictions, high end is average number based on self-reports (Loeber & Snyder, 1990) *Adult*: Midpoint of the ranges estimated by Blumstein *et al.* (1986). Consistent with medians reported by Canela-Cacho *et al.* (1997). Murders are incorporated into each crime category based on risk of death in respective crime. No estimates of rape are available; arbitrarily assumed 1/10 per year per career criminal	*Juvenile*: Thornberry *et al.* (1995, pp. 219–220) find 3.9 offenses per year for nonchronic violent offenders (3/4 of juvenile offenders) and 33.6 offenses for chronic violent offenders (1/4 of juvenile offenders) *Adult*: Mean λ's are 5–10 times higher than medians. The most serious offenders (90th percentile) have mean λ's that are 5–20 times higher than the means for all offenders (Canela-Cacho *et al.* 1997). Intensive drug use increases λ and early arrest is associated with higher λ (Blumstein & Petersilia, 1995, p. 473)
Length of criminal career	*Juvenile*: 4 years (age 14–17). *Adult*: 6 years from age 18 on	*Juvenile*: Based on juveniles who become adult offenders *Adult*: Blumstein *et al.* (1986) estimate mean career length is 5.6 years	*Adult*: Ranges from 5 to 15 years (Blumstein *et al.*, 1986). Note: According to Blumstein & Petersilia (1995, p. 473), career length has not been adequately studied
Victim costs	See Table II	Miller *et al.* (1996). Includes intangible costs such as pain, suffering & lost quality of life	Note: Intangible costs make up approximately 50% of the total lifetime costs of a career criminal
Criminal justice system	See Table III. Typical career spends 8 years in jail & prison	Cohen *et al.* (1994). Based on probability of offender entering each stage of process & its cost	Might vary for individual offenders, depending on their probability of being apprehended and differences in sentencing behavior
Foregone earnings of criminal	$7542 per year of incarceration	Cohen *et al.* (1994, p. 136), updated to 1997 dollars	Based on prison surveys reported by BJS and adjusted by Cohen *et al.*

For victim costs, Cohen (1998) draws on Miller et al (1996).

Criminal justice costs are estimated as the probability of the offender ending up at each stage of the justice system multiplied by the cost for each stage. Cohen (1998) uses the same procedure as Cohen et al (1994) updated to 1997 values and adding property crimes.

Foregone earnings while incarcerated are used to proxy the loss in productivity. Cohen (1998) uses estimates from Cohen et al (1994) for the average pre-conviction (legitimate) earnings of convicted felons based on a literature review, updated for 1997 values. This annual figure is multiplied by the average time in jail (given as 8 years).

Results

Cohen's paper uses estimates from other papers for the victim and criminal-justice costs. While these are merely inputs to the final values of interest in his paper, these inputs are interesting in themselves to us. We therefore set out the values for victim costs and criminal justice costs for different types of crimes as used by Cohen (1998) in Figure 4.

Figure 4: Figures used by Cohen (1998) in estimating the value of saving a high risk youth from a criminal career

Table II. Annual Cost to Victims of a Career Criminal (1997 Dollars)[a]

Crime	Tangible	Intangible	Risk of death	Total per crime	Number per year	Total per year
Rape	$6000	$96,000	$1000	$103,000	0.1	$10,300
Robbery	$2700	$6700	$6200	$15,600	1.25	$19,500
Agg. assault	$1800	$9200	$29,700	$40,700	3.0	$122,100
Burglary	$1300	$350	—	$1650	1.25	$2065
Larceny	$440	—	—	$440	2.5	$1000
MV theft	$4,100	$350	—	$4500	2.5	$11,200
Total					**10.6**	**$165,000**

[a]Numbers may not add due to rounding. *Source*: Dollar estimates taken from Miller *et al.* (1996), updated to 1997 dollars. See text for details on the estimated number of crimes per year.

Table III. Annual Criminal Justice-Related Costs of Career Criminals (1997 Dollars)[a]

Crime	Criminal investigation	Legal defense	Prison, jail	Parole	Probation	Total per year	Number of crimes[b]	Total[b]
Murder	$8700	$1100	$118,500	$607	$70	$163,500	—	—
Rape	$380	$30	$2400	$24	$7	$2900	0.1	$290
Robbery	$890	$60	$5800	$72	$25	$6900	1.25	$8900
Agg. assault	$870	$70	$3500	$97	$75	$4600	3.0	$18,100
Burglary	$765	$20	$1500	$46	$50	$2300	1.25	$2900
Larceny	$540	$20	$700	$44	$50	$1400	2.5	$3500
MV theft	$1550	$35	$1300	$77	$90	$3000	2.5	$7600
Total							**10.6**	**$40,000**

[a]*Source*: See Cohen *et al.* (1994) for detailed methodology; estimates updated to 1997 dollars.
[b]Murder costs have been incorporated into each crime through the risk of death. Numbers may not add due to rounding.

These are combined with an estimate for the lost (legitimate) earnings while incarcerated to produce the lifetime costs of a career criminal (see Figure 5).

Figure 5: Results from Cohen (1998)

Table IV. Lifetime Costs of a Career Criminal (1997 Dollars)[a]

Cost category	Total costs	Present value (2% discount rate)
Juvenile career		
Victim costs	$62,000–$250,000	$60,000–$244,000
Criminal justice-related	$21,000–$84,000	$20,000–$82,000
Subtotal: Juvenile Career	$83,000–$335,000	$80,000–$325,000
Adult career		
Victim costs	$1,000,000	$850,000
Criminal justice-related	$335,000	$283,000
Offender Productivity	$64,000	$54,000
Subtotal: adult career	$1,400,000	$1,200,000
Total	**$1.5–$1.8 million**	**$1.3–$1.5 million**

[a]Numbers may not add due to rounding.

Read-across for PET study

Cohen (1998) is based on US-data. It attempts to separately quantify a range of costs created over the life of a criminal career. However, the victim and criminal justice costs are derived only for a sub-set of crimes (albeit some of the most serious). In addition, this paper is now quite old and so the figures may be somewhat out of date (in fact, the figures were updated in Cohen and Piquero, 1998).

Cohen, M.A. and Piquero, A.R. (2009) "New evidence on the monetary value of saving a high risk youth", *Journal of Quantitative Criminology,* Vol. 25, p.25-49

Type of crime and cost estimated

As in Cohen (1998), the focus is the lifetime cost of a career criminal. This study incorporates a greater range of crimes than Cohen (1998), including simple assault, vandalism, fraud, arson, drunk driving offences and other minor status offences, as well as murder, rape, robbery, aggravated assault, burglary, larceny ad vehicle theft.

Data

Cohen and Piquero examine the offending behaviour of all 27,186 individuals born in Philadelphia in 1958 up to the age of approximately 26 in 1984.

The number of crimes committed is based on actual police reported contact data. The authors acknowledge this may understate offending as it will not capture undetected crime, crimes outside the Philadelphia area or offences after the age of 26. It may also miss some crimes by females who have changed names. Cohen and Piquero use an 'offence multiplier' to account for the fact only a subset of crimes will lead to interaction with the police. They base this on three other academic studies which compare police records with self-reported behaviour.

In estimating the cost of crime, Cohen and Piquero use a broadly similar 'bottom up approach' as Cohen 1998. However, they also use a 'top down' WTP approach.

For the bottom up victim cost, Cohen and Piquero use Miller et al (1996). For criminal justice cost, the same sources as Cohen (1998) are used (mainly Bureau of Justice Statistics information). For the opportunity cost of incarceration, Cohen and Piquero update the wage data used by Cohen (1998). However, they note the controversy of including such costs (since part of the reason for incarcerating offenders is to discourage offending, and so by design imposes costs on offenders).

The top-down WTP estimates are based on Cohen et al (2004). The authors note this does not include all of the crime types being considered in this study, and that it is not clear which cost categories are being included by respondents in giving their valuations.

Results

Figure 6 sets out the estimated value of crimes based on both 'bottom up' and WTP approaches used by Cohen and Piquero (2009)

Figure 6: Estimated 'bottom up' and WTP for crimes (2007 dollars) from Cohen and Piquero (2009)

	Victim costs	CJ costs	Offender productivity	Total	WTP estimate
Murder	$4.6 million	$300,000	$140,000	$5 million	$11.8 million
Rape	$135,000	$8,300	$4,500	$150,000	$290,000
Armed robbery	$29,000	$14,700	$8,000	$50,000	$280,000
Robbery	$12,000	$7,400	$4,000	$23,000	$39,000

Aggravated assaults	$37,000	$13,500	$6,400	$55,000	$85,000
Simple assaults	$4,500	$5,000	$1,300	$11,000	$19,000
Burglary	$2,000	$2,300	$1,000	$5,000	$35,000
Motor vehicle theft	$5,500	$2,900	$1,000	$9,000	$17,000
Larceny	$450	$1,700	$700	$2,800	$4,000
Drunk driving crash	$28,000	$1,700	$700	$30,000	$60,000
Arson	$57,000	$1,700	$700	$60,000	$115,000
Vandalism	$370	$630	-	$1,000	$2,000
Fraud	$1,100	$1,700	$700	$3,500	$5,500
Other offences (prostitution, loitering, false statements, etc.)	-	$500	-	$500	$1,000

It is notable that the WTP estimates are generally substantially higher than the 'bottom up' results. The authors suggest that this may be because respondents in the WTP study included a wider set of types of cost in their valuations (e.g. fear of crime or community-level social degradation) making them more comprehensive.

Read-across for PET study

As with Cohen (1998), Cohen and Piquero (2009) is based on US-data and separately quantifies a range of costs created over the life of a criminal career (although the WTP estimates may indicate the categories of cost are not exhaustive). Cohen and Piquero (200) expand the range of crimes considered compared to the earlier study to include more minor offences. While Cohen and Piquero (2009) update the results of Cohen (1998), it is worth noting that victim costs were still based on the same study (Miller, 1996). The WTP estimates are drawn from another study considered in this literature review updated for inflation.

Overall, we consider there is limited value in applying these values to the PET analysis.

Cohen, M.A., Rust, R.T., Steen, S. and Tidd, S.T. (2004) "Willingness-to-pay for crime control programs", *Criminology,* Vol.42, Iss. 1, p.89-109

Type of crime and cost estimated

Cohen et al (2004) sought to elicit the willingness to pay to reduce certain types of crime – specifically murder, rape/sexual assault, armed robbery, serious assault and burglary.

Data

Cohen et al (2004) used a telephone survey approach. From a sample 4,966 possible numbers, 3,055 were 'eligible' to be used (e.g. not businesses); from these, 2,288 households were actually contacted, and 1,300 completed the survey – the response rate was therefore between 43% and 58%, depending on the total sample referred to. Responses were weighted to account for probability of selection and adjusted for no response on age, sex, etc. They included checks on whether respondents understood the questions, could respond with some degree of rationality and consistency and were not biased by the wording of the questions.

Respondents were asked if they would vote for a proposal that would require every household in their neighbourhood to pay a certain amount to prevent one in 10 of a particular type of crime. The authors ensured the survey did not specify a particular policy, just that it had been effective and had community support. They also left the meaning of 'neighbourhood' deliberately vague.

Each respondent was assigned three of the five types of crime at random. They did not define or give any information on the prevalence, risk of victimisation or average typical losses or injuries from the crime categories, as the authors wished to elicit the WTP based on actual fear or concern (although they recognised it would also be useful to evaluate WTP based on actual risks in other studies).

The values respondents were asked to consider paying varied between $25 and $225 (in $25 increments), with the maximum determined from focus groups run earlier in the study design process. Respondents were specifically asked to disregard their answers to earlier questions to avoid 'income effects' (i.e. that they would be willing to pay $100 to reduce the risk of rape or murder, but not $200 to reduce the risk of both) –this was tested with a specific question at the end of the interview.

The yes/no answers were then converted into WTP estimates. The authors assumed WTP reduces monotonically with price increases. For a given bid range, the mid-point was used as the value for that range (e.g. if WTP $50 but not $75, the value used would be $62.50). The authors then calculated the probability density function at each bid range, then multiplied by the dollar value of each range.

This was then converted into a cost per crime based on the number of households and crimes in the US. Cohen et al (2004) used the FBI Uniform Crime Reports for murder and the National Criminal Victimization Survey for other crimes.

Results

Figure 7 shows the results found by Cohen et al (2004) as to the willingness to pay per crime.

Figure 7: Results from Cohen et al (2004)

Table 2. Implied Willingness-to-Pay per Crime

Crime	10% Crime Reduction [confidence interval]	WTP for 10% Reduction [confidence interval]	Implied WTP per Crime	Confidence Interval	
Burglary	426,113 [395,769-456,457]	$104 [$93, $116]	$ 25,000	$ 21,000	$ 30,000
Armed robbery	48,681 [39,994-57,367]	$110 [$97, $122]	$ 232,000	$ 174,000	$ 314,000
Serious Assaults	177,836 [157,478-198,193]	$121 [$109, $132]	$ 70,000	$ 57,000	$ 86,000
Rape and Sexual Assaults	54,747 [44,273-65,220]	$126 [$117, $134]	$ 237,000	$ 185,000	$ 313,000
Murder	1,553 [1,475-1,630]	$146 [$134, $158]	$ 9,700,000	$ 8,500,000	$ 11,000,000

Sources: BJS (2001a, 2001b) and FBI. Confidence intervals based on BJS (2001a) and from this survey. See text and footnote 16 for details. Number of households estimated to be 103 million in 2000 from Census data.

Cohen et al (2004) noted there could be some sampling bias, as in some cases WTP did not fall as cost increased (although in most cases it did).

Cohen et al (2004) noted that their cost estimates are significantly higher than those found elsewhere – between 1.5 and 10 times higher, depending on type of crime. They suggest part of the reason for this is that their approach includes a greater range of crime costs than just costs to victims and criminal justice costs (as many previous studies have focused on), and in particular may include some valuation of other social costs of crime.

Read-across for PET study

Cohen et al's (2004) study is based on US data. It also includes only a limited number of types of crimes (albeit arguably some of the most serious). However, as it is based on respondents' willingness to pay to avoid crime, it is likely to incorporate a greater range of types of costs (to the extent different categories of cost are important to respondents e.g. they may be factoring in general peace of mind/social benefits as well as financial and physical/mental costs to victims). However, this also means it is not possible to break down the figures further to understand the importance of different types of cost, making it difficult to cross-check results against studies which take a more disaggregated approach to estimating cost categories.

Another point to note is that the authors did not clarify for respondents exactly what was meant by the different types of crime, the likely effect of the crime or the probability of being

a victim of the crime. This is in contrast to the approach taken by Atkinson et al (2005) which went into great detail on these factors to ensure respondents had a common understanding of the question being asked. This is likely to affect comparability of the results, along with more general difficulties with cross-country comparisons (given Atkinson et al was a UK study).

Overall, we consider there is limited value in applying these values to the PET analysis

Annex 2: Qualitative research evidence on the impact of PET support

There has been some research into the wider impact of applicants to PET, which impact on our understanding of the motivations of applicants, as well as the motivations of prison based distance learners more generally (largely funded by PET but not exclusively).

This research has taken two forms; first is the analysis of the letters to PET. Second is through in depth qualitative interviews of current serving distance learners.

Hughes (2000) analysed 71 letters written to PET, outside of the application process, in 1998-1999.[28] She found that themes of 'opportunity', seeking 'meaningful' activity and personal challenge characterised these letters of thanks. Further, 19 of the 71 included positive tutor notes or course results. This suggests that the role of recognising achievement may be significant in the impact of the programme. Not all writers had begun their programme, yet expressed similar enjoyment, albeit anticipated, to those who had. Further, the act of writing their letter of thanks before the course has begun supports the potential for the application process, receiving funding and support for a course, to have a potential impact on the individual.

Hughes (2012) conducted interviews with current distance learners to analyse the motivations and disincentives to distance learning in prison.[29] She found that future employment was a central motivating factor which, although could have pre-existed the application to PET, it also developed through the process of learning.

Nichols (2016) conducted documentary analysis on 80 letters to PET, 40 of which came from applications for funding.[30] This was alongside interviews of current prisoners. She too found that employability was a central motivation for application. She further found that many applicants had previously positive experiences of education and high aspirations. Although this too may be a pre-existing feature of applicants, it is important to note that a PET grant is one of few routes to actualise this aspiration.

[28] Hughes, E. (2000), 'An Inside View: Prisoners Letters on Education' in Wilson, D. and Reuss, A. (eds) *Prison(er) Education*, Waterside Press, Winchester.
[29] Hughes, E. (2012), Education in Prison: Studying through Distance Learning, Ashgate, Surrey.
[30] Nichols, H. (2016), Unpublished Doctoral Thesis, submitted to University of Hull in January 2016.