RESEARCH

Evaluation of Aimhigher:Excellence Challenge Economic Evaluation of Opportunity Bursaries

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Executive summary

This paper looks at the impact of Opportunity Bursaries on young adults who received payments in 2001–02 and 2002–03. Both linear regression and propensity score matching techniques are used to compare to outcomes of individuals in receipt of an Opportunity Bursary with those who were eligible for the policy but not able to receive it since only a limited number were available.

We find some evidence that the policy has lead to increased retention in the first year of university study – using a linear regression technique we find a statistically significant increase of 2.6 percentage points while using propensity score matching we find an increase of 1.6 percentage points, although this latter result was not statistically significant at conventional levels. We also find some evidence that receipt of an Opportunity Bursary led to lower levels of debt – in particular 'liquid debt' defined as bank overdrafts or credit card debt.

The evidence suggests that the majority of the £1,500 that will have been paid to recipients by the time of our survey has been spent which is consistent with students facing credit constraints. The fact that they will receive a further £500 in the following year, and that their lower levels of debt may enable them to borrow more if needed, suggests that those in receipt of an Opportunity Bursary should be better placed to complete their course. Opportunity Bursaries are also found to be associated with lower average parental financial support.

An assessment of whether the benefits of the policy in terms of increased lifetime wages are sufficient to justify the total £2,000 Opportunity Bursary payments and the loss of wages while additional individuals choose to attend Higher Education is not possible without an estimate of the increase in numbers completing Higher Education as a result of receiving an Opportunity Bursary. However a simple cost benefit calculation suggests that to justify Opportunity Bursaries on the sole basis of the increased (gross) wages of those who complete Higher Education as a direct result of the policy would require the policy to increase Higher Education completion among those eligible for the policy by at least 2.7% if the required rate of return was 2½% a year. The required impact of the policy on those eligible for it is estimated to rise to 3.5% if the required rate of return was 3½% and 5.1% if the required real rate of return was 5% a year.

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1. Introduction and policy background

The Aimhigher set of initiatives are aimed at increasing participation in Higher Education among young adults, in particular among groups who historically have had relatively low Higher Education participation rates. The programme began in September 2001 (then known as the Excellence Challenge Programme). Opportunity Bursaries, which are grants to young people from lower income families with little or no experience of higher education, are one key strand of this policy. These grants are worth a total of £2,000 over a three-year course, with £1,000 being paid in the first year and a further £500 in each of the following two years.

A total of 26,000 Opportunity Bursaries were made available over the 3 years from September 2001 at a total cost of £37 million (7,000 in the first year, 8,000 in the second year and 11,000 in the third year). The policy is available in England at all Higher Education institutions with full-time undergraduates and selected Further Education colleges.[2] The guidance to Higher Education institutions from the DfES states that to be eligible the student must:

- have applied for a Higher Education place for the relevant academic year
- be aged under 21 at the start of the academic year
- be from a lower income family (defined as below £21,000 a year before tax, or in receipt of certain means-tested benefits).
- meet certain residency criteria

In addition the objective is to pay Opportunity Bursaries to those who have no or little experience of Higher Education within their family, which the DfES states as preferably being a first generation Higher Education entrant.

[2] Further details of Opportunity Bursaries are available from the DfES website at: http://www.dfes.gov.uk/aimhigherprogramme/index.cfm?pageId=4&pageType=level3

In 2001–02 and 2002–03 Higher Education Institutions were instructed to allocate their quota of Opportunity Bursaries by first granting those young adults who had studied in schools covered by Excellence in Cities (Phase 1, 2 or 3), Education Action Zones or Excellence Clusters. If Opportunity Bursaries remained they could consider applications from other students. Evidence from West, A., *et al* (2003) (Table 6) and Pennell, H., *et al* (2004) (Table 12) shows that the criteria set down by the DfES were the most commonly cited reason for how the Opportunity Bursaries were allocated.

This paper looks at the impact of the policy on young adults who received payments in 2001–02 and 2002–03, which is the first two years that the policy was in operation, using responses to a specially designed survey.[3] A key question of interest is whether the policy led to higher retention rates among those who received Opportunity Bursaries. We investigate this issue by comparing outcomes for young adults who were deemed eligible for the policy, some of who did receive it and some of whom who, as a result of the centrally set cap, did not.

A matching approach is used to show the extent to which the background characteristics of those eligible for, and in receipt of, an Opportunity Bursary are similar to the background characteristics of those eligible for, but not in receipt of, an Opportunity Bursary. We then use both linear regression techniques and propensity score matching to look at differences in outcomes of interest, in particular initial retention in Higher Education and levels of student debt.

The structure of the rest of this paper is as follows. In Section 2, we discuss the data and the methodology that we use. Section 3 presents the results and Section 4 discusses the implications for a cost benefit analysis. Section 5 concludes.

[3] Opportunity Bursaries were also available in 2003–04, but are not part of this study. From 2004–05 they have been replaced with a Higher Education Grant worth up to £1,000 per academic year to higher education students with lower income parents.

2. Data and methodology

The analysis in this paper uses the responses from a postal survey carried out with young adults who applied, and were eligible for, an Opportunity Bursary in the academic years 2001–02 or 2002–03. The surveys were completed approximately one year later – so individuals would (if they had not dropped out) be in the first term of the second year of their course. Questionnaires were sent to approximately one-third of those who were in receipt of an Opportunity Bursary (selected at random), and an equivalent number of individuals who were deemed eligible for the policy but were not in receipt due to the quota on payments.

Of the 8,885 questionnaires sent to Higher Education Institutes a total of 1,585 were sent back – a response rate of 17.8 percent. More detailed information on the survey instrument and a description of the circumstances of both recipients and non-recipients of Opportunity Bursaries in the academic year 2001–02 can be found in West, A., *et al* (2003). Corresponding analysis for the academic year 2002–03 can be found in West, A., *et al* (2004).

In terms of the potential outcomes that Opportunity Bursaries might impact upon survey respondents are asked for details of their current economic activity, debts and financial parental support. Summary statistics for these are presented in Table 2.1, split by whether or not the individual is in receipt of an Opportunity Bursary. The vast majority of respondents are still in Higher Education, although participation in Higher Education is slightly higher among those in receipt of an Opportunity Bursary (98%) compared to those not in receipt (96%). In terms of the other outcomes that are potentially of interest we like West, A., *et al* (2003) and West, A., e*t al* (2004), find that there is little difference between Opportunity Bursary recipients and non-recipients in terms of whether or not they are in part-time work or the hours worked,

but that Opportunity Bursary receipients have on average lower levels of debt (in all forms) and receive less financial support from their parents than those not receiving an Opportunity Bursary.

Table 2.1. Summary outcome statistics, by whether or not individual is in receipt of an Opportunity Bursary

	Not in receipt					In receipt				
	N	Mean	Percentile			N	Mean	Percentile		
			25th	50th	75th			25th	50th	75th
Still in higher education	334	0.96	1.00	1.00	1.00	1,066	0.98	1.00	1.00	1.00
Part time work	301	0.51	0.00	1.00	1.00	1,000	0.50	0.00	1.00	1.00
Part time hours of work	332	6.36	0.00	0.00	12.00	1,054	6.20	0.00	0.00	12.00
Bank overdraft	319	£563	£0	£250	£1,000	1,020	£498	£0	£200	£1,000
Credit card overdraft	308	£339	£0	£0	£500	987	£265	£0	£0	£200
Student loan	302	£4,213	£3,100	£4,000	£5,110	1,003	£4,079	£3,000	£4,000	£5,000
Total debt	274	£5,198	£3,862	£5,000	£7,000	915	£4,960	£3,400	£4,950	£6,400
Non student loan debt	301	£935	£0	£500	£1,500	965	£790	£0	£350	£1,250
Parents provide financial support	335	0.26	0.00	0.00	1.00	1,067	0.18	0.00	0.00	0.00
Amount of parental support (£ per year)	335	£276	£0	£0	£0	1,067	£134	£0	£0	£0

Whether or not these differences can be interpreted as a causal impact of Opportunity Bursaries depends on whether or not individuals are the same in terms of background characteristics that (in part) determine the outcomes of interest. Table 2.2 presents summary statistics on the background characteristics, again split by whether or not the individual is in receipt of an Opportunity Bursary.

Table 2.2. Summary background statistics, by whether or not individual is in receipt of an Opportunity Bursary

	Not in receipt of an Opportunity Bursary	In receipt of an Opportunity Bursary

	Mean	Percentile			Mean	Percentile		
		25th	50th	75th		25th	50th	75th
1st or 2nd year group	1.45	1.00	1.00	2.00	1.44	1.00	1.00	2.00
Year of birth	82.56	82.00	83.00	83.00	82.70	82.00	83.00	83.00
Male	0.26	0.00	0.00	1.00	0.30	0.00	0.00	1.00
Father lives at home	0.70	0.00	1.00	1.00	0.61	0.00	1.00	1.00
Mother lives at home	0.92	1.00	1.00	1.00	0.91	1.00	1.00	1.00
Younger sibling at home	0.43	0.00	0.00	1.00	0.42	0.00	0.00	1.00
Older sibling at home	0.23	0.00	0.00	0.00	0.26	0.00	0.00	1.00
Father FT employed	0.46	0.00	0.00	1.00	0.34	0.00	0.00	1.00
Mother FT employed	0.38	0.00	0.00	1.00	0.27	0.00	0.00	1.00
Both full-time employed	0.84	0.00	1.00	1.00	0.61	0.00	1.00	1.00
Lived at home before applying to university	0.42	0.00	0.00	1.00	0.47	0.00	0.00	1.00
Mothers education:								
Missing	0.18	0.00	0.00	0.00	0.21	0.00	0.00	0.00
No qualifications	0.24	0.00	0.00	0.00	0.30	0.00	0.00	1.00
O Levels	0.36	0.00	0.00	1.00	0.35	0.00	0.00	1.00
A Level	0.19	0.00	0.00	0.00	0.12	0.00	0.00	0.00
Higher	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Fathers education:								
Missing	0.31	0.00	0.00	1.00	0.40	0.00	0.00	1.00
No qualifications	0.26	0.00	0.00	1.00	0.26	0.00	0.00	1.00
O Levels	0.27	0.00	0.00	1.00	0.23	0.00	0.00	0.00
A Level	0.13	0.00	0.00	0.00	0.09	0.00	0.00	0.00
Higher	0.03	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Ethnic group								
1	0.72	0.00	1.00	1.00	0.69	0.00	1.00	1.00
2	0.03	0.00	0.00	0.00	0.04	0.00	0.00	0.00
3	0.05	0.00	0.00	0.00	0.07	0.00	0.00	0.00
4	0.05	0.00	0.00	0.00	0.07	0.00	0.00	0.00
5	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.00
6	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
7	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00
8	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00
9	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00
11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
13	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
15	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education								
GCSE points score	57.9	50.0	59.0	68.0	57.4	49.0	58.0	66.0
GCSE points score ^ 2	3597.4	2500.0	3481.0	4624.0	3499.6	2401.0	3364.0	4356.0
A Level points score	19.1	8.0	20.0	28.0	18.0	8.0	18.0	27.0
A Level points score ^ 2	530.8	64.0	400.0	784.0	474.1	64.0	324.0	729.0
Foundation GNVQ	0.03	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Intermediate GNVQ	0.07	0.00	0.00	0.00	0.07	0.00	0.00	0.00
Advanced GNVQ	0.14	0.00	0.00	0.00	0.15	0.00	0.00	0.00

Note: Sample size is 335 for those not in receipt of an Opportunity Bursary and 1,067 for those in receipt of an Opportunity Bursary. The ethnicity controls correspond to the following responses: (1) = White (British, Irish or other); (2) = Bangladeshi; (3) = Indian; (4) = Pakistani; (5) = Chinese; (6) = Asian – Other; (7) = African; (8) = Caribbean; (9) = Black – other; (10) = Mixed – Caribbean; (11) = Mixed – African; (12) = Mixed – Asian; (13) = Mixed – Other; (14) = Other ethnicity; (15) – no response.

In line with West, A., *et al* (2003) and West, A., *et al* (2004), we find little difference on average between those in receipt of an Opportunity Bursary and those not in receipt of an Opportunity Bursary in terms of their educational achievement (as measured by attainment of GNVQ levels, and point scores at both GCSE and A Level) or living arrangements when the applied to university. We do find, however, that both mothers and fathers education qualifications and employment probabilities are, on average, lower among those in receipt of an Opportunity Bursary than those not in receipt of an Opportunity Bursary.

In order to control for any differences in background characteristics of those in recipient of an Opportunity Bursary and those not in receipt of an Opportunity Bursary we employ two methodologies: first we use traditional linear regression techniques (although we allow for full interactions between the impact of the policy and the background characteristics) and second we use propensity score matching.

This second methodology involves balancing the distribution of observable background characteristics between those in receipt of an Opportunity Bursary and those not in receipt of an Opportunity Bursary. Under the assumption that we take into account all characteristics which could affect the outcomes of interest and that might vary between these two groups, then any remaining difference in outcomes can be attributed to the policy.[4] We still allow for the possibility that there may be unobservable characteristics that affect the outcomes of interest – as long as these are distributed in a way that is independent of the group to which the individual belongs.[5]

We estimate the propensity score as the probability of being in receipt of an Opportunity Bursary using a probit model with whether or not the individual receives an Opportunity Bursary as the dependent variable and all of the observable

[4] For more details see, for example, Heckman, Ichimura and Todd (1997).
[5] It is not possible to test this assumption – if it is violated then the results could be biased.

background characteristics contained in Table 2.2 as regressors. (Results from this probit are given in Appendix Table A.1). Then, for each individual, the estimated coefficients are used to estimate the probability that he/she receives an Opportunity Bursary. This probability is used as a propensity score. We then compare the outcomes of individuals who received an Opportunity Bursary with a weighted set of individuals who did not but who have a similar estimated propensity score.[6]

The balancing of the sample through matching can be seen graphically in figures 2.1a and 2.1b. The distribution of the estimated propensity score separately for individuals who did and did not receive an Opportunity Bursary is shown in Figure 2.1a.[7] There is significant overlap between the two areas – had there not been then the background characteristics of those in receipt of an Opportunity Bursary would be different to those not in receipt of an Opportunity Bursary and, unless these characteristics were thought to be unrelated to the outcomes of interest, it would not be possible to make any valid comparisons between the two groups.

[6] We are able to match on just one single propensity score rather than separately on all characteristics using a theorem by Rosenbaum and Rubin (1983). Kernel based matching is used with a bandwidth of 0.005 – i.e. outcomes of individuals in the treatment areas are compared to individuals in the comparison areas whose propensity score is within 0.5 percentage points.

[7] The figures show the distributions of the propensity score when looking at whether or not the individual remains in Higher Education. As a result of missing values of different outcome variables the distributions are slightly different for other outcomes, but not significantly so.

Figure 2.1a Distribution of estimated propensity scores by whether or not an individual is in receipt of an Opportunity Bursary, whole sample.

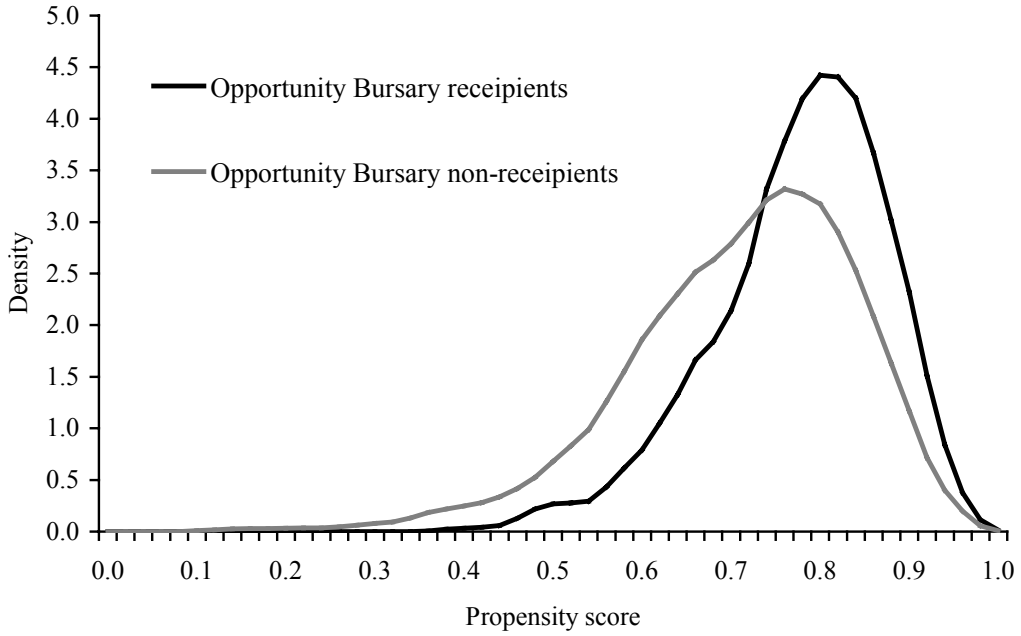
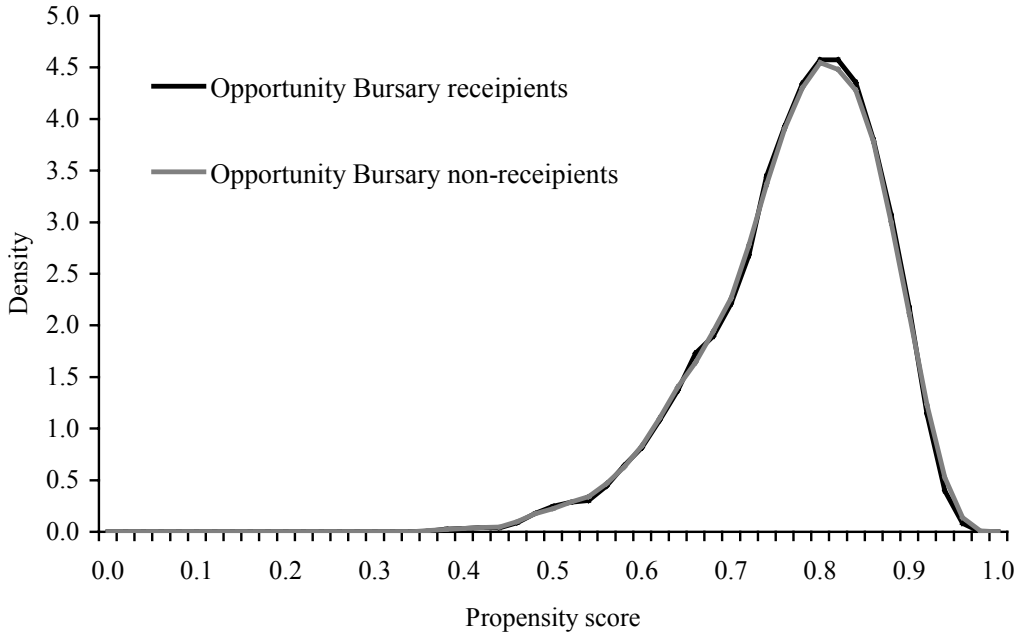


Figure 2.1b Distribution of estimated propensity scores by whether or not an individual is in receipt of an Opportunity Bursary, matched sample only.



The distribution of propensity scores once we have carried out the kernel based matching is shown in Figure 2.1b. Those who received an Opportunity Bursary but for whom no suitable match could be found are now excluded from the sample (which in the case of whether or not the individual was still in Higher Education at the time of the survey loses 36 out of 1,066 observations or just over 3% of individuals in receipt of an Opportunity Bursary). Those who did not receive an Opportunity Bursary are weighted so that the distribution of their background characteristics is brought into line with the distribution of background characteristics of those who did receive an Opportunity Bursary. Hence the two distributions are virtually identical, and under the assumption that we have controlled for all characteristics that vary between the two groups and affect the outcomes of interest, we can ascribe any differences in the outcomes between the two (suitably weighted) groups to the policy.

3. Results

The differences in outcomes between individuals in receipt of an Opportunity Bursary and those not in receipt of an Opportunity Bursary are shown in Table 3.1. The second column shows the mean of the outcome among Opportunity Bursary receipts and the third column shows the mean among non-receipients (and hence these figures are the same as those contained in Table 2.1). The fourth column shows the raw difference in outcomes. The fifth column shows the estimated impact of being in receipt of an Opportunity Bursary from an ordinary least squares regression that controls for all of the background characteristics in Table 2.2 and also allows for interactions between the impact of the policy and each of the controls for background characteristics. The last column shows the estimated impact of Opportunity Bursaries using propensity score matching, again taking account of all of the characteristics presented in Table 2.2.

3.1. Current economic activity

As discussed in section 2 the vast majority of respondents are still in Higher Education. However there is some evidence that retention has been higher among those in receipt of an Opportunity Bursary as they are found to be 2.2 percentage points more likely to still be in Higher Education than those who were eligible for but not in receipt of an Opportunity Bursary. This difference is statistically significant as the standard error is just 0.1 percentage points. Once background characteristics are controlled for using ordinary least squares we still find a positive and statistically significant impact of the policy of 2.6 percentage points. Using propensity score matching reduces the size of the difference to just 1.6 percentage points – and this difference is no longer statistically significant at conventional levels.

We find no statistically significant evidence of any impact of Opportunity Bursaries on part-time work decisions. While those in receipt of an Opportunity Bursary are slightly less likely to be in part-time work, and, on average, work slightly fewer hours, these differences are not statistically significant at conventional levels. With whether or not an individual was in part-time work this is perhaps unsurprising, given that the level of the Opportunity Bursary was £1,000 in the first year (and £500 in subsequent years). However it is perhaps more surprising that there is not a significant reduction in the number of hours that are worked part-time.

Table 3.1. Estimated impact of Opportunity Bursaries on a range of outcomes

Outcome	Levels		Differences		
	OB receipients	Non OB receipients	Raw difference	OLS (Fully interacted)	Propensity Score Matching
Still in Higher Education (%)	98.0 (0.4)	95.8 (1.1)	**2.2 (0.1)**	**2.6 (1.1)**	1.6 (1.5)
Part-time work (%)	50.1 (1.6)	51.5 (2.9)	–1.4 (3.3)	–3.6 (3.6)	–1.6 (4.1)
Part-time hours	6.20 (0.24)	6.36 (0.45)	–0.16 (0.50)	–0.20 (0.53)	–0.13 (0.67)
Bank overdraft (£)	497.95 (21.44)	562.53 (40.95)	–64.57 (44.66)	–84.37 (48.59)	–75.52 (65.36)
Credit card overdraft (£)	264.55 (15.91)	338.85 (39.57)	**–74.30 (36.05)**	**–103.77 (39.06)**	–79.88 (63.31)
Student loan (£)	4,079.34 (76.52)	4,213.09 (126.39)	–133.76 (155.75)	40.22 (161.76)	–42.78 (174.77)
Total liquid overdraft	790.40 (33.89)	934.76 (78.48)	–144.36 (74.84)	**–205.97 (80.89)**	–160.89 (127.63)
Total borrowing	4,959.58 (91.82)	5,197.79 (168.54)	–238.20 (191.47)	–135.54 (199.08)	–145.25 (256.87)
Financial support from parents (%)	17.5 (1.2)	26.3 (2.4)	**–8.7 (2.5)**	**–5.8 (2.7)**	**–6.4 (3.2)**
Financial support from parents (£/year)	134.32 (12.18)	276.23 (37.50)	**–141.91 (30.23)**	**–77.29 (33.01)**	**–103.76 (42.5)**

Note: Figures in bold are significant at the 5% level or less, standard errors are in parenthesis. Standard errors for the matched results are estimated by bootstrapped from 500 replications.

3.2. Financial situation

Also presented in Table 3.1 are the differences in levels of bank overdrafts, credit card debts and student loans between those in receipt of an Opportunity Bursary and those not in receipt of an Opportunity Bursary. For bank overdrafts and student loans we find lower levels of debt among those in receipt of an Opportunity Bursary although the differences are not statistically significant at conventional levels. For credit card debts we find that on average those in receipt of an Opportunity Bursary have £74.30 lower credit card debt than those not in receipt of an Opportunity Bursary, and that this difference is statistically significant at conventional levels. Once

background characteristics are controlled for using ordinary least squares we find that the policy leads to a statistically significant reduction in credit card debt of £103.77. Again using propensity score matching reduces the size of the difference to £79.88 – and this difference is no longer statistically significant at conventional levels.

Taking credit card and bank overdraft debt together (total liquid debt in Table 3.1) using ordinary least squares suggests that receipt of an Opportunity Bursary leads to a statistically significant reduction in debt of £205.97. Using propensity score matching this different falls to £160.89 and the difference is no longer statistically significant at conventional levels. While total borrowing, including student loans, is also lower among receipients this difference is not found to be statistically significant at conventional levels.

The final two rows of Table 3.1 examine the extent to which parental financial support is affected by receipt of an Opportunity Bursary. Using ordinary least squares suggests that receipt of an Opportunity Bursary leads to a statistically significant reduction in the likelihood of receiving parental financial support of 5.8 percentage points. Using propensity score matching this difference is slightly larger at 6.4 percentage points and is also statistically significant. Looking at the amounts received, using ordinary least squares suggests that receipt of an Opportunity Bursary leads to a statistically significant reduction in parental financial support received of £77.29. Using propensity score matching this difference is slightly larger at £103.76 and is also statistically significant.[8]

[8] As we are not controlling for parental income it is possible that this indicates that non-receipients of an Opportunity Bursary were, on average, from relatively higher income families. However all of these individuals were deemed to be eligible for an Opportunity Bursary, and we are controlling for both fathers' and mothers' employment status and educational qualifications. In order to check the robustness of our results on higher education retention and levels of debt we also run a linear regression model controlling for whether parents gave them financial support, and if so how much. This gave a positive impact on retention of 2.7 percentage points and an average reduction in liquid debt of £202. Both results were still statistically significant. This could be thought of a way of controlling for parental income under the assumption that parental financial support is not affected by the policy.

Taken together, and focussing on the propensity score matching results, the findings suggest that out of the £1,500 in Opportunity Bursaries that receipients would have received by the time they completed the survey that: £160 had been used to reduce liquid debts (though this was not statistically significant at conventional levels) , split approximately equally between lower bank overdrafts and lower credit card debt, and £100 less had been received from their parents. Given the lack of statistically significant evidence of any impact on the size of student loans this suggests that the remaining £1,240 (i.e. £1,500 minus £160 minus £100) had been spent by the recipient over the course of the previous year.

Evidence that a sizeable proportion of the grant has been spent is consistent with individuals facing credit constraints. Opportunity Bursary recipients who are studying for a three-year course (i.e. not a 2 year foundation degree) will be entitled to a further payment in the following year. This coupled with the fact that they might have more potential to borrow more (as indicated by the fact that they currently have lower debts than those eligible for but not receiving an Opportunity Bursary) and may also be more able to draw on financial support from their parents[9] in the future if needed, suggests that receipt of an Opportunity Bursary may aid completion of Higher Education.

4. Cost benefit analysis

With the information on Opportunity Bursaries that is available to date it is not possible to estimate the additional proportion of individuals eligible for an Opportunity Bursary payment who attaining a Higher Education qualification as a direct result of receiving that payment. However there is evidence of an improvement in retention in the first year of study, and as discussed above, recipients of Opportunity

[9] This will only hold if this is a causal impact of the policy, rather than young people whose parents who are providing less financial support being more likely to be in receipt of an Opportunity Bursary. See footnote 8 for more details.

Bursaries appear to be better placed to complete their studies then individuals with similar background characteristics who are not in receipt of the policy. In this section we discuss how big the increase in the proportion of young adults completing Higher Education as a result of the policy would need to be for the policy to pass a relatively simplistic cost benefit analysis.

In order to estimate the rate of return of Opportunity Bursaries, we compare the total costs and benefits from the start of the policy until retirement from the labour market, both discounted to this first year of the policy (using a range of discount rates: 2½%, 3½%, 5% and 7½%). The costs correspond to Opportunity Bursary grants i.e. £1,000 in the first year, £500 in the second year and £500 in the third year. Administrational costs are ignored. In addition we add to the costs the loss of wages at ages 19, 20 and 21 that would have been earned had the individual not gone on to university.

The benefits are the additional likelihood of an individual completing Higher Education multiplied by the wage returns to a marginal learner completing a degree course. A recent paper by Dearden, L., *et al* (2004) has estimated that the wage returns for the marginal individual completing Higher Education compared to having a level 2 qualification or above are 15.0% for men and 22.6% for women (Table 2 of their paper). Weighting by their sample sizes for men and women gives an overall estimated return of 18.6%. To put a financial value of these benefits we apply them to a profile of *gross* wages estimated from the 2002–03 Family Resources Survey.[10] We do not include any wider benefits to society of having a more highly educated workforce

[10] Our analysis assumes that wages increase by 2% per year in real terms. Obviously, it is likely that wage profiles in the future will differ from those that currently exist. This is likely to be particularly true of women – if the cohort receiving Opportunity Bursaries have higher employment rates than women today, our analysis will underestimate the return for women in our sample. Working in the opposite direction is that any depression of future graduate wages (resulting from either as a result of an increase female graduate labour market participation or as a result of an increase in the number of graduates) would reduce the cost-effectiveness of the policy.

(beyond the higher taxes paid out of the gross wages); if these were estimated and included the rate of return of the policy for a given cost would be higher (for example any increased productivity of firms that is not reflected in higher gross wages). Conversely we do not allow for any negative impacts such as lower graduate wages as a result of increased number of individuals with degrees. The required impact of the policy on Higher Education completion among those eligible for the policy for different required rates of return are set out in Table 4.1.[11]

Table 4.1. Rate of return required for the Opportunity Bursary policy to pass a simple cost / benefit test under different scenarios for the overall impact of the policy.

Real rate of return	Required Increase in Higher Education completion
2.5	2.7%
3.5	3.5%
5.0	5.1%
7.5	9.6%

This shows that if the required rate of return were at least 5% a year (in real terms) then the policy would need to lead to an increase completion rates by at least 5.1% among those eligible for the policy in order to justify its introduction on this basis alone. The alternative way to read Table 4.1 is that if it was believed that receipt of an Opportunity Bursary led to a 2.7% increase in the proportion of those eligible for an Opportunity Bursary completing the course then a desired rate of return of 2½% a year (or lower) would be required to justify the policy on the basis of this simple cost

[11] The rate of return of the policy (R) equalises the discounted total cost to the discounted total benefit. Denoting the cost per recipient in year t as Ct, the average increase in Higher Education completion as λ, the return in terms of wages from completing Higher Education as r and expected wages in a given year by w_t, R solves:

$$\sum_{t=0}^{2} \frac{C_t}{(1+R)^t} = \sum_{3}^{45} \frac{\lambda r w_t}{(1+R)^t}$$

For more details see Krueger and Whitmore (1999).

benefit analysis alone. (Or alternatively a 2½% return would imply that the policy had a zero net present value, while a lower discount rate would imply that it had a positive net present value). This is close to the retention effect found in section 3.1.

It should be noted that this cost benefit analysis treats paying Opportunity Bursaries to young adults who would have completed Higher Education in the absence of the payment as purely deadweight. While it is true that in these cases the Opportunity Bursaries are not achieving the objective of increasing the number of individuals obtaining a Higher Education qualification the grant payments do not represent a use of scarce economic resources – they simply represent a straight redistribution of income to this group of students (and, according to the evidence from section 3.2, their parents).

5. Conclusions

This paper has looked at the impact of Opportunity Bursaries on young adults who received payments in 2001–02 and 2002–03. Both linear regression and propensity score matching techniques were used to compare to outcomes of these individuals with those who were eligible for the policy but not able to receive it due to the centrally imposed quota.

There is some evidence that the policy has lead to increased retention in the first year of university study – using a linear regression technique we found a statistically significant increase of 2.6 percentage points while using propensity score matching we found an increase of 1.6 percentage points, although this latter result was not statistically significant at conventional levels. We found no statistically significant evidence that recipients of Opportunity Bursaries are less likely to work part-time or more likely to work fewer hours than those not in receipt of an Opportunity Bursary.

There is, however, some evidence that receipt of an Opportunity Bursary led to lower levels of 'liquid debt' (defined as bank overdrafts or credit card debt). There is also evidence that receipt of Opportunity Bursaries led to lower parental financial support. Despite this the majority of the £1,500 that will have been paid to recipients by the time of our survey has been spent. This is consistent with students facing credit constraints. The fact that they will receive a further £500 in the following year, and that their lower levels of debt may enable them to borrow more if needed, suggests that those in receipt of an Opportunity Bursary might be better placed to complete their course.

While it has not been possible to estimate the impact of Opportunity Bursaries on Higher Education completion we have presented simple estimates of the required real rates of return under different scenarios for the eventual impact of the policy. These suggests that to justify Opportunity Bursaries on the sole basis of the increased (gross) wages of those who complete Higher Education as a direct result of the policy would require the policy to increase Higher Education completion by at least 2.7% among eligible individuals if the required rate of return was 2½% a year. The required minimum impact of the policy is estimated to rise to 5.1% if the required real rate of return was 5% a year.

References

Dearden, L., McGranahan, L. and Sianesi, B. (2004), 'Returns to Education for the 'Marginal Learner': Evidence from the BCS70', Centre for the Economics of Education Working Paper (forthcoming).

Heckman, J., Ichimura, H. and Todd, P., (1997) 'Matching as an Econometric Evaluation Estimator', Review of Economic Studies, 65, 261-294.

Krueger, A. and Whitmore, D., (1999) 'The Effect of Attending a Small Class in the Early Grades on College-Test Taking and Middle School Test Results: Evidence from

Project STAR', Princeton University, Industrial Relations Section Working Paper No. 427. http://ssrn.com/abstract=223492

Pennell, H., West, A. and Hind, A. (2004), 'Evaluation of Aimhigher: Survey of Higher Education Providers 2003', Research Report 537, London: DfES.

Rosenbaum P. and Rubin D., (1983) 'The Central Role of the Propensity Score in Observational Studies for Causal Effects', Biometrika, 70, 41–55.

West, A., Hind, A. and Xavier, R. with Jupp, J. (2003), 'Survey of Opportunity Bursary Applicants 2001/02: Preliminary Findings', Research Report 497, London: DfES.

West, A., Hind, A. and Xavier, R. (2003), 'Evaluation of Excellence Challenge: Survey of Higher Education Providers, 2002', Research Report 449, London: DfES.

West, A., Hind, A. and Pennell H. (2004), 'Survey of Opportunity Bursary Applicants 2002/03: Preliminary Findings', forthcoming Research Report, London: DfES.

Table A.1 Estimation of propensity score (probit)

	Co–efficient	Standard error	Marginal effect
2nd year group	–0.098	0.085	–0.029
Year of birth	0.091	0.038	0.027
Male	0.126	0.086	0.037
Father lives at home	–0.176	0.112	–0.052
Mother lives at home	–0.076	0.153	–0.022
Younger sibling at home	0.058	0.082	0.018
Older sibling at home	0.080	0.093	0.024
Father FT employed	0.148	0.135	0.044
Both full-time employed	–0.348	0.088	–0.105
Lived at home before applying to university	0.073	0.084	0.022
Mothers education:			
Missing	0.646	0.292	0.165
No qualifications	0.820	0.287	0.212
O Levels	0.695	0.280	0.192
A Level	0.491	0.286	0.127
Fathers education:			
Missing	0.252	0.248	0.074
No qualifications	0.048	0.252	0.014
O Levels	0.058	0.247	0.017
A Level	–0.060	0.258	–0.018
Ethnic group			
2	–0.237	0.230	–0.077
3	0.169	0.164	0.048
4	–0.089	0.173	–0.028
5	–0.113	0.255	–0.035
6	–0.237	0.422	–0.077
7	0.069	0.230	0.020
8	0.372	0.330	0.096
9	–1.263	0.815	–0.469
10	–0.323	0.303	–0.108
11	–0.593	0.596	–0.211
12	0.371	0.441	0.096

13	–0.282	0.523	–0.093
14	–0.538	0.350	–0.189
15	–0.936	0.543	–0.347
Education			
GCSE points score	0.005	0.011	0.002
GCSE points score ^ 2	0.000	0.000	–0.000
A Level points score	0.020	0.012	0.006
A Level points score ^ 2	–0.001	0.000	–0.000
Foundation GNVQ	–0.238	0.239	–0.077
Intermediate GNVQ	0.094	0.164	0.027
Advanced GNVQ	0.097	0.134	0.029
Constant	–7.411	3.028	n/a

Note: Omitted groups: 1st cohort, female, mothers in full-time employment; mothers education beyond A level; fathers education beyond A level; white ethnicity.
See Table 2.2 for descriptive information on the background characteristics. Number of observations = 1,402.

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