

**Department for Work and Pensions**

**Research Report No 491**

# **Estimating ethnic parity in Jobcentre Plus programmes: A quantitative analysis using the Work and Pensions Longitudinal Study (WPLS)**

**Claire Crawford, Lorraine Dearden, Alice Mesnard, Jonathan Shaw, Barbara Sianesi and Peter Urwin**

A report of research carried out by the Institute for Fiscal Studies on behalf of the Department for Work and Pensions

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# The Authors

**Claire Crawford** is a Senior Research Economist in the Employment, Education and Evaluation Section of Institute for Fiscal Studies (IFS).

**Lorraine Dearden** is Director of the Centre for Early Years and Education Research at IFS.

**Alice Mesnard** is a Senior Research Economist in the Centre for the Evaluation of Development Policies.

**Jonathan Shaw** is a Senior Research Economist in the Employment, Education and Evaluation Section of IFS.

**Barbara Sianesi** is a Senior Research Economist in the Employment, Education and Evaluation Section of IFS.

**Peter Urwin** is Director of the Centre for Employment Research and School Director of Research at Westminster Business School, University of Westminster.

## Dedication

This report is dedicated to the life and work of the late Steve Lissenburgh, who played a large role in formulating the ideas for this project and who remains sadly missed.

# Abbreviations

|               |   |
|---------------|---|
| <b>CPAG</b>   | Child Poverty Action Group                  |
| <b>DfEE</b>   | Department for Education and Employment     |
| <b>DfES</b>   | Department for Education and Skills         |
| <b>DiD</b>    | Difference-in-differences                   |
| <b>DWP</b>    | Department for Work and Pensions            |
| <b>ESOL</b>   | English for Speakers of Other Languages     |
| <b>ETF</b>    | Environmental Task Force                    |
| <b>Ezones</b> | Employment Zones                            |
| <b>FILM</b>   | Fully interacted linear matching            |
| <b>FTET</b>   | Full-Time Education and Training            |
| <b>HB</b>     | Housing Benefit                             |
| <b>HMRC</b>   | Her Majesty's Revenue & Customs             |
| <b>IAP</b>    | Intensive Activity Period                   |
| <b>IB</b>     | Incapacity Benefit                          |
| <b>ICT</b>    | Information and Communications Technologies |
| <b>IFS</b>    | Institute for Fiscal Studies                |
| <b>IS</b>     | Income Support                              |
| <b>JSA</b>    | Jobseeker's Allowance                       |
| <b>LMS</b>    | Labour Market System                        |
| <b>NBD</b>    | National Benefits Database                  |

|              |                                       |
|--------------|---------------------------------------|
| <b>ND25+</b> | New Deal for individuals aged 25 plus |
| <b>NDDP</b>  | New Deal for Disabled People          |
| <b>NDfM</b>  | New Deal for Musicians                |
| <b>NDLP</b>  | New Deal for Lone Parents             |
| <b>NDYP</b>  | New Deal for Young People             |
| <b>NI</b>    | National Insurance                    |
| <b>NVQ</b>   | National Vocational Qualification     |
| <b>OA</b>    | Output Area                           |
| <b>OLS</b>   | Ordinary Least Squares                |
| <b>PC</b>    | Pension Credit                        |
| <b>PSI</b>   | Policy Studies Institute              |
| <b>SDA</b>   | Severe Disablement Allowance          |
| <b>SOA</b>   | Super Output Area                     |
| <b>VS</b>    | Voluntary Sector                      |
| <b>WBLA</b>  | Work-Based Learning for Adults        |
| <b>WFI</b>   | Work Focused Interview                |
| <b>WPLS</b>  | Work and Pensions Longitudinal Study  |

# Summary

## Introduction

A substantial employment gap between Ethnic Minorities and the overall working-age population in Great Britain has been observable for several decades (Cabinet Office, 2003). There have been a number of studies over the years that have attempted to uncover how much of this gap is due to differences in observable characteristics and how much remains unexplained. This unexplained 'residual' difference between ethnic groups is usually taken as evidence of discrimination.

Clearly, access to Jobcentre Plus services may be one way of overcoming any disadvantage that Ethnic Minorities may experience in the labour market and the extent to which Jobcentre Plus delivers ethnic parity in labour market outcomes from its services is of clear policy interest.

This exhaustive study estimates the extent of ethnic parity in employment and benefit outcomes for 2,658 different Ethnic Minority subgroups accessing a range of Jobcentre Plus services and programmes in 2003:

- Incapacity Benefit (IB);
- Income Support (IS);
- Jobseeker's Allowance (JSA);
- New Deal for Lone Parents (NDLP);
- New Deal for individuals aged 25 plus (ND25+);
- New Deal for Young People (NDYP);
- New Deal for Disabled People (NDDP);
- New Deal for Musicians (NDfM);
- Basic Skills;
- Work-Based Learning for Adults (WBLA);
- Employment Zones (Ezones);
- Ethnic Minority Outreach.

Customers in receipt of IB, IS or JSA, plus those who participate in NDLP, ND25+ or NDYP, are analysed separately in Chapters 6 to 11 respectively. These customers are joined by those who participate in NDDP, NDfM, Basic Skills, WBLA, Ezones or Ethnic Minority Outreach in the analysis of Jobcentre Plus overall in Chapter 5. The subgroups are defined by Ethnic Minority group, programme/benefit accessed, gender and region.

All the analysis uses data from the Work and Pensions Longitudinal Study (WPLS) – a relational database owned by the Department for Work and Pensions (DWP), which contains longitudinal (spell-based) information on individuals' work, benefit and pension histories. Data within the WPLS come from administrative data on benefit claims (DWP); administrative data on employment, earnings, savings, tax credits and pensions (Her Majesty's Revenue & Customs (HMRC)); and operational data on customers' activities (e.g. participation in back-to-work programmes) (Jobcentre Plus). More details about the WPLS and the sample selection procedures for the analysis are given in Chapter 3.

This report is a summary of a much more detailed and extensive report available online at [www.ifs.org.uk](http://www.ifs.org.uk)

## Methodology

Ethnic parity in outcomes from Jobcentre Plus services occurs if there is no difference, on average, between the outcome for an Ethnic Minority participant and the outcome for an 'otherwise-identical' White British participant. Where parity does not exist, there will be either an ethnic penalty – if Ethnic Minority customers experience worse outcomes than otherwise-identical White customers – or an ethnic premium – if Ethnic Minority customers experience more favourable outcomes than otherwise-identical White customers.<sup>1</sup> The report tries to get as close as possible to this ideal or 'true' measure of ethnic parity.

The DWP previously monitored ethnic parity in employment programmes – NDYP, ND25+ and NDLP – through the use of a monthly measure based on the difference between the proportions of Ethnic Minority and White programme leavers who find jobs.

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<sup>1</sup> For the remainder of the report, claiming benefits is considered to be a negative outcome while employment and sustained employment are positive ones.



There are a number of problems with this approach (outlined more fully in Chapter 2):

- It simply compares outcomes for Whites and Ethnic Minorities, without making any attempt to compare the Ethnic Minority group of interest with **otherwise-identical** White individuals. This will not provide a true measure of ethnic parity if there are systematic differences between the two groups that also affect outcomes (the so-called selection bias problem). Simple perusal of the WPLS data shows that this is potentially a big problem. For example, Ethnic Minority customers tend to have spent less time in employment and more time on benefits in the three years prior to accessing Jobcentre Plus services than White customers.
- It considers the difference in the proportion of recorded job starts between certain dates for White and Ethnic Minority participants who are observed to **leave** the New Deal. Thus, individuals who do not leave are completely ignored and an important part of the story may be lost. It also does not distinguish between stocks and flows.
- It is based on spells rather than individuals; hence, repeated exits to jobs will be counted as multiple successes.
- It only considers a move into a job as an outcome and ignores possible future spells, including a return to benefits.

In this report, a new approach is used which specifically addresses the shortcomings of previous methodologies:

- It carefully controls for observed (and in some cases unobserved) differences between Ethnic Minority and White customers using a range of appropriate methods.
- It focuses on benefit and programme **inflows** in a particular year (2003) and therefore specifically accounts for both leavers and non-leavers since, by construction, the outcomes of everybody who has entered a programme or started claiming a benefit in that year is counted in the analysis.
- It chooses individuals as the unit of analysis and not spells, so does not reward repeated exits.
- It obtains a fuller picture of ethnic parity by considering employment, sustainable employment<sup>2</sup> and benefit outcomes.

Analysis was conducted for Jobcentre Plus overall, and then for six separate benefits and programmes: IB, IS, JSA, NDLP, ND25+ and NDYP. In each case, analysis was

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<sup>2</sup> An individual is counted as being in sustained employment if they are recorded to have been continuously employed for at least three months (90 days). This outcome is not discussed in the summary report because in most cases the results are very similar to those for employment. Full details can be found in the main report at [www.ifs.org.uk](http://www.ifs.org.uk)

conducted for a large number of subgroups (defined by ethnicity, sex and region), sample sizes permitting.

Sample definitions differed slightly for different benefits and programmes (see Section 3.2 for details), but, essentially, they included all individuals who:

- started a relevant spell during 2003;
- were aged appropriately on the start date (e.g. 18–24 for NDYP);
- did not have a basic skills language need.<sup>3</sup>

The preferred estimation method adopted in this study involves using propensity score matching techniques ('matching') to estimate ethnic parity. The key question that needs answering for each Ethnic Minority group is: 'How different would their labour market outcomes have been if they had been White?'. Regression-based techniques were also used to measure ethnic parity with comparisons made between the different methods. Details of the methods used in this project are given in Section 2.5.

Both matching and regression methods, however, are based on the assumption that all outcome-relevant differences between White and Ethnic Minority Jobcentre Plus customers can be observed. The success and reliability of ethnic parity estimates based on either of these approaches thus depends crucially on the amount and quality of the characteristics observed. Chapter 3 provides the full details of the characteristics that are controlled for in the analysis of the report. In instances where the WPLS did not contain important variables, such as individual educational achievement, local neighbourhood Census data was used as a proxy. As a final check on the robustness of these results, difference-in-differences (DiD) methods are used, which, under certain assumptions, also control for the impact of unobserved characteristics.<sup>4</sup>

An advantage of matching is that it provides a series of diagnostic tests that can be used to analyse how well the Ethnic Minority and White samples have been matched.

This is very important because when Ethnic Minority and White samples cannot be reweighted satisfactorily, it is not clear that any of the methods will provide unbiased estimates of ethnic parity. What is clear, however, is that using raw differences in outcomes between Ethnic Minorities and Whites to estimate ethnic parity gives a misleading picture in almost every case.

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<sup>3</sup> Individuals with a basic skills language need were excluded because they may have considerably different labour market prospects from those who speak English fluently. Language needs seem likely to be concentrated among Ethnic Minorities, making it near impossible to find comparable Whites.

<sup>4</sup> See Section 4.3 for details of the assumptions made in DiD analysis.

## Results

The major finding from this comprehensive study is that there was a fundamental lack of comparability between the White and Ethnic Minority groups. The characteristics of different Ethnic Minority groups and White customers accessing the range of Jobcentre Plus programmes and services are different. Therefore, estimating quantitatively the extent of ethnic parity in Jobcentre Plus programmes and services was simply not possible for a large proportion of the subgroups considered in the report.

For each benefit or programme, the total possible number of subgroups for which analysis could have been run is 3,744 (16 ethnic groups × 3 gender groups (males, females and both) × 78 regions). Most of these, however, contained far too few Ethnic Minority individuals for results to be calculated (it was required that at least 400 were required). The proportion of subgroups that contained at least 400 Ethnic Minorities ranged from 2.4 per cent for IB to 30.6 per cent for Jobcentre Plus overall. See Table 4.1 for further details.

Among those subgroups that were large enough, the proportion that produced reliable results (where reweighting of White individuals to look like the Ethnic Minority group appeared to have been successful) varied widely, from a low of 20.1 per cent for NDYP benefit results to a high of 89.8 per cent for IB employment results.

IB and IS were the only benefits or programmes for which reliable **overall** results could be calculated; in all other cases, the overall White group could not be reweighted to look sufficiently like the overall Ethnic Minority group. However, since these were the results that DWP originally expressed most interest in seeing, they are discussed in this report even when unreliable. For all other subgroups, however, only reliable results are reported.

### 1 Jobcentre Plus overall (Chapter 5)

For Jobcentre Plus customers who joined a relevant programme (or started claiming a relevant benefit) in 2003:

- In the majority of cases, reliable estimates of ethnic parity could not be found: it was simply not possible to re-weight the White sample in such a way as to make it comparable with the Ethnic Minority group of interest. This included the results for Great Britain as a whole. The preferred matching estimates suggested a significant ethnic **premium** in employment outcomes and a significant ethnic **penalty** in benefit outcomes but the diagnostic tests suggest that these results cannot be relied upon: the two samples are just not similar enough.
- Amongst the subgroups that produced reliable estimates of ethnic parity, there did not seem to be much evidence to reject a finding of at least ethnic **parity** in employment outcomes and there were some groups where a significant **premium** was observed.

- In terms of benefit receipt the most predominant finding amongst Ethnic Minority subgroups for which reliable estimates were available was of a significant ethnic **penalty**; this was particularly prevalent amongst individuals of Black ethnic origin. This means that Ethnic Minority Jobcentre Plus customers are more likely than Whites to be claiming benefits in at least one of the 12 months following access to Jobcentre Plus services.

It is not possible to give any headline conclusion on whether Jobcentre Plus services, overall, result in similar outcomes for Ethnic Minorities and Whites.

## 2 Incapacity Benefit (Chapter 6)

For Jobcentre Plus customers who, in 2003, had a Work Focused Interview (WFI) as part of an IB claim:

- For Ethnic Minorities in Great Britain there is insufficient evidence to reject a finding of ethnic **parity** in employment outcomes, whilst there is a significant ethnic penalty in terms of benefit receipt. Once the sample is split by gender, there is evidence of a significant **premium** in employment outcomes for men, whilst there is insufficient evidence to reject a finding of ethnic **parity** in benefit receipt for women.
- For most regional subgroups, one cannot reject a finding of ethnic parity in both employment and benefit outcomes. This should not be taken as evidence against the significant results for the group at a more aggregated level, however, as many of the subgroups comprise a relatively small number of individuals and show evidence of insignificant differences rather than of genuine ethnic parity.

These results suggest that where reliable estimates are found, there are generally no significant differences in the outcomes achieved by White and Ethnic Minority IB customers who have a WFI.

## 3 Income Support (Chapter 7)

For Jobcentre Plus customers who, in 2003, had a WFI as part of an IS claim:

- Ethnic minorities in Great Britain are significantly more likely than otherwise-identical White IS claimants to be in work in at least one of the 12 months following the WFI date. In terms of benefit receipt, for women (who make up about 60 per cent of the sample), there is a significant ethnic **penalty** in the months immediately following the WFI date, after which a significant ethnic **premium** emerges (month five onwards). For men, a finding of ethnic parity in benefit receipt cannot be rejected.
- As was the case for IB, for most regional subgroups, Ethnic Minority IS claimants are equally likely to be in work or claiming benefits as otherwise-identical White IS claimants in the year following WFI date.

- The few subgroups in which the overall finding of a significant **penalty** in benefit receipt was confirmed tended to be of Asian ethnic origin. However, Pakistani and Bangladeshi females on IS were **less** likely to be claiming benefits than the White comparison group in the 12 months following the WFI date (although this was only statistically significant in one month). This group is of key interest given their very low employment rate.

The findings for IS customers suggest largely positive results with Ethnic Minorities being more likely to be in work in the 12 months following their WFI date than comparable White customers. This group may be worthy of further qualitative investigation to ascertain evidence of good practice.

#### **4 Jobseeker's Allowance** (Chapter 8)

For Jobcentre Plus customers who started a JSA claim in 2003:

- In many cases (including for all Ethnic Minorities living in Great Britain), it was not possible to re-weight the White sample in such a way as to make it sufficiently comparable with the Ethnic Minority sample of interest.
- Amongst the subgroups for which reliable estimates are available, the weight of evidence suggests that Ethnic Minorities and otherwise-identical Whites are equally likely to be in employment in the year following the start of their JSA claim.
- In terms of benefit receipt there is a finding of a significant ethnic **penalty** amongst the majority of subgroups for which reliable results are available. This is also true for most subgroups amongst all Ethnic Minority Jobcentre Plus customers (for which reliable results are available), perhaps suggesting that the overall results are being driven by those for JSA claimants especially as JSA claimants make up 78 per cent of the Jobcentre Plus overall sample.

It is not possible to give any headline conclusion on whether services delivered to JSA customers result in similar outcomes for Ethnic Minorities and Whites because the characteristics of the two groups are so different. This is important because it suggests that services that are tailored to address the needs of individual customers may be more appropriate for this group.

#### **5 New Deal for Lone Parents** (Chapter 9)

For Jobcentre Plus customers who started NDLP in 2003:

- For the overall estimate of ethnic parity amongst all Ethnic Minorities in Great Britain, the diagnostic tests indicate that a comparable White sample could not be created.

- A significant ethnic penalty was found for many of the subgroups under consideration – particularly individuals of Asian ethnic origin.<sup>5</sup> This means that Ethnic Minorities are significantly less (more) likely than comparable White customers to be in employment (on benefits) in at least one of the 12 months following programme start date.

The finding of a significant penalty in employment outcomes runs contrary to the findings for any other programmes/benefits discussed in this report and may perhaps warrant special attention from DWP. Ethnic minorities (particularly those living in the 272 disadvantaged group wards and Asian customers) do not appear to benefit from NDLP in the same way that White customers do.

## **6 New Deal for individuals aged 25 plus** (Chapter 10)

For Jobcentre Plus customers who started ND25+ in 2003:

- Again, the diagnostic tests generated by the matching process indicate that the results for all Ethnic Minorities in Great Britain cannot be relied upon. These overall results appear to be driven by the outcomes for men (who make up around 83 per cent of the sample). The analysis cannot reject the finding that Ethnic Minority females on ND25+ are as likely as Whites to be working or still on benefit in the 12 months after joining the programme.
- While significant and reliable **premiums** are found amongst a number of subgroups (particularly in employment outcomes and for individuals of Mixed, Chinese or other ethnic origin), the majority of results cannot reject that Ethnic Minority customers are at least as likely to be in employment or off benefits as Whites throughout the year following programme entry. This is particularly true for Asian participants.

## **7 New Deal for Young People** (Chapter 11)

For Jobcentre Plus customers who started NDYP in 2003:

- As with other programmes under analysis in this report, the diagnostic tests for the overall findings (for all Ethnic Minorities in Great Britain) are unreliable: the Ethnic Minority and White samples remain fundamentally incomparable in a number of key ways.
- The predominant finding amongst Black ethnic subgroups is of being unable to reject the hypothesis that there is no difference in employment outcomes when compared to an equivalent White group. However, for a number of subgroups there is an ethnic penalty in benefit receipt indicating that some Black participants are more likely to be on benefit in the 12 months after joining the programme than similar White participants.

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<sup>5</sup> Where significant penalties are not observed, a finding of ethnic parity could generally not be rejected.

- Much of the evidence on penalties is being driven by the outcomes of Black Caribbean men (particularly men), who experience penalties for both employment and benefit outcomes. This means that Black Caribbean men are less likely to be in employment and more likely to be on benefits compared with White men in the 12 months after joining NDYP. Of particular note is that Black Caribbean men in London are more likely to be on benefit. These young men do not seem to be benefiting from NDYP in the same way as their White counterparts do.

While no headline conclusions can be drawn about Ethnic Minorities on NDYP, the findings for Black Caribbean men are significant given the high unemployment rates experienced by young Black men. This is worthy of further qualitative study on why NDYP appears to be failing this group.

## Summary and conclusion

This report has provided a comprehensive study of ethnic parity in labour market outcomes amongst a number of Jobcentre Plus programmes and benefits. The analysis of different methodological approaches indicates that one has to be extremely careful when estimating ethnic parity, particularly if the Ethnic Minority and corresponding White customer groups differ in terms of characteristics that also affect labour market outcomes. In many cases, simple regression techniques will give misleading answers, meaning that the results of previous studies that have relied solely on these techniques (see Chapter 1) should be treated with some caution.

Whilst the fundamental incomparability of the Ethnic Minority and White customer groups has meant that reliable results could be obtained for a frustratingly small number of groups, there are, nevertheless, some key messages that can be drawn from the analysis:

- The characteristics of different Ethnic Minority groups and White customers accessing the range of Jobcentre Plus programmes and services are different. These differences need to be taken into account **in an appropriate way** in order to obtain reliable estimates of ethnic parity – otherwise, policy conclusions and decisions will be based on potentially misleading results.
- If a White comparison group cannot be found, it is much better to acknowledge this fact rather than to produce an estimate that might be wrong. The report has clearly shown that in most cases where a good comparison group could not be found, different estimation methods gave very different results. Clearly, those Ethnic Minority groups for which no comparison could be found need further investigation to ensure they are getting appropriate Jobcentre Plus provision, but **empirical** methods cannot be relied on to provide a **reliable** estimate of the extent of ethnic parity. It is simply not possible to know how the Ethnic Minority group would have been treated if they were White, because none of the empirical methods available can construct the appropriate counterfactual to measure this **in a reliable way**.

- Findings of ethnic penalties, where reliable, tend to be concentrated in Black male subgroups, particularly Black Caribbean males and the reasons behind this need further investigation.

Given how difficult constructing reliable estimates of ethnic parity turned out to be, it may not be worthwhile repeating the exercise in the future. If DWP are keen to measure ethnic parity, then other methods need to be considered (for example, experimental methods and/or qualitative studies).



# 1 Introduction

A substantial employment gap between Ethnic Minorities and the overall working-age population in Great Britain has been observable for several decades (Cabinet Office, 2003; National Audit Office, 2008; Heath and Cheung, 2006). In the third quarter of 2007, the gap stood at 13.2 percentage points, with 74.8 per cent of the Great Britain working-age population in employment compared with 61.6 per cent of the equivalent Ethnic Minority population (Labour Force Survey). The National Audit Office (2008) notes that over the last 20 years there have been significant fluctuations in this gap, ranging from 12.5 percentage points in 1989 to 20 percentage points in 1994. However, since 1994, there has been a slow but steady decline in the Ethnic Minority employment gap.<sup>6</sup>

As would be expected, this overall gap conceals considerable diversity in employment rates across ethnic groups (see, for example, Heath and Cheung, 2006). Thus, Black Caribbeans and Indians have employment rates that are similar to those for the Great Britain working-age population as a whole, whereas Bangladeshis and Pakistanis have rates that are considerably lower – a fact that can be partly explained by the very low rates of employment amongst women in these two ethnic groups, which even by 2007 were still below 25 per cent. Perhaps more worryingly for Pakistanis, whilst the recent closing of the employment rate gap between Ethnic Minorities and Whites has been relatively well spread across ethnic groups, this has not been the case for this group between 2002 and 2007. The drop in employment rates experienced by this group can also be seen amongst the Chinese population and in both cases is accompanied by a slight increase in inactivity; evidence on enrolments in higher education may explain the situation for the Chinese, but not the Pakistani, ethnic group.<sup>7</sup>

The National Audit Office (2008) also notes that whilst 21 per cent of the overall population are 'economically inactive' (neither working nor actively seeking work), this compares with about one-third of the working age Ethnic Minority population. Again there are wide differences in these figures across different

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<sup>6</sup> For a longer historical context, see, for instance, Berthoud and Blekesaune (2003) and Heath (2001).

<sup>7</sup> Bhattacharyya *et al.*, 2005 and Heath and Cheung (2006).

ethnic groups. Heath and Cheung (2006) show that Pakistani and Bangladeshi men have particularly high inactivity rates, largely because of long-term sickness and disability.

The National Audit Office (2008) estimates that the cost of the employment gap is around £8.6 billion a year, which it splits into the cost of extra benefit payments and lost tax revenue (£1.3 billion) and lost output (£7.3 billion) (but ignores any wider social costs associated with this gap).

It is the Government's intention that '*in ten years' time, Ethnic Minority groups should no longer face disproportionate barriers to accessing and realising opportunities for achievement in the labour market*' (Cabinet Office, 2003). In order to achieve such aims, policymakers need to be well informed on the exact form and extent of any such barriers. The statistical literature investigating the labour market fortunes of Ethnic Minorities attempts to identify the extent to which any apparent systematic disadvantage observed for certain ethnic groups, or Ethnic Minorities as a whole, can be attributed to differences in their characteristics which reduce their employability, as opposed to the discriminatory behaviour of other agents in the labour market.<sup>8</sup>

To illustrate, a number of studies<sup>9</sup> underline the high levels of concentration of Ethnic Minorities in poor inner-city areas and the accompanying lower levels of demand for labour; thus, whilst analysis of these areas suggests less pronounced differences in employment rates between the local White and Ethnic Minority populations, the predominance of Ethnic Minorities in these areas translates to a higher level of disadvantage on a national level. Taking another example, Bangladeshi women have lower employment probabilities than many Other ethnic groups. However, controlling for their poorer qualifications profile and their high probability of experiencing language difficulties<sup>10</sup> significantly reduces the correlation between ethnicity and employment outcome.

Thus, studies that adopt a statistical approach to analysis of the situation of Ethnic Minorities tend to use multivariate techniques (usually regression analysis) to control for differences in labour market profiles, modelling wage differences (Blackaby *et al.*, 2002), the extent of occupational 'segregation' (Blackaby *et al.*, 1999; Borooah, 1999) or the rate of unemployment/inactivity (Blackaby *et al.*, 1999). These approaches, which typically use some form of decomposition analysis, are based on the assumption that much of the unexplained 'residual' difference

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<sup>8</sup> For an excellent review, see Clark and Drinkwater (2005).

<sup>9</sup> For instance, Clark and Drinkwater (2002) and Social Exclusion Unit (2005).

<sup>10</sup> See, for instance, Owen *et al.* (2000).

between ethnic groups (having controlled for a variety of characteristics) can be attributed to discrimination.<sup>11</sup>

However, whilst a review of this literature highlights an increasing academic interest over recent decades, gaining a clear historical perspective of the extent to which the situation of various Ethnic Minority groups has improved, remained unchanged or worsened is hampered by a number of limitations; primarily, the limited amount of comparable evidence from large survey datasets before the 1990s<sup>12</sup> but also the variety in econometric methods employed and the attempt to model a number of different manifestations of discrimination (i.e. wages, employment, unemployment and occupational segregation).

Having said this, Clark and Drinkwater (2005) provide a very good review of the work of researchers such as David Blackaby who, with various other authors, has mapped out the differing situations of Ethnic Minorities in the UK labour market both before and after 1991 (when the Census began to collect information on ethnicity for the first time). Whilst it is hard to generalise, the evidence does suggest that up to half of the deterioration in the relative employment position of Ethnic Minorities (particularly males) during the 1980s can be explained by a range of observed characteristics. Similarly, during the 1990s, researchers could explain just over one-half of any employment disadvantage through differences in factors such as human capital.

The majority of economic theories assume that discrimination manifests in the hiring and firing practices of employers (with much of the theoretical literature stemming back to the work of Becker (1964), which is well described in Joll et al. (1983), and Thurow (1975)); though there are also theories of efficiency wages that consider employee power and others that consider employee behaviour. Bosworth *et al.* (1996) provide a discussion on these issues but these are not considered here as this aspect is not the focus of the present study.

Jobcentre Plus is a key organisation that has the potential to affect the employment rate of Ethnic Minorities. The main way in which this contribution manifests itself is through the 'treatment' it provides to improve the employability of Ethnic

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<sup>11</sup> Clearly, this assumption depends crucially on the extent to which any study has captured all differences in the characteristics of ethnic groups. This is a particularly questionable assumption in the modelling of occupational segregation; these equations are 'reduced form' in nature (i.e. they do not distinguish between the demand of individuals **for** work in certain occupations and the supply, **by** employers, of jobs in certain occupations to those of different ethnic groups). In this case, the well-documented differences in cultural preferences of some ethnic groups for jobs in certain occupations may be misconstrued as discriminatory behaviour by employers. Similarly, the study here is not able to distinguish between these, often unobservable, 'demand' and 'supply' effects.

<sup>12</sup> One of the exceptions being the *National Surveys of Ethnic Minorities*.

Minorities, as opposed to overcoming possible discriminatory behaviour amongst employers.<sup>13</sup>

In order to inform future strategies and policymaking to achieve this, the extent to which ethnic group influences the chances of a Jobcentre Plus customer successfully obtaining employment needs to be fully understood. This study is not the first to tackle this issue and a considerable literature has been created in recent years. This has usually taken the form of an investigation into the degree of 'parity' (of outcome) between different ethnic groups on specific Jobcentre Plus programmes, including New Deal for Young People (NDYP) (Moody, 2000; Bonjour *et al.*, 2001), New Deal 25 plus (ND25+) (McArdle, 2001), Employment Zones (Ezones) (Moody, 2002) and New Deal for Lone Parents (NDLP) (Moody, 2002). Much of this work on particular programmes is now rather out-of-date and, where it was based on surveys, was hampered by small sample sizes for some ethnic groups.

In order to estimate the true measure of ethnic parity, it is essential to compare each Ethnic Minority group with an otherwise-identical White group. Previous studies estimating ethnic parity have relied on simple regression techniques and assumed that having a sufficiently rich set of controls would achieve this objective. However, it is now well known that regression techniques may have problems if: (i) there is not complete overlap in the **range** of values for the control variables (the so-called common support problem); (ii) the regression methods fail to weight comparable individuals correctly; and (iii) the simple regression methods (ordinary least squares (OLS)) do not allow the effect to vary by individual observed characteristics.

This report is unique in using the full range of methods to estimate ethnic parity and to assess the sensitivity of the results to the methods used. This turns out to be very important and raises serious questions of the reliability of previous estimates of ethnic parity. The purpose of the research is to help Jobcentre Plus gain a more detailed and accurate understanding of its impact on Ethnic Minority customers than has hitherto been possible. Of course, the extent to which any difference in employment and benefit outcomes can accurately be 'attributed' to the actions of Jobcentre Plus staff, as opposed to the actions of employers, is limited.

The rest of the report proceeds as follows: Chapter 2 outlines the approach taken in the report to measuring ethnic parity. Chapter 3 gives details of the programmes and benefits as well as the data and samples used. Chapter 4 explains how the estimates in the report should be interpreted and discusses the important caveats. Chapters 5 to 11 outline the ethnic parity estimates for Jobcentre Plus overall (Chapter 5), Incapacity Benefit (Chapter 6), Income Support (Chapter 7), Jobseeker's

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<sup>13</sup> Whilst there is a process by which Jobcentre Plus staff can take action against employers who they feel are acting in a discriminatory way, this is not widely used (see evidence from Hudson *et al.* (2006)) and would not seem to form a core aspect of Jobcentre Plus staff duties.

Allowance (Chapter 8), New Deal for Lone Parents (Chapter 9), New Deal 25 plus (Chapter 10) and New Deal for Young People (Chapter 11). A summary and conclusions are provided in Chapter 12.

This report is a summary of a much more detailed and extensive report that was produced for the Department for Work and Pensions (DWP) in January 2007.<sup>14</sup>

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<sup>14</sup> The full detailed report is available online at [www.ifs.org.uk](http://www.ifs.org.uk)



## 2 Measuring ethnic parity

Ethnic parity in Jobcentre Plus services and programmes was previously measured by comparing the proportion of Ethnic Minority customers who obtain a job with the proportion of White customers who obtain a job. However, as the previous discussion highlights, this does not take account of the possibility that systematic differences in **the distribution of all observable and non-observable background characteristics could be determining how customers are treated by Jobcentre Plus as well as their labour market outcomes**. In order to see whether there is ethnic parity, it is crucial that Ethnic Minority customers are compared with otherwise-identical White customers. This, however, is extremely difficult to do, and the various methods for doing this involve different assumptions and methods, as outlined below.

### 2.1 Definition of 'ethnic parity'

A natural definition for there to be **ethnic parity** in outcomes from Jobcentre Plus services and programmes is if there is no difference, on average, between the outcome for an Ethnic Minority participant and the outcome for an 'otherwise-identical' White participant. Where parity does not exist, there will be either an ethnic penalty – if Ethnic Minority customers experience worse outcomes than otherwise-identical White customers – or an ethnic premium – if Ethnic Minority customers experience more favourable outcomes than otherwise-identical White customers.

This definition is an ideal one, and the aim of this report is to provide measures of the degree of parity or the extent of the penalty (premium) that most closely approximate the ideal (or 'true') ones.<sup>15</sup>

A first objective of the project was to investigate the previous methodology used by the Department for monitoring Jobcentre Plus performance for Ethnic Minorities and whether there were any ways the measures could be improved. Sections 2.2 and 2.3, thus, briefly outline the previous approach to assessing ethnic parity and

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<sup>15</sup> Further discussion of interpretational issues of this definition can be found in Section 4.7.

highlight some of its problems. Section 2.4 will then propose ways to address these shortcomings and describe a new approach. Section 2.5 will outline the methodology and Section 2.6 will provide a comparison of the methods used for estimating ethnic parity.

## 2.2 The previous approach to measuring ethnic parity

To monitor the performance of **employment programmes** – New Deal for Young People (NDYP), New Deal 25 plus (ND25+) and New Deal for Lone Parents (NDLP) – the Department previously used a monthly measure based on the difference in the proportions of Ethnic Minority and White programme leavers who accessed jobs:

$$\frac{\# \text{ Ethnic Minority New Deal leavers into jobs} / \# \text{ Ethnic Minority New Deal leavers}}{\# \text{ White New Deal leavers into jobs} / \# \text{ White New Deal leavers}}$$

The previous approach for measuring overall parity in **Jobcentre Plus** performance used an extract of data from the Labour Market System (LMS) to show the number of customers gaining jobs in a particular quarter as a proportion of all customers with **any** LMS activity (e.g. job/opportunity referrals or starts, interviews, adjudications or sanctions) recorded in the same quarter:<sup>16</sup>

$$\frac{\# \text{ Ethnic Minorities into jobs} / \# \text{ Ethnic Minorities with any LMS activity}}{\# \text{ Whites into jobs} / \# \text{ Whites with any LMS activity}}$$

Note that ethnic parity was not assessed separately for individuals making benefit claims (other than as part of LMS activity in the overall Jobcentre Plus measure); this project has, however, sought to estimate ethnic parity for individuals on Income Support (IS), Incapacity Benefit (IB) and Jobseeker's Allowance (JSA) as well.

## 2.3 Problems with the previous approach

There are a number of methodological problems with the approach outlined above. These are summarised in the box, and discussed in some detail in the corresponding subsections.

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<sup>16</sup> An overall parity measure is calculated, together with measures for selected groups of wards and local authority districts with high Ethnic Minority and unemployment concentrations.



The parity measure previously used by the Department:

- simply compares outcomes for Whites and Ethnic Minorities, without making any attempt to compare 'otherwise-identical' individuals;
- considers:
  - all individuals who leave the New Deal during a given period, thus selecting on the outflow (New Deal measure);
  - all individuals with any recorded interaction with Jobcentre Plus during a given quarter, thus confounding stocks and flows (Jobcentre Plus measure);
- is based on the number of activities and not on the number of individuals;
- is focused on job entry alone, de facto treating it as an absorbing state.

### 2.3.1 Selection bias

Attributing all the observed difference in outcomes between Whites and Ethnic Minorities to their ethnicity ignores the possibility that these two groups may differ in terms of characteristics other than ethnicity that also affect the outcomes of interest.

In other words, the simple difference in the observed outcomes for White and Ethnic Minority groups would provide a biased estimate of the true ethnic parity if there were systematic differences between the two groups that also affect outcomes. Such discrepancy in observed outcomes may arise because of differences in characteristics that can potentially be observed by the analyst (observables) as well as in characteristics that are not observed by the analyst (unobservables). Of course, what is observed and what remains unobserved is determined by what data the analyst has access to. In the data available for this research, one can observe, say, gender and previous labour market history but not innate ability or motivation.

For example, Bangladeshi women have lower employment probabilities than many Other ethnic groups and one might think this is explained by discrimination on the grounds of ethnicity. However, these women also have much lower levels of qualification and are more likely to experience language difficulties,<sup>17</sup> which, if taken into account, might be expected to significantly reduce the correlation between ethnicity and employment outcome – the observed ethnic 'penalty'.

The old DWP measure, obtained by comparing the proportion of Ethnic Minority customers who obtain a job with the proportion of White customers who obtain a job, would only be valid under the special – and unlikely – case in which the

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<sup>17</sup> See, for instance, Owen *et al.* (2000).

distributions of all observable and non-observable background characteristics that determine job outcomes are the same for all ethnic groups accessing Jobcentre Plus services or a given programme.

### 2.3.2 Sampling frame

To monitor the performance of the New Deal programmes, the Department used to consider the difference in the proportion of recorded job starts between certain dates for White and Ethnic Minority participants who left the New Deal. For this measure, sample selection is thus based on **outflow**, which raises (at least) two issues:

First, such a measure does not consider those customers who did not record an exit. It thus misses the important group of individuals who simply continue to remain on benefits and evidence suggests that these individuals are more likely to be from Ethnic Minority groups. Consider as an example the case where the previous measure reported that 80 per cent of the Ethnic Minority participants who leave the programme exit to a job and only 60 per cent of the Whites leaving do so but where only five per cent of Ethnic Minority customers leave the pool over that time period while 50 per cent of White customers do.

The second issue has to do with the selection process out of unemployment. Since the previous measure selected the sample based on an outcome, i.e. leaving the programme, selection into the group of leavers is likely to be non-random and there may be systematic differences between the ways that Whites and Ethnic Minorities have been selected into this group. In particular, if ethnicity affects exit rates from unemployment, White and Ethnic Minority individuals who are observed to leave unemployment will differ in terms of unobservables. To see why, consider that the highest-quality (in terms of labour market performance) individuals tend to leave benefits/unemployment first; if rates of outflow differ by ethnicity, then the quality of the outflow of claimants will differ by ethnicity, which could lead to biased results.<sup>18</sup>

A similar reasoning applies to the measure used by the Department to assess Jobcentre Plus overall. The sampling frame used all individuals with a recorded interaction with Jobcentre Plus during a given quarter, which involves sampling from both the inflow and the stock. To fix ideas, consider the case of a programme. Although this sampling frame allows one to capture the **inflow** into the programme during a particular quarter, a large proportion of the individuals being analysed will have entered prior to this and will have been on the programme for a long time (the **stock**). Again, it is quite possible that selection into this group of customers with long durations is non-random, in that the stock of Whites and the stock

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<sup>18</sup> Since individuals of higher ability (irrespective of ethnicity) leave unemployment faster, if ceteris paribus Whites also leave unemployment faster, then White customers who are observed to leave will be, on average, of lower ability than Ethnic Minority customers who leave.

of Ethnic Minorities who are observed to remain on the programme in a given quarter may differ along both observed and unobserved dimensions, depending on the possibly different processes by which Whites and Ethnic Minorities leave the programme.<sup>19</sup> Again, this could lead to biased results.

### 2.3.3 Spells versus individuals

The previous approach was based on spells, not on individuals. This means that people who had more than one spell on a programme/benefit in any given time period (in the case of the existing approach, a quarter) will be counted in the analysis according to the number of spells they had on a programme/benefit in that quarter. Thus, repeated job exits by the same individual within the quarter of interest will count as corresponding 'successes'. However, to exhibit repeated job exits, the individual has necessarily to have come back onto benefits in this quarter, an indicator of lack of success in that job. This lack of success is not captured in an analysis of spells.

This approach not only ignores the issue of sustainability in employment, but in fact it **rewards** low sustainability. This is particularly serious if different ethnic groups vary in the extent to which they 'cycle' on and off programmes/benefits. As an extreme case, consider a situation in which most of the White customers cycled back and forth between short jobs and benefits, while Ethnic Minority customers mostly waited for a good job match and hence, kept the job. In this scenario, the measure would show a large ethnic penalty.

### 2.3.4 Outcome measures

The previous approach only considered a move into a job as an outcome. Only looking at exits into jobs explicitly ignores possible future spells and in particular the potential for return to benefits.

Furthermore, focusing exclusively on exits into jobs does not allow one to get a full picture of any differences in the quality of labour market destinations. By contrast, differences in job retention and employment probability over time would allow one to gauge potential differences in the sustainability of jobs that White and Ethnic Minority customers go into.

Similarly, looking at new outcome measures relating to whether individuals continue with benefit receipt is likely to be of considerable policy interest.

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<sup>19</sup> Since individuals of higher ability (irrespective of ethnicity) leave unemployment faster, if ceteris paribus Whites also leave unemployment faster, then Whites who are among the stock of unemployed will be on average of lower ability than Ethnic Minorities who are still unemployed.

### 2.3.5 Ethnicity not recorded

The previous approach was only calculated for customers who have their ethnicity recorded in the administrative data and thus, omits all customers whose ethnicity is recorded as 'none selected', 'prefer not to say' or 'no personal contact'.<sup>20</sup>

## 2.4 New approach used in this study

This section sets out the details of the approach taken in this report to measure ethnic parity, highlighting how the shortcomings described in the previous section have been addressed.

The primary aim of this project is to calculate the degree of parity or the extent of penalty/premium by seeking to compare 'otherwise-identical' individuals. The ensuing requirements are set out in the box.

In order to compare 'otherwise-identical' individuals, the suggested methodology strives to:

- carefully control for observed differences between Ethnic Minority and White customers using appropriate methods;
- reduce the likelihood that individuals differ in unobserved dimensions as much as possible via a suitable choice of sampling frame;
- choose individuals, not spells, as the unit of analysis;
- obtain a fuller picture by considering a number of carefully constructed outcomes.

### 2.4.1 Selection bias

Interest lies in the extent to which there is **ethnic parity** of outcomes from Jobcentre Plus services and programmes, when considering whether there are any differences in the outcomes for Ethnic Minority participants compared with 'otherwise-identical' White participants.

As discussed in Section 2.3.1, the previous measure used was obtained by simply comparing the proportion of Ethnic Minority customers who obtain a job with the proportion of White customers who obtain a job; it thus ignores the possibility that White and Ethnic Minority customers differ, on average, more than just in terms of ethnicity.

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<sup>20</sup> From both a methodological and a policy perspective, it is useful to consider how many of these individuals there are and whether they represent a distinct group in themselves, with systematic differences in their exit patterns (when compared with Whites) in terms of the outcome measures considered. This is done in the full report but not reported here.

To prevent parity measures being affected by such 'selection' bias, one needs to control for any differences between ethnic groups in observed and unobserved characteristics that may affect their outcomes, such as the individual's background and labour market history. By doing this, one will be able to gain a better understanding of how much the observed ethnic difference in labour market outcomes, such as job-entry rates, is due to differences in the characteristics of White and Ethnic Minority groups and how much can be attributed solely to ethnicity, i.e. to the 'ethnic penalty'.

Two main methods are available to control for **observed** differences between individuals belonging to different ethnic groups:

- standard regression techniques (ordinary least squares (OLS));
- matching (in particular, propensity score matching) methods.

It is important to underline that both types of method only allow the researcher to control for observable differences between individuals, i.e. characteristics that are measured and recorded in the data (see Chapter 4 for caveats and Section 3.4 for a review of the available variables). Furthermore, matching and regression differ in the way in which they control for such observable differences.

Under suitable assumptions, the difference-in-differences (DiD) method, by contrast, allows for unobserved differences between Whites and Ethnic Minorities that are constant over time and that affect their labour market outcomes in a constant way. This approach has also been used for part of the analysis, mainly as a sensitivity check.

The various methodological approaches are discussed in some more detail in Section 2.5.

### 2.4.2 Sampling frame

Section 2.3.2 has raised some serious concern that the sampling frames underlying the old measures might differentially miss important groups of individuals (in particular, non-leavers), as well as introduce bias in the composition of Whites and Ethnic Minorities considered.

These concerns do not relate to differential selection into the programme, but rather to differential **selection into the analysis sample**, and this differential selection might be driven by unobservables. Therefore, in this report, benefit and programme inflows are analysed; if one focuses on the inflow, selection into the programme is, by definition, selection into the analysis sample.

To be operational, one needs to decide on the details of the inflow window, in particular about (a) its length and (b) its starting point. There are pros and cons for each of these choices.

A larger inflow window yields a larger sample size, thus increasing the robustness of the models as well as the probability of being able to produce more subgroup analyses. However, a larger inflow window limits the time period over which to measure labour market history and to assess outcomes (for the latter in particular, one needs a sufficiently long evaluation horizon to be able to assess sustainability of employment). Finally, a larger window might run the risk of 'straddling' periods where there were significant changes to benefit/programme eligibility and/or alterations to procedures.

The choice of the starting point of the inflow window relatively far back in time allows a longer horizon over which the outcomes can be assessed, which is particularly important in assessing sustainability of employment. On the other hand, it would affect the extent to which the analysis can be seen as up-to-date, as well as limit the period of availability for data on labour market history.

Based on data available for this project, reliable information on previous labour market history is available from June 1999, while individual employment outcomes can be evaluated until December 2004.

In order to obtain a balance between an analysis that is as up-to-date as possible and data that are rich enough for the task at hand, it was thus agreed that the appropriate choice of inflow window would cover the 2003 calendar year.

Crucially, this allows the analysis to:

- consider the existing versions of the New Deal programmes and to focus on IS and IB recipients who have had a Work Focused Interview (WFI);<sup>21</sup>
- have a period of at least three years to measure previous labour market history;
- follow entrants at the end of 2003 for a whole year, which would allow most of them to participate fully in the programmes and also have the opportunity to record a period of sustained employment, as discussed below.

Table 2.1 shows the distribution of completed durations on the three New Deal programmes under consideration and for the three benefit groups (IS, IB and JSA), separately for Ethnic Minority and White customers who started the programme or benefit during 2003. Specifically, the table relates to the duration of the qualifying spell in the relevant analysis sample (see Section 3.2 for details of how analysis samples are defined). It shows the proportion of individuals whose qualifying spell lasts no more than three months, no more than six months, etc.

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<sup>21</sup> WFIs were introduced in 2003. As noted in more detail in Section 3.2, attention is restricted to benefit recipients who have had a WFI. On substantive grounds, the WFI represents at least some type of 'treatment'; on practical grounds, ethnicity is only recorded for customers who have had a WFI.

**Table 2.1** Distribution of completed durations of programme or benefit spell by ethnicity, 2003 inflow

| Duration (months) | NDYP            |       | ND25+           |       | NDLP            |       |
|-------------------|-----------------|-------|-----------------|-------|-----------------|-------|
|                   | Ethnic Minority | White | Ethnic Minority | White | Ethnic Minority | White |
| 3                 | 41.0            | 42.5  | 28.7            | 29.1  | 27.1            | 38.6  |
| 6                 | 62.1            | 62.4  | 50.9            | 55.1  | 47.9            | 62.6  |
| 9                 | 73.9            | 74.8  | 66.2            | 71.4  | 65.6            | 77.4  |
| 12                | 82.6            | 83.4  | 81.0            | 84.0  | 79.0            | 87.9  |
| 15                | 89.7            | 90.1  | 89.8            | 91.9  | 86.9            | 93.4  |
| 18                | 94.2            | 94.4  | 94.3            | 95.6  | 92.1            | 96.1  |

| Duration (months) | JSA             |       | IS              |       | IB              |       |
|-------------------|-----------------|-------|-----------------|-------|-----------------|-------|
|                   | Ethnic Minority | White | Ethnic Minority | White | Ethnic Minority | White |
| 3                 | 43.0            | 58.8  | 9.1             | 12.7  | 4.3             | 6.3   |
| 6                 | 66.2            | 78.6  | 27.1            | 31.7  | 22.9            | 27.7  |
| 9                 | 81.8            | 89.7  | 41.1            | 46.9  | 39.7            | 44.7  |
| 12                | 88.9            | 93.8  | 48.1            | 54.6  | 49.9            | 54.2  |
| 15                | 92.8            | 96.1  | 53.3            | 59.8  | 55.5            | 59.5  |
| 18                | 94.9            | 97.1  | 57.5            | 63.6  | 58.8            | 62.8  |

Note: Each figure denotes the percentage of the programme/benefit inflow that has left the programme/benefit within x months from inflow, x = 3, 6, 9, 12, 15, 18. Duration is until recorded first exit.

Table 2.1 shows that for JSA and the three New Deal programmes, between 80 and 90 per cent of qualifying spells last no more than 12 months (the time over which benefit and employment outcomes can be observed). The rate of exit from IS and IB is much slower, with between 45 and 55 per cent of qualifying spells lasting 12 months or less. Durations in the raw data are slightly shorter for White customers than for Ethnic Minorities across all programmes/benefits.

To obtain some measure of job quality in terms of sustainability<sup>22</sup> within a 12-month window, individuals would need to have started work by the beginning of month 10 after entry. Table 2.1 shows that between 65 and 75 per cent of individuals on a New Deal programme, 80 to 90 per cent of JSA claimants and 40 to 45 per cent of IS and IB claimants have left the relevant programme/benefit nine months after inflow.<sup>23</sup> Considering a 12-month window thus seems to provide the right balance.

<sup>22</sup> Note that the Department defines an individual as being in sustained employment if they have been continuously employed for at least three months.

<sup>23</sup> Of course, this means that for individuals who enter employment in months 10, 11 or 12 after inflow, sustainability of employment cannot be assessed within the 12-month window.



The chosen timeline is highlighted in Figure 2.1:

- individuals being analysed are the inflow into a programme or benefit during 2003;
- their past labour market history is tracked back to three years before inflow;
- their labour market outcomes are evaluated over a one-year period.<sup>24</sup> In particular, a person who entered a programme or benefit on the last available day of the inflow window (31 December 2003) would have 12 months to move through the programme/benefit and record some type of employment- or benefit-related outcome.

**Figure 2.1 Outline of the approach**

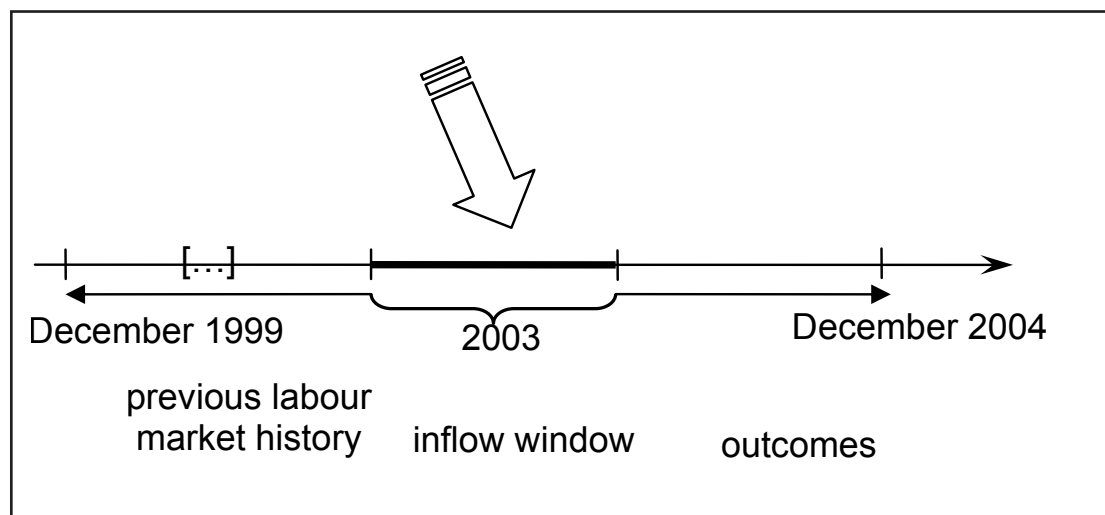
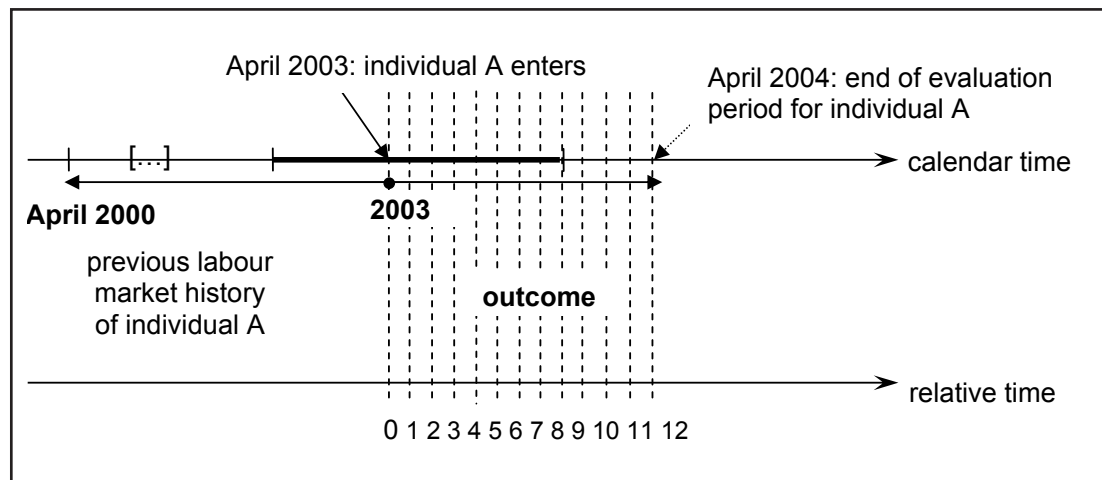


Figure 2.2 further outlines the approach by sketching an individual example. Individual A enters the programme in April 2003; at the moment of inflow, relative time for that individual is set to zero. More generally, relative time is set to zero at each individual's recorded programme or benefit entry date. The ethnic parity measures are then constructed by recording post-inflow outcomes month-by-month, i.e. after 1, 2, ... and 12 months from the individual's inflow (note that 30-day periods, rather than calendar months, were used for this purpose). For the current example, this corresponds to May 2003 to April 2004 (Section 2.4.4 further discusses the chosen outcome measures). An individual's history is constructed for the three years prior to inflow, which in this case amounts to recording individual A's labour market status from April 2000 to April 2003.

<sup>24</sup> Note, thus, that even for individuals for whom one could potentially observe outcomes for up to two years (those who entered a programme/started claiming a benefit at the beginning of January 2003), only outcomes for the first 12 months after entry are considered.



**Figure 2.2 Individual A enters the programme in 2003**



### 2.4.3 Spells compared to individuals

The key question this report wants to answer for each Ethnic Minority group relates to how different their labour market outcomes would have been if they had been White. An individual-level approach is thus adopted, which samples individuals starting a programme/benefit during the inflow window and then records their subsequent outcomes.

In contrast to the spell-based approach previously used by the Department, the suggested method is able to capture (differential) return to benefits and employment sustainability, providing, in particular, a more accurate picture of those people who cycle on and off benefit. Thus, an individual who starts drawing benefits several times in the inflow window will be recorded once and the outcome will be their status at a specific point in time. The spells-based approach would count this person several times and may possibly record several job exits, while under the new approach the individual will be given the same weight as any other person and their exit to a job would only count as a positive outcome if it were sustained (rather than being followed by a return to benefit).

### 2.4.4 Outcome measures

Section 2.3.4 has identified and discussed a number of shortcomings in the way outcomes were measured previously. By focusing on first exit only, and indeed on exit to employment only, the approach ignored any ethnic differences in return to benefits ('recidivism') and in the quality (sustainability) of labour market destinations.

In order to capture (differential) recidivism and employment sustainability, outcome measures that follow individuals over time will be considered, with labour market status assessed month-by-month, up to one year after inflow. This should allow enough time for customers to find jobs as well as for them to display recidivism, and should thus give an accurate picture of the medium- and more long-term extent of ethnic parity.

Furthermore, labour market status will be measured in different dimensions:

- probability of being in employment (E);
- probability of being in sustained employment (S);
- probability of being on benefits (B).

This new way of measuring outcomes thus looks beyond exit into jobs and considers whether customers are in employment or on benefit over time (specifically, monthly) following inflow into the programme/benefit (compare this to Section 2.4.2). Specifically:

- to allow one to obtain a fuller picture of any differences in the quality of destinations, the new approach assesses differences in **employment** probability over time;
- an additional measure of **employment sustainability** is also used to directly assess any potential differences in the sustainability of the jobs that White and Ethnic Minority customers go into;
- continued **benefit receipt** is analysed in order to capture both the extent to which individuals who are non-employed remain on benefits and the extent to which individuals who are employed still collect benefits (in particular, IS).<sup>25</sup>

To measure the percentage of individuals who are employed (or claiming benefits) x months since programme/benefit start (where x goes from one to 12 and months are measured as 30-day periods), the following three options have been considered:

- a. employed (or on benefit) for 15 or more days during month x;
- b. employed (or on benefit) at any time during month x;
- c. employed (or on benefit) at multiples of 30 days since inflow, i.e. on the (30x)th day since inflow.

Option (a) has been chosen after separately testing these alternatives and finding that they did not make any significant difference in terms of the resulting ethnic parity measure.<sup>26</sup> The reason is that, in any given month, the vast majority of individuals are employed/on benefit either for the whole month or for none of the month – so all three measures give the same answer.

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<sup>25</sup> Note that the proposed measure of benefit receipt will not be able to identify these two effects separately, nor will it be able to check that individuals in employment are claiming IS (rather than something else).

<sup>26</sup> Focusing on specific dates, as done by option (c), would miss short employment or benefit spells that fall between these key dates, a shortcoming not suffered by the other two options, which measure outcomes over a period of time. Option (b) did not seem demanding enough.

As a last implementation detail to measure benefit dependency, note that the constructed indicator takes account of both active and inactive benefits,<sup>27</sup> although it is not able to distinguish between the two. In particular, a move from an inactive benefit (e.g. IB) to an active benefit (e.g. JSA) – which may be regarded as a positive outcome by the Department – would not be recorded.

Finally, sustained employment was measured from month 3 to month 12 after inflow and required the individual to have been **continuously** employed for at least three months up to then.<sup>28</sup> Thus from month 3 onwards, in addition to testing whether there are any ethnic differences in the probability of being in employment, the analyses will also test whether there are any ethnic differences in the probability of being in continuous employment for the previous three months.

It turns out that most results for the sustained employment outcome are similar to those for employment. Consequently, sustained employment results are not discussed here; they can, however, be found in full in the main report.

#### 2.4.5 Ethnicity not recorded

In this summary report, analysis is not presented for individuals of unknown ethnic origin. Full results for this group are contained in the main report.

## 2.5 Methodology

### 2.5.1 Overview

The main analysis will use propensity score matching techniques ('matching') to measure ethnic parity in Jobcentre Plus programmes and mainstream services. As explained in more detail below, these methods are more flexible, in the sense that they impose fewer restrictions on the data, than standard regression-based methods. On the other hand, the latter methods are easier and faster to implement and, at times, are found to produce very similar results to the more complex and

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<sup>27</sup> Specifically, JSA, compensation whilst on a New Deal option (achieved by including NDYP and ND25+ spells as benefit spells), Basic Skills, Work-Based Learning for Adults (WBLA), IS or IB all counted towards the measure of benefit receipt. Note that this measure is defined by considering whether the individual is on benefit on day 1, day 2, ..., day 30 of the month of interest; thus, if an individual is on more than one type of benefit on a particular day, it is only counted as a single day on benefit.

<sup>28</sup> So to count as sustainably employed, e.g. in month 3, an individual would need to have been **continuously** employed for **all** 30 days of month 1 (i.e. the month following inflow date), month 2 and month 3. This is a slightly stricter definition than the one for being employed in a given month, which only requires the individual to have been employed for at least 15 of the 30 days.

time-consuming matching estimators. Ethnic parity has thus also been measured using regression-based techniques and comparisons between the two methods were pursued to assess the reliability of the regression-based methods for the case under analysis.

Duration modelling (outlined in Section 2.5.4) adds an important time dimension to the analyses, by ascertaining whether particular ethnic groups are able to find employment more quickly than others.

While matching, regression and duration methods only control for observed differences between Ethnic Minority and White customers, DiD methods (outlined in Section 2.5.5) provide evidence on the robustness of the findings to the presence of uncontrolled (i.e. unobserved) individual differences between ethnic groups.

## 2.5.2 Measuring ethnic parity through matching methods

The main research strategy of this analysis involves using propensity score matching techniques (or 'matching') to address the key question that needs answering for each Ethnic Minority group: 'How different would their labour market outcomes have been if they had been White?'

To construct such a counterfactual for an Ethnic Minority group, one needs to select, from the pool of White Jobcentre Plus customers, a comparison group of customers who 'look the same', in terms of observed characteristics  $X$ , as the customers of the ethnic group under analysis. Matching is the best available method for selecting such a matched (or reweighted) White comparison group in which the distribution of individual and local area characteristics that might affect labour market outcomes,  $X$ , is as similar as possible to the distribution of  $X$  in the Ethnic Minority customer group of interest.

More specifically, matching allows one to match every customer from a particular Ethnic Minority group to a similar White customer (or to a group of White customers).<sup>29</sup> In essence, the matching procedure reweights Whites so that they look as similar as possible to the relevant Ethnic Minority group of interest in terms of factors ( $X$ ) that might affect labour market outcomes. To ensure comparability, Ethnic Minority customers for whom no suitable White comparator can be found (i.e. who fall outside the so-called 'common support') are excluded from the analysis (this issue is taken up again in Section 4.2). The estimate of the

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<sup>29</sup> To implement propensity score matching, a probit or logit regression model can be run, where the dependent variable is equal to 1 for the relevant Ethnic Minority group and to 0 for the White comparison group. From this model, one can estimate the 'propensity score', i.e. the predicted probability of being from the particular Ethnic Minority group of interest given the person's individual and local area characteristics,  $X$ . Each member of the ethnic group of interest can then be matched to either the closest White individual or to a group of 'similar' White individuals. There are numerous matching methods that can be used; see Blundell *et al.* (2005) for full details.

ethnic penalty/parity/premium is then obtained by comparing the mean labour market outcomes of the Ethnic Minority group with the mean outcomes of the appropriately matched/reweighted White comparison group. This can be done for each programme or service and for each Ethnic Minority group of interest.

Matching techniques are thus able to control, in a flexible way, for the effect of observed background characteristics on labour market outcomes so as to accurately isolate the impact of ethnicity, i.e. the preferred measure of ethnic parity.

Note that matching methods – as well as regression methods discussed below – are based on the assumption that one can observe all the outcome-relevant differences between White and Ethnic Minority Jobcentre Plus customers. Any unobserved differences other than ethnicity between the groups being compared will show up as ethnic penalty or premium (depending on whether the remaining difference concerns an unobserved trait that is unfavourable or favourable to the labour market). The success and reliability of ethnic parity estimates based on either of these approaches will, thus, crucially depend on the amount and quality of the characteristics that can be observed.

### **2.5.3 Measuring ethnic parity through regression-based methods**

Compared with matching, standard regression techniques (OLS) have the advantage of being fast and simple to implement but they will not necessarily overcome biases in estimates of ethnic parity, due to the following:

- they may estimate the ethnic penalty by comparing non-comparable individuals using extrapolation (the common support problem);
- they may not weight comparable individuals correctly;
- they typically assume that the ethnic penalty is the same for all individuals, preventing it from varying according to individual observed characteristics.

Matching techniques are more flexible and less restrictive than regression models in that they do not suffer from these problems; matching has thus been the primary focus for the research in this report as it should provide the most reliable estimates of ethnic parity.

On the other hand, regression techniques offer the following advantages compared with matching methods:

- By imposing a (linear) structure, OLS allows one to obtain more precise estimates (in fact, OLS is the most efficient among the linear and unbiased estimators). This feature is likely to be particularly attractive when disaggregating the analysis and thus using reduced sample sizes.

- The restrictions typically imposed in regression models can be made less restrictive. In particular, in the regression model, one can allow the ethnic penalty to vary according to each observable characteristic. Previous research has indeed shown that such a fully interacted linear matching (or FILM) can often produce results that are very similar to the ones obtained by matching (Blundell *et al.*, 2005).

Consequently, an important part of the research project has been to assess the reliability of regression techniques by comparing results from them with those produced by matching.

#### 2.5.4 Measuring ethnic parity through duration modelling

Duration modelling can add an important time dimension to the analysis by ascertaining whether particular ethnic groups are able to find employment more quickly than others – both as documented in the data and once holding observed characteristics constant. Specifically, such models allow one to assess the potentially different impact of time on the probability that Ethnic Minority and (comparable) White customers leave unemployment for a job. In this set-up, there would thus be ‘ethnic parity’ if an Ethnic Minority customer experiences, on average, the same probability of leaving unemployment over time as does an ‘otherwise-identical’ White customer.

Duration analysis focuses exclusively on the **first** exit from the programme/benefit, thus ignoring any differential subsequent performance of Ethnic Minorities and Whites. It has already been discussed at length (Sections 2.3.3, 2.3.4, 2.4.3 and 2.4.4) that this might be a potentially serious shortcoming: only looking at first exits explicitly ignores possible future spells and, in particular, any ethnic differences in return to benefits (recidivism) and in the quality (sustainability) of labour market destinations.

By contrast, month-by-month differences in employment probability are able to capture (differential) recidivism and employment sustainability.

As an extreme example, consider a situation in which:

- most of the White customers left the programme quite soon, but then returned to benefits very quickly; while
- Ethnic Minority customers spent, on average, more time on the programme waiting for a good job match which subsequently ensured their long-term employment.

In this scenario, a duration model would show a large ethnic penalty in terms of first exit from the programme. By contrast, the more ‘forward-looking’ approach, which looks at differential employment rates over the whole observation period, would offer a more complete picture: an initial penalty in terms of employment probability (during the time when Whites are leaving the programme faster than Ethnic Minorities), which would, however, quickly disappear and indeed turn into a premium (when Ethnic Minorities enjoy sustainable employment while Whites are back on benefits).

The number of transitions of this type that the available observation period of 365 days would allow one to observe is, *a priori*, not clear. If most programme participants remain on the programme or otherwise unemployed for longer periods (a year or more), the duration analysis will not miss too many important patterns; by contrast, if frequent movement into and out of unemployment and benefits is the norm, this analysis would tell only part of the story.

With such interpretational caveats in mind, a minor set of analyses using duration modelling have been carried out for selected comparisons. The aim of these additional analyses was mainly to explore whether the 'story' that emerges from the month-by-month ethnic parity estimates would greatly change in a duration framework.

### 2.5.5 Measuring ethnic parity through DiD methods

The idea underlying the DiD approach is that one can eliminate observed or unobserved differences between Ethnic Minority and White customers that are **constant** over time by taking the differences over time, within the groups and subtracting the differences between the groups. In this application, the DiD estimator, thus, measures the excess outcome growth before and after inflow for Ethnic Minorities compared with Whites.

Compared with the approaches outlined above, this method allows for time-invariant unobserved differences between Ethnic Minorities and Whites; in particular, it removes differences in unobserved characteristics that are constant over time and that affect individual employment and benefit outcomes in a constant way.

This strategy relies on the assumption that had the Ethnic Minority customers been White, they would have experienced the same **variation** in average employment (and benefit) outcomes as the average outcome variation actually experienced by White customers. This condition requires, in particular, that had they been White, the Ethnic Minority group would have been affected in the same way by macroeconomic conditions as the White group and, for New Deal Ethnic Minority customers, that they would have had the same programme effect as the White customers.

This assumption is, thus, most plausible when the two groups are very similar, so that asymmetric changes over time in the labour market, programme effects or individual behaviour are less likely. Given, however, the well-documented differences in important characteristics between Ethnic Minority groups, this assumption is not likely to be met.

A way to at least partially address this issue is to control for **observed** compositional differences between Ethnic Minority and White customers that are likely to affect their employment dynamics. This conditional DiD approach has been implemented in a rather flexible regression framework, allowing the ethnic penalty to depend on observed individual characteristics but restricting the effects of such characteristics on outcome growth to be linear.



A further implementation choice relates to how to deal with multiple pre-inflow time periods. Given that the literature to date has not provided any established solution, the analysis has been carried out in two ways. In the first variant, growth has been measured with respect to a 12-month moving window to capture seasonal effects, i.e. taking the difference between labour market status in the  $k^{\text{th}}$  post-inflow month and labour market status 12 months before (which is, by construction, a pre-inflow month, given that the analysis post-inflow window is of 12 months).<sup>30</sup> In the second variant, the change in employment/benefit status at a given post-inflow month has been calculated with respect to the average employment/benefit probability over the 12-month period before inflow.

Note that to implement an approach that models **changes** in outcomes, individuals with missing or otherwise incomplete 12-month pre-inflow histories have to be excluded from the analysis. Specifically, Ethnic Minority and White customers who have only **first** appeared in the Work and Pensions Longitudinal Study (WPLS) data during the 12 months before starting the programme/benefit have been dropped.

While the DiD analysis can provide an important sensitivity or robustness check for the results based on matching methods, there are a few conceptual caveats that have to be borne in mind.

The approach taken will not be valid if there are omitted variables that change in different ways for Ethnic Minority and White customers or if the two groups still have some unknown characteristics that distinguish them and make them react differently to, for example, a common macroeconomic shock or participation in a New Deal programme. Furthermore, even focusing on the available observed characteristics, in those instances where matching failed to balance them appropriately between Ethnic Minority customers and matched White customers, one **knows** that it is not possible to control appropriately for differences in these characteristics. Compared with matching or regression, in the DiD approach the importance of this fundamental incomparability (in terms of observables) has moved from resulting in bias due to its possible effects on outcome **levels** to resulting in bias due to its possible effects on outcome **growth**.

A second type of caveat relates to the *a priori* expectation that such a strategy would not be appropriate for many customer groups – the main reason for considering this analysis was as an additional sensitivity check rather than as the main approach. In particular, one would have thought that customers starting NDYP should have **all** been non-employed and on benefits in each of the six months immediately preceding the start of the programme. In such scenarios,

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<sup>30</sup> Given that the outcome, e.g. employed or not in a given month, is a binary variable, this implies running a regression on a dependent variable that takes on only three values (-1, 0 and 1). While it would thus not be appropriate to treat it as an approximately continuous variable, suitable ways to estimate the standard errors have been used.



a DiD approach would make no sense, since it would, *de facto*, end up just comparing the post-inflow **raw** outcomes.

As it turned out, however, some variation in pre-inflow labour market status for customer groups such as ND25+, NDYP and JSA has been uncovered in the data (e.g. between 14 (month 1) and 19 (month 20) per cent of ND25+ customers were in fact employed and between five (month 1) and 11 (month 12) per cent do not appear to be on benefits in the year immediately preceding inflow into the programme). Still, it remains largely unclear why they appear to be employed and/or not collecting any benefits (possible explanations relate to data-cleaning issues that favour employment in the presence of uncertain dates, to part-time work or to benefit fraud). It should, therefore, be kept in mind that for many customer groups, there is not much variation in the pre-inflow employment/benefit status; that the sources of such variation are unknown for important groups; and that the DiD strategy critically relies on such variation for identification of ethnic parity.

## 2.6 Comparison of methods

Previous papers estimating ethnic parity have tended to choose a particular econometric method and assume that it controls for all characteristics in an appropriate way. This report, on the other hand, can put this hypothesis to the test, by providing estimates of ethnic parity using a variety of methods (outlined in Section 2.5).

Matching (Section 2.5.2) is the only method to provide diagnostic tests. This enables the researcher to ascertain whether the process has been able to reweight the White sample in a way that makes it comparable with the Ethnic Minority sample of interest. For a result to be considered reliable, the following conditions have to be satisfied:

- after matching, no more than 35 characteristics significantly different at the five per cent level;
- pre-inflow history for the outcome of interest (for example, employment history for an estimate of employment parity) successfully balanced at the five per cent level;
- median bias no worse than for the raw samples (median bias gives an idea of how different the Ethnic Minority and White groups are in terms of observed characteristics).

In addition, it was also required that no more than 30 per cent of the Ethnic Minority sample was lost to common support.<sup>31</sup>

To pre-empt the results in Chapters 5 to 11, the most systematic finding is that matching and regression-based results tend to be very different from the raw estimates and are often of the opposite sign (indicating an ethnic premium when the raw results show a penalty, for example). Using raw estimates of ethnic parity, therefore, has the potential to be highly misleading.

Comparing across methods, matching estimates frequently differ from the regression-based and DiD results, particularly when the diagnostic tests indicate that an appropriate control group **cannot** be constructed. When this is the case, it is not clear whether any of the methods chosen will provide an unbiased estimate of ethnic parity (for the reasons outlined in Section 2.5).

When an appropriate control group **can** be constructed, Section 2.5 argued that matching is the method most likely to provide reliable results. The fact that regression-based results are sometimes different from the matching estimates indicates that reliance on regression-based results will, in some cases, also lead to misleading conclusions.

With this in mind, the report will focus on matching estimates of ethnic parity for subgroups for which an appropriate control group can be found.

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<sup>31</sup> If this condition is failed, the result is reliable but only applies to a subset (at most, 70 per cent) of the Ethnic Minority group in question. Results of this kind are not discussed in this summary report but do appear in the main report.

# 3 Programmes and benefits, sampling and data

## 3.1 Programmes and benefits

This report considers customers who made use of Jobcentre Plus services via one of the following programmes/benefits:

- Incapacity Benefit (IB);
- Income Support (IS);
- Jobseeker's Allowance (JSA);
- New Deal for Lone Parents (NDLP);
- New Deal for individuals aged 25 plus (ND25+);
- New Deal for Young People (NDYP);
- New Deal for Disabled People (NDDP);
- New Deal for Musicians (NDfM);
- Basic Skills;
- Work-Based Learning for Adults (WBLA);
- Employment Zones (Ezones);
- Ethnic Minority Outreach.

Customers in receipt of IB, IS or JSA, plus those who participate in NDLP, ND25+ or NDYP, are analysed in Chapters 6 to 11 respectively. These customers are joined by those who participate in NDDP, NDfM, Basic Skills, WBLA, Ezones or Ethnic Minority Outreach in the analysis of Jobcentre Plus overall in Chapter 5.

A brief description of each of these programmes/benefits is provided in the following sections.

### 3.1.1 Incapacity Benefit

IB is a benefit paid to individuals who are assessed as being incapable of work and who meet certain National Insurance (NI) contributions conditions. It is paid at three rates – short-term lower rate, short-term higher rate and long-term rate – depending on the duration of incapacity.

### 3.1.2 Income Support

IS is a benefit for individuals aged 16 and over who are on low income. It cannot be claimed by those who are unemployed and actively seeking work (they should claim JSA instead), nor is it payable to individuals in full-time work (claimants must be working less than 16 hours per week and their partner, if they have one, must be working less than 24 hours per week). In general, this means either that claimants are lone parents or that they are sick or disabled (but do not pass the NI contributions condition for IB).

### 3.1.3 Jobseeker's Allowance

JSA is a benefit paid to individuals of working age who are unemployed or who work fewer than 16 hours per week and are looking for full-time work. There are two main types of JSA: contributions-based JSA and income-based JSA. To be eligible for contributions-based JSA, an individual must meet certain NI contributions conditions (as with IB). Contributions-based JSA can be topped up with income-based JSA (or the individual can claim income-based JSA alone if they do not qualify for contributions-based JSA), which is means tested.

As a condition of receipt of JSA, all jobseekers must sign a Jobseeker's Agreement, which lists the actions they agree to undertake as part of their job-search activities. If an individual is deemed to have breached this Jobseeker's Agreement, they may incur a range of possible sanctions, up to and including having their benefit stopped.

### 3.1.4 New Deal for Lone Parents

NDLP is a voluntary programme which aims to help and encourage lone parents with at least one child under the age of 16 who are either not in work, or who work fewer than 16 hours per week, to *'improve their prospects and living standards by taking up or increasing hours of paid work and of improving their job readiness to increase their employment opportunities'* (Evans et al., 2003). Specifically, individuals are assigned to a Personal Adviser whose job it is to help them look and apply for suitable jobs, find training opportunities and find and organise registered childcare and to provide advice on the benefits to which they are entitled once they have found work.<sup>32</sup>

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<sup>32</sup> Source: [www.surestart.gov.uk/surestartservices/support/helpwithchildcarecosts/newdealforloneparents](http://www.surestart.gov.uk/surestartservices/support/helpwithchildcarecosts/newdealforloneparents)

### 3.1.5 New Deal for individuals aged 25 plus

ND25+ is designed to help unemployed individuals aged 25 and over to find and keep a job. Participation in ND25+ is compulsory for customers who have been claiming JSA for at least 18 of the previous 21 months. It is also possible to participate voluntarily in ND25+ before meeting this eligibility criterion, although evidence suggests that, at present, there is little or no early entry into ND25+.

When individuals first join ND25+, they enter a period known as **Gateway**. This can last up to four months and consists of informal meetings between the customer and their Personal Adviser to help with job-search activity, including addressing any issues that the individual feels are preventing them from moving into work (for example, childcare). If the individual has not found a job by the end of the Gateway period, they enter what is known as the **Intensive Activity Period (IAP)**. This requires the individual to commit full-time to either:

- work experience/work placements with an employer or voluntary organisation;
- training for a specific job; or
- courses to develop the skills that employers are looking for.

During the IAP, customers stop claiming JSA but receive a training allowance of equal amount (and, possibly, a top-up payment as well). If they have still not found a job by the end of the IAP (which lasts a minimum of 13 weeks), they make a new claim for JSA and continue receiving support from Jobcentre Plus to help them find a job: this period is known as **Follow-through** and can last up to six weeks.<sup>33</sup>

### 3.1.6 New Deal for Young People

NDYP is similar to ND25+ except that it is targeted on unemployed individuals aged between 18 and 24. Participation in NDYP is compulsory for all 18- to 24-year-olds who have been claiming JSA for at least six months; in addition, it is possible for certain customers to participate voluntarily at an earlier date.

Upon entering NDYP, participants go through a period of four months' intensive job-search activity, where Personal Advisers try to help them find unsubsidised employment: this period is known as **Gateway**. If they have not found a job at the end of the Gateway period, they can choose from the following four options, all of which are designed to enhance employability:

- subsidised employment for a period of six months (including self-employment);
- full-time education and training (FTET);
- employment in the voluntary sector (VS);
- employment in an environmental task force (ETF).

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<sup>33</sup> Source: [www.jobcentreplus.gov.uk/JCP/Customers/outofworkhelplookingforwork/Getting\\_job\\_ready/Programmes\\_to\\_get\\_you\\_ready/New\\_Deal/New\\_Deal\\_25\\_plus/Dev\\_011413.xml.html](http://www.jobcentreplus.gov.uk/JCP/Customers/outofworkhelplookingforwork/Getting_job_ready/Programmes_to_get_you_ready/New_Deal/New_Deal_25_plus/Dev_011413.xml.html)

For all NDYP participants who reach the end of the Option period without securing employment, the return to JSA is known as the **Follow-through** period, involving another period of intensive job-search.

### 3.1.7 New Deal for Disabled People

NDDP is a voluntary programme open to individuals in receipt of a disability or health-related benefit (for example, IB or Severe Disablement Allowance (SDA)) or of a disability premium to a non-health-related benefit (for example, IS or Housing Benefit (HB)<sup>34</sup>). Job 'brokers' from a range of organisations provide advice and practical support to participants, with the aim of helping them move from disability and health-related benefits into paid employment.<sup>35</sup>

### 3.1.8 New Deal for Musicians

NDfM is a voluntary programme that '*provides advice and guidance on the business aspects of work in the music industry*'.<sup>36</sup> It can also be accessed as part of ND25+ or NDYP at the Option/IAP stage.

### 3.1.9 Basic Skills

Individuals who have been unemployed for six months are screened for basic skills needs (in terms of literacy, numeracy and Information and Communication Technologies (ICT)). If they are found to be below Level 1<sup>37</sup> of the national basic skills curriculum, then they may be referred to some sort of Basic Skills provision. There are three main types of provision on offer: Short Intensive Basic Skills (which lasts for four weeks), Basic Employability Training and provision through the NDYP FTET option (both of which last up to 26 weeks). Each programme is designed to encourage and enable individuals to apply for and obtain jobs.<sup>38</sup>

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<sup>34</sup> Provided the individual is not receiving JSA and is not in paid work for 16 or more hours per week.

<sup>35</sup> Source: [www.direct.gov.uk/en/DisabledPeople/Emplimentsupport/WorkSchemesAndProgrammes/DG\\_4001963](http://www.direct.gov.uk/en/DisabledPeople/Emplimentsupport/WorkSchemesAndProgrammes/DG_4001963)

<sup>36</sup> Source: [www.jobcentreplus.gov.uk/JCP/Customers/outofworkhelplookingforwork/Getting\\_job\\_ready/Programmes\\_to\\_get\\_you\\_ready/New\\_Deal/New\\_Deal\\_for\\_Musicians/index.html](http://www.jobcentreplus.gov.uk/JCP/Customers/outofworkhelplookingforwork/Getting_job_ready/Programmes_to_get_you_ready/New_Deal/New_Deal_for_Musicians/index.html)

<sup>37</sup> See [www.qca.org.uk/libraryAssets/media/14130\\_national\\_standards\\_for\\_adult\\_literacy\\_numeracy\\_ict.pdf](http://www.qca.org.uk/libraryAssets/media/14130_national_standards_for_adult_literacy_numeracy_ict.pdf) for details of the literacy, numeracy and ICT skills that are expected in order to reach Level 1.

<sup>38</sup> Source: [www.dwp.gov.uk/jad/2003/148\\_sum.pdf](http://www.dwp.gov.uk/jad/2003/148_sum.pdf)

### 3.1.10 Work-Based Learning for Adults

WBLA was a voluntary programme available to unemployed individuals aged 25 or over who have been out of work for at least six months.<sup>39</sup> It aimed to help such individuals back to work through a programme of training and work experience, which might have involved training to do a specific job, working towards a National Vocational Qualification (NVQ), actual work experience or a combination of these. WBLA could also form a compulsory element of either ND25+ or NDLP.

### 3.1.11 Employment Zones

Ezones are operated by either public or private sector organisations in 13 areas of Great Britain,<sup>40</sup> and are designed to help unemployed individuals find and keep a job. For customers aged 25 and over who have been in receipt of JSA for at least 18 out of the last 21 months<sup>41</sup> or for those aged between 18 and 24 (inclusive) who have finished a spell on NDYP and have been receiving JSA for at least six months continuously, participation in Ezones is compulsory. Lone parents who are not working more than 16 hours a week and do not claim JSA<sup>42</sup> and individuals in receipt of Pension Credit (PC) who do not work more than 16 hours a week,<sup>43</sup> can participate voluntarily in Ezones.<sup>44</sup>

### 3.1.12 Ethnic Minority Outreach

Ethnic Minority Outreach was a voluntary programme aimed at unemployed Ethnic Minorities who had not been claiming JSA for more than six months and who lived

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<sup>39</sup> Individuals who do not need to meet the six-month rule include those with a disability, those with a basic skills need, those returning to work after caring for a child or other relative, lone parents, those subject to large-scale redundancies, those who have previously been in the armed forces and refugees.

<sup>40</sup> These areas are: Plymouth; Brighton and Hove; Doncaster and Bassetlaw; Middlesbrough, Redcar and Cleveland; Heads of the Valleys, Caerphilly and Torfaen; North West Wales; Nottingham, Glasgow; Liverpool and Sefton; Birmingham; Tower Hamlets and Newham; Brent and Haringey; and Southwark.

<sup>41</sup> Ezones operate instead of ND25+ (for which these individuals would have been eligible had they lived in a different area).

<sup>42</sup> The alternative for such individuals may be participation in NDLP.

<sup>43</sup> Of course, the restrictions that have been placed on the age of Jobcentre Plus customers in this report (see Chapter 3 for more details) mean that no-one claiming PC should be included in the Jobcentre Plus sample used for estimating ethnic parity.

<sup>44</sup> Source: [www.jobcentreplus.gov.uk/JCP/Customers/Programmesandservices/Employment\\_Zones/](http://www.jobcentreplus.gov.uk/JCP/Customers/Programmesandservices/Employment_Zones/)

in one of the target areas.<sup>45</sup> There were three main elements of Outreach work: encouraging individuals to use Jobcentre Plus services, working with employers to promote diversity in recruitment strategies, and delivering specialist support (for example, in addressing language needs) to help customers compete for jobs.<sup>46</sup>

## 3.2 Samples

Section 2.4.2 gave a brief outline of the sampling frame. This section describes, in more detail, how each of the samples was chosen. Note that the word 'sample' is not used in the traditional 'subset of the population' sense (because information about all individuals in the relevant population is available). Rather, it denotes all individuals in the population who meet the criteria set out below.

Analysis samples were defined as follows:

- **JSA**

All individuals:

- who started a JSA spell during 2003;
- aged 16-57 on the start date;
- whose JSA spell did not start during an NDYP, ND25+, NDfM or Ezones spell;
- who did not have a basic skills language need.

- **IS and IB**

All individuals:

- who attended a Work Focused Interview (WFI) for the relevant benefit during 2003, and for whom this WFI took place no more than six months after the benefit start date;
- aged 16-57 on the WFI date;
- who did not have a basic skills language need.

- **New Deal programmes**

All individuals:

- who started a spell of the relevant programme during 2003;
- aged 18-24 (NDYP), 25-57 (ND25+) or 16-57 (NDLP) on the programme start date;
- who did not have a basic skills language need.

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<sup>45</sup> These include districts in the East Midlands, the East of England, London, the North East, the North West, Scotland, Wales, the West Midlands, Yorkshire and Humberside and the South West.

<sup>46</sup> Source: [www.jobcentreplus.gov.uk/JCP/stellent/groups/jcp/documents/websitecontent/dev\\_011508.pdf](http://www.jobcentreplus.gov.uk/JCP/stellent/groups/jcp/documents/websitecontent/dev_011508.pdf)



- **Jobcentre Plus**

All individuals who belong to one (or more) of the JSA, IS, IB and New Deal programme samples, or:

- who started a spell of NDfM, NDDP, Basic Skills, WBLA, Ezones or Outreach during 2003;
- aged 16–57 on the start date;
- (if the spell was Basic Skills or WBLA) whose Basic Skills or WBLA spell did not start during an NDYP, ND25+, NDLP, NDfM, NDDP or Ezones spell;
- who did not have a basic skills language need.

A number of things should be noted about these definitions:

- The samples are all individual-based, not spell-based. In cases where an individual had more than one spell that qualified them for inclusion in a given sample, only the first such spell (the one starting earliest) is counted, so individuals do not appear in the sample multiple times. This spell is referred to as the 'qualifying spell'.
- An upper age limit was imposed for all samples to avoid including individuals about to retire. The number of individuals affected by this was relatively small (for example, around three per cent of individuals starting JSA in 2003 and 4.5 per cent of individuals starting ND25+ in 2003 were excluded by this rule).
- Individuals identified as having a basic skills language need were excluded. This method may not capture all individuals with language difficulties: only those recorded as having a basic skills language need. These individuals are excluded as people who do not speak English fluently are likely to have significantly different labour market prospects from those who do. Since one might expect this to be more of a problem for Ethnic Minorities than for Whites, it would have been near impossible to find comparable White individuals for this group of Ethnic Minorities.<sup>47</sup>
- JSA spells were not permitted to start during an NDYP, ND25+, NDfM or Ezones spell because it was judged that such spells were more likely to be continuations of previous JSA spells rather than new claims. (Individuals are recorded as having left JSA when they start a New Deal option even though they are still paid an amount equivalent to the value of JSA. If they have not found a job by the time the option has finished, they return to JSA – recorded as a new spell.)

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<sup>47</sup> The only exceptions may have been non-British White individuals, e.g. those of Eastern European origin, who make up a very small percentage of the White population of interest.

- For the Jobcentre Plus sample, Basic Skills and WBLA spells were not permitted to start during an NDYP, ND25+, NDLP, NDfM, NDDP or Ezones spell because individuals on any of these programmes could be sent on Basic Skills or WBLA. In such cases, it was felt that Basic Skills and WBLA spells should be treated as part of NDYP, ND25+, etc. rather than as spells in their own right.
- For IS and IB, analysis focused on individuals with WFIs because (i) these individuals are more likely to have ethnicity recorded and (ii) the WFI is a 'treatment' intervention whose effect can be analysed. For new claimants, WFIs usually take place shortly after the start of the IS or IB spell. But since WFIs were introduced across the country starting in 2003 as part of the roll-out of Jobcentre Plus, some individuals with a WFI in 2003 had already been receiving IS or IB for a long period of time. To avoid confusing the stock and flow of claimants (see Sections 2.3.2 and 2.4.2), it would have been desirable to require that new spells in 2003 were registered at a rolled-out Jobcentre Plus office (so claimants would have received a WFI within a few weeks). This, however, turned out to be too difficult to implement. Instead, the WFI date was restricted to be during 2003 and no more than six months after the benefit spell start date.<sup>48</sup>
- The definition of Jobcentre Plus includes all benefits and programmes with an identifiable treatment. This explains why benefits such as Bereavement Benefit, Incapacity Carers Allowance, etc. were excluded. That said, it would have been impossible to include most, if not all, of these benefits because ethnicity was recorded so poorly. It was not possible to replicate the current Department for Work and Pensions (DWP) definition of Jobcentre Plus (which considers all customers with **any** Labour Market System (LMS) activity) because employment and benefit outcomes were unavailable for customers who had not claimed a benefit or started a programme.
- Given that individuals may start more than one programme or benefit in the space of a year, a decision was made to restrict the Jobcentre Plus overall sample to include only the first qualifying spell for each individual. For example, if an individual (aged 20) started claiming JSA on 1 February 2003 and then joined NDYP as soon as they were required to (i.e. on 1 August 2003), then they would only be included in the Jobcentre Plus overall sample as a JSA claimant (and not as an NDYP participant). Given that this process was applied equally to both Ethnic Minority and White Jobcentre Plus customers, this should not introduce any bias into the results and it makes the estimation process simpler.

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<sup>48</sup> It should be noted that individuals who claim IS but who work less than 16 hours per week, are not required to participate in a WFI; hence, these individuals will be automatically excluded from the analysis.

### 3.3 The datasets

The samples described above were all selected using the Work and Pensions Longitudinal Study (WPLS) dataset.<sup>49</sup> This is a spell-level dataset that contains information about time on benefits and programmes (from DWP records, sometimes called the 'master index') and time in employment (from Her Majesty's Revenue & Customs (HMRC) records).

The definition of ethnic parity given in Chapter 2 requires that Ethnic Minority individuals be compared with 'otherwise-identical' White individuals. To identify which individuals were otherwise identical, a wide range of background characteristics was required. In fact, the strategy used in this project requires information on all pre-inflow characteristics likely to affect employment and benefit outcomes (see Section 2.5). Clearly, one important determinant of employment and benefit outcomes is past labour market involvement and this can be derived directly from the WPLS (see Section 3.4.2 for more details). Aside from this, the WPLS also includes a small number of useful characteristics, such as ethnicity, date of birth and sex, a partner flag for JSA claimants and postcode (enabling local area data to be merged in).

Other administrative data sources were used to provide additional background characteristics:

- 100 per cent National Benefits Database (NBD) provided some information for IS and IB claimants about children, partner, disability and illness;
- New Deal datasets provided information for NDYP, ND25+ and NDLP participants about disability and marital status.

None of the administrative data sources contain reliable information on education or wealth. As these are likely to be important determinants of labour market outcomes, some alternative source was required. In this case, aggregate data available for small geographic areas may be used as a suitable proxy. Information about local labour market conditions was also needed. Both were obtained from the 2001 Census (see Sections 3.4.3 and 3.4.4 for more details).

### 3.4 Explanatory variables

This section describes the variables that were created using the above data. It was agreed that, as well as an overall ethnic parity estimate for each benefit and programme, analysis should be conducted by ethnicity, sex and region. Section 3.4.1 describes these three variables. Sections 3.4.2 to 3.4.4 describe variables

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<sup>49</sup> The only exception is the exclusion of individuals with a basic skills language need. This was achieved using a dataset provided by DWP derived from Basic Skills administrative data which identified cases to be removed using a method formulated in earlier work by the Policy Studies Institute (PSI) (see Anderson *et al.* (2004)).

included in the analysis that are common to all benefits and programmes, while Section 3.4.5 discusses those unique to particular groups.

### 3.4.1 The 'by' variables: ethnicity, sex and region

Estimates of the degree of ethnic parity were split by ethnicity, sex and region. These three variables are described here.

- **Ethnicity** – Ethnicity information in the WPLS allowed 11 separate ethnic groups to be identified:
  - Black Caribbean;
  - Black African;
  - Other Black;
  - Indian;
  - Pakistani;
  - Bangladeshi;
  - Other Asian;
  - mixed;
  - Chinese;
  - Other ethnic group<sup>50</sup>;
  - unknown.

These were aggregated into five higher-level categories:

- Black (comprising Black Caribbean, Black African and Other Black);
- Asian (comprising Indian, Pakistani, Bangladeshi and Other Asian);
- Pakistani and Bangladeshi (note this is a subset of Asian);
- Mixed, Chinese and other;
- Ethnic Minorities overall (excluding unknown).

giving a total of 16 different Ethnic Minority groups.

- **Sex** – Estimates were produced separately for males and females and then for males and females pooled. In the latter case, a female indicator was included in the models.
- **Region** – The following 78 regions were identified:
  - Great Britain as a whole;
  - any of the 272 disadvantaged group wards (this is a single group);

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<sup>50</sup> Individuals of White (but not White British) ethnic origin will be included in this group.

- six cities (Birmingham, Bradford, Leeds, Leicester, London and Manchester) and rest of Great Britain (this is seven groups);
- 69 Jobcentre Plus districts.

### 3.4.2 Past labour market history variables

To derive reliable estimates of the ethnic penalty or premium in labour market outcomes, Ethnic Minority individuals must be compared with **otherwise-identical** White individuals. An important dimension in this is past labour market history, particularly in terms of:

- employment history;
- benefit history;
- past programme participation.

Before summary variables could be constructed, however, WPLS employment and benefit data had to be cleaned up considerably. What follows is a brief outline of the steps taken; more details are available on request.

For **employment spells**, the following steps were taken:

- Following DWP advice and internal DWP work, a number of spells were dropped. This included spells where DWP was unsure whether they have been matched to the right individual, old spells, spells that finish on or before the day they start, spells where the individual was aged less than ten on the start date, etc.
- A substantial proportion of individuals had multiple spells starting on the same day (often more than two), suggesting that not all 'old' spells had been successfully removed as the data were updated. This was certainly the conclusion reached by internal DWP work,<sup>51</sup> which kept only one job start for each individual on any one day. The rules used here differed slightly from this, but the basic principles were similar. Roughly in order, the rules used were:
  - favour spells with certain dates over those with uncertain dates (uncertain means either that only the tax year in which the spell started and/or ended is known or that the spell is ongoing);
  - favour spells from more recent extracts of the data;
  - favour longer spells.
- Some spells in the employment data were actually spells on taxable benefits. Many of these were flagged (and therefore easily removed), but this was not possible for all such spells. A set of rules, based on matching benefit and employment dates, was devised to try to eliminate more of these non-employment spells.

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<sup>51</sup> This work was part of the DWP's evaluation of the Job Outcome Target pilots. See [www.dwp.gov.uk/asd/asd5/rports2005-2006/rrep316.asp](http://www.dwp.gov.uk/asd/asd5/rports2005-2006/rrep316.asp)

- Having carried out all this cleaning, a large number of employment spells still had uncertain start or end dates. For these spells, start dates were set as early as possible and end dates as late as possible, and then an attempt was made to reduce the uncertainty using the fact that some benefits are very unlikely to overlap with employment.

A number of decisions, in particular those to favour longer spells when deleting duplicated spells and to set uncertain dates to maximise the length of the spell, are likely to have led to the length of employment spells being overstated. But this only matters to the extent that the spells of Ethnic Minorities and Whites are **differentially** affected.

**Benefit spells**, in contrast, were relatively straightforward to clean up. In short:

- following DWP advice, a number of spells were dropped (spells with negative duration, spells where the individual was aged less than ten on the start date, etc.);
- the end date of most benefit spells (not JSA) is only known within a two- or six-week window. For consistency with employment spells, the end date for these benefit spells was set to the last possible date the spell could have finished (i.e. the end of the window of uncertainty).

Again, choosing the latest possible end dates is likely to overstate the length of benefit spells but this matters only if Ethnic Minorities and Whites are differentially affected.

In the raw data, all employment, benefit and programme information appears in the form of spells (start and end dates – see above). Because of the complexity of spell patterns, this had to be summarised in some way to enable straightforward comparison across individuals. The decisions made about how to do this are documented below:

- Three years' worth of labour market history was used. Given the 2003 inflow window, the earliest spell information used relates to January 2000, consistent with DWP's concern that some spells prior to August 1999 may be unreliable.
- For benefit and employment histories, it made logical and practical sense to use the same variable definitions as used for benefit and employment outcomes. These were discussed in Section 2.4.4; the key features were:
  - they were defined in **relative** terms, counting from the day the individual started the programme that qualified them to be included in the analysis group (called the time of inflow,  $t = 0$ );
  - the measures were monthly (30-day intervals);
  - an individual was defined as being employed (on benefit) in a given month if they were employed (on benefit) for 15 or more days in that month; an individual was defined as being sustainably employed if they had been continuously employed for at least three months;

- the definition of ‘on benefit’ included JSA, NDYP, ND25+, Ezones, Basic Skills, WBLA, IS and IB.<sup>52</sup>
- Monthly employment, sustained employment and benefit variables were created along these lines for each of the **six** months prior to inflow. This was because previous research (e.g. Dolton *et al.*, 2006) has shown that recent labour market history is more important than earlier labour market history in determining future labour market outcomes.
- One real difficulty with using WPLS employment and benefit information to compare Ethnic Minorities and Whites is that recent immigrants will appear as having no employment or benefit history. If Ethnic Minorities are more likely to be recent immigrants than Whites, there is a real danger that Ethnic Minorities with a full (but unknown) work history will be compared with Whites who have never worked. To try to counter this problem:
  - dummy variables were defined for each of the six months prior to inflow, indicating whether the individual had yet appeared in the WPLS;
  - all ‘proportion of time’ variables (see below) were calculated relative to time since first appearing in the WPLS.

This issue is discussed in more detail in Section 4.5.

- Labour market history in the three years prior to inflow was also summarised more broadly using two variables: proportion of time employed in these months (or since first appearing in the WPLS, whichever is more recent) and proportion of time on benefit in these months (or since first appearing in the WPLS, whichever is more recent).<sup>53</sup>
- NDYP and ND25+ are mandatory after six months and 18 months of JSA receipt respectively. This raises the question of whether, for these groups, earlier labour market history might be more informative than more recent history because many individuals have been unemployed and on JSA in the run-up to inflow. It was decided, however, not to use substantially different history variables. This was both because a substantial proportion of individuals enter these programmes early (so will not necessarily have been unemployed and on JSA for all of the recent past) and because summarising earlier history in a more detailed way seemed to make little difference to the results. The only concession was the inclusion of an indicator of early-entrant status.

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<sup>52</sup> This definition is similar to that used in Beale *et al.* (2005).

<sup>53</sup> It had been thought that two sets of variables might be necessary: one for large subgroups that contained dummy variables for months 7–36 (like the variables for months 1–6) and one for small subgroups summarising the information more parsimoniously (as described above). It turned out, however, that the choice made little difference to the results, so only the parsimonious summary was used.



- It was thought that individuals with a history of inactive benefit receipt were likely to have considerably different employment and benefit prospects from those who had claimed only active benefits. Therefore, two additional dummy variables were included: one flagging individuals who had spent some, but not more than 50 per cent, of their time on inactive benefits since first appearing in the WPLS, and one flagging individuals who had spent more than 50 per cent of their time on inactive benefits.
- In the WPLS, there are a substantial number of employment spells lasting just one day. HMRC advice suggests these are often cases where the end date is known for certain but the start date is unknown. To avoid discarding this information completely, a dummy variable was created for individuals with at least one such spell in the three years prior to inflow, indicating that they had been employed for at least part of this period.
- Past participation in various programmes is likely to reveal information about individuals. In particular, participation in voluntary programmes may suggest a willingness to be proactive in improving employment prospects, whilst participation in Basic Skills may indicate individuals who are less likely to be successful in the labour market. In line with this, indicators of voluntary programme participation, Basic Skills need and Basic Skills attendance during the three-year history period were created.

### 3.4.3 Individual characteristics

Aside from labour market history, there are a number of other individual characteristics it is important to control for. These include:

- gender (only for estimates with males and females pooled);
- age;
- month of inflow;
- educational qualifications;
- wealth.

Of these, the last three merit brief discussion.

There are pronounced seasonal patterns in employment and benefit receipt so it is important to control for the month of inflow onto the benefit or programme of interest.

Education is an important determinant of labour market outcomes. Unfortunately, however, none of the administrative datasets used for this project contained reliable education information.<sup>54</sup> To address this problem, local area Census data were

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<sup>54</sup> The New Deal datasets included variables intended to record highest qualification but the information was missing for the vast majority of the sample so could not be used.



used as a proxy. Data was provided on highest qualification for unemployed or inactive people (the relevant population of interest for benefit claimants and New Deal participants)<sup>55</sup> for Super Output Areas ((SOAs), around 750 households). This was split by White/non-White status.<sup>56</sup> This was used to calculate the proportion of unemployed or inactive individuals in each combination of SOA and White/non-White status with:

- no qualifications (this is the omitted category);
- Level 1 qualifications;<sup>57</sup>
- Level 2 qualifications;
- Level 3 qualifications;
- Level 4 or higher qualifications;
- unknown qualifications.

For each White/non-White individual in a given SOA, the relevant information was mapped in using home postcode. In this context, the information can be interpreted as a probability that the individual has each level of qualification.

There are two potential problems with this approach: First, there is no guarantee that the correlation between actual qualifications and the SOA-level proxy is strong and, without data on actual qualifications, it is not something that can be tested. But given the absence of an alternative, there was little choice but to use this measure. The second problem relates to the fact that the Census was collected during 2001, whereas inflow took place during 2003. This means that not only might the information not be the most up-to-date available (individuals may have gained higher qualifications after the Census but prior to inflow)<sup>58</sup> but it is also possible that individuals in one of the analysis samples lived in an area in 2003 where no Ethnic Minorities lived when the Census was collected (in 2001), meaning that there is no SOA-level education information available for them. In fact, this latter issue turned out not to be a problem.

The administrative data also contained little indication of individual wealth, so, as with education, the 2001 Census was used to provide a proxy. A number of

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<sup>55</sup> For JSA, ND25+, NDYP and NDLP, unemployed individuals were thought to be the most appropriate group. For IS and IB, a combination of unemployed and inactive individuals was used.

<sup>56</sup> Information for more disaggregated ethnic groups could not be provided by Office for National Statistics (ONS) as it was potentially disclosive.

<sup>57</sup> See [www.sflqi.org.uk/llu+/docs/9185\\_level\\_descriptors.pdf](http://www.sflqi.org.uk/llu+/docs/9185_level_descriptors.pdf) for full details of the National Qualifications framework.

<sup>58</sup> Although the most important thing is that the information was collected prior to inflow.

alternatives were available.<sup>59</sup> The one chosen here was the proportion of each ethnic group<sup>60</sup> living in council or other social-rented housing at ward level.<sup>61</sup>

### 3.4.4 Local labour market characteristics

Employment opportunities and local conditions can vary widely across neighbourhoods. It is, therefore, important to control for these differences. The variable used to control for them was unemployment by travel-to-work area from the 2001 Census. The same concerns about timing outlined above also apply here.

### 3.4.5 Other variables not common across groups

Some information was only available (and perhaps even only relevant) for particular analysis groups. This section lists the remaining variables that were included in the model and the programmes and benefits for which they existed.

- **Partner** (available for: IS, JSA, NDYP, ND25+; not relevant for: NDLP) – Partner information relates, in general, to claims for a partner.
- **Number of children** (available for: IS, NDLP, IB; proxied: JSA, Jobcentre Plus, ND25+, NDYP) – Information about children relates, in general, to claims for children. Proxies were constructed using 2001 Census data in a way identical to that described above for wealth. The variable measures the proportion of the relevant ethnic group aged under 16 in the relevant ward.
- **Age of youngest child** (available for: IS, NDLP) – Information about children for IS customers relates to claims for children.

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<sup>59</sup> Results did not seem to vary with the measure chosen.

<sup>60</sup> For England and Wales, data were available for: White British, Irish, other White (combined to provide information for White individuals), White and Black Caribbean, White and Black African, White and Asian, other mixed (combined to provide information for individuals of mixed ethnic origin), Indian, Pakistani, Bangladeshi, Other Asian, Black Caribbean, Black African, Other Black, Chinese and other Ethnic Groups (each of whom appeared separately in the analysis). For Scotland, data were available for: White, Indian, Pakistani and other South Asian (this was mapped to Pakistani, Bangladeshi and Other Asian individuals), Chinese and other (where other was mapped to Black Caribbean, Black African, Other Black and other Ethnic Groups).

<sup>61</sup> The same variable at Output Area (OA) level (approximately 150 households) was originally mapped in, but was missing for a large proportion of individuals (indicating that people had moved across OAs between the Census and the time of inflow). Aggregation to SOA level did not seem to make any difference. It was thought that disaggregation by ethnicity was more important than disaggregation by region, so a ward-level measure was adopted.

- **Disability** (available for: IS, NDYP, ND25+, NDLP; not relevant for: IB) – IS disability information in the NBD relates to receipt of the IS disability premium. The majority of individuals are recorded as receiving the premium only after their IS claim had started. But given the possibility of administrative delays, the distinction between whether or not the premium was received from the start of the claim was ignored. New Deal disability information did not seem to be tied to receipt of a premium.
- **On IB at inflow** (available for: all benefits/programmes; not relevant for: IB) – Being on IB is an indicator of incapacity for work. Therefore, it is sensible to control for it in programmes and benefits other than IB.
- **On IS at inflow** (available for: all benefits/programmes; not relevant for: IS) – A substantial proportion of individuals on IB are also claiming IS, so it is important to control for IS claims for this group. It is not possible to claim IS alongside many of the other benefits and programmes in question.
- **Amount of benefit at inflow** (available for: IS, IB) – The purpose of including this information was twofold: as an indication of the amount that might be lost on entering work and as a proxy for characteristics not available elsewhere. Because there are only a small number of different IB rates, it was possible to classify the amount received into one of the following five categories: (i) £0; (ii) lower rate; (iii) lower rate plus adult dependent payment;<sup>62</sup> (iv) higher rate; and (v) other. A similar classification was not possible for IS; here, the distribution of amount received was split three ways: (i) less than £40; (ii) at least £40 but less than £60; and (iii) £60 or more.<sup>63</sup>
- **IB illness information** (available for: IB; not relevant elsewhere) – Individuals were classified into five categories according to their IB illness code using the International Classification of Diseases.
- **Occupation** (available for: JSA) – For JSA, the WPLS contains information both about the usual occupation of the individual and about the occupation of the job they are seeking. This was used to create a ten-way classification of usual occupations and indicators of whether the individual was seeking a job belonging to a higher or lower occupational group.
- **Previous New Deal spells** (available for: NDYP, ND25+, NDLP) – The number of previous spells on the relevant New Deal programme was included.

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<sup>62</sup> It was hoped that this might provide some information about partners (which is not available elsewhere for IB claimants).

<sup>63</sup> The amount of IS received may provide information about an individual's household income, although because the personal allowance depends on circumstances (e.g. whether an individual has a dependent partner or dependent children), it is not necessarily a monotonic relationship.

- **Early entrant** (available for: NDYP, ND25+; not relevant elsewhere) – This indicates whether the participant entered the relevant programme early (i.e. before the qualifying conditions based on JSA receipt had been met).
- **Programme indicators** (available for: Jobcentre Plus; not relevant elsewhere) – Since the Jobcentre Plus analysis group pooled individuals on different programmes and benefits, it was necessary to create indicators of the type of programme or benefit that the qualifying spell related to.<sup>64</sup>

### 3.5 Limitations of the data

Some limitations of the data used have already been touched on in previous sections. Here, the main issues are collected together.

- Employment spells for individuals on low earnings may not appear in the WPLS. Employment information in the WPLS is derived from P45 and P46 forms sent to HMRC by employers. It is only compulsory, however, to submit forms for employees earning enough to be subject to income tax. Although some employers submit forms for all employees regardless of their earnings, this is not always true. Therefore, individuals earning below the income tax threshold may appear as having no employment spells. This causes problems if it differs by ethnicity – which it might do if, say, Ethnic Minorities more often work for small employers who are less likely to submit forms for employees below the income tax threshold. There is no way of telling how much of a problem this is.
- The start and end dates for many employment spells are not known with certainty. Most commonly, this manifests itself as 6 April start dates and 5 April end dates (indicating that the tax year in which the employment spell started or finished is known but not the precise date). There are also a considerable number of spells lasting just one day (usually indicating that HMRC received notification of an end date for a job they didn't know existed). These unknown dates create wide windows of uncertainty of when individuals were actually employed. Again, they pose a problem for this project if unknown dates affect Ethnic Minority employment histories and/or outcomes differently from White employment histories and/or outcomes.
- Many individuals have multiple employment spells that seem to relate to the same job (for example, they start on the same day and there are too many for them to all be different jobs). If all these spells had the same start and end dates, it would not be a problem for employment histories and outcomes as defined in this project (because no account is taken of the number of jobs held). But this is not the case: often, the end dates of spells differ (some are certain end dates, others are uncertain within a tax year, others are open spells, etc.).

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<sup>64</sup> Note that individuals for whom the qualifying spell was NDfM, NDDP, Basic Skills, WBLA, Ezones or Outreach were grouped into an 'Other' programme type.

- The end dates for most benefit spells are only known to within a given window (usually two or six weeks). In the raw data, the actual end date is randomly set to be some time during that window.
- There is no record of how long individuals have been living in the UK. In a project comparing Ethnic Minorities and Whites, immigration is likely to be a considerable issue. An individual who has just arrived in the UK and starts claiming benefits or joins a programme will never previously have appeared in the WPLS (i.e. they will be recorded as never having previously been employed or on benefit), whereas they may, in reality, have been employed or on benefit in another country. This means that they will be compared with White individuals who have also only just appeared in the WPLS but who may have been absent for potentially different reasons, e.g. studying or starting a family. The underlying assumption in this project must be that Ethnic Minorities and Whites are absent from the WPLS for the same reasons.
- The range of background characteristics available in the administrative data is limited. In particular, there is no reliable education information and (in the version of the data used for this project) no indication of income or wealth. As described above, it is possible to use Census data to proxy for this missing information but this is likely to fall some way short of having the information for the individuals themselves. This is because the proxy is an area-level average by ethnicity. Where many individuals of a given ethnicity live in a particular area, the proxy is completely reliant on individuals in that area having similar qualifications to the individual being proxied.
- Recent migrants to the UK may not speak English very well and are, therefore, likely to find it much harder to find work than an otherwise equivalent individual. The only source of information about language needs is the Basic Skills dataset. This can help identify individuals who don't speak English well but it isn't clear that all such individuals will be captured (and therefore dropped from the analysis).



## 4 Interpretation of ethnic parity estimates

In this chapter, a few critical caveats that should be borne in mind when interpreting the estimates of ethnic parity in outcomes from Jobcentre Plus services and programmes are highlighted.<sup>65</sup> It should be noted that when considering subgroups, analysis is only carried out on Ethnic Minority groups that contain more than 400 individuals and where less than 95 per cent of the sample is lost to common support.

The results chapters contain many summary tables describing the subgroups that exhibit penalties, the subgroups that exhibit premiums and the subgroups for which parity cannot be rejected.

For an **employment** penalty to be recorded, Ethnic Minorities must be significantly less likely (at the five per cent level) than Whites to be employed in at least one of the 12 months following inflow to the relevant benefit or programme, while for an **employment** premium to be recorded, Ethnic Minorities must be significantly more likely (at the five per cent level) than Whites to be employed in at least one of the 12 months following inflow to the relevant benefit or programme. For **benefits**, it is the other way round: a penalty is recorded if Ethnic Minorities are significantly more likely (at the five per cent level) than Whites to be claiming benefits in at least one of the 12 months following inflow to the relevant benefit or programme, while a premium is recorded if Ethnic Minorities are significantly less likely (at the five per cent level) than Whites to be claiming benefits in at least one of the 12 months following inflow to the relevant benefit or programme. Because these criteria require significant differences in only one of the 12 outcome months, it is possible for a given subgroup to exhibit both a penalty and a premium. When no penalty or premium is found, this is described as ethnic parity not being rejected.

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<sup>65</sup> A much more extensive discussion of how to interpret all the outputs produced for the main report as well as interpretational caveats are discussed in Chapter 4 of the full report.

## 4.1 Ethnic parity and unobserved characteristics

Both matching and regression estimates can control only for **observed** differences between ethnic groups in characteristics that are likely to impact on labour market outcomes. **Any residual unobserved differences other than ethnicity between the groups being compared will show up as ethnic penalty or premium** (depending on whether the remaining difference concerns an unobserved trait that is unfavourable or valuable to the labour market).

For instance, suppose that:

- a given Ethnic Minority group has invested less in training, or is less motivated, on average, than the White customer group it is compared to;
- our data do not include indicators of past training and of ambition;
- these characteristics have a strong, positive impact on an individual's probability of obtaining a job.

In this case, any measure of 'ethnic penalty' obtained via regression or matching would be driven – partly at least – by this difference in unobserved characteristics, as opposed to ethnicity itself. In this example, the ethnic penalty would be overestimated.

A specific caveat on unobserved differences concerns the pre-inflow employment history. If there is differential selection into employment on the basis of **unobservables** and if there has been past discrimination in the labour market, then the members of an Ethnic Minority group with the same employment history as their matched White counterparts might represent a higher 'slice' of the (unobserved) ability distribution amongst their ethnic group. As a result, any investigation risks comparing more able Ethnic Minorities with less able Whites, in terms of their unobservable characteristics, which would lead to an underestimate of any ethnic 'penalty' and to an overestimate of any ethnic 'premium'.

A similar argument can be made in terms of other observables one would like to control for, such as education. If the selection process into education differs between Ethnic Minorities and Whites,<sup>66</sup> then comparing Ethnic Minority and White

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<sup>66</sup> For example, because of anticipated discrimination in the labour market, credit constraints or a different culture, Ethnic Minorities might be less likely to invest in education, so those Ethnic Minority individuals who are observed to achieve a given qualification are of higher unobserved ability than Whites achieving that qualification.



individuals with the same level of education might still leave some unobservable difference unaccounted for.<sup>67</sup>

## 4.2 Common support

As mentioned in Chapter 2, regression methods may end up estimating the ethnic penalty by comparing non-comparable individuals using extrapolation. This is the so-called 'common support problem', arising when, for some individuals of the Ethnic Minority group of interest, there are no White individuals with the same (or similar) observed characteristics.

Matching methods, by contrast, focus on finding an appropriate comparison group for the Ethnic Minority group under analysis; the price to pay to achieve the necessary comparability is that matching analyses would exclude from the analysis those Ethnic Minority customers who have no suitable match or comparator among White customers.

If the extent of the ethnic penalty/premium differs across Ethnic Minority customers, restricting to the common subset could actually change the parameter being estimated; in other words, the estimated ethnic parity would only pertain to those Ethnic Minority customers who fall within the common support and might not reflect the ethnic parity for the full Ethnic Minority customer group.

Just realising how different some Ethnic Minority customers are from White customers is in itself an informative piece of information – the extent to which Ethnic Minority customers differ from the corresponding White customers, even within a given region, is at times striking (e.g. forcing the removal of over 95 per cent of the Ethnic Minority group), preventing, in fact, any analysis from being carried out. By contrast, standard regression methods would have ignored such a fundamental non-comparability and simply extrapolated based on functional form assumptions.

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<sup>67</sup> The same issues arise in the classic case of testing for discrimination on the grounds of gender using a wage equation. Estimates of male and female earnings equations are used with some form of decomposition method to determine the extent to which women in the sample are being rewarded in a different way from men **given their observed characteristics**, among which are education and past labour market experience. However, this does not account for the fact that (traditionally) female rates of participation and, therefore, employment tend to be lower than those for men. If this 'selection' into the labour market is non-random (for instance, if it is the case that only the most able of women enter the labour market or indeed, obtained higher levels of education), then men and women with the same observed labour market experience and education will differ in terms of unobservables. As far as we are aware, this issue has not been fully addressed in this literature.

### 4.3 Difference-in-differences analysis

Matching and regression-based estimates of the ethnic parity will be biased if the available data do not contain all those variables that differ between Ethnic Minority and White customers and also affect their labour market outcomes.

The difference-in-differences (DiD) analysis would, by contrast, account for this bias – provided that the omitted variables are constant over time and have a constant effect on the outcome. This approach relies on a plausibly weaker assumption than matching or regression (though such assumptions are not nested): if they had been White, the Ethnic Minority customers would have experienced, on average, the same outcome **dynamics** as the ones experienced by White customers. This assumption can still be implausible if Ethnic Minority and White customers are observed to be unbalanced in terms of pre-inflow observed characteristics that are thought to be associated with employment dynamics. This was the reason to extend the simple DiD approach to one that controls for the impact of observed characteristics on outcome growth.

The necessary assumption then becomes that, conditional on such observed characteristics, the average outcomes for Ethnic Minority customers, had they been White, would have followed parallel paths to the average outcomes of White customers.

While the DiD analysis can provide an important sensitivity or robustness check for the results based on matching methods, there are a few conceptual caveats that have to be borne in mind. These were discussed in Section 2.5.5.

### 4.4 Employment outcomes: low earners are missed from the Work and Pensions Longitudinal Study

The proportion of under-65s who are working but earning below their personal allowance is about seven per cent of the working population;<sup>68</sup> these individuals will not be included in the Work and Pensions Longitudinal Study (WPLS) unless their employer voluntarily reports their employment status and earnings.

This share is bound to be much greater than seven per cent for the more disadvantaged groups considered in this analysis. Therefore, a non-negligible minority of working Jobcentre Plus customers will not, in fact, be recorded as in employment in the available database.

One possibility is to reformulate the employment outcome as being ‘gainfully employed with earnings above the tax threshold’. While this represents an interesting and relevant outcome, it is not fully captured in the data either. This is because some firms do voluntarily submit the relevant forms for **all** employees,

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<sup>68</sup> Figure taken from the 2003/04 Family Resources Survey and run through HMRC’s Tax and Benefit Model, IGOTM.

irrespective of how much they earn; the data, thus, also include an unidentified proportion of individuals who earn below the threshold.

There would still be no difficulties for interpretation provided an equal proportion of Whites and Ethnic Minorities (with the same observable characteristics) had their status voluntarily reported by firms. However, this condition would not hold if, even given observable characteristics, Whites are more likely to work in firms that tend to report irrespective of earnings amount, such as larger or more organised firms. It is not possible to observe whether this is so or not.

Note that, by contrast, benefit receipt does not suffer from such selective recording problems. Discussing employment and benefit outcomes jointly thus allows one to gain a quite reliable overall picture of ethnic differences in labour market performance.

#### 4.5 Time neither in employment nor on benefits and immigration

To control for previous differential labour market experience and performance between Ethnic Minority and White customers, an individual's past labour market history has been tracked back to three years before inflow.

As mentioned in the previous section, some past employment spells might have been missed and this might have happened differentially between Ethnic Minorities and Whites. An additional data-driven concern relates to the absence, in the administrative database used in the project, of any information concerning the date of arrival in the United Kingdom by **non-native** individuals, essentially all of whom are of an Ethnic Minority background

Specifically, if an individual at a given time does not appear in the WPLS, it can mean either that:

- they are neither on any benefit nor in recorded employment; or
- they are not in the country (yet).

Immigration taking place less than three years prior to starting the programme/benefit would, thus, automatically mean that an individual did not have a full work or benefit history.

To address the problem that Ethnic Minority clients are around ten percentage points more likely than Whites to have not been in the WPLS for three years or more, the time that each individual has been observed in the WPLS has been used as the reference for calculating their pre-inflow labour market history. Specifically, the total proportion of time spent on benefits in the last three years and the share spent in employment in the last three years have been normalised using the actual time an individual has been observed in the WPLS (instead of three years). An additional set of six matching variables has also been constructed for each of

the six months prior to inflow to reflect whether labour market status is known or unknown (the latter referring to months prior to a person first appearing in the WPLS).

The choice of normalisation and the inclusion of the extra matching variables go some way in trying to account for differential 'entry' into the WPLS between Ethnic Minority and White customers.

Still, one has to keep in mind that the underlying assumption is that what Ethnic Minority individuals do when not in WPLS is, on average, 'equivalent' (at least in terms of labour market performance) to what their observationally similar White counterparts do when not in the WPLS. The remaining concern is thus that 'not being in the WPLS' could mean different things for Ethnic Minority non-natives and for their matched White natives. For natives, it means having been out of the labour force: studying, informal employment, employment below the tax threshold, pregnancy, etc. For non-natives, by contrast, it could be any of the above (i.e. being out of the labour force), but it could also be work of a type that would have appeared in the WPLS had they been in the UK.

#### 4.6 Comparisons of ethnic parity across ethnicities, programmes and districts

First of all, while the extent of ethnic parity can be compared across Ethnic Minority groups (say, Blacks having a lower degree of parity than Asians), specific analyses would be needed to calculate measures of ethnic parity between two Ethnic Minority groups. One cannot simply divide the estimated parity measures that were obtained separately for, say, Blacks and Asians to infer the penalty/premium from belonging to one rather than the other Ethnic Minority group. This is because despite the fact that both estimates were obtained with reference to the same (White) group, each measure involved a different way of reweighting the White comparator individuals, so the transitive property does not apply in general.<sup>69</sup>

Second, the set of obtained ethnic parity measures would not allow for straightforward comparisons between programmes. In particular, the report estimates the parities achieved by the various programmes separately, and each for its **specific** Ethnic Minority customer group. Hence, an unequal parity performance of the different programmes considered separately may just arise from the different types of Ethnic Minority and White customers they serve.

Third, comparisons of the parity estimates across programmes would not allow one to address the question of which programme helps Ethnic Minorities the most. More specifically, these comparisons do not allow one to investigate the relative impact of different Jobcentre Plus programmes in placing Ethnic Minorities into

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<sup>69</sup> It would hold under the very special case where the (observed) characteristics were the same for the two Ethnic Minority groups for which a direct comparison is sought.

work. This is because in order to measure the relative programme effectiveness for Ethnic Minorities, the performance of a group of Ethnic Minority customers who entered a particular programme would need to be compared with the performance of a group of customers from the **same** Ethnic Minority who entered **another** programme, with the added condition that these customers would need to have the same or very similar characteristics. The same would apply to their White comparators. Due to the targeted nature of most of the programmes, this kind of comparison is only available for New Deal for individuals aged 25 plus (ND25+) compared to Employment Zones (Ezones).

For the reasons discussed above, it is important to stress that the ranking of the ethnic parity measures should not be taken as the final verdict on the effectiveness of the programmes for Ethnic Minorities. Indeed, the analysis in this report is not evaluating programme effectiveness at all but instead, differential effectiveness for Ethnic Minorities and Whites.

To exemplify these caveats in just comparing the parities of two programmes, consider the following example. Suppose ethnic parity cannot be rejected for New Deal for Young People (NDYP) and an ethnic penalty is found for New Deal for Lone Parents (NDLP) – in other words, that the employment chances of an Ethnic Minority NDYP participant are the same as those of their matched White comparator, while the employment chances of an Ethnic Minority NDLP participant are lower than those of an observably similar White participant. This finding only enables one to say that NDYP seems to perform better with regard to ethnic parity than NDLP. However, the ethnic parity scores of NDYP relate specifically to the NDYP entrants who were used to generate them, so that if NDLP entrants had instead gone onto NDYP, they wouldn't necessarily have achieved the same scores. Furthermore, such findings are consistent with a situation in which NDLP is more effective than NDYP for Ethnic Minorities, in the sense that it helps more Ethnic Minority people back into employment than does NDYP (i.e. Ethnic Minorities have better employment outcomes if they go on NDLP). In fact, it could even be that NDYP – the programme with ethnic parity – has no effect at all, neither for Whites nor for the Ethnic Minorities, i.e. it is equally ineffective for both groups of participants.

Similar caveats apply when comparing the ethnic parity measures across localities (districts or offices): the composition of Ethnic Minority customers might differ across districts, and close parity in a district may not imply that that district is most effective (again, the extreme example is a district that, while totally ineffective for White and Ethnic Minority customers alike, is found to have ethnic parity).

## 4.7 Implications of and for 'discrimination'

### 4.7.1 Implication of discrimination for ethnic parity estimates

The counterfactual question that the report tries to address concerns how the labour market outcomes of an Ethnic Minority customer would differ if they were White. It is important to stress that this counterfactual implies **holding constant the ethnicity of everyone else**, i.e. how would the outcomes of an Ethnic Minority customer differ if they were of White origin **but** every other Ethnic Minority individual retained their ethnic origin (this is called 'partial equilibrium' analysis). Specifically, these estimates are not answering the question of what would happen to the outcomes of an Ethnic Minority customer if every Jobcentre Plus Ethnic Minority client were 'switched' to White.

To see how this subtle issue relates to the interpretation of the ethnic parity estimates in the presence of discrimination against Ethnic Minorities in the labour market, let us assume that there is discrimination in the labour market and that an ethnic penalty is found. This ethnic penalty estimate would pick up two factors:

- the fact that an Ethnic Minority client experiences worse employment outcomes than their observable characteristics (bar ethnicity) would predict;
- the fact that in the presence of inelastic labour supply, the White comparator is likely to experience more favourable employment outcomes compared with a situation in which there were no discrimination. Specifically, the Ethnic Minority client whose ethnicity is 'switched' to White would then take advantage of the discrimination in favour of Whites (and against their previous Ethnic Minority group).

The crucial issue is that discrimination not only affects the labour market outcomes if an individual is of an Ethnic Minority background but it can also affect the outcomes if the (same) individual is of White background (since in the presence of discrimination a White customer will experience better labour market outcomes than if the same White customer were facing a labour market with no discrimination). Both effects are captured by the ethnic penalty estimate. This needs to be borne in mind when looking at the results.

### 4.7.2 Implication of ethnic parity for discrimination

If the available variables are sufficiently rich to enable this analysis to control for all those labour market relevant differences between Ethnic Minority and White customers who start on a programme or benefit, anything that differentially happens to their employment rate afterwards can be interpreted as being purely driven by the different ethnicity.

It is, however, important to appreciate from the start that the analyses in this report were not designed to look into the **process** causing Ethnic Minorities to perform differently from observationally similar Whites; in particular, they do not allow one to disentangle the various potential channels that might lead Ethnic Minorities to experience different outcomes from observationally similar Whites.

It was initially thought that information on job referrals could be explored in two additional types of analyses to provide some indication of the extent to which the labour market itself (as opposed to Jobcentre Plus in particular) could account for any residual ethnic differences. In a first step, job referral intensity was to be considered as an outcome, where a finding that Ethnic Minority customers were experiencing lower job referral rates than their observationally similar White counterparts could hint at the programme/service working differentially. In a second step, ethnic parity estimates conditioning on referral intensity were meant to block out this channel, thus isolating 'residual' employer discrimination. In particular, observing differences in employment outcomes for Ethnic Minority and observationally similar White customers once holding job referral intensities constant across ethnic groups might indicate the presence of employer discrimination in recruitment. Whilst these analyses were only ever meant to provide very simple information on these issues, the assumptions required turned out to be unduly strong due to the lack of any clear timeline associated with the data on referrals. Furthermore, the interpretation of the findings of 'referrals ethnic penalties' would not be particularly informative or clear-cut; evidence of a large number of referrals for an individual could reflect a 'motivated' client who pushes for referrals or a caseworker who feels the candidate is highly employable and refers them for jobs. The fact that caseworkers tend to avoid referring Ethnic Minority clients to firms they already know do not hire minorities and the presence of district targets on referrals, would further confound any meaningful interpretation. It was thus decided not to proceed with this analysis as part of this project.

In particular, if an ethnic penalty is found, two (and possibly three) broad influences could be at work:

- Labour market discrimination by **employers** based on employers' views on Ethnic Minorities.
- Differential treatment effects of **Jobcentre Plus programmes and services**, where the treatment effect is defined as the employment outcome if an individual is 'treated' by Jobcentre Plus compared with the employment outcome if the individual is not 'treated' by Jobcentre Plus. Differential treatment effects – whereby the treatment effect of the programme/service for Ethnic Minority customers differs from the treatment effect of the programme/service for observationally similar White customers – could in turn arise from:



- ‘discrimination’ by Jobcentre Plus, i.e. the way Jobcentre Plus treats Ethnic Minorities. It is important to stress that this does not necessarily mean that Jobcentre Plus advisers/staff neglect Ethnic Minority customers compared with observationally similar Whites; in fact, staff might be trying their best for Ethnic Minorities but there is no way of knowing what effect these efforts actually have, i.e. they could be unwittingly counterproductive or misplaced. The evaluation literature is full of examples of programmes that actually hurt the participants they were meant to help. Also, several studies have shown that caseworkers do not seem, in general, to (be able to) allocate their clients so as to maximise their subsequent outcomes. For Sweden, Frölich (2001) has found that compared with the observed assignment to four types of rehabilitation programmes, an optimal allocation of participants would have yielded large gains in the form of an over 20 per cent higher re-employment rate. Analogous conclusions are reached by Lechner and Smith (2003) for Switzerland (see also the similar evidence they review for other countries);
- the programme options that Ethnic Minority customers decide to go on to (decided on their own and/or influenced by their adviser – see point above). Maybe they choose less effective ones than the ones that observationally similar Whites choose.
- Self-discriminatory behaviour by **Ethnic Minorities**, such as not applying for a job or not choosing an effective programme or option because they anticipate, rightly or wrongly, that they will be discriminated against.

It is important to keep these caveats in mind when interpreting the estimates contained in Chapters 5 to 11. These chapters bring out the highlights of the exhaustive analysis carried out in Chapters 5 to 12 of the main report.<sup>70</sup>

## 4.8 Subgroups for which reliable results exist

For each benefit or programme, the total possible number of groups for which analysis could have been run is 3,744 (16 ethnic groups × 3 gender groups (male, female and both) × 78 regions). In reality, far fewer results than this were calculated (because subgroups were too small) and even fewer of these results were reliable. This is shown in Table 4.1.

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<sup>70</sup> Electronic copies of the full report are available on the IFS website: [www.ifs.org.uk](http://www.ifs.org.uk)



**Table 4.1 Subgroups for which reliable results could be calculated**

|                        | Subgroups containing 400+ Ethnic Minorities (% of 3,744) |                         | Reliable results for employment (% of remaining subgroups) |             | Reliable results for sustained employment (% of remaining subgroups) |             | Reliable results for benefit receipt (% of remaining subgroups) |             |
|------------------------|--|-------------------------|--|-------------|--|-------------|---|-------------|
|                        | No.  | %                       | No.  | %           | No.  | %           | No.   | %           |
| Jobcentre Plus overall | 1,146  | 30.6                    | 458  | 40.0        | 467  | 40.8        | 322   | 28.1        |
| IB                     | 88   | 2.4                     | 79   | 89.8        | 77   | 87.5        | 71  | 80.7        |
| IS                     | 124  | 3.3                     | 107  | 86.3        | 104  | 83.9        | 102   | 82.3        |
| JSA                    | 1,031  | 27.5                    | 406  | 39.4        | 435  | 42.2        | 341   | 33.1        |
| NDLP                   | 120  | 3.2                     | 83   | 69.2        | 85   | 70.8        | 93  | 77.5        |
| ND25+                  | 140  | 3.7                     | 61   | 43.6        | 59   | 42.1        | 63  | 45.0        |
| NDYP                   | 279  | 7.5                     | 68   | 24.4        | 67   | 24.0        | 56  | 20.1        |
| <b>Total</b>           | <b>2,928</b>   | <b>11.2<sup>a</sup></b> | <b>1,262</b>   | <b>43.1</b> | <b>1,294</b>   | <b>44.2</b> | <b>1,048</b>  | <b>35.8</b> |

<sup>a</sup> Percentage of 3,744 × 7.

Table 4.1 shows that only 2.4 per cent of subgroups for IB contained at least 400 Ethnic Minorities. For Jobcentre Plus overall, 30.6 per cent of subgroups were large enough.

For subgroups that were large enough, the proportion with reliable results (where reweighting White individuals to look like the Ethnic Minority groups was successful) varied widely, from a low of 20.1 per cent for NDYP benefit results to a high of 89.8 per cent for IB employment results.<sup>71</sup>

In short, the main reason why reliable results do not exist for many subgroups is that there were too few Ethnic Minorities in that subgroup. For some programmes and benefits, particularly Jobcentre Plus overall, JSA, ND25+ and NDYP, failure to re-weight White individuals satisfactorily was also important.

<sup>71</sup> These figures are given as percentages of all subgroups that were large enough, including those where results were not calculated because a suitable match could not be found for 95 per cent or more of the Ethnic Minority sample.



# 5 Ethnic parity in Jobcentre Plus overall

## 5.1 Introduction

This chapter summarises the main findings of Chapter 5 of the main report. It looks at measures of ethnic parity for Jobcentre Plus customers who entered one of the following programmes (or started claiming one of the following benefits<sup>72</sup>) in 2003:<sup>73</sup>

- Jobseeker's Allowance (JSA);
- Income Support (IS);
- Incapacity Benefit (IB);
- New Deal for individuals aged 25 plus (ND25+);
- New Deal for Young People (NDYP);
- New Deal for Lone Parents (NDLP);
- New Deal for Disabled People (NDDP);
- New Deal for Musicians (NDfM);
- Basic Skills;
- Work-Based Learning for Adults (WBLA);

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<sup>72</sup> Note that for individuals who are included in the Jobcentre Plus sample as a result of an Income Support (IS) or an Incapacity Benefit (IB) spell, it is actually the date of the Work Focused Interview (WFI) (rather than the claim start date) that must be in 2003 (and within six months of the start of the IS or IB claim). Further explanation can be found in Chapters 6 (IB) and 7 (IS) of the main report.

<sup>73</sup> Refer to Section 3.1 for more information about each of these programmes/benefits.

- Employment Zones (Ezones);
- Ethnic Minority Outreach.

Given that individuals may start more than one programme or benefit within the space of a year, a decision was made to restrict the sample to include only the first such qualifying spell (see Chapter 3 for more details). This may mean that NDYP spells (amongst others) are under-represented in the Jobcentre Plus sample (compared with JSA spells, for example).<sup>74</sup>

## 5.2 Description of the Jobcentre Plus sample

Table 5.1 provides a breakdown of the Jobcentre Plus sample by programme/benefit and ethnicity. As can be seen, around three-quarters of the sample comprises individuals who started a JSA claim in 2003: this is slightly higher for Whites than for Ethnic Minorities (77.6 per cent compared with 72.3 per cent). This indicates that the results from analysing the JSA programme separately (in Chapter 8) are likely to be very similar to those for the Jobcentre Plus sample.

Table 5.2 provides a breakdown of the Jobcentre Plus sample by gender and ethnicity. Just over two million individuals accessed Jobcentre Plus services (of the type described above) at some point during 2003, of whom 64 per cent are male. Approximately 80 per cent of individuals in the sample are White and just over ten per cent are from an Ethnic Minority background. Further disaggregation shows that 3.6 per cent of customers are Black (of whom 47 per cent are Black Caribbean and 41 per cent are Black African), 4.1 per cent are Asian (of whom 39 per cent are Pakistani and 37 per cent are Indian) and 2.5 per cent are of some other ethnic origin.

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<sup>74</sup> This is because it is mandatory for JSA recipients to start NDYP six months after first claiming benefit, so that if individuals start both JSA and NDYP in 2003, only their JSA spell will be included in the Jobcentre Plus sample. For information, 97 per cent of White individuals in the JSA sample are also included in the Jobcentre Plus sample, compared with only 53 per cent of White individuals in the NDYP sample. The figures are similar for Ethnic Minorities in these programmes.

**Table 5.1 Breakdown of Jobcentre Plus sample by programme/benefit**

| Programme/benefit                     | Whites           |            | Ethnic minorities |            |
|---------------------------------------|------------------|------------|-------------------|------------|
|                                       | Number           | %          | Number            | %          |
| JSA                                   | 1,282,273        | 77.6       | 152,038           | 72.3       |
| IS                                    | 41,655           | 2.5        | 4,829             | 2.3        |
| IB                                    | 43,309           | 2.6        | 3,405             | 1.6        |
| ND25+                                 | 62,704           | 3.8        | 10,828            | 5.2        |
| NDYP                                  | 66,162           | 4.0        | 15,696            | 7.5        |
| NDLP                                  | 106,877          | 6.5        | 10,081            | 4.8        |
| NDDP                                  | 2,168            | 0.13       | 143               | 0.07       |
| NDfM                                  | 268              | 0.02       | 58                | 0.03       |
| Basic Skills                          | 21,794           | 1.3        | 8,156             | 3.9        |
| WBLA                                  | 21,217           | 1.3        | 4,111             | 2.0        |
| Ezones                                | 2,932            | 0.18       | 984               | 0.47       |
| Ethnic Minority Outreach <sup>a</sup> | 176              | 0.01       | 29                | 0.01       |
| <b>All</b>                            | <b>1,651,535</b> | <b>100</b> | <b>210,358</b>    | <b>100</b> |

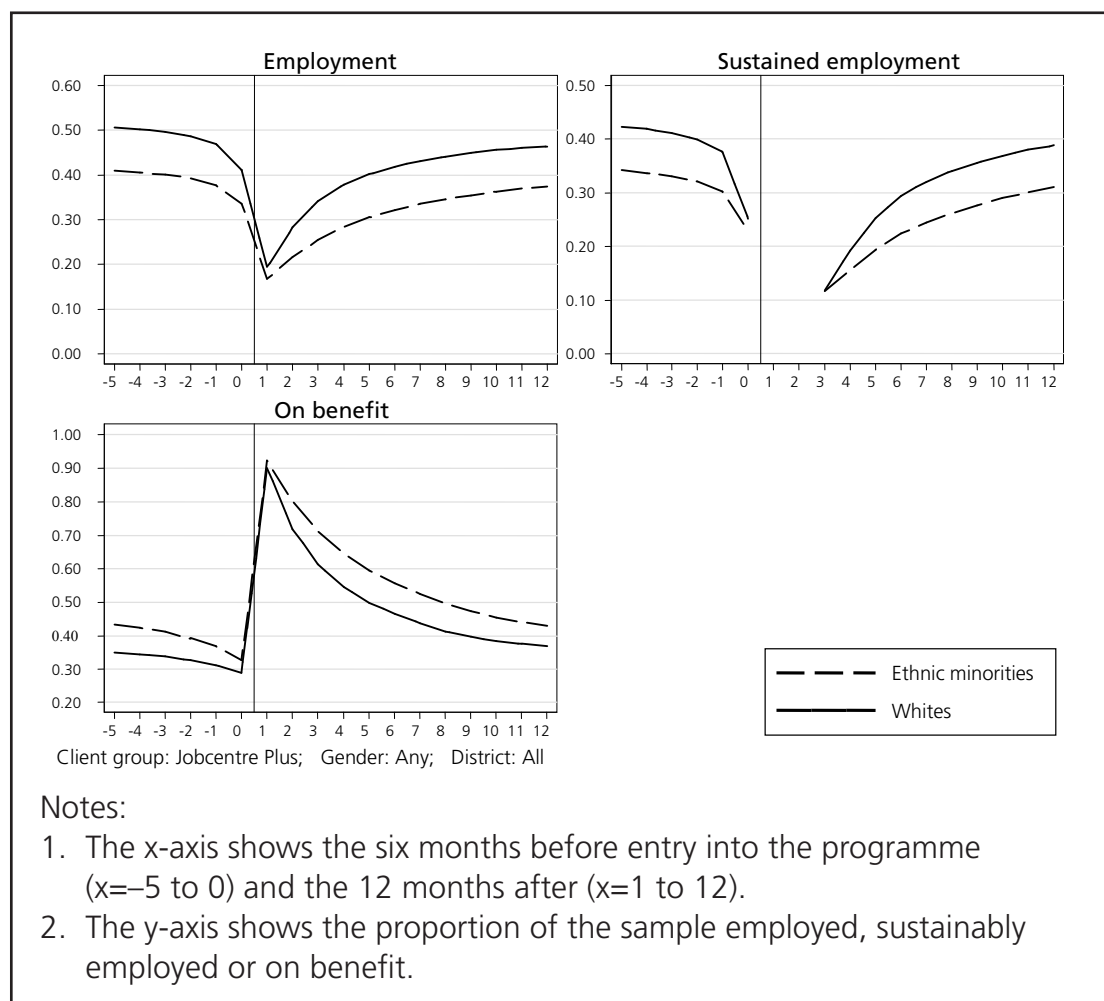
<sup>a</sup> The fact that White individuals are recorded as participating in the Ethnic Minority Outreach programme may be explained by the fact that providers are told that *'jobless people outside of the target communities/localities must not be turned away from any form of provision'* ([www.jobcentreplus.gov.uk/JCP/stellent/groups/jcp/documents/websitecontent/dev\\_011508.pdf](http://www.jobcentreplus.gov.uk/JCP/stellent/groups/jcp/documents/websitecontent/dev_011508.pdf)).

**Table 5.2 Breakdown of Jobcentre Plus sample by ethnicity**

| Ethnic subgroup    | %          | All              | %          | Males            | %          | Females        |
|--------------------|------------|------------------|------------|------------------|------------|----------------|
|                    |            | Number           |            | Number           |            | Number         |
| White              | 80.0       | 1,651,540        | 80.0       | 1,055,060        | 80.1       | 596,460        |
| Ethnic Minority    | 10.2       | 210,360          | 10.5       | 138,120          | 9.7        | 72,240         |
| Black              | 3.6        | 74,260           | 3.6        | 47,740           | 3.6        | 26,520         |
| Caribbean          | 1.7        | 34,740           | 1.7        | 22,660           | 1.6        | 12,080         |
| African            | 1.5        | 30,080           | 1.4        | 19,100           | 1.5        | 10,980         |
| Other              | 0.5        | 9,440            | 0.5        | 5,980            | 0.5        | 3,460          |
| Asian              | 4.1        | 85,320           | 4.2        | 56,020           | 3.9        | 29,300         |
| Indian             | 1.5        | 31,400           | 1.4        | 18,600           | 1.7        | 12,800         |
| Pakistani          | 1.6        | 33,440           | 1.7        | 22,740           | 1.4        | 10,720         |
| Bangladeshi        | 0.6        | 12,320           | 0.7        | 8,980            | 0.4        | 3,340          |
| Other              | 0.4        | 8,140            | 0.4        | 5,720            | 0.3        | 2,440          |
| Other              | 2.5        | 50,780           | 2.6        | 34,360           | 2.2        | 16,420         |
| Mixed              | 0.7        | 14,560           | 0.7        | 8,840            | 0.8        | 5,720          |
| Chinese            | 0.2        | 3,820            | 0.2        | 2,260            | 0.2        | 1,560          |
| Other ethnic group | 1.6        | 32,400           | 1.8        | 23,260           | 1.2        | 9,160          |
| Unknown            | 9.8        | 202,120          | 9.6        | 126,200          | 10.2       | 75,920         |
| <b>All</b>         | <b>100</b> | <b>2,064,020</b> | <b>100</b> | <b>1,319,400</b> | <b>100</b> | <b>744,620</b> |

Figure 5.1 illustrates the employment and benefit outcomes for all Ethnic Minorities and Whites in the Jobcentre Plus sample over an 18-month period, starting six months before entry. Differences in outcomes between the two groups represent raw estimates of ethnic parity. A person is classified as being employed or on benefit in a particular month if they were employed or on benefit for at least 15 of the previous 30 days.<sup>75</sup> An individual is classified as being in sustained employment if they have been continuously employed for the past three months (90 days).

**Figure 5.1 Labour market status over time for unmatched Jobcentre Plus sample**



<sup>75</sup> Note that benefit receipt is not a condition of inclusion in the Jobcentre Plus sample; hence, the rate of benefit receipt does not jump to 100 per cent at the time of inflow, as it does for the IB and IS samples (see Chapters 6 and 7 respectively). Similarly, individuals can be employed at the same time as claiming a benefit (for example, IS) or participating in a programme (for example, NDLP); thus it is not unreasonable that the employment rate at the time of entry is non-zero. Of course, it is also possible that some individuals are fraudulently claiming out-of-work benefits at the same time as working.

From Figure 5.1, it is clear that there are significant<sup>76</sup> differences in the raw employment, sustained employment<sup>77</sup> and benefit outcomes of the two groups, both before and after inflow (into the Jobcentre Plus sample).

Figure 5.1 shows that Ethnic Minorities are always less likely than White Jobcentre Plus customers to be in work and are always more likely to be claiming benefits. Once individuals start accessing Jobcentre Plus services (indicated by the vertical lines in Figure 5.1), the proportion of Whites in work (on benefits) increases (decreases) faster than that of Ethnic Minorities (particularly in the first three months following inflow), such that the rates approach (but do not reach) their pre-inflow levels<sup>78</sup> 12 months after entering the sample. The raw results, therefore, suggest that there is an ethnic penalty in employment and benefit outcomes.

It is clear, however, that Whites and Ethnic Minorities who access Jobcentre Plus services differ in terms of a number of observed pre-programme characteristics and that these differences are likely to affect estimates of ethnic parity.<sup>79</sup> Table 5.3 makes comparisons between major ethnic groups across a range of key background characteristics and outcome variables.

Ethnic minorities are less likely (than Whites) to be female, are generally younger and are less likely to be on IB (used as a proxy for disability) at inflow; they are more likely to have demonstrated a basic skills need and to have participated in a voluntary programme in the three years prior to inflow and they tend to live in higher unemployment areas. In terms of labour market history, Ethnic Minorities have, on average, spent a smaller proportion of the three years prior to entry in employment (and a larger proportion on benefits) than Whites. In terms of labour market outcomes, they have, again, spent a smaller proportion of time in employment (and a larger proportion on benefits) than Whites in the 12 months after first accessing Jobcentre Plus services in 2003.

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<sup>76</sup> Note that the significance of raw differences in outcomes is only assessed in the 12 months after entering the sample (not in the six months before). See Table A5.1.4 in Appendix A5A.1 of the main report for details.

<sup>77</sup> A finding of ethnic parity, penalty or premium tends to be consistent across employment and sustained employment outcomes for a particular subgroup. In this summary report, therefore, only employment outcomes will be discussed. Interested readers can refer to Chapter 5 of the main report for full details of the sustained employment outcomes.

<sup>78</sup> Those observed six months before inflow.

<sup>79</sup> See Table A5.1.1 in Appendix A5A.1 of the main report for more details.

Table 5.3 Selected characteristics of the Jobcentre Plus sample by ethnicity

|  | All   | White | Wthnic minority | Black    | Asian    | Other    | Unknown  |
|--|-------|-------|-----------------|----------|----------|----------|----------|
| Female   | 0.361 | 0.361 | 0.343***        | 0.357**  | 0.343*** | 0.323*** | 0.376*** |
| Age at inflow  | 32.2  | 32.5  | 30.4***         | 30.9***  | 30.0***  | 30.6***  | 31.5***  |
| On Incapacity Benefit at inflow                          | 0.100 | 0.100 | 0.056***        | 0.052*** | 0.061*** | 0.052*** | 0.079*** |
| Percentage of time employed, years 1–3 before inflow     | 0.506 | 0.523 | 0.413***        | 0.411*** | 0.430*** | 0.388*** | 0.462*** |
| Percentage of time on benefits, years 1–3 before inflow  | 0.299 | 0.304 | 0.352***        | 0.421*** | 0.294*** | 0.350*** | 0.200*** |
| Basic skills need  | 0.141 | 0.144 | 0.212***        | 0.209*** | 0.199*** | 0.239*** | 0.046*** |
| Participated in a voluntary programme prior to inflow    | 0.043 | 0.044 | 0.056***        | 0.076*** | 0.035*** | 0.061*** | 0.017*** |
| Unemployment rate in travel-to-work area                 | 0.056 | 0.056 | 0.058***        | 0.058*** | 0.057*** | 0.057*** | 0.054*** |
| Percentage of time employed, months 1–12 after inflow    | 0.381 | 0.392 | 0.307***        | 0.302*** | 0.315*** | 0.300*** | 0.371*** |
| Percentage of time on benefits, months 1–12 after inflow | 0.510 | 0.508 | 0.586***        | 0.649*** | 0.545*** | 0.564*** | 0.440*** |

## Notes:

1. \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
2. Percentage of time on benefits/employed is given as a proportion, i.e. between 0 and 1.



There is also significant variation within the Ethnic Minority sample (compared with Whites). For example, Asian Jobcentre Plus customers are less likely to have participated in a voluntary programme in the three years prior to entry and have, on average, spent a smaller proportion of this period on benefits (than Whites). This highlights the importance of considering ethnic parity measures at both the broad and more disaggregated levels.

This chapter will now proceed as follows: Section 5.3 considers ethnic parity measures for the Ethnic Minority sample as a whole and then for the more disaggregated ethnic groupings; in all cases, samples are broken down by gender and geography (where possible). Section 5.4 concludes and provides some brief policy implications.

## 5.3 Estimates of ethnic parity

### 5.3.1 All Ethnic Minorities

The raw ethnic parity estimates (discussed in Section 5.2) suggest that there is an ethnic **penalty** in employment and benefit outcomes for all Ethnic Minority Jobcentre Plus customers living in Great Britain. These estimates (for months 3, 6, 9 and 12 after entry) are replicated in Column 1 of Table 5.4. Columns 2 to 6 of the table additionally provide estimates using ordinary least squares (OLS), fully interacted linear matching (FILM), kernel matching and difference-in-differences ((DiD); two methods, described in Section 2.5.5) respectively.<sup>80</sup>

The regression-based methods (OLS and FILM) and the two DiD estimators all produce remarkably similar results for this sample: they reduce (but do not eliminate) the raw employment and benefit penalties (the same is also true of the kernel matching estimates for benefit receipt – at least for the first six months after inflow). The matching estimates of employment outcomes, on the other hand, indicate a significant ethnic premium throughout the year following entry.

As discussed in Section 2.6, this report relies on the diagnostic tests produced by the matching estimator to assess the reliability of **all** of these results.<sup>81</sup> As can be seen from Table 5.4, 94 covariates remain significantly unbalanced after the White sample has been reweighted, including employment, sustained employment and benefit history variables (indicated by UH(E,S,B) in Table 5.4) and many district-

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<sup>80</sup> These estimates can be found in Table A5.1.2 in Appendix A5A of the main report. The DiD estimates come from Table A12A.1 in Appendix A12A of the main report.

<sup>81</sup> Although there are no equivalent diagnostic tests for OLS, FILM or DiD, any failure of matching indicates that observable characteristics are liable to be fundamentally unbalanced whichever method is used (see Sections 2.5.3 and 2.5.5 for more details), thus undermining the reliability of all estimators.

level dummies.<sup>82</sup> This means that the Ethnic Minority and White samples that have been used to produce these estimates differ significantly in terms of 94 background characteristics (including labour market history), greatly undermining the notion of comparability between the two groups and thus, casting doubt not only on the reliability of the kernel matching estimator but also on the regression and DiD results.

The remainder of this chapter will focus on subgroups for which the diagnostic tests indicate that matching results are reliable.

Table 5.5 provides a summary of the reliable estimates of ethnic parity in employment outcomes for Ethnic Minority subgroups (split by gender and region). Of a possible 148 subgroups (with Ethnic Minority sample size greater than 400), 46 provide reliable estimates, the majority of which are for individual Jobcentre Plus districts.<sup>83</sup> Of these reliable estimates, the majority indicate that ethnic parity in employment outcomes cannot be rejected: this is in contrast to the (albeit unreliable) overall results, which suggest either a significant penalty or a significant premium (depending on the method).<sup>84</sup>

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<sup>82</sup> See Appendix A5A.1 to the main report for more details.

<sup>83</sup> See Table 5.4 of the main report for a summary of the findings for all 148 groups.

<sup>84</sup> From now on in this chapter, we will refer to the overall matching estimates as the overall estimate, given that this is the only method for which we possess diagnostic tests.

**Table 5.4 Jobcentre Plus: parity estimates for all Ethnic Minorities living in Great Britain – comparison of methods**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.086*** | -0.009*** | -0.014*** | 0.019***        | -0.009*** | -0.011***     |
| Employed in month 6                                  | -0.098*** | -0.010*** | -0.017*** | 0.025***        | -0.014*** | -0.015***     |
| Employed in month 9                                  | -0.095*** | -0.007*** | -0.015*** | 0.034***        | -0.012*** | -0.014***     |
| Employed in month 12                                 | -0.089*** | -0.004*** | -0.011*** | 0.038***        | -0.022*** | -0.011***     |
| On benefit in month 3                                | 0.099***  | 0.043***  | 0.046***  | 0.035***        | 0.047***  | 0.049***      |
| On benefit in month 6                                | 0.091***  | 0.033***  | 0.038***  | 0.020***        | 0.038***  | 0.041***      |
| On benefit in month 9                                | 0.076***  | 0.022***  | 0.029***  | 0.004           | 0.030***  | 0.031***      |
| On benefit in month 12                               | 0.059***  | 0.013***  | 0.021***  | -0.006*         | 0.034***  | 0.023***      |
| N – Ethnic Minorities                                | 210,360   |           |           |                 |           |               |
| N – Whites   | 1,651,540 |           |           |                 |           |               |
| Median bias  | 12.6      |           |           | 3.2             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 17.4%         |
| Whites   |           |           |           |                 |           | 9.1%          |

Notes:

1. \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
2. In Kernel matching column:  
CS(xx) means that xx per cent of the Ethnic Minority sample was lost to common support (where xx will always be 95 or less);  
UC(yy) means that even after matching, yy covariates remain unbalanced at the 5 per cent significance level;  
UH(E,S,B) means that after matching, variables in parentheses were not balanced in at least one of the six months prior to entering the Jobcentre Plus sample (at the 5 per cent significance level) – E = employment history variables, S = sustainable employment history variables and B = benefit history variables.

**Table 5.5 Jobcentre Plus: reliable estimates of ethnic parity in employment outcomes for Ethnic Minorities (compared with Whites)**

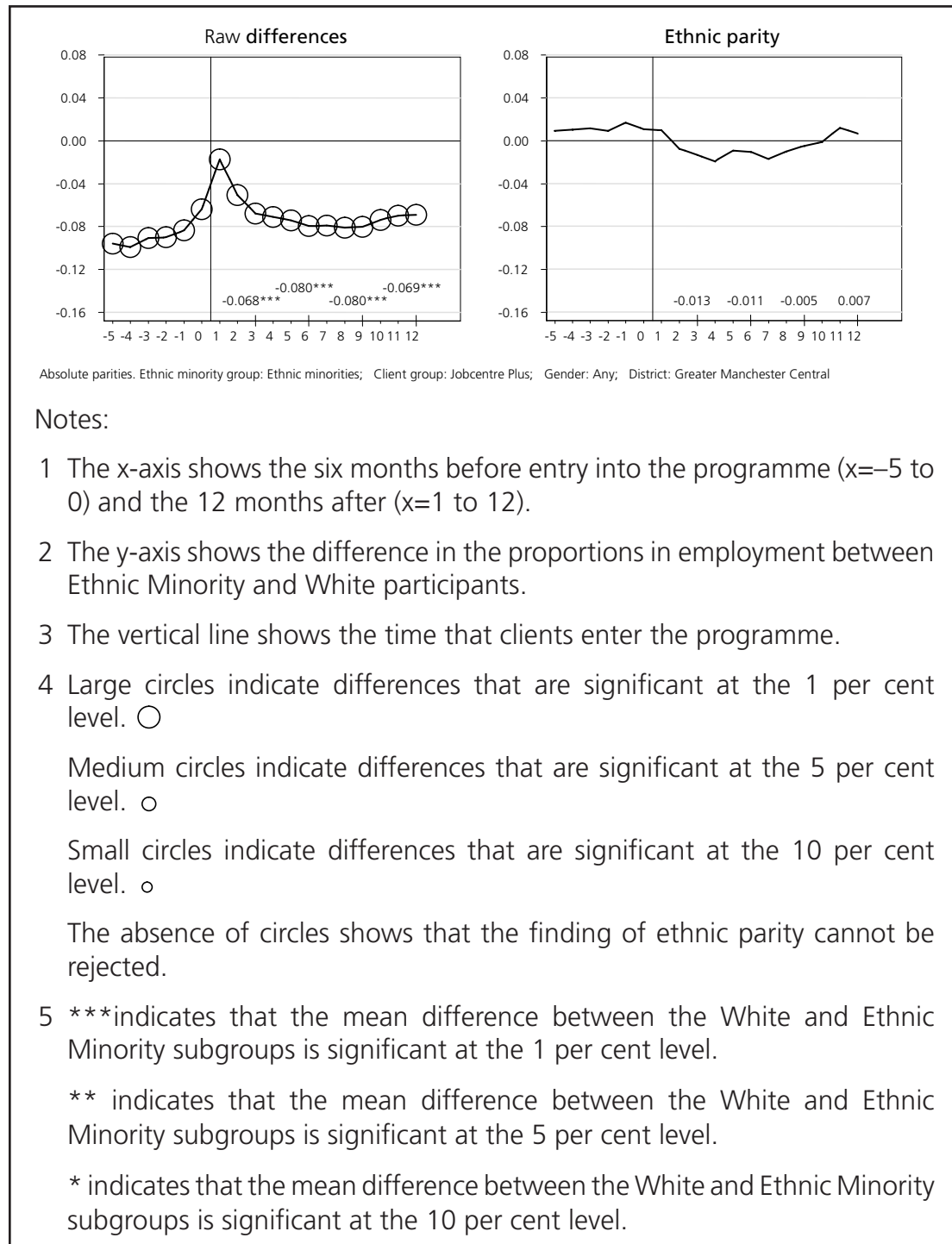
| <b>Ethnic parity</b>                           | <b>Ethnic penalty</b>                 | <b>Ethnic premium</b>                            |
|--|---------------------------------------|--|
| Females in Manchester                          | Any in Glasgow                        | Males in Lancashire West                         |
| Males in Edinburgh, Lothian and Borders        | Any and males in Northumbria          | Males in Greater Manchester Central              |
| Males in Glasgow                               | Females in Greater Manchester Central | Any in Coventry and Warwickshire                 |
| Any in Lancashire West                         | Any in Staffordshire                  | Any and males in Nottinghamshire                 |
| Any and males in Liverpool and Wirral          |                                       | Males in Suffolk                                 |
| Any in Greater Manchester Central              |                                       | Any and males in Hampshire and the Isle of Wight |
| Any and males in Cardiff and Vale              |                                       | Males in Kent                                    |
| Males in Coventry and Warwickshire             |                                       | Any and males in City and East London            |
| Males in Staffordshire                         |                                       |  |
| Any and males in The Marches                   |                                       |  |
| Any, males and females in Northamptonshire     |                                       |  |
| Females in Nottinghamshire                     |                                       |  |
| Any in Essex                                   |                                       |  |
| Any, males and females in Surrey and Sussex    |                                       |  |
| Females in City and East London                |                                       |  |
| Any and females in South London                |                                       |  |
| Females in West London                         |                                       |  |
| Any, males and females in West of England      |                                       |  |
| Any and males in Gloucestershire and Wiltshire |                                       |  |

Note: This table summarises the reliable employment estimates found in Chapter 5, Table 5.4 of the main report.

Of course, this predominant finding of being unable to reject ethnic parity may reflect insignificant penalties or premiums (as a result of relatively small sample sizes) rather than 'true' ethnic parity. This does not always seem to be the case for these subgroups, however, as Figure 5.2 demonstrates for Jobcentre Plus customers living in Greater Manchester Central.<sup>85</sup> While the raw results show large and significant ethnic penalties in all months before and after inflow, once the White sample has been reweighted (giving more weight to individuals who were less likely to have been in work before joining a programme or claiming a benefit in 2003, amongst other things), these differences disappear, leaving insufficient evidence to reject ethnic parity in employment outcomes.

<sup>85</sup> See Appendix A5A.46 to the main report for more details.

**Figure 5.2 Estimates of ethnic parity in employment outcomes for Jobcentre Plus customers living in Greater Manchester Central**



Interestingly, a greater number of subgroups provide evidence in support of the overall matching estimates (of a significant ethnic premium) than do for the raw/regression/DiD results (of a significant ethnic penalty). But it is worth pointing out that where there is evidence of a premium, it tends to be significant in only a limited number of months (see, for example, the results for Jobcentre Plus

customers living in Hampshire and the Isle of Wight in Chapter 5 of the main report). In cases where there is evidence of a penalty, it appears to be somewhat more robust over time (see, for example, the findings for Jobcentre Plus customers living in Northumbria in Chapter 5 of the main report).

Table 5.6 provides a summary of the reliable estimates of ethnic parity in terms of benefit receipt and shows that the predominant finding amongst these subgroups is of an ethnic penalty. This is perhaps not surprising, given that all of the methods outlined in Table 5.4 suggested that there was an ethnic penalty amongst all Jobcentre Plus customers (at least in the first six months following inflow<sup>86</sup>) – although, of course, these results are unreliable.

**Table 5.6 Jobcentre Plus: reliable estimates of ethnic parity in benefit receipt for Ethnic Minorities (compared with Whites)**

| <b>Ethnic parity</b>                   | <b>Ethnic penalty</b>                          | <b>Ethnic premium</b>                        |
|--|--|--|
| Males in Glasgow                       | Males in Edinburgh, Lothian and Borders        | Any and males in Hampshire and Isle of Wight |
| Any and males in Lancashire West       | Any in Glasgow                                 |  |
| Males in Cardiff and Vale              | Any and males in Northumbria                   |  |
| Any and males in The Marches           | Any and males in Liverpool and Wirral          |  |
| Females in Nottinghamshire             | Females in Greater Manchester Central          |  |
| Any in Cambridgeshire                  | Any in Cardiff and Vale                        |  |
| Any in Suffolk                         | Males in Staffordshire                         |  |
| Males in Kent                          | Females in Northamptonshire                    |  |
| Males and females in Surrey and Sussex | Any in Nottinghamshire                         |  |
| Males in West of England               | Any in Essex                                   |  |
|  | Males in Suffolk                               |  |
|  | Any in Kent                                    |  |
|  | Any in Surrey and Sussex                       |  |
|  | Any, males and females in City and East London |  |
|  | Females in North London                        |  |
|  | Females in South London                        |  |
|  | Females in West London                         |  |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 5, Table 5.4 of the main report.

Figure 5.3 provides graphical illustration of the penalty for Jobcentre Plus customers living in the City and East London.<sup>87</sup> The raw results imply an ethnic penalty that

<sup>86</sup> The kernel matching estimates for Ethnic Minorities overall indicate that the penalty that is evident in months 3 and 6 following inflow has disappeared by month 9 and may even be turning into a small premium by month 12 (albeit only significant at the ten per cent level).

<sup>87</sup> See Appendix A5A.116 in the main report for more details.

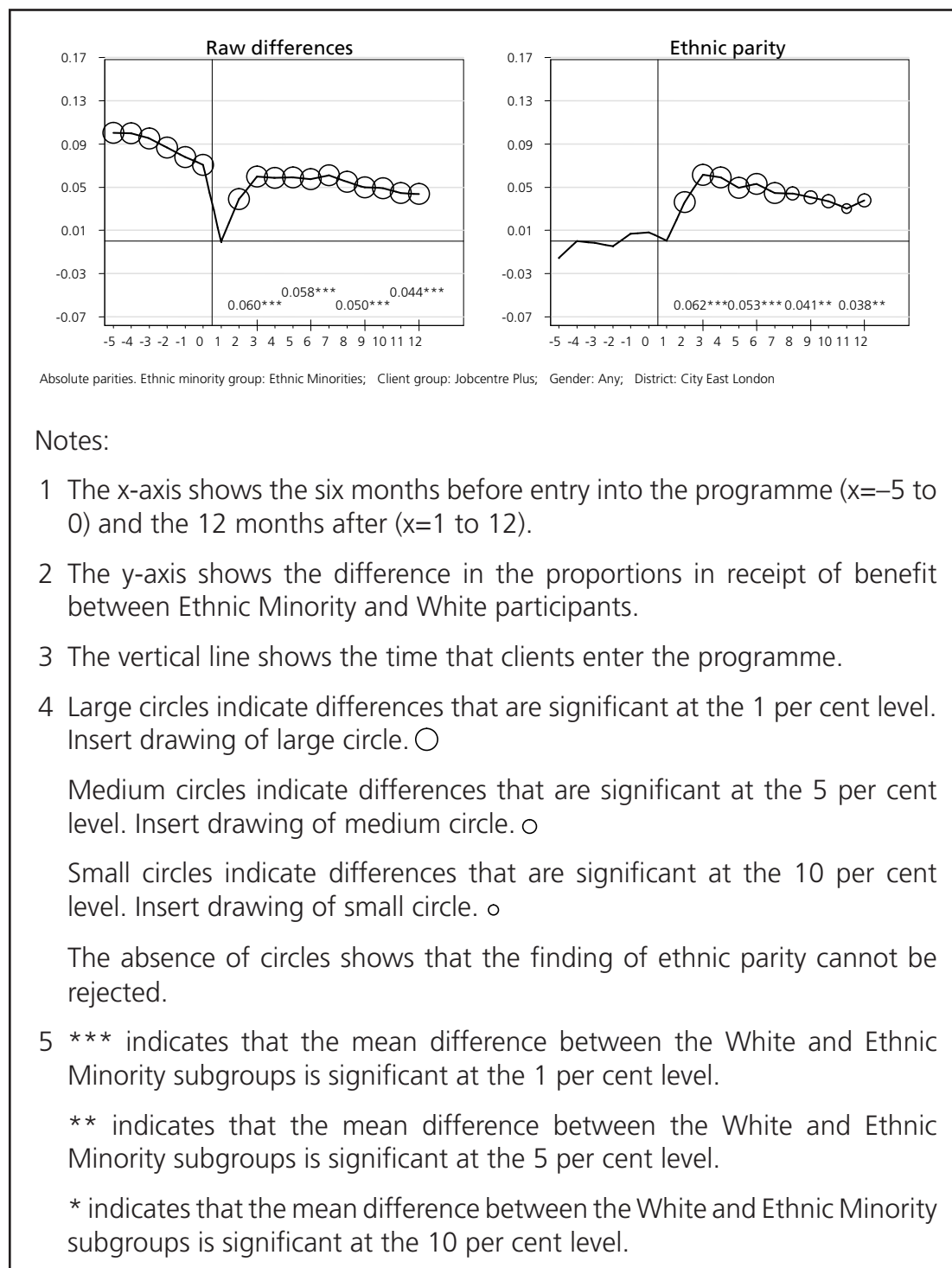
is larger before inflow than it is afterwards. Once the White sample is reweighted, however, pre-inflow differences disappear, but evidence of an ethnic penalty in the post-inflow months (similar in magnitude and significance to the raw outcome, at least in the early months) remains, indicating that Ethnic Minorities are between 3.6 and 6.2 percentage points (4.6 and 9.9 per cent) more likely to be claiming benefits than otherwise-identical White Jobcentre Plus customers in the year following inflow.<sup>88,89</sup>

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<sup>88</sup> It should be noted that the percentage point and per cent differences quoted in this section (and throughout the remainder of the chapter) do not necessarily correspond to the same months; they are simply designed to provide an indication of the spectrum of significant results.

<sup>89</sup> See Table A5.116.4 in Appendix A5A.116 of the main report for more details.

**Figure 5.3 Estimates of ethnic parity in benefit receipt for Jobcentre Plus customers living in the City and East London District**



### 5.3.2 Black Ethnic Minorities

A summary of the reliable estimates of ethnic parity in terms of employment outcomes for subgroups of Black ethnic origin is shown in Table 5.7. A higher proportion of results are reliable for Blacks (83 of 215) than they were for Ethnic Minorities, although those that are reliable are distributed more evenly between not rejecting parity (36) and significant premium (30) than they were for Ethnic Minorities.



**Table 5.7 Jobcentre Plus: reliable estimates of ethnic parity in employment outcomes for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>                            | <b>Ethnic penalty</b>                             | <b>Ethnic premium</b>                                    |
|---|---|--|
| <b>Black:</b>                                   | <b>Black:</b>                                     | <b>Black:</b>  |
| Any, males and females in Birmingham            | Females in Manchester                             | Any in Leeds   |
| Males in Leeds                                  | Any, males and females in Black Country           | Any and males in Leicester                               |
| Females in London                               | Any and males in Nottinghamshire                  | Any and males in Manchester                              |
| Any in Liverpool and Wirral                     | Males in West of England                          | Any and males in Greater Manchester Central              |
| Females in Greater Manchester                   | <b>Black Caribbean:</b>                           | Any in Leeds Central                                     |
| Central Males in Leeds Central                  | Males in Greater Manchester Central               | Females in Birmingham and Solihull                       |
| Any and males in Sheffield                      | Any, males and females in Black Country           | Any and males in Coventry and Warwickshire               |
| Any and males in Birmingham and Solihull        | Any and males in Nottinghamshire                  | Any and males in Leicestershire                          |
| Any and males in Northamptonshire               | Any and males in Berkshire, Bucks and Oxfordshire | Any, males and females in Bedfordshire and Hertfordshire |
| Females in Berkshire, Bucks and Oxfordshire     | Females in South London                           | Any and males in Berkshire, Bucks and Oxfordshire        |
| Any and females in South London                 | Any in West of England                            | Any in West of England                                   |
| <b>Black Caribbean:</b>                         |   | <b>Black Caribbean:</b>                                  |
| Females in 272 wards                            |   | Females in Great Britain excluding six cities            |
| Any, males and females in Birmingham            |   | <b>Black African:</b>                                    |
| Females in London                               |   | Any in Birmingham  |
| Any in Greater Manchester Central               |   | Any in Leicester   |
| Any and males in Birmingham and Solihull        |   | Any and males in Manchester                              |
| Any and males in Bedfordshire and Hertfordshire |   | Females in Great Britain excluding six cities            |
| Any and males in City and East London           |   | Any in Greater Manchester Central                        |
| Males in Central London                         |   | Any and males in Birmingham and Solihull                 |
| Males and females in North London               |   | Any in Leicestershire                                    |
| Males in Brent, Harrow and Hillingdon           |   | Any in Berkshire, Bucks and Oxfordshire                  |
| Any and males in South East London              |   |  |
| Females in West London                          |   |  |

Note: This table summarises the reliable employment estimates found in Chapter 5, Table 5.5 of the main report.

The distribution of penalties and premiums is not so even amongst Black Jobcentre Plus customers: for Black Caribbeans (particularly males), it is more likely (than for Other Black ethnic groups) that parity cannot be rejected or to find significant penalties (compared with Whites), while the only reliable results for Black Africans provide evidence of significant premiums.<sup>90</sup>

<sup>90</sup> See Appendix A5A to the main report for more details.

Figure 5.4 provides an example of one Black subgroup (all Black Jobcentre Plus customers living in Leicester) that mirrors the (albeit unreliable) overall finding of a significant ethnic premium.<sup>91</sup> Once the White sample is reweighted (giving more weight to individuals who were less likely to have been in work in the six months prior to inflow,<sup>92</sup> amongst other things), Black customers are between 4.3 and 5.7 percentage points (equivalent to between 13.7 and 30.9 per cent) more likely to be in work than otherwise-identical White customers in the first eight months following inflow.<sup>93</sup>

**Figure 5.4 Estimates of ethnic parity in employment outcomes for Black Jobcentre Plus customers living in Leicester**

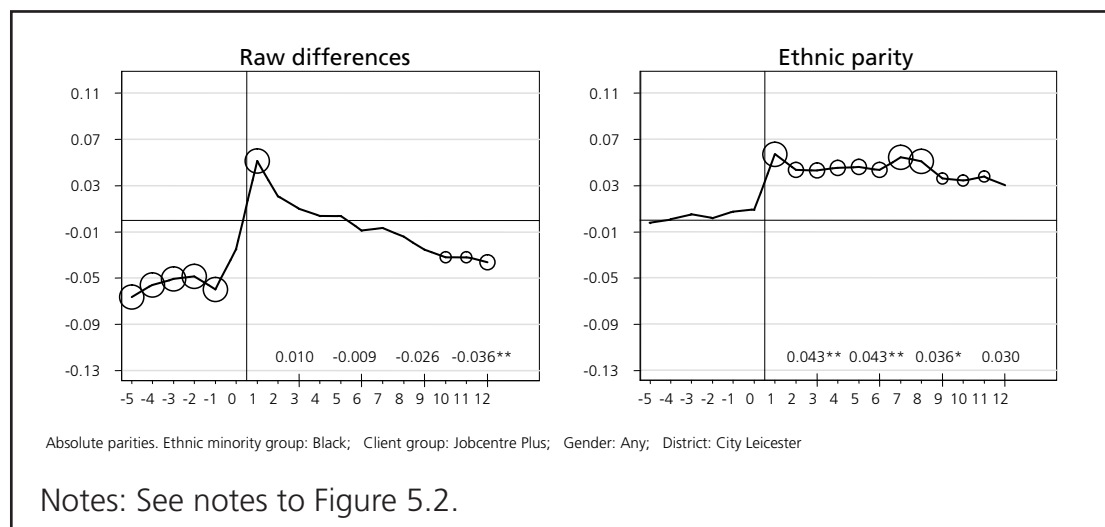


Table 5.8 summarises the reliable estimates of ethnic parity in terms of benefit receipt for Jobcentre Plus customers of Black ethnic origin, almost all of which are found in areas outside London. This table very clearly highlights the fact that the predominant finding amongst Black customers is of an ethnic penalty in benefit receipt in at least one of the 12 months following inflow, which ties in with the (albeit unreliable) estimates for all Ethnic Minority Jobcentre Plus customers in Great Britain.

<sup>91</sup> See Appendix A5A.160 to the main report for more details.

<sup>92</sup> This is in accordance with the significant raw penalty in employment outcomes in the six months prior to inflow (shown in Figure 5.4).

<sup>93</sup> Thereafter, the difference is only significant at the ten per cent level. See Table A5.160.4 in Appendix A5A.160 of the main report for more details.

**Table 5.8 Jobcentre Plus: reliable estimates of ethnic parity in benefit receipt for individuals of Black ethnic origin (compared with Whites)**

| Ethnic parity                           | Ethnic penalty   | Ethnic premium                                      |
|---|--|---|
| Black Caribbean:<br>Males in Birmingham | <p data-bbox="759 495 831 524"><b>Black:</b></p> <p data-bbox="639 533 959 1357">Any and males in Leeds<br/>Any and males in Leicester<br/>Females in London<br/>Females in Manchester<br/>Any in Liverpool and Wirral<br/>Any, males and females in Greater Manchester Central<br/>Any and males in Leeds Central<br/>Any and males in Sheffield<br/>Any and males in Coventry and Warwickshire<br/>Any, males and females in Black Country<br/>Males in Leicestershire<br/>Any and males in Northamptonshire<br/>Any and males in Nottinghamshire<br/>Any and males in Bedfordshire and Hertfordshire<br/>Any, males and females in Berkshire, Bucks and Oxfordshire<br/>Any and males in West of England</p> <p data-bbox="691 1368 903 1397"><b>Black Caribbean:</b></p> <p data-bbox="639 1406 959 1850">Any in Greater Manchester Central<br/>Any, males and females in Black Country<br/>Any and males in Nottinghamshire<br/>Any and males in Bedfordshire and Hertfordshire<br/>Any and males in Berkshire, Bucks and Oxfordshire<br/>Any in City and East London<br/>Females in North London<br/>Females in West London</p> <p data-bbox="711 1861 882 1890"><b>Black African:</b></p> <p data-bbox="639 1899 959 2024">Any in Birmingham<br/>Any in Leicester<br/>Any and males in Greater Manchester Central</p> | Black:<br>Females in Bedfordshire and Hertfordshire |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 5, Table 5.5 of the main report.

### 5.3.3 Asian Ethnic Minorities

Table 5.9 provides a summary of the reliable estimates (only 36 of 266 groups with large enough sample size<sup>94</sup>) of ethnic parity in employment outcomes for Jobcentre Plus customers of Asian ethnic origin. The pattern is similar to that found for all Ethnic Minority customers: the majority of reliable estimates indicate that a finding of ethnic parity cannot be rejected.

**Table 5.9 Jobcentre Plus: reliable estimates of ethnic parity in employment outcomes for individuals of Asian ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b>  |
|--|---|--|
| <p><b>Asian:</b></p> <p>Males in Nottinghamshire<br/>Any in Hampshire and Isle of Wight</p> <p>Males in Kent<br/>Any in Surrey and Sussex</p> <p>Females in Lambeth, Southwark and Wandsworth</p> <p>Males in North London<br/>Females in South London<br/>Males in South East London</p> <p><b>Indian:</b></p> <p>Any and males in Bedfordshire and Hertfordshire<br/>Any and males in Berkshire, Bucks and Oxfordshire<br/>Any in Lambeth, Southwark and Wandsworth</p> <p><b>Pakistani and Bangladeshi:</b></p> <p>Any, males and females in London</p> <p><b>Other Asian:</b></p> <p>Any in North London<br/>Any in South London</p> | <p><b>Asian:</b></p> <p>Any and females in London<br/>Any in Nottinghamshire</p> <p><b>Indian:</b></p> <p>Females in Great Britain excluding six cities</p> <p><b>Pakistani and Bangladeshi:</b></p> <p>Any in North London<br/>Any in South London</p> <p><b>Other Asian:</b></p> <p>Females in Great Britain excluding six cities</p> | <p><b>Asian:</b></p> <p>Any and males in London<br/>Any and males in Lambeth, Southwark and Wandsworth<br/>Any in North London</p> <p><b>Indian:</b></p> <p>Any and males in North London</p> <p><b>Other Asian:</b></p> <p>Any and males in Great Britain excluding six cities<br/>Any and males in West London</p> |

Note: This table summarises the reliable employment estimates found in Chapter 5, Table 5.6 of the main report.

In contrast to the findings for Black Jobcentre Plus customers, the region in which significant employment premiums are found (mirroring the unreliable overall results) tends to be in London. Furthermore – again in contrast to the results for Black subgroups – there is not such a clear pattern in the results for particular Asian

<sup>94</sup> In many cases where results are recorded as unreliable, an appropriate control group could be found but only by dropping more than 30 per cent of the White sample.

subgroups:<sup>95</sup> for Indian customers and customers from Other Asian ethnic origins, there is evidence of at least one significant penalty, one significant premium and one instance where the hypothesis of ethnic parity cannot be rejected.

Moving on to discuss estimates of benefit receipt for Asian Jobcentre Plus customers, a summary of the reliable results is shown in Table 5.10. Again, the results follow broadly the same pattern as for Ethnic Minorities overall: there are approximately twice as many instances of significant penalties as there are instances where ethnic parity cannot be rejected.

**Table 5.10 Jobcentre Plus: reliable estimates of ethnic parity in benefit receipt for individuals of Asian ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>  | <b>Ethnic premium</b>                               |
|---|--|---|
| <b>Asian:</b><br>Females in Lambeth, Southwark and Wandsworth | <b>Asian:</b><br>Males in Nottinghamshire<br>Males in Kent                                       | <b>Asian:</b><br>Any in Hampshire and Isle of Wight |
| <b>Indian:</b><br>Any in Berkshire, Bucks and Oxfordshire     | Any in Surrey and Sussex<br>Males in South East London   | Any and females in North London                     |
| Any in Lambeth, Southwark and Wandsworth                      | <b>Indian:</b><br>Males in Berkshire, Bucks and Oxfordshire                                      | <b>Indian:</b><br>Any in North London               |
| <b>Pakistani and Bangladeshi:</b><br>Males in London          | Any and males in North London  | <b>Other Asian:</b><br>Any in South London          |
| <b>Other Asian:</b><br>Any in North London                    | <b>Pakistani and Bangladeshi:</b><br>Any in London<br>Any in North London<br>Any in South London |   |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 5, Table 5.6 of the main report.

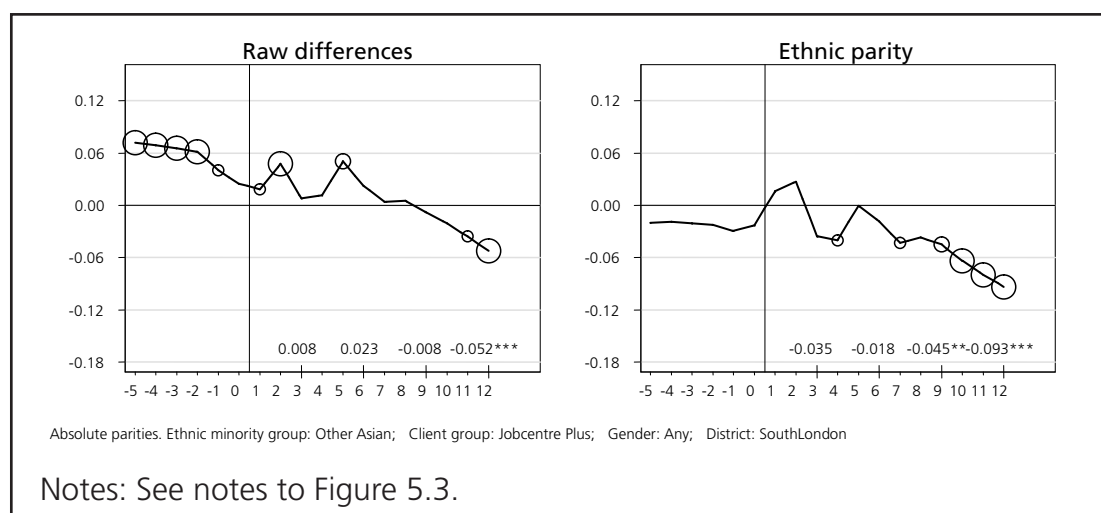
Whilst benefit premiums remain rare amongst Asian subgroups, they are slightly less rare than for Ethnic Minority or Black Jobcentre Plus customers. Figure 5.5 illustrates graphically the estimates for Other Asian Jobcentre Plus customers living in South London.<sup>96</sup> Once the White sample has been reweighted (i.e. once matching has occurred), a significant premium is evident towards the end of the year following inflow, peaking at 9.3 percentage points (24.6 per cent) in month 12. This means that in South London, Jobcentre Plus customers of some non-Indian, non-Pakistani, non-Bangladeshi Asian origin are significantly less likely to be receiving benefits a year after inflow than otherwise-identical Whites. This is

<sup>95</sup> This is also true for individuals of Mixed, Chinese or other ethnic origin (see Table 5.11 for details).

<sup>96</sup> See Appendix A5A.627 to the main report for more details.

in contrast to the (albeit unreliable) results for Ethnic Minorities overall, which predominantly indicated significant penalties.<sup>97</sup>

**Figure 5.5 Estimate of ethnic parity in benefit receipt for other Asian Jobcentre Plus customers living in South London**



### 5.3.4 Mixed, Chinese and other Ethnic Minorities

Table 5.11 provides a summary of the reliable estimates of ethnic parity in employment outcomes amongst Jobcentre Plus customers of Mixed, Chinese or other ethnic origin, whilst Table 5.12 provides a summary in terms of benefit receipt. In both cases, the overall pattern of results is similar to that found for all Ethnic Minority and Asian subgroups: for employment outcomes, the predominant finding indicates that ethnic parity cannot be rejected, whilst for benefit receipt, the majority of subgroups provide evidence of significant penalties.<sup>98</sup>

<sup>97</sup> The kernel matching estimate seems to be moving towards parity or even a marginally significant premium towards the end of the year following inflow, which ties in with the pattern of results observed for Other Asian customers in South London, discussed above.

<sup>98</sup> More subgroups of Mixed, Chinese and other ethnic origin provide evidence of significant ethnic premiums than do subgroups of all Ethnic Minority Jobcentre Plus customers analysed together.

**Table 5.11 Jobcentre Plus: reliable estimates of ethnic parity in employment outcomes for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>  | <b>Ethnic premium</b>  |
|--|--|--|
| <p><b>Mixed, Chinese and other:</b></p> <p>Females in 272 wards<br/>Any and males in Bradford<br/>Any in Leeds<br/>Any in Manchester<br/>Females in Great Britain excluding six cities<br/>Any in Liverpool and Wirral<br/>Any and females in Greater Manchester Central<br/>Any and males in Bradford<br/>Any in Leeds Central<br/>Any and males in Sheffield<br/>Any and males in Coventry and Warwickshire<br/>Males in Black Country<br/>Any in Nottinghamshire<br/>Any in Hampshire and Isle of Wight<br/>Males in Berkshire, Bucks and Oxfordshire<br/>Males in Surrey and Sussex<br/>Any in City and East London<br/>Any, males and females in Central London<br/>Any, males and females in Lambeth, Southwark and Wandsworth<br/>Any, males and females in North East London<br/>Males in Brent, Harrow and Hillingdon<br/>Any, males and females in West London<br/>Any in West of England</p> <p><b>Chinese:</b></p> <p>Females in 272 wards<br/>Females in London<br/>Males in Great Britain excluding six cities</p> | <p><b>Mixed, Chinese and other:</b></p> <p>Females in Manchester<br/>Any in Surrey and Sussex<br/>Males in City and East London<br/>Females in South London</p> <p><b>Chinese:</b></p> <p>Any, males and females in Great Britain<br/>Any in 272 wards<br/>Any and females in Great Britain excluding six cities</p> <p><b>Other ethnic group:</b></p> <p>Any in Surrey and Sussex<br/>Males in City and East London</p> | <p><b>Mixed, Chinese and other:</b></p> <p>Males in Leeds<br/>Males in Manchester<br/>Males in Greater Manchester Central<br/>Males in Leeds Central<br/>Any and males in Leicestershire<br/>Males in Nottinghamshire<br/>Males in Bedfordshire and Hertfordshire<br/>Any in Brent, Harrow and Hillingdon<br/>Males in South London</p> <p><b>Chinese:</b></p> <p>Any and males in Great Britain<br/>Males in 272 wards<br/>Any and males in London</p> <p><b>Other ethnic group:</b></p> <p>Any in Leeds<br/>Males in Manchester<br/>Any in Leeds Central<br/>Any and females in Brent, Harrow and Hillingdon<br/>Any and males in South London</p> |

Continued

Table 5.11 Continued

| Ethnic parity               | Ethnic penalty | Ethnic premium |
|-----------------------------|----------------|----------------|
| <b>Other ethnic group:</b>  |                |                |
| Females in 272 wards        |                |                |
| Any in Birmingham           |                |                |
| Males and females in London |                |                |
| Any in Manchester           |                |                |
| Any and males in Greater    |                |                |
| Manchester Central          |                |                |
| Any in Berkshire, Bucks     |                |                |
| and Oxfordshire             |                |                |
| Any in City and East London |                |                |
| Any, males and females in   |                |                |
| Central London              |                |                |
| Any, males and females in   |                |                |
| Lambeth, Southwark and      |                |                |
| Wandsworth                  |                |                |
| Any, males and females in   |                |                |
| North East London           |                |                |
| Males and females in North  |                |                |
| London                      |                |                |
| Males in Brent, Harrow and  |                |                |
| Hillingdon                  |                |                |
| Any and males in South East |                |                |
| London                      |                |                |
| Any, males and females in   |                |                |
| West London                 |                |                |

Note: This table summarises the reliable employment estimates found in Chapter 5, Table 5.7 of the main report.



**Table 5.12 Jobcentre Plus: reliable estimates of ethnic parity in benefit receipt for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>   | <b>Ethnic premium</b>   |
|---|---|---|
| <p><b>Mixed, Chinese and other:</b></p> <p>Any and males in Leeds</p> <p>Any and males in Leeds Central</p> <p>Males in Coventry and Warwickshire</p> <p>Males in Leicestershire</p> <p>Any in Hampshire and Isle of Wight</p> <p>Males in Surrey and Sussex</p> <p>Females in Central London</p> <p>Males and females in Lambeth, Southwark and Wandsworth</p> <p>Females in West London</p> <p>Any in West of England</p> <p><b>Chinese:</b></p> <p>Males in Great Britain excluding six cities</p> <p><b>Other ethnic group:</b></p> <p>Males in Birmingham</p> <p>Any in Surrey and Sussex</p> <p>Any and females in City and East London</p> <p>Females in Central London</p> <p>Any and females in Lambeth, Southwark and Wandsworth</p> <p>Any in South London</p> | <p><b>Mixed, Chinese and other:</b></p> <p>Females in 272 wards</p> <p>Any and males in Bradford</p> <p>Females in Manchester</p> <p>Any in Liverpool and Wirral</p> <p>Males and females in Greater Manchester Central</p> <p>Any and males in Bradford</p> <p>Any and males in Sheffield</p> <p>Any in Leicestershire</p> <p>Males in Nottinghamshire</p> <p>Any in Surrey and Sussex</p> <p>Any and males in City and East London</p> <p>Any and males in Central London</p> <p>Any in Lambeth, Southwark and Wandsworth</p> <p>Females in North East London</p> <p><b>Chinese:</b></p> <p>Any and males in 272 wards</p> <p>Females in Great Britain excluding six cities</p> <p><b>Other ethnic group:</b></p> <p>Females in 272 wards</p> <p>Any and males in Manchester</p> <p>Females in Great Britain excluding six cities</p> <p>Any and males in Greater Manchester Central</p> <p>Any and males in Central London</p> <p>Females in North East London</p> <p>Females in West London</p> | <p><b>Mixed, Chinese and other:</b></p> <p>Females in Great Britain excluding six cities</p> <p><b>Chinese:</b></p> <p>Any, males and females in 272 wards</p> <p><b>Other ethnic group:</b></p> <p>Any in Leeds</p> <p>Males in Manchester</p> <p>Any in Leeds Central</p> <p>Any in Berkshire, Bucks and Oxfordshire</p> <p>Males in City and East London</p> <p>Males in Lambeth, Southwark and Wandsworth</p> <p>Any in South East London</p> |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 5, Table 5.7 of the main report.

In terms of employment outcomes, the fact that ethnic parity cannot be rejected in most cases goes against the (albeit unreliable) findings for all Ethnic Minority Jobcentre Plus customers living in Great Britain, for whom – depending on the method – either significant penalties (regression methods or DiD) or significant premiums (matching) were found (see Table 5.4 for details). In terms of benefit receipt, on the other hand, the predominant finding for individuals of Mixed,

Chinese or other ethnic origin fits in well with the (albeit unreliable) estimates for all Ethnic Minorities.<sup>99</sup>

## 5.4 Summary of findings and policy implications

For Jobcentre Plus customers who joined a relevant programme (or started claiming a relevant benefit) in 2003:<sup>100</sup>

- In many cases, it was not possible to reweight the White sample in such a way as to make it comparable with the Ethnic Minority sample of interest. Whilst it is frustrating that this meant there were fewer reliable results to analyse than was anticipated at the outset of this project, it reveals that – in general – the Ethnic Minority and White customers served by particular Jobcentre Plus districts are very different – often too different for matching to be able to make them similar.
- The (matched) results for all Ethnic Minorities in Great Britain (of a significant **premium** in employment outcomes and a significant **penalty** in benefit receipt) are unreliable: 94 covariates remain unbalanced after matching, including employment, sustained employment and benefit history variables.<sup>101</sup>
- In terms of employment outcomes, when subgroup analysis (by ethnic group, gender and region) is carried out, the most predominant finding suggests that one cannot reject the hypothesis of ethnic parity. This is in contrast to the (albeit unreliable) overall result of a significant ethnic premium in employment outcomes, which is confirmed by fewer subgroups.
- In terms of benefit receipt, on the other hand, the (albeit unreliable) overall finding of a significant ethnic penalty is replicated amongst the majority of subgroups for which reliable results are found (particularly amongst Black Jobcentre Plus customers). Department for Work and Pensions (DWP) should investigate why Ethnic Minorities are more likely to claim benefits, particularly when they are at least as likely (as comparable White customers) to have a job. Possible explanations include the following:

<sup>99</sup> It is possible for groups to appear in both the penalty and premium columns of these tables because we observe individuals in more than one period following inflow. For example, Chinese males in the 272 disadvantaged group wards are significantly more likely to be claiming benefits than comparable White customers in the second month following inflow, while they are significantly less likely to be claiming benefits in months 8 to 12 (see Appendix A5B.737 for more details).

<sup>100</sup> See Section 5.1 for details of the benefits and programmes that are included in this definition.

<sup>101</sup> Other estimators will also suffer from the same fundamental lack of comparability between the samples.

- Ethnic Minorities might, on average, have jobs that are more poorly paid than comparable Whites, such that they remain eligible for IS even after they start working; this would lend itself to a clear policy implication.
- Ethnic Minorities might be more likely to work for employers who return income tax records to Her Majesty's Revenue & Customs (HMRC), even where those jobs are paid below the income tax threshold (this means that of those individuals who have a job, more Ethnic Minorities than Whites will be recorded as being employed).
- Ethnic Minorities may be more likely to make fraudulent benefit claims than comparable Whites.

Unfortunately, it is not possible to identify the extent to which each of these suggestions applies (and, of course, this is not an exhaustive list of the possibilities).

- Another interesting point to note is that there are almost as many individuals of unknown ethnic origin as there are Ethnic Minorities in the Jobcentre Plus sample. It should, therefore, be a priority for DWP to improve the recording of ethnicity across its services.



# 6 Ethnic parity in Incapacity Benefit

## 6.1 Introduction

The estimates of ethnic parity in Incapacity Benefit (IB) are based on individuals who had a Work Focused Interview (WFI) as part of an IB claim in 2003 (where that interview took place within six months of claim start date) (see Chapter 3). As WFIs were in the process of being rolled out (via the introduction of Jobcentre Plus offices<sup>102</sup>) at this time, not all offices will be represented in the sample.<sup>103</sup> However, it is necessary to select the sample on the basis of WFI date, because ethnicity is more likely to be recorded for individuals who have had an interview.

## 6.2 Description of the Incapacity Benefit sample

Table 6.1 shows that just over 79,000 individuals had a WFI as part of an IB claim in 2003, of whom around 60 per cent were male. Around 85 per cent of individuals are from a White ethnic background and seven per cent are from an Ethnic Minority. Further disaggregation shows that 2.2 per cent of customers are of Black ethnic origin (of whom 45 per cent are Black Caribbean and 41 per cent are Black African), 3.3 per cent are of Asian ethnic origin (of whom 51 per cent are Pakistani and 34 per cent are Indian) and 1.7 per cent are of some other ethnic origin.

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<sup>102</sup> It was expected that 275 offices would be rolled out by June 2003 (Child Poverty Action Group, 2003).

<sup>103</sup> It should be noted that all districts appear in the sample, although the number of individuals in each district may not be representative of the number of IB claimants that would appear in these districts, had the roll-out of Jobcentre Plus offices been completed.

**Table 6.1 Ethnic breakdown of IB sample**

| Ethnic subgroup    | All        |               | Males      |               | Females    |               |
|--------------------|------------|---------------|------------|---------------|------------|---------------|
|                    | %          | Number        | %          | Number        | %          | Number        |
| White              | 84.4       | 66,920        | 84.8       | 40,880        | 84.0       | 26,040        |
| Ethnic Minority    | 7.2        | 5,660         | 7.2        | 3,480         | 7.1        | 2,200         |
| Black              | 2.2        | 1,760         | 2.2        | 1,040         | 2.3        | 720           |
| Caribbean          | 1.0        | 800           | 1.0        | 500           | 1.0        | 300           |
| African            | 0.9        | 720           | 0.8        | 400           | 1.0        | 320           |
| Other              | 0.3        | 240           | 0.3        | 140           | 0.3        | 100           |
| Asian              | 3.3        | 2,600         | 3.3        | 1,600         | 3.2        | 1,000         |
| Indian             | 1.1        | 880           | 1.0        | 480           | 1.3        | 420           |
| Pakistani          | 1.7        | 1,320         | 1.8        | 860           | 1.5        | 460           |
| Bangladeshi        | 0.2        | 160           | 0.2        | 100           | 0.2        | 60            |
| Other              | 0.3        | 240           | 0.3        | 160           | 0.3        | 80            |
| Other              | 1.7        | 1,300         | 1.7        | 820           | 1.5        | 480           |
| Mixed              | 0.4        | 340           | 0.4        | 200           | 0.4        | 140           |
| Chinese            | 0.1        | 80            | 0.1        | 40            | 0.1        | 40            |
| Other ethnic group | 1.1        | 900           | 1.2        | 600           | 1.0        | 300           |
| Unknown            | 8.4        | 6,660         | 8.0        | 3,880         | 9.0        | 2,780         |
| <b>All</b>         | <b>100</b> | <b>79,260</b> | <b>100</b> | <b>48,240</b> | <b>100</b> | <b>31,020</b> |

Figure 6.1 illustrates the employment and benefit outcomes for all Ethnic Minorities and Whites in the IB sample over an 18-month period, starting six months before WFI date and ending 12 months afterwards. Differences in outcomes between the two groups represent raw estimates of ethnic parity. A person is classified as employed or on benefit in a particular month if they were employed or on benefit for at least 15 of the previous 30 days. This means that although all customers were on benefit on the day they had their WFI (by definition), not all had been on benefit for at least 15 of the previous 30 days; hence, on the day of entry (date of WFI, the vertical line in Figure 6.1), the proportion on benefit is less than one.<sup>104</sup> An individual is classified as being in sustained employment if they have been continuously employed for the past three months (90 days).

<sup>104</sup> This may be reasonable if a large proportion of individuals have their first WFI less than 15 days after making a claim for IB.

**Figure 6.1 Labour market status over time for unmatched IB sample**

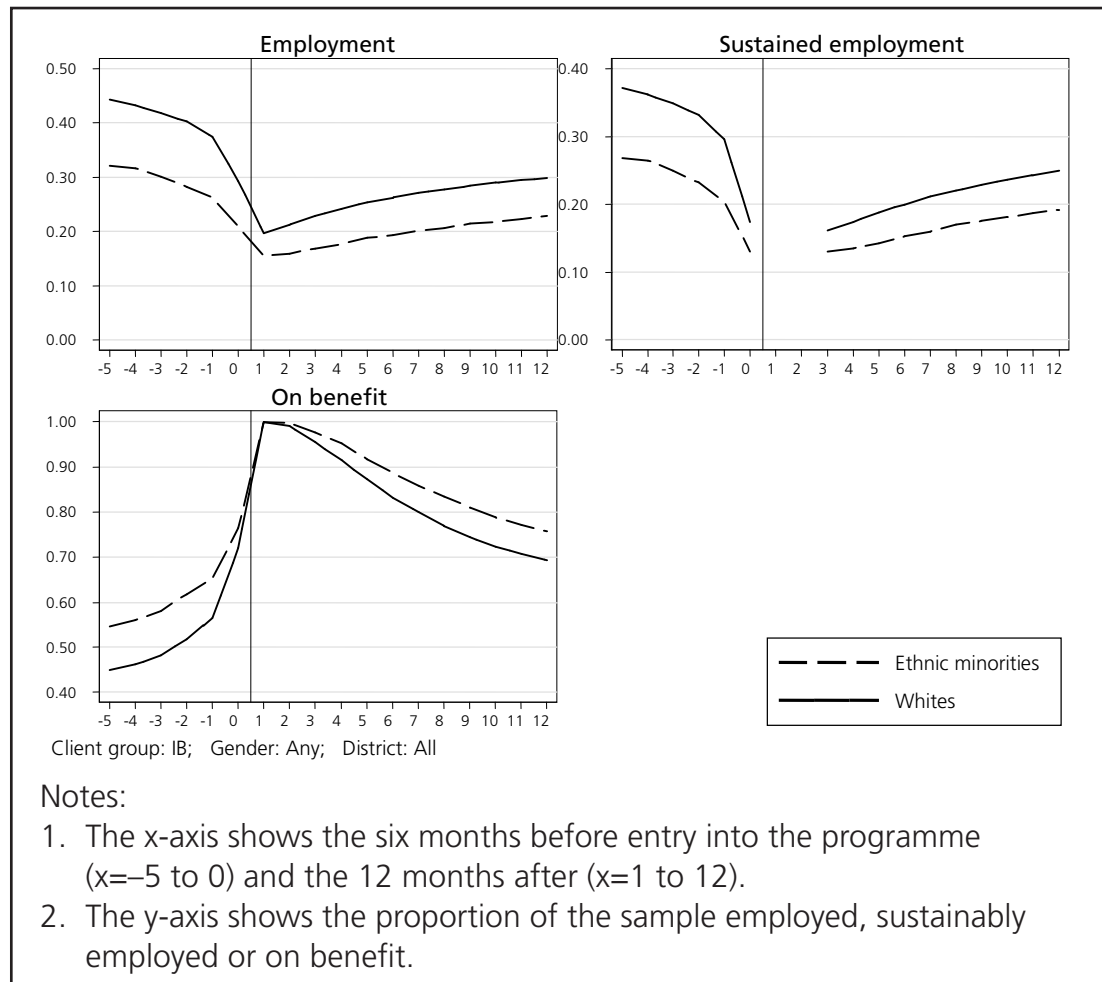


Figure 6.1 shows that there are differences in the raw employment, sustained employment<sup>105</sup> and benefit outcomes of the two groups, both before and after WFI date; these differences appear to narrow in the months before inflow and widen again after inflow. With the exception of the difference in benefit receipt rates between Ethnic Minorities and Whites in the first month after entry, these gaps are always significant.<sup>106</sup>

The proportion of individuals in employment increases over time, from approximately 15 per cent of Ethnic Minorities (and 20 per cent of Whites) in the first month

<sup>105</sup> A finding of ethnic parity, penalty or premium tends to be consistent across employment and sustained employment outcomes for a particular subgroup. In this summary report, therefore, sustained employment outcomes will barely be discussed. Interested readers can refer to Chapter 6 of the main report for full details of the sustained employment outcomes.

<sup>106</sup> Note that the significance of raw differences in outcomes is only assessed in the 12 months after entering the sample (not in the six months before). See Table A6.1.4 in Appendix A6A.1 of the full report for details.

after WFI date<sup>107</sup> to 23 per cent of Ethnic Minorities (and 30 per cent of Whites) 12 months later. Over the same period, the proportion of individuals on benefits steadily decreases for both groups but at a higher rate for Whites than for Ethnic Minorities. Twelve months after WFI date, 76 per cent of Ethnic Minorities (and 69 per cent of Whites) are still on benefit.

The raw results, therefore, suggest that there is an ethnic penalty in employment and benefit outcomes, i.e. that Ethnic Minorities claiming IB are less likely to be in work and more likely to be on benefits than White IB claimants. However, it is clear that Whites and Ethnic Minorities are very different in terms of a number of observed pre-programme characteristics and that these differences are likely to affect these estimates of ethnic parity.<sup>108</sup> Table 6.2 makes comparisons between a number of broad ethnic groupings across a range of key background characteristics and outcome variables.

Ethnic minorities are, on average, younger (than Whites) and they are more likely to have a greater number of children, to have exhibited a basic skills need and participated in a voluntary programme in the three years prior to inflow, to be claiming Income Support (IS) at WFI date (used as a proxy for personal income) and to live in higher unemployment areas. In terms of labour market histories, Ethnic Minorities have, on average, spent a smaller proportion of the three years prior to inflow in employment (and a larger proportion on benefits) than Whites. In terms of labour market outcomes, the proportion of the year following inflow spent in employment is significantly lower (and the proportion spent on benefits significantly higher) for Ethnic Minorities than it is for Whites.

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<sup>107</sup> To be eligible for IB, individuals should be incapable of work. This does not mean that they are not employed, however: for example, it may be the case that they are in a period of temporary absence from their job but were not entitled to Statutory Sick Pay (and hence have started claiming IB). It also seems likely that most individuals who were working immediately prior to becoming ill/injured would still be recorded as in employment (until such time as a conclusion could be reached over their likely long-term future). Because the employment figure in month 0 refers not to the day of interview itself but to employment in the last 30 days, there could be people who were not working on the actual day of interview but had been for at least 15 of the previous 30 days. There may also be some fraudulent IB claims. It is not possible to quantify the impact of these scenarios.

<sup>108</sup> See Table A6.1.1 in Appendix A6A.1 of the main report for more details on the ways in which Ethnic Minorities differ from Whites.



Table 6.2 Characteristics of the IB sample by ethnicity

|  | All   | Ethnic Minority |          |          |          |          | Unknown |
|--|-------|-----------------|----------|----------|----------|----------|---------|
|  |       | White           | Black    | Asian    | Other    |          |         |
| Female   | 0.391 | 0.389           | 0.405    | 0.385    | 0.367*   | 0.418*** |         |
| Age at inflow  | 36.7  | 36.7            | 35.1***  | 36.6     | 35.1***  | 37.9***  |         |
| Number of kids at inflow                                 | 0.010 | 0.010           | 0.001*** | 0.030*** | 0.008    | 0.014**  |         |
| Percentage of time employed, years 1–3 before inflow     | 0.459 | 0.464           | 0.367*** | 0.344*** | 0.344*** | 0.508*** |         |
| Percentage of time on benefits, years 1–3 before inflow  | 0.460 | 0.458           | 0.633*** | 0.507*** | 0.584*** | 0.388*** |         |
| Basic skills need  | 0.131 | 0.132           | 0.203*** | 0.222*** | 0.194*** | 0.061*** |         |
| Participated in a voluntary programme before inflow      | 0.057 | 0.057           | 0.093*** | 0.057    | 0.078*** | 0.038*** |         |
| On IS at inflow  | 0.560 | 0.558           | 0.713*** | 0.602*** | 0.687*** | 0.491*** |         |
| Unemployment rate in travel-to-work area                 | 0.054 | 0.054           | 0.057*** | 0.054*** | 0.055**  | 0.052*** |         |
| Percentage of time employed, months 1–12 after inflow    | 0.257 | 0.259           | 0.210*** | 0.183*** | 0.196*** | 0.288*** |         |
| Percentage of time on benefits, months 1–12 after inflow | 0.833 | 0.832           | 0.917*** | 0.847*** | 0.885*** | 0.809*** |         |

## Notes:

1. \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
2. Percentage of time on benefits/employed is given as a proportion, i.e. between 0 and 1.

Individuals of Black, Asian and other ethnic origin (considered separately) differ from Whites in the same ways that Ethnic Minorities do, with the exception that Black IB claimants have fewer children, on average, than White IB claimants. This highlights the importance of taking into account this difference in composition and considering ethnic parity measures at both the broad and more disaggregated levels for the IB group.

This chapter will now proceed as follows: Section 6.3 considers ethnic parity measures for the Ethnic Minority sample as a whole and then for the more disaggregated ethnic groupings; in all cases, the samples are broken down by gender and geography (where possible). Section 6.4 concludes and provides some brief policy implications.

## 6.3 Estimates of ethnic parity for Incapacity Benefit claimants

### 6.3.1 All Ethnic Minorities

The raw ethnic parity estimates (discussed in Section 6.2) suggest that there is an ethnic **penalty** in employment and benefit outcomes for all Ethnic Minority IB claimants living in Great Britain. These raw estimates (for months 3, 6, 9 and 12 after WFI date) are replicated in Column 1 of Table 6.3. Columns 2 to 6 of the table additionally provide estimates using ordinary least squares (OLS), fully interacted linear matching (FILM), kernel matching and difference-in-differences ((DiD); two methods, described in Section 2.5.5) respectively.<sup>109</sup>

Unlike the case for Jobcentre Plus overall in Chapter 5, the diagnostics for the preferred matching estimator are very good and matching succeeds in reweighting the sample so that one can compare all Ethnic Minorities entering IB with a very similar White group. Furthermore, all the estimation methods produce virtually identical estimates of ethnic parity. These estimates suggest that, in marked contrast to the raw results, ethnic parity in employment cannot be rejected and that there is an ethnic penalty in benefit receipt. This means that Ethnic Minorities are significantly more likely to be claiming benefits than White IB customers in at least one of the 12 months following WFI date.

A summary of the reliable matching estimates of ethnic parity in employment outcomes for Ethnic Minority groups is given in Table 6.4 (benefit outcomes are shown in Table 6.5 later). All of the 21 possible subgroups appear in this table, i.e. estimates of all of the subgroups where sample sizes are large enough are reliable.

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<sup>109</sup> These estimates can be found in Table A6.1.2 in Appendix A6A of the main report. The DiD estimates come from Table A12A.13 in Appendix A12A of the main report.

Table 6.3 IB: parity estimates for all Ethnic Minorities living in Great Britain – comparison of methods

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.060*** | -0.006   | -0.003   | -0.003          | 0.002     | 0.003         |
| Employed in month 6                                  | -0.069*** | -0.006   | -0.004   | -0.004          | 0.003     | 0.000         |
| Employed in month 9                                  | -0.070*** | 0.002    | 0.002    | 0.004           | 0.006     | 0.006         |
| Employed in month 12                                 | -0.070*** | 0.004    | 0.006    | 0.006           | 0.008     | 0.010         |
| On benefit in month 3                                | 0.022***  | 0.008*** | 0.006*** | 0.004           | 0.013**   | 0.011**       |
| On benefit in month 6                                | 0.055***  | 0.020*** | 0.017*** | 0.012**         | 0.021***  | 0.021***      |
| On benefit in month 9                                | 0.066***  | 0.021*** | 0.018*** | 0.014*          | 0.015*    | 0.019***      |
| On benefit in month 12                               | 0.064***  | 0.011*   | 0.010    | 0.007           | 0.006     | 0.012         |
| N – Ethnic Minorities                                | 5,660     |          |          |                 |           |               |
| N – Whites   | 66,920    |          |          |                 |           |               |
| Median bias  | 11.1      |          |          | 0.9             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(0)UC(28)     |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 12.8%         |
| Whites   |           |          |          |                 |           | 7.3%          |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.

\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.

\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- In Kernel matching column:

CS(xx) means that xx per cent of the Ethnic Minority sample was lost to common support (where xx will always be 95 or less);

UC(yy) means that even after matching, yy covariates remain unbalanced at the 5 per cent significance level.

**Table 6.4 IB: reliable estimates of ethnic parity in employment outcomes for Ethnic Minorities (compared with Whites)**

| Ethnic parity   | Ethnic penalty | Ethnic premium                               |
|---|----------------|--|
| Any and females in Great Britain  | None           | Males in Great Britain<br>Males in 272 wards |
| Any and females in 272 wards<br>Any, males and females in London                            |                |  |
| Any and males in Manchester<br>Any, males and females in Great Britain excluding six cities |                |  |
| Any in Lancashire East<br>Any in Greater Manchester Central                                 |                |  |
| Any in Calderdale and Kirklees<br>Any and males in Lambeth, Southwark and Wandsworth        |                |  |
| Any and males in Brent, Harrow and Hillingdon   |                |  |

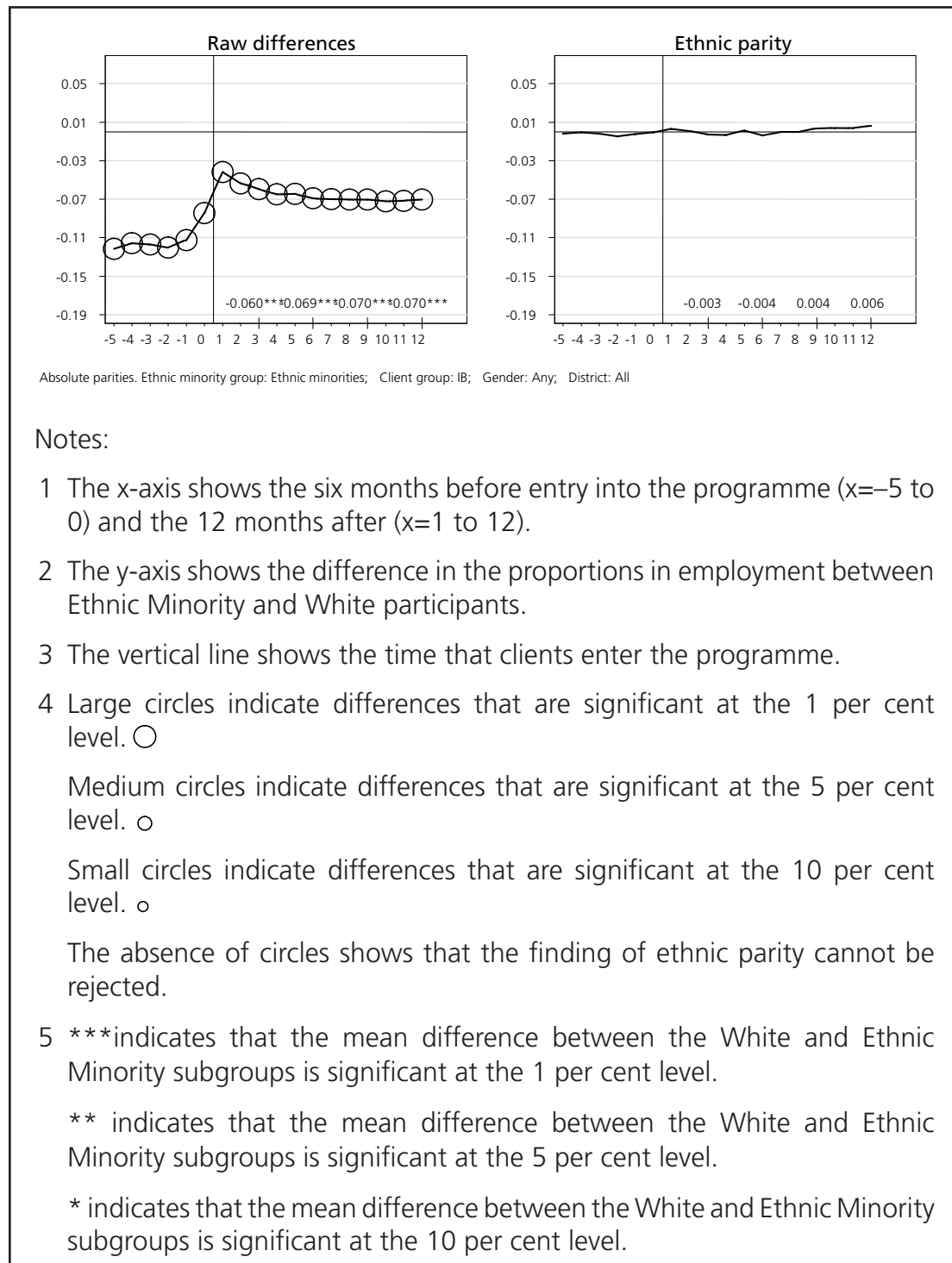
Note: This table summarises the reliable employment estimates in Chapter 6, Table 6.3 of the main report.

From Table 6.4, it is clear that the predominant finding is that ethnic parity in employment outcomes cannot be rejected: this means that, for these subgroups, Ethnic Minority and White IB claimants are equally likely to be working in the 12 months following WFI date. For two subgroups, there is evidence of an ethnic premium in employment outcomes. There is no evidence to support the raw finding of an ethnic penalty in employment outcomes.

Figure 6.2 provides graphical illustration of the finding for one group where ethnic parity could not be rejected – namely, all IB claimants living in Great Britain, using the preferred kernel matching method.<sup>110</sup> As discussed in Section 6.2, there is evidence of a significant ethnic penalty in terms of the raw outcomes, both before and after entry. Once the White sample has been reweighted (giving more weight to individuals who were not in employment in the six months prior to entry, amongst other things), these differences disappear, leaving insufficient evidence to reject ethnic parity in employment outcomes. This means that the employment rate of Ethnic Minorities is virtually identical to that of their matched White counterparts in every month, such that the ethnic penalty observed in the raw results must be due to the fact that Ethnic Minority IB claimants possess observable characteristics (including labour market experience) that make them less likely to be in work than White IB claimants.

<sup>110</sup> See Appendix A6A.1 of the main report for more details.

**Figure 6.2 Estimates of ethnic parity in employment outcomes for IB claimants in Great Britain**



A summary of the reliable estimates of ethnic parity in benefit receipt can be found in Table 6.5. Whilst the predominant finding remains one of not being able to reject ethnic parity, there are seven groups for which an ethnic penalty is found (including any and males in Great Britain) and one group for which a premium is found.

**Table 6.5 IB: reliable estimates of ethnic parity in benefit receipt for Ethnic Minorities (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>  | <b>Ethnic premium</b> |
|--|--|-----------------------|
| Females in Great Britain<br>Any and males in 272 wards<br>Any in Manchester<br>Any, males and females in<br>Great Britain excluding six<br>cities<br>Any in Lancashire East<br>Any in Greater Manchester<br>Central<br>Any in Calderdale and Kirklees<br>Males in Lambeth, Southwark<br>and Wandsworth<br>Any and males in Brent,<br>Harrow and Hillingdon | Any and males in Great Britain<br>Females in 272 wards<br>Any, males and females in<br>London<br>Any in Lambeth, Southwark<br>and Wandsworth | Males in Manchester   |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 6, Table 6.3 of the main report.

Figure 6.3 provides estimates of ethnic parity in benefit receipt for all IB claimants living in Great Britain – one of the groups for which an ethnic penalty was found.<sup>111</sup> Once the White sample is reweighted (giving more weight to individuals who were on benefits in the six months prior to entry, amongst other things), in four of the 12 months after WFI date, Ethnic Minorities are between 0.3 and 1.7 percentage points (0.3 and 2.1 per cent) more likely to be claiming benefits than comparable White customers.<sup>112</sup>

From Table 6.5, it is clear that in contrast to the overall results, the most common finding among regional subgroups is being unable to reject ethnic parity in benefit receipt. Figure 6.4 provides estimates for IB claimants living in Brent, Harrow and Hillingdon.<sup>113</sup> From the raw results, it is clear that a penalty, significant at the one per cent level, in each of the months leading up to inflow becomes smaller and is only significant at the five or ten per cent level in some months thereafter. Once the White sample is reweighted (giving more weight to individuals who were claiming benefits in the six months prior to entry, amongst other things), this penalty disappears, leaving insufficient evidence to reject ethnic parity in benefit receipt. This is in contrast to the results for Ethnic Minorities overall, for whom there is evidence of a significant penalty. On closer inspection, however, many of

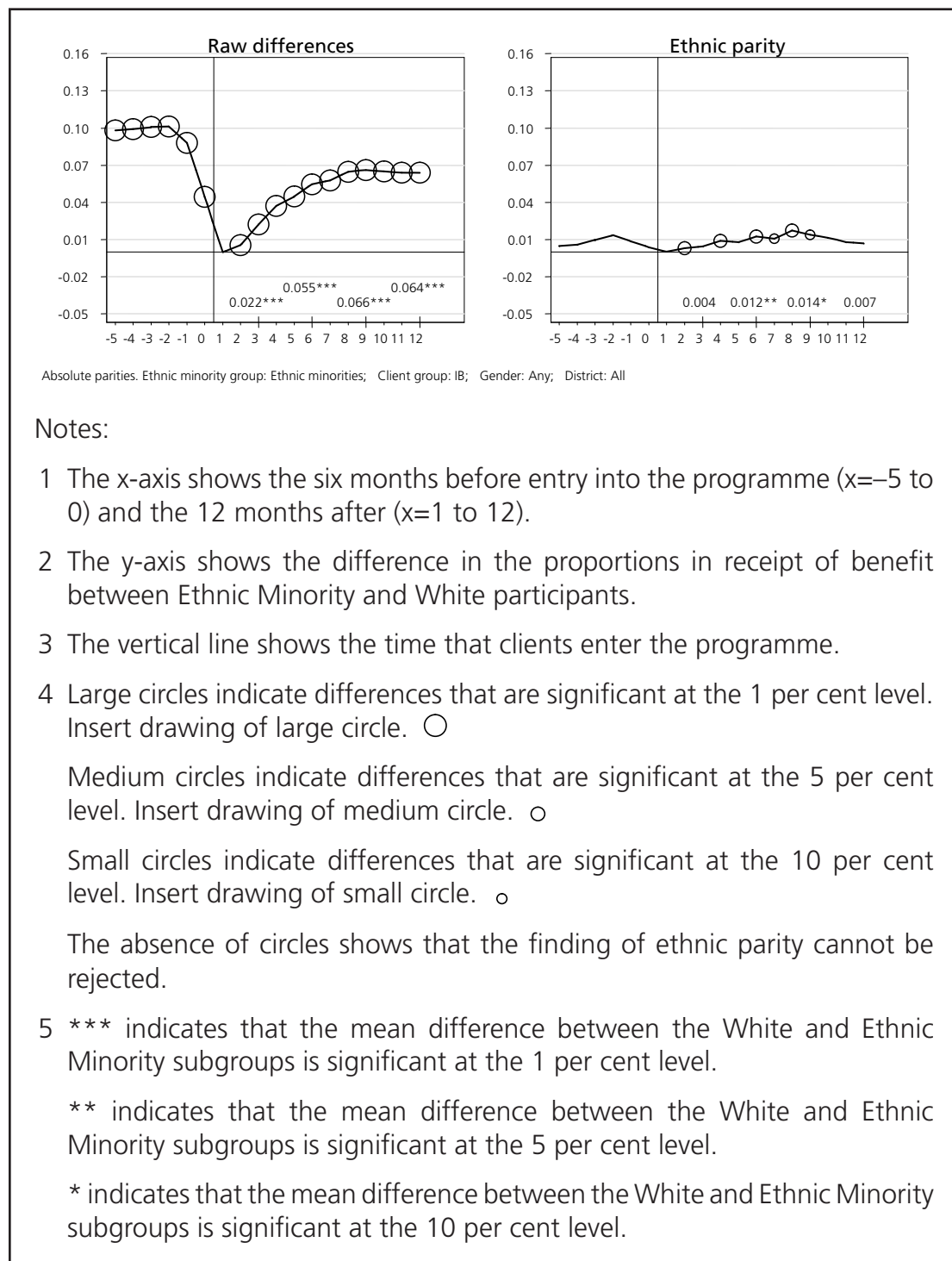
<sup>111</sup> See Table A6.1.4 in Appendix A6A.1 of the full report for full details.

<sup>112</sup> It should be noted that the percentage point and per cent differences quoted in this section (and throughout the remainder of the chapter) do not necessarily correspond to the same months; they are simply designed to provide an indication of the spectrum of significant results.

<sup>113</sup> See Appendix A6A.20 of the main report for more details.

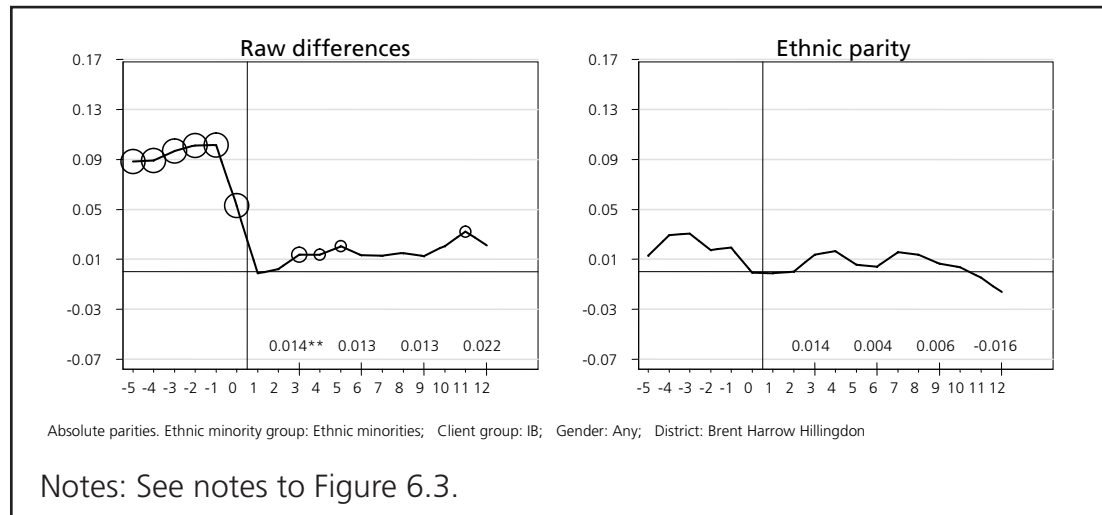
the parity results reported in Table 6.5 are indicative of insignificant differences (perhaps as a result of small sample sizes) rather than of genuine ethnic parity.<sup>114</sup>

**Figure 6.3 Estimates of ethnic parity in benefit receipt for IB claimants in Great Britain**



<sup>114</sup> See, for example, the results for men living in Lambeth, Southwark and Wandsworth in Appendices A6A.19 and A6B.19 of the main report.

**Figure 6.4 Estimates of ethnic parity in benefit receipt for IB claimants living in Brent, Harrow and Hillingdon**



In summary, the overall results for this group suggest that ethnic parity in employment cannot be rejected but that there is an ethnic penalty in benefit receipt. When subgroups are considered (disaggregated by gender and region), the predominant finding is that ethnic parity in both outcomes cannot generally be rejected. For these subgroups, it is not possible to reject the hypothesis that Ethnic Minority and White IB claimants are equally likely to be in work and/or claiming benefits in the year following WFI date.

### 6.3.2 Black Ethnic Minorities

A summary of the reliable preferred matching estimates of ethnic parity in terms of employment outcomes for subgroups of Black ethnic origin is shown in Table 6.6. Reliable results were only found for 12 out of a possible 18 subgroups. Where results are reliable, it is not possible to reject the finding of ethnic parity in all but one group. This, however, seems to be primarily due to small sample sizes, as many of the graphs provide evidence of insignificant differences rather than genuine ethnic parity in the point estimates.<sup>115</sup> The exception is Black African men, for whom there is evidence of a significant ethnic **penalty** in employment outcomes;<sup>116</sup> this is in contrast to the results for both Black and Ethnic Minority men, for whom there is insufficient evidence to reject ethnic parity and evidence of an ethnic premium respectively. However, this penalty is only significant in the first month following WFI date.

<sup>115</sup> See, for example, the results for Black females living in one of the 272 disadvantaged group wards in Appendices A6A.27 and A6B.27 of the main report.

<sup>116</sup> See Appendices A6A.37 and A6B.37 of the main report for more details.



**Table 6.6 IB: reliable estimates of ethnic parity in employment outcomes for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>                           | <b>Ethnic premium</b> |
|---|---|-----------------------|
| <b>Black:</b><br>Any, males and females in Great Britain<br>Females in 272 wards<br>Any and males in London | <b>Black African:</b><br>Males in Great Britain | None                  |
| <b>Black Caribbean:</b><br>Any and males in Great Britain<br>Any in 272 wards<br>Any in London              |   |                       |
| <b>Black African:</b><br>Any in Great Britain   |   |                       |

Note: This table summarises the reliable employment estimates in Chapter 6, Table 6.4 of the main report.

Table 6.7 summarises the results for ethnic parity in benefit receipt for the same groups. Here the reliable findings are of not rejecting ethnic parity (eight subgroups) and of ethnic penalty (four **big** subgroups). For the remaining six subgroups, no reliable estimates could be found.

**Table 6.7 IB: reliable estimates of ethnic parity in benefit receipt for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>                                     | <b>Ethnic premium</b> |
|--|---|-----------------------|
| <b>Black:</b><br>Females in Great Britain<br>Females in 272 wards<br>Any and males in London | <b>Black:</b><br>Any and males in Great Britain           | None                  |
| <b>Black Caribbean:</b><br>Any in 272 wards<br>Any in London                                 | <b>Black Caribbean:</b><br>Any and males in Great Britain |                       |
| <b>Black African:</b><br>Any and males in Great Britain                                      |   |                       |

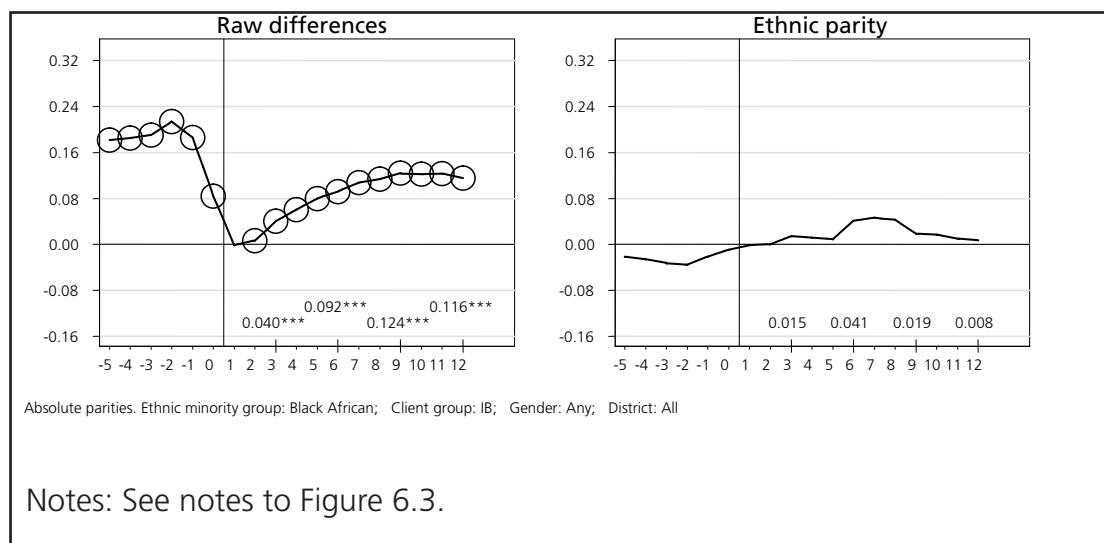
Note: This table summarises the reliable benefit receipt estimates found in Chapter 6, Table 6.4 of the main report.

Figure 6.5 provides estimates of ethnic parity in benefit receipt for Black African IB claimants.<sup>117</sup> From the raw results, it is clear that Black Africans are significantly more likely to be claiming benefits (than Whites) in every month before and after WFI date. Once the White sample is reweighted, however, these differences

<sup>117</sup> See Appendix A6A.36 of the main report for more details.

disappear, leaving insufficient evidence to reject ethnic parity in benefit receipt. This is in contrast to the results for both Black and Ethnic Minority IB claimants overall, for whom there is evidence of a significant penalty, indicating that Black African IB claimants fare relatively better (compared with their matched White counterparts) than customers from Other ethnic groups, at least in terms of benefit outcomes.<sup>118</sup>

**Figure 6.5 Estimates of ethnic parity in benefit receipt for Black African IB claimants**



To summarise, there are very few significant differences to report between Black and White IB claimants; where there are significant differences, they are always ethnic penalties, mostly associated with benefit receipt. It is not clear, however, how many of these are genuine findings of ethnic parity and how many are really penalties or premiums that are only insignificant because of small sample sizes. Where results do differ from those for Ethnic Minorities overall, they provide a mixture of more positive outcomes (e.g. not rejecting parity rather than finding a penalty, as with benefit receipt for Black African claimants) and more negative outcomes (e.g. not rejecting parity rather than finding a premium, as with the employment outcomes of Black men), such that it is difficult to draw overarching conclusions for the Black group as a whole.

<sup>118</sup> Most of the smaller Black subgroups also provide insufficient evidence to reject ethnic parity, although from the graphs in the relevant Appendix subsection, these appear to show insignificant differences, rather than genuine ethnic parity (see, for example, the results for Black women living in the 272 disadvantaged group wards in Appendices A6A.27 and A6B.27 of the main report).

### 6.3.3 Asian Ethnic Minorities

Table 6.8 summarises the employment findings for subgroups of the Asian IB sample, split according to gender and geography. Reliable estimates are obtained for 26 of the 27 possible subgroups. From the table, it is clear that once again the predominant finding is that ethnic parity in employment outcomes cannot be rejected, although for the two largest subgroups – female and male Asians – there is evidence of an ethnic penalty (females) and premium (males).

**Table 6.8 IB: reliable estimates of ethnic parity in employment outcomes for individuals of Asian ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>             | <b>Ethnic premium</b>  |
|--|-----------------------------------|------------------------|
| <b>Asian:</b>  | <b>Asian:</b>                     | <b>Asian:</b>          |
| Any in Great Britain   | Females in Great Britain          | Males in Great Britain |
| Any in 272 wards   | <b>Pakistani and Bangladeshi:</b> | <b>Indian:</b>         |
| Any in London  | Females in Great Britain          | Males in Great Britain |
| Any, males and females in Great Britain excluding six cities |                                   |                        |
| Any in Lancashire East                                       |                                   |                        |
| Any in Calderdale and Kirklees                               |                                   |                        |
| <b>Indian:</b>   |                                   |                        |
| Any and females in Great Britain                             |                                   |                        |
| Any in Great Britain excluding six cities                    |                                   |                        |
| <b>Pakistani and Bangladeshi:</b>                            |                                   |                        |
| Any and males in Great Britain                               |                                   |                        |
| Any in 272 wards   |                                   |                        |
| Any and males in Great Britain excluding six cities          |                                   |                        |
| <b>Pakistani:</b>  |                                   |                        |
| Any, males and females in Great Britain                      |                                   |                        |
| Any in 272 wards   |                                   |                        |
| Any and males in Great Britain excluding six cities          |                                   |                        |

Note: This table summarises the reliable employment estimates in Chapter 6, Table 6.5 of the main report.

Figure 6.6 provides estimates of ethnic parity in employment outcomes for Pakistani and Bangladeshi male IB claimants living in Great Britain.<sup>119</sup> On the basis of the raw results, it is clear that there is a large and significant penalty in every month before and after inflow; this penalty is slightly larger than for Ethnic Minorities overall. Once the White sample is reweighted, these differences disappear, leaving insufficient evidence to reject ethnic parity in employment outcomes, such that Pakistani and Bangladeshi men are as likely as White men to be working in any

<sup>119</sup> See Appendix A6A.56 of the full report for more details.

given month. This is in contrast to the results for Ethnic Minority (and Asian) men overall, for whom there is evidence of a significant **premium** in employment outcomes.<sup>120</sup> It also highlights an interesting difference between Pakistani and Bangladeshi men and women (who showed evidence of a significant penalty in employment outcomes).<sup>121</sup> Linear regression methods are capable of replicating this finding.<sup>122</sup>

**Figure 6.6 Estimates of ethnic parity in employment outcomes for Pakistani and Bangladeshi male IB claimants**

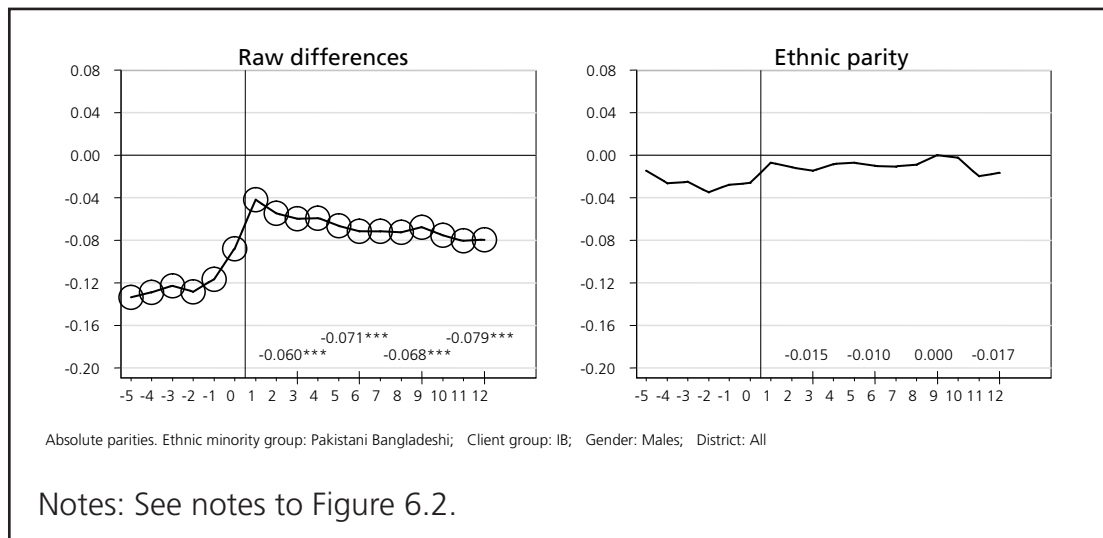


Table 6.9 summarises the reliable parity estimates for benefit receipt. There are reliable estimates for 23 of the 27 subgroups. Once again, the predominant finding is that ethnic parity in outcomes cannot be rejected. There are only three groups for which an ethnic penalty is found and also three instances of a significant (and reliable) ethnic premium in benefit receipt.<sup>123</sup>

<sup>120</sup> This may not be particularly surprising, given that the premium was relatively small and that the raw penalty was slightly larger for Pakistani and Bangladeshi than for all Ethnic Minority men.

<sup>121</sup> Of course, this may be due to differences between Pakistani and Bangladeshi men and women, differences between White men and women, or some combination of the two.

<sup>122</sup> See Tables A6.56.2 and A6.57.2 in Appendix A6A.56 of the full report for more details.

<sup>123</sup> A significant premium in benefit outcomes only occurs for one other subgroup in this chapter (excluding individuals of unknown ethnic origin) – namely, Ethnic Minority male IB claimants living in Manchester (see Figure 6.11 in Section 6.3.4 of the main report).

**Table 6.9 IB: reliable estimates of ethnic parity in benefit receipt for individuals of Asian ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>   | <b>Ethnic premium</b>                 |
|---|---|---------------------------------------|
| <b>Asian:</b><br>Males and females in Great Britain                 | <b>Asian:</b><br>Any in London                                | <b>Asian:</b><br>Any in 272 wards     |
| Any and males in Great Britain excluding six cities                 | <b>Pakistani and Bangladeshi:</b><br>Females in Great Britain | Any in Calderdale and Kirklees        |
| Any in Lancashire East  | <b>Pakistani:</b><br>Females in Great Britain                 | <b>Pakistani:</b><br>Any in 272 wards |
| <b>Indian:</b><br>Any, males and females in Great Britain           |   |                                       |
| Any in Great Britain excluding six cities                           |   |                                       |
| <b>Pakistani and Bangladeshi:</b><br>Any and males in Great Britain |   |                                       |
| Any and males in Great Britain excluding six cities                 |   |                                       |
| <b>Pakistani:</b><br>Any and males in Great Britain                 |   |                                       |
| Any and males in Great Britain excluding six cities                 |   |                                       |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 6, Table 6.5 of the main report.

To summarise, there are relatively few significant differences to report for any of the Asian subgroups under consideration; however, there appear to be more premiums and fewer penalties (particularly in terms of benefit receipt) than there have been for either Black or Ethnic Minority subgroups. This may be taken as evidence that individuals of Asian ethnic origin seem to perform relatively better (compared with their matched White counterparts) than do individuals of Black ethnic origin (compared to otherwise-identical White customers).

### **6.3.4 Mixed, Chinese and other Ethnic Minorities**

Table 6.10 summarises the employment findings for nine subgroups of the IB sample made up of individuals from various non-Black, non-Asian ethnic backgrounds and split, where possible, according to gender and geography. It is clear from the table that for the eight subgroups for which results are available, ethnic parity in employment cannot be rejected.

**Table 6.10 IB: reliable estimates of ethnic parity in employment outcomes for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b> | <b>Ethnic premium</b> |
|--|-----------------------|-----------------------|
| Mixed, Chinese and other:<br>Any, males and females in<br>Great Britain<br>Any in 272 wards<br>Any in London | None                  | None                  |
| <b>Other:</b><br>Any and males in Great Britain<br>Any in London   |                       |                       |

Note: This table summarises the reliable employment estimates in Chapter 6, Table 6.6 of the main report.

Table 6.11 summarises the corresponding reliable results for benefit receipt, which are obtained for eight of the nine possible groups. It shows that in terms of benefit receipt, there is a mixture of being unable to reject ethnic parity and finding significant ethnic penalties.

**Table 6.11 IB: reliable estimates of ethnic parity in benefit receipt for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b> |
|--|---|-----------------------|
| Mixed, Chinese and other:<br>Females in Great Britain<br>Any in 272 wards<br>Any in London | Mixed, Chinese and other:<br>Any and males in Great Britain<br><b>Other:</b><br>Any and males in Great Britain<br>Any in London | None                  |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 6, Table 6.6 of the main report.

## 6.4 Summary of findings and policy implications

For customers who, in 2003, had a WFI as part of an IB claim:

- For all Ethnic Minorities in Great Britain, the finding of ethnic **parity** in employment outcomes cannot be rejected, but there is evidence of a significant ethnic **penalty** in benefit receipt.
- For men, there is evidence of a significant ethnic **premium** in employment outcomes. For women, there is insufficient evidence to reject ethnic **parity** in benefit receipt.

- For most regional subgroups, ethnic parity in employment and benefit outcomes cannot be rejected. This should not be taken as evidence against the significant results for the group at a more aggregated level, however, as many of the subgroups comprise a relatively small number of individuals and show evidence of insignificant differences rather than of genuine ethnic parity.
- For individuals of Black, or Mixed, Chinese or other, ethnic origin, there are no instances of significant ethnic premiums for any of the subgroups under consideration. There is limited evidence of significant penalties in terms of benefit receipt, but the predominant finding is of ethnic parity (or at least no significant differences) in employment and benefit outcomes.
- For Asian individuals, there are more instances of significant premiums – and fewer instances of significant penalties – than for other ethnic subgroups; however, the most prevalent result is, again, of ethnic parity (or at least no significant differences) in employment and benefit outcomes.
- The fact that the predominant finding (in terms of employment and benefit outcomes) is of not rejecting ethnic parity should not be used as evidence against the overall finding of a significant penalty in benefit receipt. Not only do many of the smaller subgroups show insignificant differences rather than genuine ethnic parity, but also many of the individuals who are part of the overall analysis will not have been included in the regional results, presumably because they live in a district in which there are fewer than 400 Ethnic Minority IB claimants.
- In terms of policy recommendations, the fact that Ethnic Minorities are more likely (than otherwise-identical White IB claimants) to be claiming benefits in the months following WFI date may be worthy of further investigation.





# 7 Ethnic parity in Income Support

## 7.1 Introduction

The estimates of ethnic parity in Income Support (IS) are based on individuals who have had a Work Focused Interview (WFI) as part of an IS claim in 2003 (where that interview takes place within six months of claim start date) (see Chapter 3 for more details). This is because ethnicity is better recorded for IS claimants who have had a WFI; however, this selection criterion raises two important issues: First, WFIs were in the process of being rolled out (via the introduction of Jobcentre Plus offices<sup>124</sup>) in 2003; hence, not all current offices will be represented in this sample.<sup>125</sup> Second, individuals who are employed (for less than 16 hours per week and still claiming IS) do not have to have a WFI,<sup>126</sup> so such individuals will not appear in the sample.<sup>127</sup>

## 7.2 Description of the Income Support sample

From Table 7.1, it can be seen that just under 94,000 individuals had a WFI as part of an IS claim in 2003, of whom 58 per cent were female. Approximately

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<sup>124</sup> It was expected that 275 offices would be rolled out by June 2003 (Child Poverty Action Group, 2003).

<sup>125</sup> It should be noted that all districts appear in the sample, although the number of individuals in each district may not be representative of the number of IS claimants that would appear in these districts, had the roll-out of Jobcentre Plus offices been completed.

<sup>126</sup> Source: Child Poverty Action Group, 2003.

<sup>127</sup> It is also worth noting that individuals are only included in the sample if they are aged 57 or younger on the date of their WFI, thus avoiding any issues associated with the move from Minimum Income Guarantee (as part of IS) to Pension Credit (PC) for individuals aged 60 or above in April 2003.

83 per cent of the sample are from a White ethnic background and nine per cent are from an Ethnic Minority background. Of the Ethnic Minority sample, 39 per cent are of Black ethnic origin (of which 45 per cent are Black Caribbean and 42 per cent are Black African), the same proportion (39 per cent) are of Asian ethnic origin (of which 57 per cent are Pakistani) and 21 per cent are of some other ethnic origin.

**Table 7.1 Ethnic breakdown of IS sample**

| Ethnic subgroup    | All        |               | Males      |               | Females    |               |
|--------------------|------------|---------------|------------|---------------|------------|---------------|
|                    | %          | Number        | %          | Number        | %          | Number        |
| White              | 83.2       | 78,140        | 83.4       | 32,760        | 83.0       | 45,360        |
| Ethnic Minority    | 9.1        | 8,560         | 8.8        | 3,440         | 9.4        | 5,120         |
| Black              | 3.6        | 3,360         | 3.0        | 1,160         | 4.0        | 2,200         |
| Caribbean          | 1.6        | 1,520         | 1.4        | 540           | 1.8        | 980           |
| African            | 1.5        | 1,420         | 1.2        | 460           | 1.7        | 960           |
| Other              | 0.4        | 420           | 0.4        | 160           | 0.5        | 260           |
| Asian              | 3.6        | 3,380         | 3.7        | 1,460         | 3.5        | 1,920         |
| Indian             | 1.0        | 900           | 1.0        | 380           | 1.0        | 520           |
| Pakistani          | 2.1        | 1,920         | 2.1        | 840           | 2.0        | 1,100         |
| Bangladeshi        | 0.3        | 240           | 0.2        | 80            | 0.3        | 140           |
| Other              | 0.3        | 320           | 0.4        | 180           | 0.3        | 140           |
| Other              | 1.9        | 1,820         | 2.1        | 820           | 1.8        | 1,000         |
| Mixed              | 0.6        | 580           | 0.5        | 200           | 0.7        | 360           |
| Chinese            | 0.1        | 100           | 0.1        | 40            | 0.1        | 60            |
| Other ethnic group | 1.2        | 1,160         | 1.5        | 580           | 1.1        | 580           |
| Unknown            | 7.7        | 7,240         | 7.8        | 3,060         | 7.6        | 4,160         |
| <b>All</b>         | <b>100</b> | <b>93,920</b> | <b>100</b> | <b>39,280</b> | <b>100</b> | <b>54,660</b> |

Figure 7.1 illustrates the employment and benefit outcomes for all Ethnic Minorities and Whites in the IS sample over an 18-month period, starting six months before WFI date. Differences in outcomes between the two groups represent raw estimates of ethnic parity. A person is classified as being employed or on benefit in a particular month if they were employed or on benefit for at least 15 of the previous 30 days. This means that although all customers were on benefit on the day they had their first WFI as part of an IS claim (by definition), not all were on benefit for at least 15 of the 30 days leading up to that interview; hence, on the day of entry (the vertical lines in Figure 7.1), the proportion of the sample on benefit is less than one.<sup>128</sup> An individual is classified as being in sustained employment if they have been continuously employed for the past three months (90 days).

<sup>128</sup> This may be reasonable if a large proportion of individuals have their first WFI less than 15 days after making a claim for IS.

**Figure 7.1 Labour market status over time for unmatched IS sample**

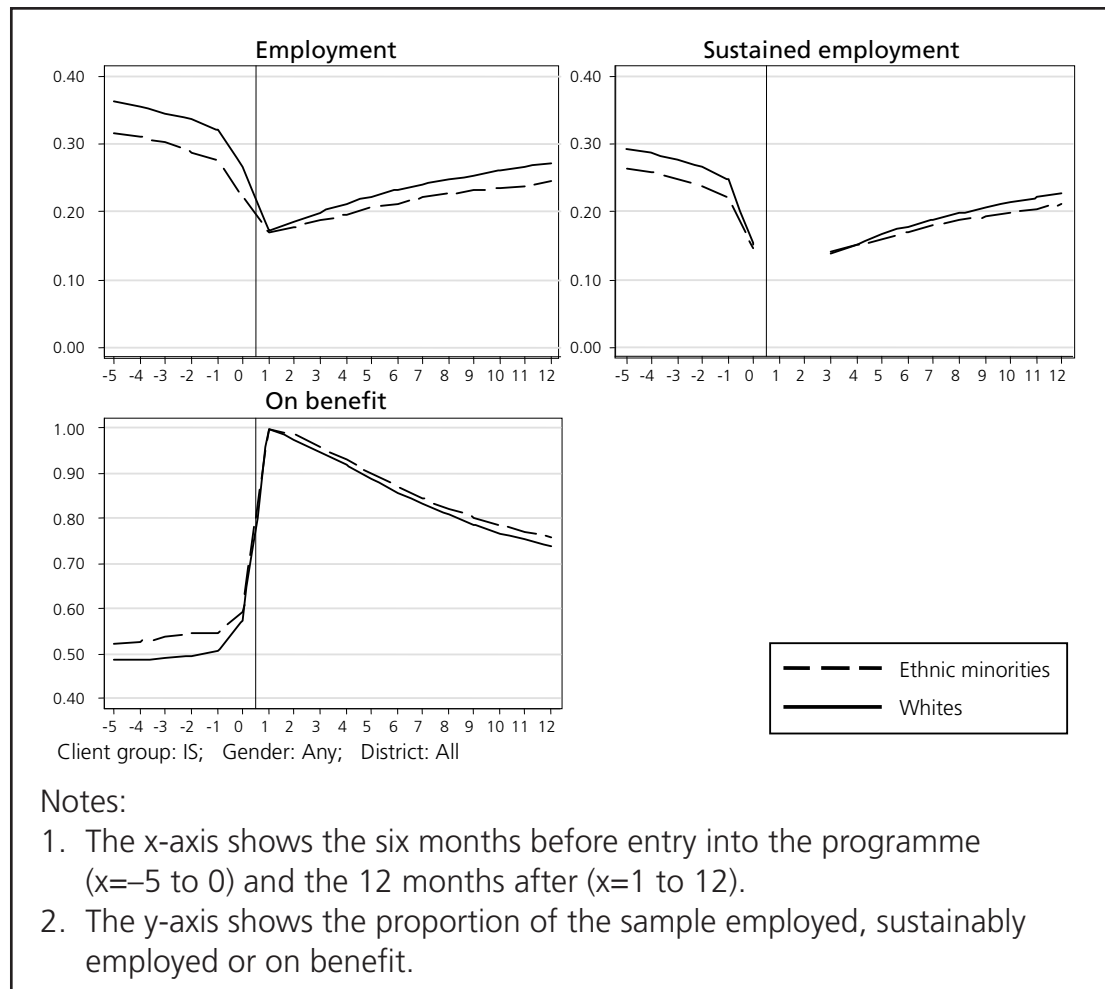


Figure 7.1 shows that there are differences in the raw employment, sustained employment<sup>129</sup> and benefit outcomes of the two groups, both before and after WFI date; these gaps are almost always significant.<sup>130</sup>

<sup>129</sup> A finding of ethnic parity, penalty or premium tends to be consistent across employment and sustained employment outcomes for a particular subgroup. In this summary report, therefore, only employment outcomes will be discussed. Interested readers can refer to Chapter 7 of the main report for full details of the sustained employment outcomes.

<sup>130</sup> See Table A7.1.4 in Appendix A7A.1 of the main report for more details.

The proportion of individuals in employment increases over time, from approximately 17 per cent (of both Whites and Ethnic Minorities) in the first month after WFI date<sup>131</sup> to 24 per cent of Ethnic Minorities (and 27 per cent of Whites) 12 months later. Over the same period, the proportion of individuals on benefits decreases from 99.9 per cent (of both Ethnic Minorities and Whites) to approximately 76 per cent of Ethnic Minorities (and 74 per cent of Whites).<sup>132</sup>

The raw results, therefore, suggest that there is an ethnic **penalty** in employment and benefit outcomes, i.e. that Ethnic Minorities claiming IS are less likely to be employed – and more likely to be on benefits – than White individuals.

However, it is clear that Whites and Ethnic Minorities in the IS sample are very different in terms of a number of observed pre-programme characteristics, and that these differences are likely to affect estimates of ethnic parity.<sup>133</sup> Table 7.2 makes comparisons between a number of broad ethnic groupings across a range of key background characteristics and outcome variables.

Ethnic minorities as a whole are more likely (than Whites) to be female, older, married/cohabiting and on Incapacity Benefit (IB); they tend to have more children, are more likely to have a basic skills need and tend to live in higher unemployment areas. On average, they have also spent a larger proportion of time on benefits (and a smaller proportion of time in employment) both before and after WFI date.

There is also significant variation **within** the Ethnic Minority sample (compared with Whites). For example, IS claimants of Asian ethnic origin spent, on average, a smaller proportion of the three years prior to WFI date in employment (than Whites), while individuals of Black ethnic origin spent a **larger** proportion of the same period in work. This highlights the importance of considering ethnic parity measures at both the broad and more disaggregated levels.

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<sup>131</sup> To be eligible for IS, individuals should not be working more than 16 hours per week. The fact that some employers report that an individual is working for them (even where that individual is not liable for income tax) may explain at least part of the non-zero employment figure observed at the point at which individuals have their first WFI as part of an IS claim. Because the figure refers not to the day of interview itself, but to employment in the last 30 days, there could be people who were not working on the actual day of interview but had been for at least 15 of the previous 30 days. There may also be some fraudulent IS claims. Unfortunately, it is not possible to quantify the impact of any of these scenarios.

<sup>132</sup> All individuals were on benefit, by definition, on the day they had their first WFI as part of an IS claim.

<sup>133</sup> See Table A7.1.1 in Appendix A7A.1 of the main report for more details on the ways in which Ethnic Minorities differ from Whites.

Table 7.2 Characteristics of the IS sample by ethnicity

|  | All   | White | Ethnic Minority | Black    | Asian    | Other    | Unknown  |
|--|-------|-------|-----------------|----------|----------|----------|----------|
| Female   | 0.582 | 0.581 | 0.597***        | 0.654*** | 0.567    | 0.551**  | 0.576    |
| Age at inflow  | 33.0  | 32.9  | 33.4***         | 32.9     | 34.3***  | 32.9     | 34.1***  |
| Married/cohabiting                                       | 0.106 | 0.098 | 0.151***        | 0.036*** | 0.282*** | 0.119*** | 0.131*** |
| On Incapacity Benefit at inflow                          | 0.252 | 0.246 | 0.254*          | 0.194*** | 0.290*** | 0.299*** | 0.316*** |
| Number of kids at inflow                                 | 0.843 | 0.821 | 1.039***        | 0.934*** | 1.276*** | 0.792    | 0.847*   |
| Age of youngest child at inflow                          | 5.209 | 5.221 | 5.171           | 5.189    | 5.210    | 5.065**  | 5.119**  |
| Percentage of time employed, years 1–3 before inflow     | 0.379 | 0.382 | 0.325***        | 0.399**  | 0.255*** | 0.317*** | 0.413*** |
| Percentage of time on benefits, years 1–3 before inflow  | 0.517 | 0.515 | 0.571***        | 0.577*** | 0.555*** | 0.592*** | 0.470*** |
| Basic skills need  | 0.128 | 0.129 | 0.168***        | 0.147*** | 0.194*** | 0.160*** | 0.068*** |
| Participated in a voluntary programme prior to inflow    | 0.114 | 0.118 | 0.114           | 0.159*** | 0.072*** | 0.112    | 0.069*** |
| Unemployment rate in travel-to-work area                 | 0.054 | 0.054 | 0.055***        | 0.057*** | 0.054*   | 0.055*** | 0.052*** |
| Percentage of time employed, months 1–12 after inflow    | 0.230 | 0.230 | 0.212***        | 0.273*** | 0.156*** | 0.202*** | 0.247*** |
| Percentage of time on benefits, months 1–12 after inflow | 0.854 | 0.855 | 0.867***        | 0.887*** | 0.837*** | 0.886*** | 0.835*** |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- Percentage of time on benefits/employed is given as a proportion, i.e. between 0 and 1.

This chapter will now proceed as follows: Section 7.3 considers ethnic parity measures for the Ethnic Minority sample as a whole and then for the more disaggregated ethnic groupings; in all cases, samples are broken down by gender and geography (where possible). Section 7.4 concludes and provides some brief policy implications.

## 7.3 Estimates of ethnic parity for IS claimants

### 7.3.1 All Ethnic Minorities

The raw ethnic parity estimates (discussed in Section 7.2) suggest that there is an ethnic **penalty** in employment and benefit outcomes for all Ethnic Minority IS claimants living in Great Britain. These estimates (for months 3, 6, 9 and 12 after WFI date) are replicated in Column 1 of Table 7.3. Columns 2 to 6 of the table additionally provide estimates using ordinary least squares (OLS), fully interacted linear matching (FILM), kernel matching and difference-in-differences ((DiD); two methods, described in Section 2.5.5) respectively.<sup>134</sup>

Interestingly, these methods all produce virtually identical estimates of ethnic parity (as was the case for IB, discussed in Chapter 6). Furthermore, these estimates are in marked contrast to the raw differences: a significant penalty is transformed into a significant **premium**.

As discussed in Section 2.6, however, this report relies on the diagnostic tests provided by the matching method to assess the reliability of these estimates. In this case, while matching has succeeded in reweighting the White sample (to make it 'look like' the Ethnic Minority sample of interest) without losing anyone to common support, 35 covariates remain significantly unbalanced. This means that the Ethnic Minority and White samples that have been used, differed significantly across 35 background characteristics, the upper limit on the number of characteristics that can remain unbalanced with the result still being considered reliable.

A summary of the reliable matching estimates of ethnic parity in employment outcomes for all Ethnic Minority groups is given in Table 7.4 (benefit outcomes are shown in Table 7.5 later). All but four of the 28 potential subgroups appear in this table (including all Ethnic Minorities in Great Britain, discussed above), i.e. estimates for the majority of subgroups where sample sizes are large enough are reliable.

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<sup>134</sup> These estimates can be found in Table A7.1.2 in Appendix A7A of the main report. The DiD estimates come from Table A12A.25 in Appendix A12A of the main report.

Table 7.3 IS: parity estimates for all Ethnic Minorities living in Great Britain – comparison of methods

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.012*** | 0.009**   | 0.011***  | 0.017***        | 0.025***  | 0.023***      |
| Employed in month 6                                  | -0.020*** | 0.013***  | 0.014***  | 0.018***        | 0.026***  | 0.024***      |
| Employed in month 9                                  | -0.023*** | 0.013***  | 0.014***  | 0.016**         | 0.022***  | 0.024***      |
| Employed in month 12                                 | -0.028*** | 0.014***  | 0.017***  | 0.021***        | 0.022***  | 0.027***      |
| On benefit in month 3                                | 0.011***  | 0.000     | -0.000    | -0.001          | -0.004    | -0.006        |
| On benefit in month 6                                | 0.013***  | -0.011**  | -0.014*** | -0.014***       | -0.013*   | -0.015***     |
| On benefit in month 9                                | 0.015***  | -0.016*** | -0.020*** | -0.018***       | -0.027*** | -0.024***     |
| On benefit in month 12                               | 0.019***  | -0.017*** | -0.019*** | -0.020***       | -0.042*** | -0.026***     |
| N – Ethnic Minorities                                | 8,560     |           |           |                 |           |               |
| N – Whites   | 78,140    |           |           |                 |           |               |
| Median bias  | 9.3       |           |           | 1.2             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(0)UC(35)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 16.5%         |
| Whites   |           |           |           |                 |           | 7.5%          |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- In Kernel matching column:  
CS(xx) means that xx per cent of the ethnic minority sample was lost to common support (where xx will always be 95 or less);  
UC(yy) means that even after matching, yy covariates remain unbalanced at the 5 per cent significance level.

**Table 7.4 IS: reliable estimates of ethnic parity in employment outcomes for Ethnic Minorities (compared with Whites)**

| Ethnic parity   | Ethnic penalty | Ethnic premium   |
|---|----------------|--|
| Males and females in London<br>Any and females in Manchester<br>Any, males and females in Great Britain excluding six cities<br>Any in Lancashire East<br>Any, males and females in Greater Manchester Central<br>Any and females in Calderdale and Kirklees<br>Any in North East London<br>Males in Brent, Harrow and Hillingdon | None           | Any, males and females in Great Britain<br>Any, males and females in 272 wards<br>Any in London<br>Any and females in Brent, Harrow and Hillingdon |

Note: This table summarises the reliable employment estimates in Chapter 7, Table 7.3 of the main report.

From Table 7.4, it is clear that the predominant finding is that ethnic parity in employment outcomes cannot be rejected; this means that, for these subgroups, Ethnic Minority and White IS claimants are equally likely to be working in the 12 months following WFI date. For nine subgroups, there is evidence of an ethnic premium in employment outcomes (consistent with the finding for all IS claimants). There is no evidence to support the raw finding of an ethnic penalty in employment outcomes.<sup>135</sup>

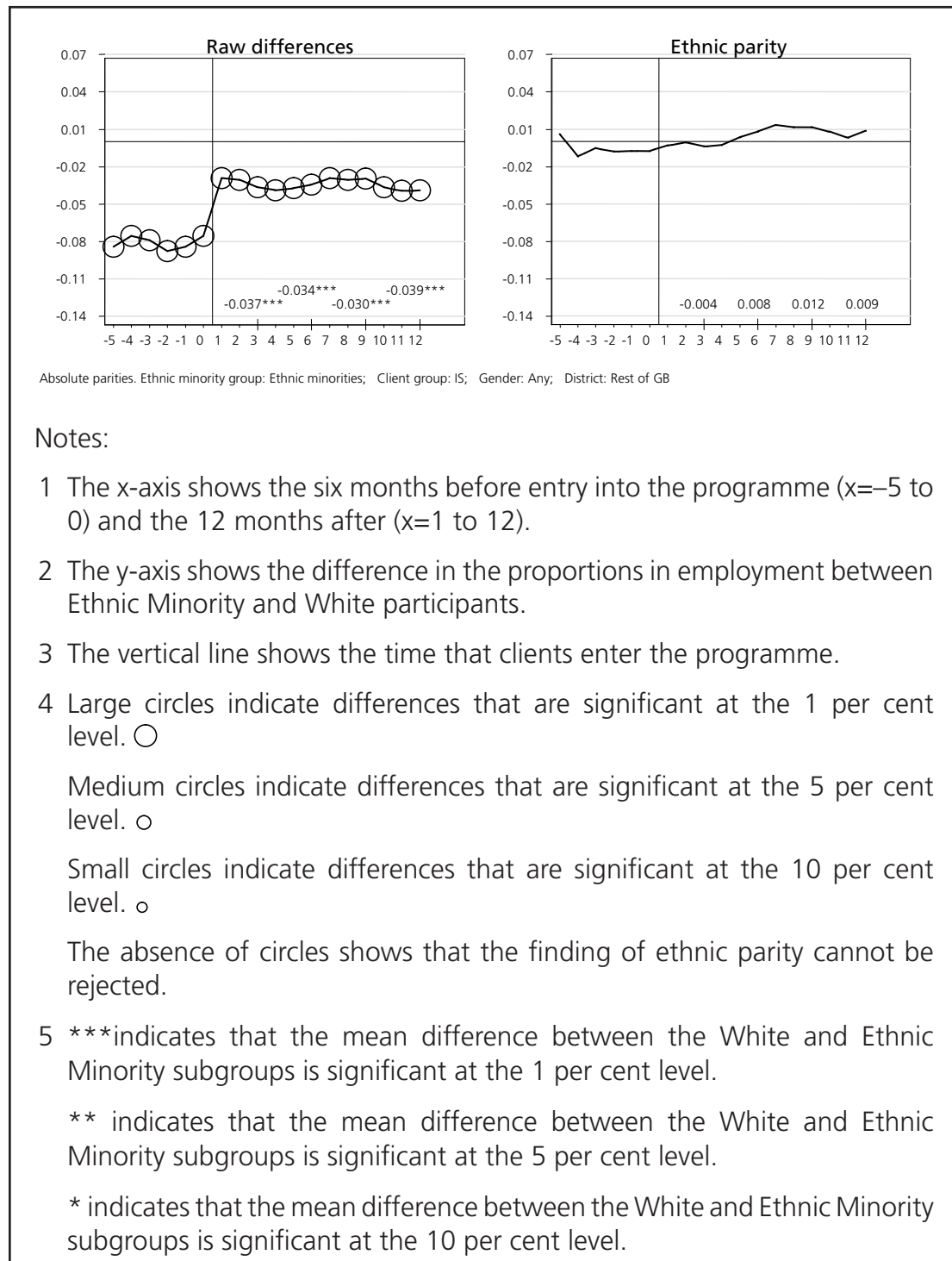
Figure 7.2 provides one example of where ethnic parity could not be rejected – individuals living in Great Britain excluding the six cities with the highest Ethnic Minority populations, who make up 36 per cent of the overall Ethnic Minority sample.<sup>136</sup> If raw estimates were relied upon, one would conclude that Ethnic Minorities are significantly less likely than Whites to be in work, both before and after having a WFI as part of an IS claim. Once the White sample has been appropriately reweighted, however, these penalties disappear, leaving no evidence of any significant difference between the employment probabilities of the two groups.

<sup>135</sup> While Table 7.4 suggests that there is an ethnic premium for males and females in London when they are considered together – but no evidence to reject ethnic parity when they are considered separately – closer examination of the graphs in Appendix A7B reveals that, in practice, the estimates differ little (with larger sample size likely to explain why a significant premium could be detected for males and females together).

<sup>136</sup> See Appendix A7A.13 in the main report for more details.



**Figure 7.2 Estimates of ethnic parity in employment outcomes for IS claimants living in Great Britain excluding the six cities with the highest Ethnic Minority populations**



A summary of the reliable estimates of ethnic parity in benefit receipt can be found in Table 7.5. Whilst the predominant finding remains one of not being able to reject ethnic parity, there is greater variation amongst the subgroups than there is in terms of employment outcomes: seven subgroups provide evidence to support the finding of an ethnic premium for Ethnic Minorities overall, while eight subgroups support the raw estimates of a significant penalty in benefit receipt.

**Table 7.5 IS: reliable estimates of ethnic parity in benefit receipt for Ethnic Minorities (compared with Whites)**

| Ethnic parity  | Ethnic penalty  | Ethnic premium   |
|--|---|--|
| Males in Great Britain<br>Any and females in 272 wards<br>Any and males in London<br>Any and females in<br>Manchester                                      | Any and females in Great<br>Britain<br>Males in 272 wards<br>Any, males and females in<br>Great Britain excluding six<br>cities | Any and females in Great<br>Britain<br>Females in London<br>Males in Greater Manchester<br>Central |
| Any and females in Greater<br>Manchester Central<br>Any in Calderdale and Kirklees<br>Any in North East London<br>Males in Brent, Harrow and<br>Hillingdon | Any in Lancashire East<br>Females in Calderdale and<br>Kirklees   | Any in Lambeth, Southwark<br>and Wandsworth<br>Any and females in Brent,<br>Harrow and Hillingdon  |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 7, Table 7.3 of the main report.

Figure 7.3 provides graphical evidence for each of ethnic parity, penalty and premium, via the estimates for Ethnic Minority men and women analysed separately.<sup>137</sup> For both sexes, there is evidence of an ethnic penalty in the raw results; these penalties are of similar magnitude in the six months prior to WFI date, but are slightly smaller (and significant in fewer months) for women than for men in the 12 months afterwards.

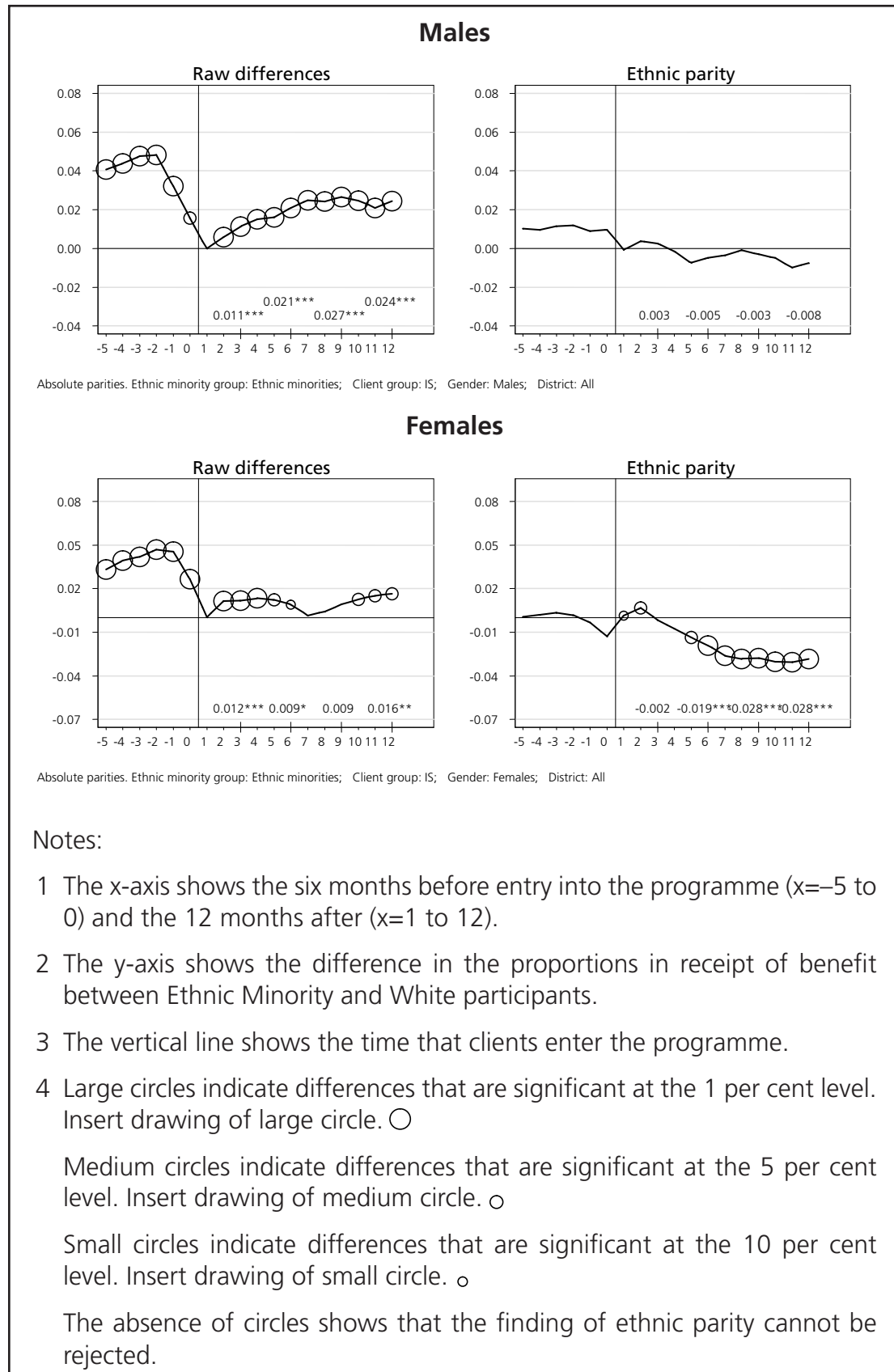
For women, once the White sample has been reweighted, a penalty remains in only the first two months following inflow (and is significant at the five per cent level or above in only the second month), after which it turns into a significant **premium** from month 5 onwards. This illustrates the importance of following outcomes over time rather than taking a solely short-term view. For men, on the other hand, the raw penalties disappear entirely, leaving insufficient evidence to reject ethnic **parity** in benefit receipt. On this basis, it appears that it is Ethnic Minority women who are driving the overall results (for benefit receipt at least).

In summary, the overall results for this group, of ethnic premiums in employment and benefit receipt, are replicated in a number of subgroups. Having said this, however, the predominant finding amongst the subgroups (disaggregated by gender and region) is that ethnic parity could not be rejected for either outcome. This means that – for these subgroups at least – Ethnic Minority and White IS claimants are equally likely to be in work and/or claiming benefits in the year following WFI date.<sup>138</sup>

<sup>137</sup> See Appendix A7A.2 (for men) and Appendix A7A.3 (for women) in the main report for more details.

<sup>138</sup> The fact that ethnic parity has been recorded in the table may indicate an insignificant penalty or premium (due to small sample size) rather than ‘genuine’ ethnic parity; however, this does not appear to be the case here. Interested readers can refer to Appendices A7A and A7B of the main report for confirmation.

**Figure 7.3 Estimates of ethnic parity in benefit receipt for IS claimants, by gender**



**Figure 7.3 Continued**

- 5 \*\*\* indicates that the mean difference between the White and Ethnic Minority subgroups is significant at the 1 per cent level.
- \*\* indicates that the mean difference between the White and Ethnic Minority subgroups is significant at the 5 per cent level.
- \* indicates that the mean difference between the White and Ethnic Minority subgroups is significant at the 10 per cent level.

**7.3.2 Black Ethnic Minorities**

A summary of the reliable matching estimates of ethnic parity in terms of employment outcomes for subgroups of Black ethnic origin is shown in Table 7.6. A higher proportion of the estimates for Black subgroups (than for all Ethnic Minorities) were unreliable, with only 20 of a possible 31 providing reliable results here. Where results are reliable, however, they follow the same broad pattern as for Ethnic Minorities overall: that is to say, the predominant finding is of not rejecting ethnic parity in employment outcomes, such that – within these subgroups – individuals of Black ethnic origin claiming IS are as likely as White IS claimants to be working in the 12 months following WFI date. Four subgroups replicate the overall finding of an ethnic premium in employment outcomes.

**Table 7.6 IS: reliable estimates of ethnic parity in employment outcomes for individuals of Black ethnic origin (compared with Whites)**

| Ethnic parity                           | Ethnic penalty | Ethnic premium                            |
|---|----------------|---|
| <b>Black:</b>                           | None           | <b>Black:</b>                             |
| Females in Great Britain                |                | Any and males in Great Britain            |
| Males in 272 wards                      |                | Any in Great Britain excluding six cities |
| Any, males and females in London        |                | <b>Black Caribbean:</b>                   |
| Any in Brent, Harrow and Hillingdon     |                | Any in Great Britain                      |
| <b>Black Caribbean:</b>                 |                |   |
| Males and females in Great Britain      |                |   |
| Any in 272 wards                        |                |   |
| Any and females in London               |                |   |
| <b>Black African:</b>                   |                |   |
| Any, males and females in Great Britain |                |   |
| Any in London                           |                |   |
| <b>Other Black:</b>                     |                |   |
| Any in Great Britain                    |                |   |

Note: This table summarises the reliable employment estimates found in Chapter 7, Table 7.4 of the main report.

The reliable estimates of ethnic parity in benefit receipt are summarised in Table 7.7. In contrast to the results for Ethnic Minority subgroups, none of the subgroups of Black ethnic origin replicate the overall finding of an ethnic premium in benefit receipt. In addition, fewer subgroups replicate the overall raw findings of an ethnic **penalty** in benefit receipt and ethnic parity in benefit receipt could not be rejected in most cases. Thus – in accordance with the findings for employment outcomes – in general, Black IS claimants are as likely as White IS claimants to be receiving benefits in the 12 months following WFI date.

**Table 7.7 IS: reliable estimates of ethnic parity in benefit receipt for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b> |
|--|---|-----------------------|
| <b>Black:</b><br>Males and females in Great Britain<br>Any and males in 272 wards<br>Any, males and females in London<br>Any in Brent, Harrow and Hillingdon | <b>Black:</b><br>Any in Great Britain excluding six cities<br><br><b>Black Caribbean:</b><br>Any in 272 wards | None                  |
| <b>Black Caribbean:</b><br>Males and females in Great Britain<br>Any and females in London   |   |                       |
| <b>Black African:</b><br>Any, males and females in Great Britain<br>Any in London  |   |                       |
| <b>Other Black:</b><br>Any in Great Britain  |   |                       |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 7, Table 7.4 of the main report.

### 7.3.3 Asian Ethnic Minorities

Table 7.8 summarises the reliable estimates (35 of 36 possible subgroups) of ethnic parity in terms of employment outcomes for individuals of Asian ethnic origin. In accordance with the results for all Ethnic Minorities – and for individuals of Black ethnic origin – the predominant finding is being unable to reject ethnic parity in employment outcomes.

**Table 7.8 IS: reliable estimates of ethnic parity in employment outcomes for individuals of Asian ethnic origin (compared with Whites)**

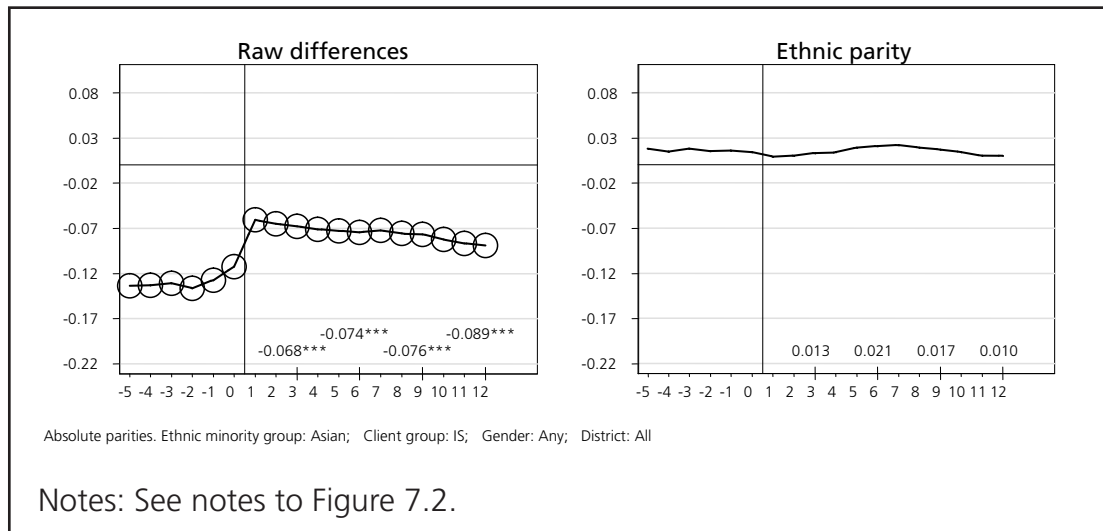
| <b>Ethnic parity</b>   | <b>Ethnic penalty</b> | <b>Ethnic premium</b>            |
|--|-----------------------|----------------------------------|
| Asian:<br>Any and females in Great Britain                   | None                  | Asian:<br>Males in Great Britain |
| Any and females in 272 wards                                 |                       |                                  |
| Any and females in London                                    |                       |                                  |
| Any, males and females in Great Britain excluding six cities |                       |                                  |
| Any in Lancashire East                                       |                       |                                  |
| Any in Calderdale and Kirklees                               |                       |                                  |
| <b>Indian:</b>   |                       |                                  |
| Any and females in Great Britain                             |                       |                                  |
| Any in Great Britain excluding six cities                    |                       |                                  |
| <b>Pakistani and Bangladeshi:</b>                            |                       |                                  |
| Any, males and females in Great Britain                      |                       |                                  |
| Any and females in 272 wards                                 |                       |                                  |
| Any, males and females in Great Britain excluding six cities |                       |                                  |
| Any in Lancashire East                                       |                       |                                  |
| Any in Calderdale and Kirklees                               |                       |                                  |
| <b>Pakistani:</b>  |                       |                                  |
| Any, males and females in Great Britain                      |                       |                                  |
| Any and females in 272 wards                                 |                       |                                  |
| Any, males and females in Great Britain excluding six cities |                       |                                  |
| Any in Lancashire East                                       |                       |                                  |
| Any in Calderdale and Kirklees                               |                       |                                  |

Note: This table summarises the reliable employment estimates found in Chapter 7, Table 7.5 of the main report.

Figure 7.4 provides graphical illustration of the results for one such subgroup – namely, all Asian IS claimants.<sup>139</sup> The raw results indicate a large and significant penalty (that is much larger than for Ethnic Minorities overall) in the six months leading up to date of WFI, which decreases slightly – but remains significant – in the 12 months afterwards. Once the White sample has been reweighted, however, this penalty disappears such that ethnic parity cannot be rejected for every month following inflow.

<sup>139</sup> See Appendix A7A of the main report for more details.

**Figure 7.4 Estimates of ethnic parity in employment outcomes for Asian IS claimants**



A summary of the reliable estimates of ethnic parity in benefit receipt for Asian subgroups is shown in Table 7.9. For this outcome, 32 of a possible 36 subgroups (slightly lower than for employment) provide reliable estimates. As was the case for Ethnic Minorities overall (but not for individuals of Black ethnic origin), whilst being unable to reject ethnic parity remains the predominant finding amongst the subgroups, a reasonable number replicate the overall matched result (of an ethnic premium in benefit receipt), whilst a similar number corroborate the overall raw result (indicating a significant ethnic penalty).

It should be noted, however, that insignificant penalties or premiums are found amongst a number of the subgroups for which ethnic parity is recorded in Table 7.9 (see, for example, the estimates in Chapter 7 of the main report for Indian IS claimants living in Great Britain, excluding the six cities with the highest Ethnic Minority populations). Also, for many of the subgroups for which penalties are recorded, the differences are only significant in a couple of months (see, for example, the estimates in Chapter 7 of the main report for Pakistani and Bangladeshi females living in one of the 272 disadvantaged group wards).

**Table 7.9 IS: reliable estimates of ethnic parity in benefit receipt for individuals of Asian ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>  | <b>Ethnic premium</b>  |
|---|--|--|
| <b>Asian:</b><br>Males in Great Britain<br>Females in 272 wards<br>Males in Great Britain<br>excluding six cities<br>Any in Calderdale and Kirklees   | <b>Asian:</b><br>Females in Great Britain<br>excluding six cities<br>Any in Lancashire East<br><b>Pakistani and Bangladeshi:</b><br>Females in 272 wards<br>Females in Great Britain<br>excluding six cities<br>Any in Lancashire East | <b>Asian:</b><br>Any and females in Great<br>Britain<br>Any and females in London<br><b>Indian:</b><br>Any and females in Great<br>Britain<br><b>Pakistani and Bangladeshi:</b><br>Any and females in Great<br>Britain |
| <b>Indian:</b><br>Any in Great Britain excluding<br>six cities<br><b>Pakistani and Bangladeshi:</b><br>Males in Great Britain<br>Males in Great Britain<br>excluding six cities<br>Any in Calderdale and Kirklees | <b>Pakistani:</b><br>Any and females in 272 wards<br>Females in Great Britain<br>excluding six cities<br>Any in Lancashire East  | Any in 272 wards<br><b>Pakistani:</b><br>Any in Great Britain  |
| <b>Pakistani:</b><br>Males and females in Great<br>Britain<br>Any and males in Great Britain<br>excluding six cities<br>Any in Calderdale and Kirklees  |  |  |

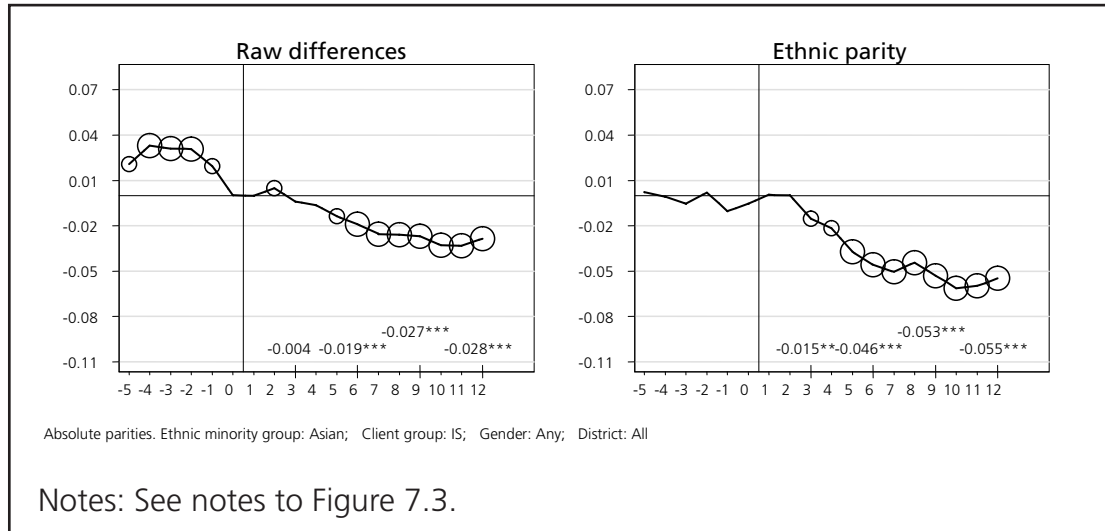
Note: This table summarises the reliable benefit receipt estimates found in Chapter 7, Table 7.5 of the main report.

The subgroups for which significant ethnic premiums are found, on the other hand, tend to demonstrate more reliable findings, as illustrated in Figure 7.5 for all Asian IS claimants.<sup>140</sup> For these individuals, a significant penalty prior to inflow turns into a significant premium from the fifth month after the date of the WFI. This indicates that despite the fact that Asians are more likely to have been claiming benefits (than Whites) prior to inflow, the WFI appears to do more to help them exit benefits than it does for Whites. Once the White sample is reweighted, giving more weight to individuals who are more likely to have been on benefit in the months leading up to inflow (amongst other things), it is perhaps not surprising that strong evidence of a premium in benefit receipt emerges in the year following inflow.

<sup>140</sup> Interested readers should refer to Chapter 7 of the main report for details of duration analysis for this subgroup.



**Figure 7.5 Estimates of ethnic parity in benefit receipt for Asian IS claimants**



**7.3.4 Mixed, Chinese and other Ethnic Minorities**

A summary of the reliable estimates of ethnic parity in terms of employment outcomes (benefit receipt) for IS claimants of Mixed, Chinese or other ethnic origin is shown in Table 7.10 (Table 7.11). As for individuals of Asian ethnic origin, the majority of subgroups with large enough sample sizes produce reliable estimates, with 12 of the 13 possible subgroups featuring in these tables.

**Table 7.10 IS: reliable estimates of ethnic parity in employment outcomes for individuals of Mixed, Chinese or Other ethnic origin (compared with Whites)**

| Ethnic parity  | Ethnic penalty | Ethnic premium   |
|--|----------------|--|
| Mixed, Chinese and other:<br>Any and females in Great Britain<br>Any in 272 wards<br>Any and females in London                 | None           | Mixed, Chinese and other:<br>Males in Great Britain<br>Other ethnic group:<br>Males in Great Britain |
| Mixed:<br>Any in Great Britain<br>Other ethnic group:<br>Any and females in Great Britain<br>Any in 272 wards<br>Any in London |                |  |

Note: This table summarises the reliable employment estimates found in Chapter 7, Table 7.6 of the main report.

**Table 7.11 IS: reliable estimates of ethnic parity in benefit receipt for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| Ethnic parity  | Ethnic penalty                         | Ethnic premium |
|--|--|----------------|
| <p>Mixed, Chinese and other:<br/>Any, males and females in Great Britain<br/>Any in 272 wards<br/>Any and females in London</p> <p><b>Other ethnic group:</b><br/>Any, males and females in Great Britain<br/>Any in 272 wards<br/>Any in London</p> | <p>Mixed:<br/>Any in Great Britain</p> | <p>None</p>    |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 7, Table 7.6 of the main report.

The results for IS claimants of Mixed, Chinese or other ethnic origin closely mirror those for IS claimants of Black ethnic origin: that is to say, the predominant finding in terms of both employment and benefit receipt is failing to reject ethnic parity, with very few subgroups deviating from this result. This means that individuals of Mixed, Chinese or other ethnic origin – in the relevant subgroups – are as likely as White individuals to be working and/or claiming benefits in the 12 months following WFI date.

## 7.4 Summary of findings and policy implications

For customers who, in 2003, had a WFI as part of an IS claim:

- For all men and women in Great Britain, there is evidence of a significant ethnic premium in employment outcomes. In terms of benefit receipt, for women (who make up 60 per cent of the sample), there is a significant ethnic penalty in the months immediately following date of WFI, after which a significant ethnic premium emerges, from month 5 onwards. For men, ethnic parity in benefit receipt cannot be rejected.
- When split by district and gender, there is insufficient evidence to reject ethnic parity for employment outcomes. This is likely to be due to smaller sample sizes affecting precision. For benefit outcomes, the results are fairly evenly split between not being able to reject ethnic parity, penalties and premiums.
- For almost all Black and Mixed, Chinese or other subgroups, there is insufficient evidence to reject ethnic **parity** in both employment and benefit outcomes.

- For most subgroups of Asian IS claimants, ethnic **parity** in employment outcomes cannot be rejected, but there is a mixture of not rejecting **parity**, finding significant premiums and finding significant **penalties** in terms of benefit receipt.
- For most subgroups considered in this chapter, there is insufficient evidence to reject ethnic parity in outcomes for Jobcentre Plus customers who had a WFI as part of an IS claim in 2003.



# 8 Ethnic parity in Jobseeker's Allowance

## 8.1 Introduction

The estimates of ethnic parity in Jobseeker's Allowance (JSA) are based on individuals who started a JSA claim during 2003. Section 5.2 showed that around three-quarters of the Jobcentre Plus overall sample comprised individuals who started a JSA claim in 2003, so it is highly likely that the results in this chapter will be similar to those found for the Jobcentre Plus overall sample in Chapter 5.

## 8.2 Description of the Jobseeker's Allowance sample

Table 8.1 shows that over 1,660,000 customers started a JSA claim during 2003, of whom 32 per cent were female. Approximately 80 per cent of the sample are from a White ethnic background, ten per cent are from an Ethnic Minority background and 11 per cent are of unknown ethnic origin. Of the Ethnic Minority sample, 33 per cent are of Black ethnic origin (of which 47 per cent are Black Caribbean and 40 per cent are Black African), 44 per cent are of Asian ethnic origin (of which 39 per cent are Indian and 38 per cent are Pakistani) and 24 per cent are of some other ethnic origin.

**Table 8.1 Ethnic breakdown of JSA sample**

| Ethnic subgroup    | All        |                  | Males      |                  | Females    |                |
|--------------------|------------|------------------|------------|------------------|------------|----------------|
|                    | %          | Number           | %          | Number           | %          | Number         |
| White              | 79.6       | 1,322,000        | 79.9       | 908,560          | 78.8       | 413,440        |
| Ethnic Minority    | 9.6        | 159,500          | 9.8        | 110,960          | 9.3        | 48,560         |
| Black              | 3.1        | 5,2040           | 3.3        | 37,000           | 2.9        | 15,020         |
| Black Caribbean    | 1.5        | 2,4480           | 1.6        | 17,660           | 1.3        | 6,820          |
| Black African      | 1.3        | 2,0960           | 1.3        | 14,720           | 1.2        | 6,240          |
| Other              | 0.4        | 6,600            | 0.4        | 4,620            | 0.4        | 1,980          |
| Asian              | 4.2        | 69,560           | 4.1        | 47,160           | 4.3        | 22,400         |
| Indian             | 1.6        | 26,800           | 1.4        | 16,240           | 2.0        | 10,540         |
| Pakistani          | 1.6        | 26,400           | 1.7        | 18,820           | 1.4        | 7,580          |
| Bangladeshi        | 0.6        | 10,180           | 0.7        | 7,660            | 0.5        | 2,520          |
| Other              | 0.4        | 6,200            | 0.4        | 4,440            | 0.3        | 1,740          |
| Other              | 2.3        | 37,920           | 2.4        | 26,780           | 2.1        | 11,140         |
| Mixed              | 0.7        | 10,920           | 0.6        | 7,240            | 0.7        | 3,680          |
| Chinese            | 0.2        | 3,080            | 0.2        | 1,860            | 0.2        | 1,240          |
| Other ethnic group | 1.4        | 23,920           | 1.6        | 17,680           | 1.2        | 6,220          |
| Unknown            | 10.8       | 179,700          | 10.3       | 117,000          | 11.9       | 62,680         |
| <b>All</b>         | <b>100</b> | <b>1,661,200</b> | <b>100</b> | <b>1,136,520</b> | <b>100</b> | <b>524,680</b> |

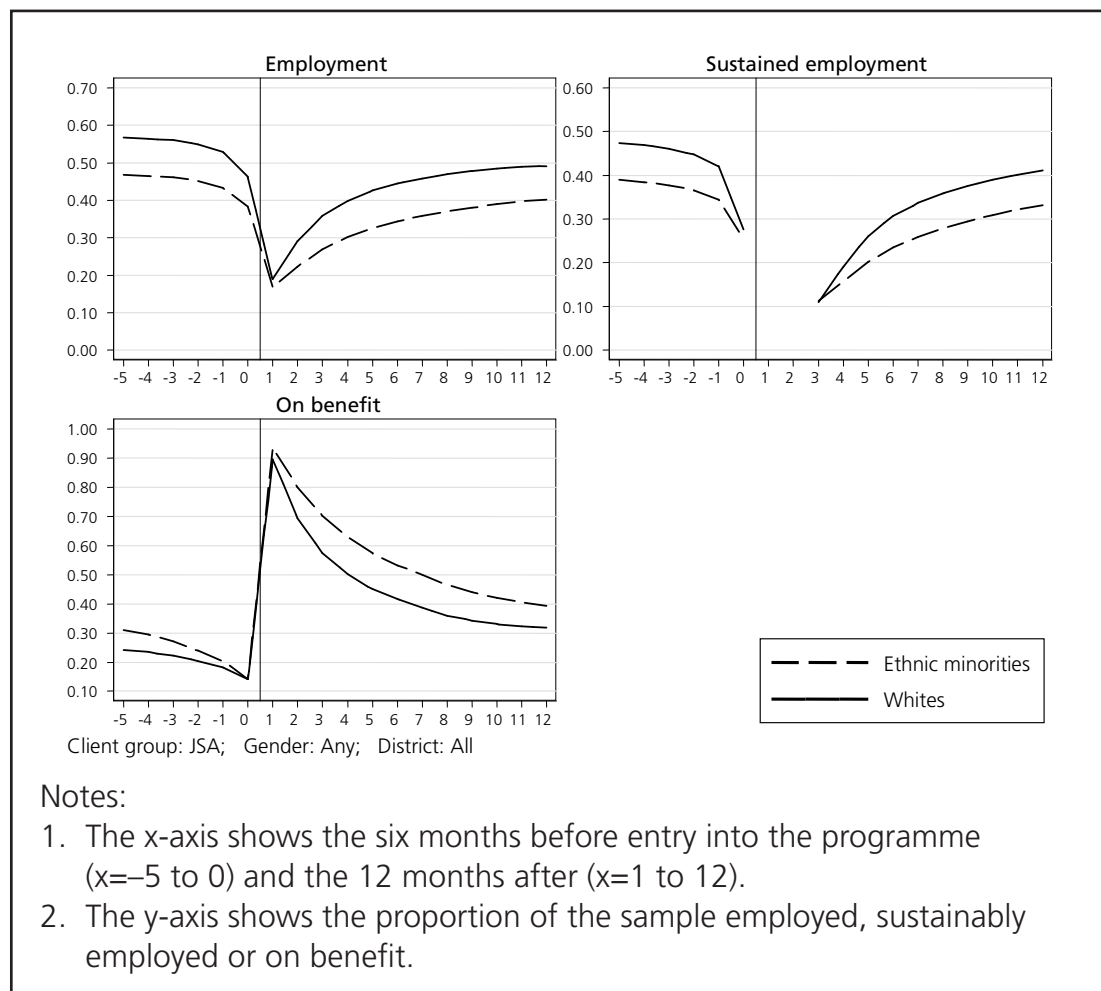
Figure 8.1 illustrates the observed raw employment and benefit outcomes for all Ethnic Minorities and Whites in the JSA sample over an 18-month period, starting six months before entry. Differences in outcomes between the two groups represent raw estimates of ethnic parity. A person is classified as being employed or on benefit in a particular month if they were employed or on benefit for at least 15 of the previous 30 days. An individual is classified as being in sustained employment if they have been continuously employed for the past three months (90 days).

Figure 8.1 shows that there are differences in the raw employment, sustained employment<sup>141</sup> and benefit outcomes of the two groups, both before and after starting a JSA claim; these gaps are always significant.<sup>142</sup>

<sup>141</sup> A finding of ethnic parity, penalty or premium tends to be consistent across employment and sustained employment outcomes for a particular subgroup. In this summary report, therefore, only employment outcomes will be discussed. Interested readers can refer to Chapter 8 of the main report for full details of the sustained employment outcomes.

<sup>142</sup> Table A8.1.4 in Appendix A8A.1 of the main report for more details.

**Figure 8.1 Labour market status over time for the unmatched JSA sample**



The proportion of individuals in employment increases over time, from approximately 17 per cent of Ethnic Minorities (and 19 per cent of Whites) in the first month after starting a JSA claim to 40 per cent of Ethnic Minorities (and 49 per cent of Whites) 12 months later. Over the same period, the proportion of individuals on benefits decreases from 94 per cent of Ethnic Minorities (and 90 per cent of Whites) to approximately 39 per cent of Ethnic Minorities (and 32 per cent of Whites).

The raw results, therefore, suggest that there is an ethnic **penalty** in employment and benefit outcomes, i.e. that Ethnic Minorities claiming JSA are less likely to be employed – and more likely to be on benefits – than White JSA claimants.

However, it is clear that Whites and Ethnic Minorities in the JSA sample are very different in terms of a number of observed pre-programme characteristics and that these differences are likely to affect estimates of ethnic parity.<sup>143</sup> Table 8.2 makes comparisons between a number of broad ethnic groupings across a range of key background characteristics and outcome variables.

<sup>143</sup> See Table A8.1.1 in Appendix A8A.1 of the main report for more details on the ways in which Ethnic Minorities differ from Whites.

Table 8.2 Characteristics of the JSA sample by ethnicity

|  | Ethnic Minority |       |          |          |          | Unknown  |
|--|-----------------|-------|----------|----------|----------|----------|
|  | All             | White | Black    | Asian    | Other    |          |
| Female   | 0.316           | 0.313 | 0.289*** | 0.322*** | 0.294*** | 0.349*** |
| Age at inflow  | 32.0            | 32.3  | 30.7***  | 29.7***  | 30.5***  | 31.3***  |
| Married/cohabiting                                       | 0.232           | 0.227 | 0.112*** | 0.372*** | 0.215*** | 0.252*** |
| On Incapacity Benefit at inflow                          | 0.061           | 0.064 | 0.048*** | 0.046*** | 0.044*** | 0.053*** |
| Percentage of time employed, years 1–3 before inflow     | 0.549           | 0.570 | 0.454*** | 0.469*** | 0.441*** | 0.473*** |
| Percentage of time on benefits, years 1–3 before inflow  | 0.223           | 0.225 | 0.329*** | 0.230*** | 0.274*** | 0.161*** |
| Basic skills need  | 0.122           | 0.126 | 0.190*** | 0.174*** | 0.202*** | 0.036*** |
| Participated in a voluntary programme prior to inflow    | 0.029           | 0.029 | 0.061*** | 0.036*** | 0.060*** | 0.011*** |
| Unemployment rate in travel-to-work area                 | 0.056           | 0.056 | 0.058*** | 0.057*** | 0.057*** | 0.054*** |
| Percentage of time employed, months 1–12 after inflow    | 0.401           | 0.413 | 0.314*** | 0.335*** | 0.328*** | 0.380*** |
| Percentage of time on benefits, months 1–12 after inflow | 0.468           | 0.464 | 0.629*** | 0.526*** | 0.547*** | 0.412*** |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- Percentage of time on benefits/employed is given as a proportion, i.e. between 0 and 1.



Ethnic minorities as a whole are more likely (than Whites) to be male, younger and married/cohabiting, to have a basic skills need and to live in higher unemployment areas. On average, they have also spent a larger proportion of time on benefits (and a smaller proportion of time in employment) both before and after starting a JSA claim.

There is also significant variation within the Ethnic Minority sample (compared with Whites). For example, JSA claimants of Black ethnic origin are much less likely to be married/cohabiting than Whites, whilst those of Asian ethnic origin are much more likely to be married/cohabiting than Whites. This highlights the importance of considering ethnic parity measures at both the broad and more disaggregated levels.

This chapter will now proceed as follows: Section 8.3 considers ethnic parity measures for the Ethnic Minority sample as a whole and then for the more disaggregated ethnic groupings; in all cases, samples are broken down by gender and geography (where possible). Section 8.4 concludes and provides some brief policy implications.

## 8.3 Estimates of ethnic parity for Jobseeker's Allowance claimants

### 8.3.1 All Ethnic Minorities

The ethnic parity estimates for JSA for all Ethnic Minorities in Great Britain are very sensitive to the estimation method used, especially for employment outcomes. This mirrors the findings for Jobcentre Plus overall, which is not surprising given that JSA customers are the largest component of the Jobcentre Plus overall group. The estimates based on the various methods employed in the study are shown in Table 8.3, which summarises them for employment and benefit outcomes at 3, 6, 9 and 12 months.<sup>144</sup>

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144 These estimates can be found in Table A8.1.2 in Appendix A8A of the main report. The DiD estimates come from Table A12A.37 in Appendix A12A of the main report.

Table 8.3 JSA: parity estimates for all Ethnic Minorities living in Great Britain – comparison of methods

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.089*** | -0.013*** | -0.018*** | 0.018***        | -0.018*** | -0.016***     |
| Employed in month 6                                  | -0.101*** | -0.014*** | -0.021*** | 0.025***        | -0.022*** | -0.022***     |
| Employed in month 9                                  | -0.098*** | -0.011*** | -0.019*** | 0.035***        | -0.016*** | -0.020***     |
| Employed in month 12                                 | -0.090*** | -0.008*** | -0.015*** | 0.037***        | -0.025*** | -0.017***     |
| On benefit in month 3                                | 0.127***  | 0.058***  | 0.063***  | 0.031***        | 0.061***  | 0.063***      |
| On benefit in month 6                                | 0.117***  | 0.045***  | 0.051***  | 0.013***        | 0.050***  | 0.051***      |
| On benefit in month 9                                | 0.097***  | 0.034***  | 0.041***  | -0.007          | 0.039***  | 0.040***      |
| On benefit in month 12                               | 0.076***  | 0.023***  | 0.030***  | -0.015***       | 0.041***  | 0.031***      |
| N – Ethnic Minorities                                | 159,500   |           |           |                 |           |               |
| N – Whites   | 1,322,000 |           |           |                 |           |               |
| Median bias  | 12.1      |           |           | 2.9             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 16.2%         |
| Whites   |           |           |           |                 |           | 9.3%          |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- In Kernel matching column:  
CS(xx) means that xx per cent of the Ethnic Minority sample was lost to common support (where xx will always be 95 or less);  
UC(yy) means that even after matching, yy covariates remain unbalanced at the 5 per cent significance level.  
UH(E,S,B) means that after matching, variables in parentheses were not balanced in at least one of the six months prior to entering the JSA sample (at the 5 per cent significance level) – E = employment history variables, S = sustainable employment history variables and B = benefit history variables.

All of the methods suggest that the raw estimates of an ethnic penalty in employment and benefit outcomes are too large. The preferred propensity score matching method estimates, however, are unreliable, as 104 covariates remain unbalanced after matching, including employment, sustained employment and benefit history variables and many district-level dummies. This suggests that for JSA, it is simply impossible to find a similar comparable White group to the Ethnic Minority sample, even after reweighting. The matching estimates suggest that there is a significant **premium** in employment outcomes and a significant **penalty** followed by a significant **premium** in benefit receipt. However, these results (like the raw results discussed) are not comparing like with like<sup>145</sup> and are, therefore, unreliable. All of the other methods (ordinary least squares (OLS), fully interacted linear matching (FILM) and difference-in-differences (DiD)) estimate that there is a small ethnic penalty in employment outcomes (between 0.8 and 2.5 percentage points) and a larger ethnic penalty in benefit outcomes which is larger in the earlier months than the later months. But again, there is a large amount of doubt about whether the assumptions underlying these models are appropriate and there are no equivalent diagnostics for these methods to assess whether the assumptions required to produce unbiased results hold.

It is clear that, as was the case for Jobcentre Plus overall, within a large number of Jobcentre Plus districts, it is simply not possible to find or construct (through reweighting) a White comparison group with the same observed background characteristics of the Ethnic Minority groups of interest who live in the same district. Once again, as was the case with Jobcentre Plus overall, there are severe doubts as to whether reliable estimates can be obtained as the two groups are simply not comparable.

The results for Ethnic Minority men and women in Great Britain analysed separately are also unreliable.<sup>146</sup> When the sample is split by region and gender, unreliable results again predominate. In all, for Ethnic Minorities as a whole, 141 different groups are considered.<sup>147</sup> Where reliable estimates are found, the majority of these suggest ethnic parity in employment cannot be rejected. This may reflect true parity or just be due to the relatively small sample sizes for some of these groups. However, there is also evidence of ethnic penalties and ethnic premiums for some groups.

A summary of the reliable ethnic parity estimates for employment for all Ethnic Minority groups is given in Table 8.4 (benefit outcomes are shown in Table 8.5 later). This shows that only 38 of the 141 potential subgroups have reliable estimates.

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<sup>145</sup> The median bias is smaller for the propensity score matching estimates than for the raw estimates, but other diagnostics suggest that matching has not been fully successful.

<sup>146</sup> See Tables A.38 and A.39 in the Appendix to this summary.

<sup>147</sup> See Table 8.3 of the main report for a summary of the findings for all 141 groups.

**Table 8.4 JSA: reliable estimates of ethnic parity in employment outcomes for Ethnic Minorities (compared with Whites)**

| <b>Ethnic parity</b>                           | <b>Ethnic penalty</b>                 | <b>Ethnic premium</b>                |
|--|---------------------------------------|--------------------------------------|
| Females in Manchester                          | Any in Edinburgh, Lothian and Borders | Males in Leeds                       |
| Any in Lancashire West                         | Any and males in Northumbria          | Males in Lancashire West             |
| Any and males in Liverpool and Wirral          | Females in Greater Manchester Central | Males in Leeds Central               |
| Any in Greater Manchester Central              | Any and males in Staffordshire        | Any in Suffolk                       |
| Any and males in Cardiff and Vale              | Males in Nottinghamshire              | Males in Hampshire and Isle of Wight |
| Males in Coventry and Warwickshire             | Males in Surrey and Sussex            | Males in Kent                        |
| Any and males in The Marches                   | Females in South London               |                                      |
| Males in Northamptonshire                      | Females in West London                |                                      |
| Any and females in Nottinghamshire             |                                       |                                      |
| Males in Essex                                 |                                       |                                      |
| Any in Hampshire and Isle of Wight             |                                       |                                      |
| Any and females in Surrey and Sussex           |                                       |                                      |
| Females in Central London                      |                                       |                                      |
| Any and males in West of England               |                                       |                                      |
| Any and males in Gloucestershire and Wiltshire |                                       |                                      |

Note: This table summarises the reliable employment estimates in Chapter 8, Table 8.3 of the main report.

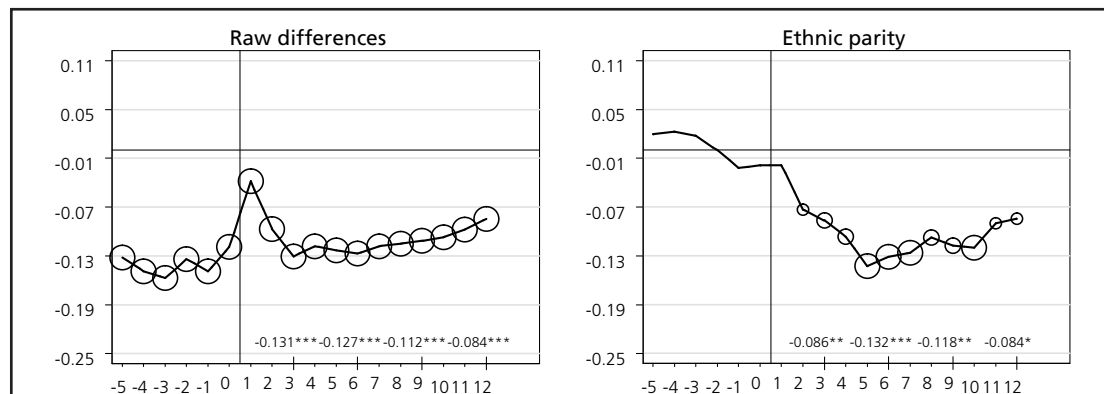
The third column of Table 8.4 shows the six gender and regional subgroups that have reliable and similar outcomes to the overall, but unreliable, finding of an ethnic premium. It should be noted that for these regions the premium is, on the whole, significant in only a few months.

The first column of Table 8.4 shows the 21 groups for which employment estimates are reliable and a finding of ethnic parity cannot be rejected. It should be remembered that with some of these groups, sample sizes get quite small, so rejecting parity becomes more difficult.

There is, however, evidence of an ethnic penalty in employment for ten groups. Figure 8.2 provides graphical illustration of this penalty finding, for individuals living in the Jobcentre Plus district of Northumbria. If raw results were relied upon, one would conclude that Ethnic Minorities are significantly less likely than Whites to be in work in the 12 months after first claiming JSA. But the raw results show that they were also less likely to be in work in the six months before claiming JSA. Once the White sample has been appropriately reweighted using matching methods, the pre-JSA employment gap is eliminated but there remains evidence

of a significant ethnic penalty in employment outcomes for this group after beginning to claim JSA.<sup>148</sup>

**Figure 8.2 Estimates of ethnic parity in employment outcomes for JSA claimants living in Northumbria**



Absolute parities. Ethnic minority group: EthnicMinorities; Client group: JSA; Gender: Any; District: Northumbria

**Notes:**

- 1 The x-axis shows the six months before entry into the programme ( $x=-5$  to 0) and the 12 months after ( $x=1$  to 12).
- 2 The y-axis shows the difference in the proportions in employment between Ethnic Minority and White participants.
- 3 The vertical line shows the time that clients enter the programme.
- 4 Large circles indicate differences that are significant at the one per cent level. ○  
Medium circles indicate differences that are significant at the five per cent level. ○  
Small circles indicate differences that are significant at the ten per cent level. ○  
The absence of circles shows that the finding of ethnic parity cannot be rejected.
- 5 \*\*\* indicates that the mean difference between the White and Ethnic Minority subgroups is significant at the one per cent level.  
\*\* indicates that the mean difference between the White and Ethnic Minority subgroups is significant at the five per cent level.  
\* indicates that the mean difference between the White and Ethnic Minority subgroups is significant at the ten per cent level.

A summary of the reliable estimates of ethnic parity in benefit receipt can be found in Table 8.5. The predominant finding is either not rejecting ethnic parity

<sup>148</sup> See Table A8.33.4 in Appendix A8A.33 of the main report.

(12 groups) or an ethnic penalty (12 groups). For three groups, there is evidence of an ethnic premium.

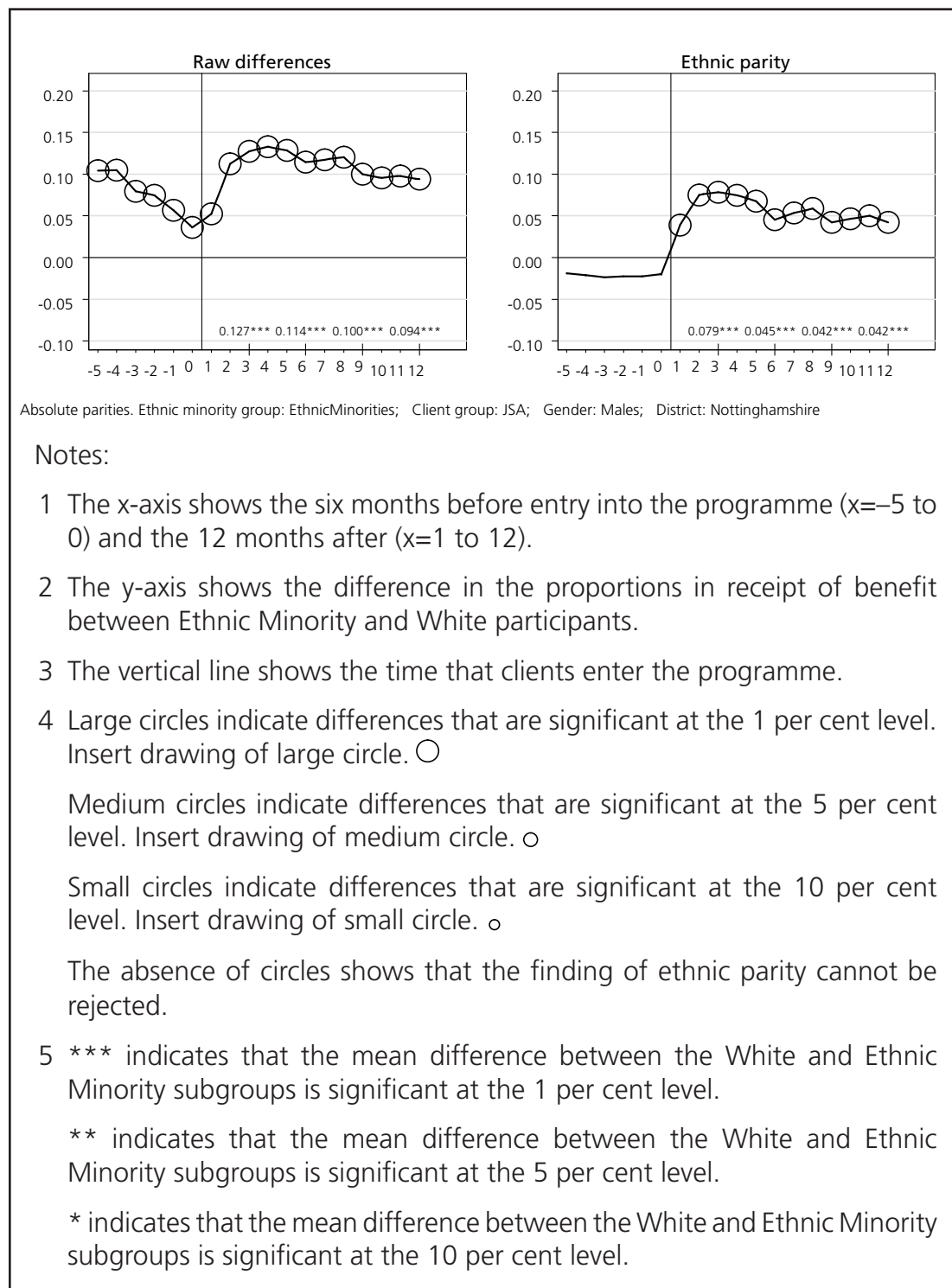
**Table 8.5 JSA: reliable estimates of ethnic parity in benefit receipt for Ethnic Minorities (compared with Whites)**

| <b>Ethnic parity</b>                       | <b>Ethnic penalty</b>                  | <b>Ethnic premium</b>              |
|--|--|------------------------------------|
| Males in Lancashire West                   | Any in Edinburgh, Lothian and Borders  | Any in Hampshire and Isle of Wight |
| Females in Greater Manchester Central      | Any and males in Northumbria           | Males in Kent                      |
| Males in Barnsley, Doncaster and Rotherham | Any in Lancashire West                 | Any in Surrey and Sussex           |
| Males in Cardiff and Vale                  | Males in Liverpool and Wirral          |                                    |
| Any and males in The Marches               | Any in Cardiff and Vale                |                                    |
| Males in Hampshire and Isle of Wight       | Any and males in Staffordshire         |                                    |
| Males and females in Surrey and Sussex     | Males and females in Nottinghamshire   |                                    |
| Females in Central London                  | Males in Essex                         |                                    |
| Females in West London                     | Males in Gloucestershire and Wiltshire |                                    |
| Males in West of England                   |  |                                    |

Note: This table summarises the reliable benefit receipt estimates in Chapter 8, Table 8.3 of the main report.

Figure 8.3 illustrates a finding of an ethnic penalty for males in the Jobcentre Plus district of Nottinghamshire. The figure illustrates a raw penalty in the six months leading up to the JSA claim and in the following 12 months. Once the White sample has been appropriately reweighted using matching methods, the pre-JSA benefit receipt gap is eliminated but there remains evidence of a significant ethnic penalty in benefit receipt after entry for this group, with the proportion of Ethnic Minorities in receipt of benefit being at least four percentage points higher (apart from in the first month).

**Figure 8.3 Estimates of ethnic parity in benefit receipt for male JSA claimants living in Nottinghamshire**



### 8.3.2 Black Ethnic Minorities

The overall results for Black JSA customers mirror those for Ethnic Minorities overall: there are significant, but unreliable, ethnic premiums in employment and a significant, but unreliable, ethnic penalty for benefit receipt.

A summary of all the reliable ethnic parity employment estimates for all the Black Ethnic Minority subgroups is shown in Table 8.6. There are reliable results for 72 of a possible 185 groups.<sup>149</sup> A large proportion of the groups for which no reliable estimates can be found is based in London. The table shows that reliable results are evenly distributed between not rejecting ethnic parity (29 groups) and finding an ethnic premium (30 groups), whilst for 13 groups there is a finding of an ethnic penalty in employment outcomes.

**Table 8.6 JSA: reliable estimates of ethnic parity in employment outcomes for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>  | <b>Ethnic premium</b>  |
|---|--|--|
| <p><b>Black:</b></p> <p>Any and males in Birmingham<br/>Females in London<br/>Females in Manchester<br/>Any and males in Greater Manchester Central<br/>Any, males and females in Birmingham and Solihull<br/>Females in Black Country</p> <p><b>Black Caribbean:</b></p> <p>Females in 272 wards<br/>Any and males in Birmingham<br/>Any, males and females in Birmingham and Solihull<br/>Any, males and females in City and East London<br/>Any and males in Central London<br/>Any and males in North London<br/>Females in South London<br/>Males in West London</p> <p><b>Black African:</b></p> <p>Males in Birmingham<br/>Any and males in South London</p> <p><b>Other Black:</b></p> <p>Females in London</p> | <p><b>Black:</b></p> <p>Any and males in Black Country<br/>Any and males in Nottinghamshire</p> <p><b>Black Caribbean:</b></p> <p>Males in Manchester<br/>Any and males in Greater Manchester Central<br/>Any and males in Black Country<br/>Any in Nottinghamshire<br/>Any and males in Berkshire, Bucks and Oxfordshire<br/>Any in West London</p> | <p><b>Black:</b></p> <p>Females in Birmingham<br/>Any and males in Leeds<br/>Any and males in Leicester<br/>Any and males in Manchester<br/>Females in Great Britain excluding six cities<br/>Any and males in Leeds Central<br/>Any in Sheffield<br/>Any in Coventry and Warwickshire<br/>Any and males in Leicestershire<br/>Any in Northamptonshire<br/>Any and males in Bedfordshire and Hertfordshire<br/>Any and males in Berkshire, Bucks and Oxfordshire<br/>Any and males in West of England</p> <p><b>Black Caribbean:</b></p> <p>Females in Great Britain excluding six cities<br/>Any and males in Bedfordshire and Hertfordshire</p> <p><b>Black African:</b></p> <p>Any in Birmingham<br/>Any and males in Manchester<br/>Any in Greater Manchester Central<br/>Any in Birmingham and Solihull<br/>Any in Berkshire, Bucks and Oxfordshire</p> |

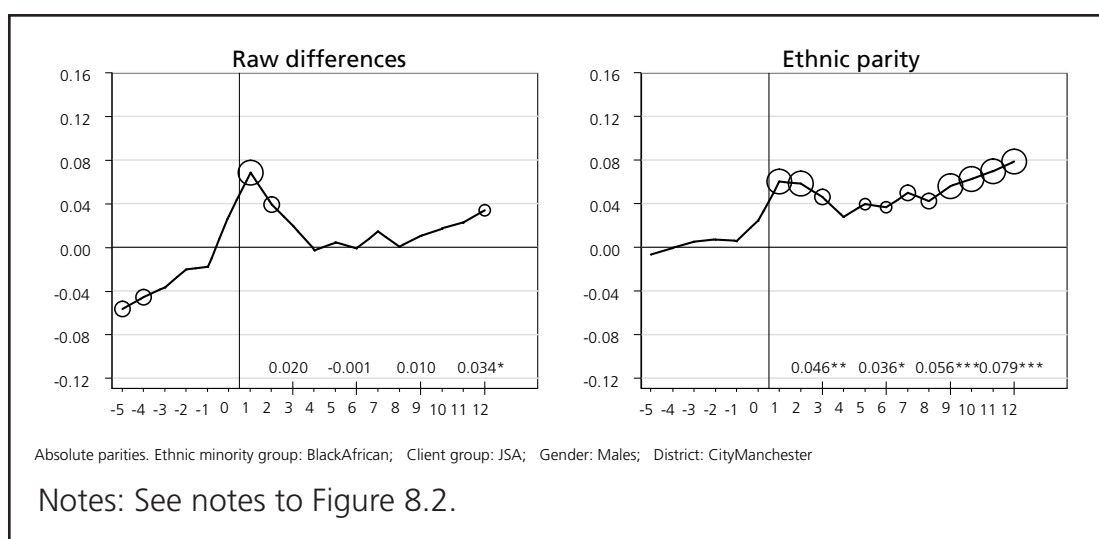
Note: This table summarises the reliable employment estimates in Chapter 8, Table 8.4 of the main report.

<sup>149</sup> See Table 8.4 in Chapter 8 of the full report for a summary of all the findings for individuals of Black ethnic origin.



As can be seen from Figure 8.4, one group that exhibits a particularly pronounced employment premium (mirroring the unreliable overall results for Black JSA customers) is Black African males in Manchester. For this group, once the White sample has been reweighted, the weak finding of an ethnic premium in the raw results is significantly strengthened. For this group, there appears to be convincing evidence that Black African males are more likely to be in work in the months after first claiming JSA than similar White JSA customers.

**Figure 8.4 Estimates of ethnic parity in employment outcomes for Black African male JSA claimants living in Manchester**



The reliable estimates of ethnic parity in benefit receipt are summarised in Table 8.7. Reliable results are only obtained for 43 groups (out of a possible 185). The majority of reliable results find an ethnic penalty in benefit receipt, mirroring the unreliable overall finding for individuals of Black ethnic origin.

**Table 8.7 JSA: reliable estimates of ethnic parity in benefit receipt for individuals of Black ethnic origin (compared with Whites)**

| Ethnic parity  | Ethnic penalty   | Ethnic premium |
|--|--|----------------|
| <p><b>Black:</b><br/>Males in Bedfordshire and Hertfordshire</p> <p><b>Black Caribbean:</b><br/>Females in Birmingham<br/>Males in Bedfordshire and Hertfordshire</p> <p><b>Other Black:</b><br/>Any and females in London</p> | <p><b>Black:</b><br/>Any and males in Leeds<br/>Any and males in Leicester<br/>Males in London<br/>Females in Great Britain excluding six cities<br/>Any and males in Greater Manchester Central<br/>Any and males in Leeds Central<br/>Any in Sheffield<br/>Any in Coventry and Warwickshire<br/>Any, males and females in Black Country<br/>Males in Leicestershire<br/>Any and males in Nottinghamshire<br/>Any in Bedfordshire and Hertfordshire<br/>Any and males in Berkshire, Bucks and Oxfordshire<br/>Any and males in West of England</p> <p><b>Black Caribbean:</b><br/>Males in Manchester<br/>Females in Great Britain excluding six cities<br/>Any and males in Greater Manchester Central<br/>Any and males in Black Country<br/>Any in Nottinghamshire<br/>Any and males in Berkshire, Bucks and Oxfordshire<br/>Any, males and females in City and East London</p> <p><b>Black African:</b><br/>Males in Birmingham<br/>Any in Greater Manchester Central<br/>Any in Berkshire, Bucks and Oxfordshire</p> | None           |

Note: This table summarises the reliable benefit receipt estimates in Chapter 8, Table 8.4 of the main report.

### 8.3.3 Asian Ethnic Minorities

Table 8.8 summarises the reliable estimates of ethnic parity in employment outcomes (only 28 out of a possible 230) for Asian Ethnic Minorities. For almost all groups, no reliable results can be found. For around half of the groups, this is because no reliable White matches can be found but in a large number of cases, matches can only be found by throwing away a large proportion of the Ethnic Minority sample (sometimes over 90 per cent of the sample).<sup>150</sup> For the small number of groups where reliable estimates are found, the most common finding is that ethnic parity could not be rejected.

**Table 8.8 JSA: reliable estimates of ethnic parity in employment outcomes for individuals of Asian ethnic origin (compared with Whites)**

| Ethnic parity  | Ethnic penalty   | Ethnic premium  |
|--|--|---|
| <p><b>Asian:</b></p> <p>Females in London<br/>Any and males in Nottinghamshire<br/>Any in Kent<br/>Males in Berkshire, Bucks and Oxfordshire<br/>Any and males in Surrey and Sussex<br/>Any in Lambeth, Southwark and Wandsworth<br/>Females in North London<br/>Males and females in South London<br/>Any in South East London</p> <p><b>Indian:</b></p> <p>Females in Great Britain excluding six cities<br/>Any and males in Bedfordshire and Hertfordshire<br/>Any in Kent<br/>Males in Berkshire, Bucks and Oxfordshire<br/>Any in South London</p> <p><b>Bangladeshi:</b></p> <p>Females in Great Britain</p> <p><b>Other Asian:</b></p> <p>Females in London<br/>Any in Great Britain excluding six cities<br/>Any and males in West London</p> | <p><b>Pakistani and Bangladeshi:</b></p> <p>Any in South London</p> <p><b>Other Asian:</b></p> <p>Females in Great Britain<br/>Females in Great Britain excluding six cities<br/>Any in South London</p> | <p><b>Other Asian:</b></p> <p>Males in Great Britain excluding six cities</p> |

Note: This table summarises the reliable employment estimates in Chapter 8, Table 8.5 of the main report.

<sup>150</sup> See Table 8.5 in Chapter 8 of the full report for a summary of all the findings for individuals of Asian ethnic origin.

There is a similar story when it comes to reliable estimates of ethnic parity in benefit receipt for this group, shown in Table 8.9: for most of the groups, reliable estimates cannot be found. For the small number of groups where reliable estimates are found, the predominant finding is of an ethnic penalty in benefit receipt.

**Table 8.9 JSA: reliable estimates of ethnic parity in benefit receipt for individuals of Asian ethnic origin (compared with Whites)**

| Ethnic parity  | Ethnic penalty  | Ethnic premium                                     |
|--|---|--|
| <p><b>Asian:</b><br/>Any in Kent<br/>Males in Surrey and Sussex<br/>Females in North London<br/>Any in South East London</p> <p><b>Indian:</b><br/>Any in Kent<br/>Males in Berkshire, Bucks and Oxfordshire</p> | <p><b>Asian:</b><br/>Any and males in Nottinghamshire<br/>Any in Surrey and Sussex<br/>Any in Lambeth, Southwark and Wandsworth</p> <p><b>Indian:</b><br/>Any and males in Bedfordshire and Hertfordshire</p> <p><b>Pakistani and Bangladeshi:</b><br/>Any in South London</p> <p><b>Other Asian:</b><br/>Females in Great Britain<br/>Any, males and females in Great Britain excluding six cities<br/>Any in South London</p> | <p><b>Other Asian:</b><br/>Any in South London</p> |

Note: This table summarises the reliable benefit receipt estimates in Chapter 8, Table 8.5 of the main report.

### 8.3.4 Mixed, Chinese and other Ethnic Minorities

The overall results for Mixed, Chinese and other Ethnic Minority JSA customers again largely mirror those for Ethnic Minorities overall: there are significant, but unreliable, ethnic premiums for employment and significant, but unreliable, ethnic penalties **and** premiums for benefit receipt. These results should be interpreted with extreme care since the White and Ethnic Minority samples remain far from being well balanced: 66 covariates remain unbalanced, including employment, sustained employment and benefit histories. Also among the unbalanced covariates are many regional variables, indicating that the Whites and the other Ethnic Minorities being compared live in different areas. Unreliable results are also obtained when estimation is carried out by gender.<sup>151</sup>

Table 8.10 provides a summary of the reliable estimates of ethnic parity in employment outcomes amongst JSA customers of Mixed, Chinese or other ethnic origin, whilst Table 8.11 provides a summary in terms of benefit receipt. In both

<sup>151</sup> See Tables A.47 and A.48 in the Appendix to this summary.

cases, the overall pattern of results is similar to that found for all Ethnic Minority subgroups: for employment outcomes, the predominant finding indicates that ethnic parity cannot be rejected, whilst for benefit receipt, a substantial proportion of subgroups provide evidence of significant penalties.<sup>152</sup>

**Table 8.10 JSA: reliable estimates of ethnic parity in employment outcomes for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b>   |
|--|---|---|
| <b>Mixed, Chinese and other:</b><br>Females in 272 wards<br>Any in Leeds<br>Any and males in Manchester<br>Females in Great Britain<br>excluding six cities<br>Any in Liverpool and Wirral<br>Any and males in Greater<br>Manchester Central<br>Any in Leeds Central<br>Any in Coventry and<br>Warwickshire<br>Any in Leicestershire<br>Any and males in<br>Nottinghamshire<br>Males in Bedfordshire and<br>Hertfordshire<br>Males in Berkshire, Bucks and<br>Oxfordshire<br>Any, males and females in<br>Central London<br>Any, males and females in<br>Lambeth, Southwark and<br>Wandsworth<br>Any, males and females in<br>North East London<br>Any, males and females in<br>Brent, Harrow and Hillingdon<br>Any and males in South<br>London<br>Any, males and females in<br>West London | <b>Mixed, Chinese and other:</b><br>Females in Manchester<br>Any and males in Surrey and<br>Sussex<br>Any and males in City and<br>East London<br>Females in South London<br><b>Chinese:</b><br>Any and females in Great<br>Britain<br>Any in 272 wards<br>Any and females in Great<br>Britain excluding six cities<br><b>Other ethnic group:</b><br>Any and males in City and<br>East London | <b>Mixed, Chinese and other:</b><br>Males in Black Country<br>Any in Cambridgeshire<br>Any in Bedfordshire and<br>Hertfordshire<br>Any in Hampshire and Isle of<br>Wight<br><b>Chinese:</b><br>Any in London<br><b>Other ethnic group:</b><br>Any and males in Birmingham<br>and Solihull<br>Any and males in South<br>London |

Continued

<sup>152</sup> More subgroups of Mixed, Chinese or other ethnic origin provide evidence of significant ethnic premiums than do subgroups of all Ethnic Minority JSA customers analysed together.

Table 8.10 Continued

| Ethnic parity               | Ethnic penalty | Ethnic premium |
|-----------------------------|----------------|----------------|
| Chinese:                    |                |                |
| Males in Great Britain      |                |                |
| Males in 272 wards          |                |                |
| Males and females in London |                |                |
| Males in Great Britain      |                |                |
| excluding six cities        |                |                |
| Other ethnic group:         |                |                |
| Females in 272 wards        |                |                |
| Any in Birmingham           |                |                |
| Females in London           |                |                |
| Any and males in Manchester |                |                |
| Any and males in Greater    |                |                |
| Manchester Central          |                |                |
| Any, males and females in   |                |                |
| Central London              |                |                |
| Any, males and females in   |                |                |
| Lambeth, Southwark and      |                |                |
| Wandsworth                  |                |                |
| Any and males in North East |                |                |
| London                      |                |                |
| Any and males in Brent,     |                |                |
| Harrow and Hillingdon       |                |                |
| Any and males in South East |                |                |
| London                      |                |                |
| Any, males and females in   |                |                |
| West London                 |                |                |

Note: This table summarises the reliable employment estimates in Chapter 8, Table 8.6 of the main report.

**Table 8.11 JSA: reliable estimates of ethnic parity in benefit receipt for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>  | <b>Ethnic premium</b>  |
|---|--|--|
| <p><b>Mixed, Chinese and other:</b><br/> Females in Great Britain excluding six cities<br/> Males in Black Country<br/> Any in Hampshire and Isle of Wight<br/> Any and males in Surrey and Sussex<br/> Any, males and females in Central London<br/> Females in Lambeth, Southwark and Wandsworth<br/> Any and males in North East London<br/> Males in South London</p> <p><b>Chinese:</b><br/> Females in Great Britain excluding six cities</p> <p><b>Other ethnic group:</b><br/> Males in Birmingham and Solihull<br/> Males and females in Central London<br/> Females in Lambeth, Southwark and Wandsworth<br/> Males in North East London<br/> Any in South London<br/> Any and males in South East London</p> | <p><b>Mixed, Chinese and other:</b><br/> Females in 272 wards<br/> Any in Leeds<br/> Any, males and females in Manchester<br/> Males in Greater Manchester Central<br/> Any in Leeds Central<br/> Any in Leicestershire<br/> Any and males in City and East London<br/> Any and males in Lambeth, Southwark and Wandsworth<br/> Females in North East London<br/> Females in Brent, Harrow and Hillingdon<br/> Females in South London<br/> Females in West London</p> <p><b>Chinese:</b><br/> Females in Great Britain<br/> Any and males in 272 wards<br/> Males and females in London<br/> Any and males in Great Britain excluding six cities</p> <p><b>Other ethnic group:</b><br/> Females in 272 wards<br/> Any and males in Manchester<br/> Any and males in Greater Manchester Central<br/> Any and males in City and East London<br/> Any in Central London<br/> Any and males in Lambeth, Southwark and Wandsworth<br/> Any and males in Brent, Harrow and Hillingdon<br/> Females in West London</p> | <p><b>Mixed, Chinese and other:</b><br/> Any and males in Brent, Harrow and Hillingdon</p> <p><b>Chinese:</b><br/> Females in Great Britain<br/> Any in 272 wards<br/> Males and females in London</p> <p><b>Other ethnic group:</b><br/> Any in Lambeth, Southwark and Wandsworth<br/> Any in North East London<br/> Any in Brent, Harrow and Hillingdon<br/> Males in South London</p> |

Note: This table summarises the reliable benefit receipt estimates in Chapter 8, Table 8.6 of the main report.

## 8.4 Summary of findings and policy implications

For Jobcentre Plus customers who started claiming JSA in 2003:

- In many cases, it was not possible to reweight the White sample in such a way as to make it comparable with the Ethnic Minority sample of interest. This reveals that, in general, the Ethnic Minority and White customers who start JSA claims are very different – often too different for matching to be able to make them similar.
- The (matched) results for all Ethnic Minorities in Great Britain (of a significant **premium** in employment outcomes and a significant **penalty** in benefit receipt) are unreliable: 104 covariates remain unbalanced after matching, including employment, sustained employment and benefit history variables.<sup>153</sup>
- In terms of employment outcomes, when subgroup analysis (by ethnic group, gender and region) is carried out, the most predominant finding suggests that one cannot reject the hypothesis of ethnic parity. This is in contrast to the (albeit unreliable) overall result of a significant ethnic premium in employment outcomes, which is confirmed by many fewer subgroups (in particular, amongst individuals of Black or of Mixed, Chinese or other ethnic origin).
- In terms of benefit receipt, on the other hand, the (albeit unreliable) overall finding of a significant ethnic penalty is replicated amongst the majority of subgroups for which reliable results are found (particularly amongst Black JSA customers). DWP should investigate why Ethnic Minorities are less likely to sign off JSA, particularly when they are at least as likely (as comparable White customers) to have a job. This may inform why this also occurs for Jobcentre Plus overall, for which JSA customers are the largest group (a number of plausible explanations are set out in the summary of the Jobcentre Plus findings in Section 5.4).

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<sup>153</sup> Other estimators will also suffer from the same fundamental lack of comparability between the samples.



# 9 Ethnic parity in New Deal for Lone Parents

## 9.1 Introduction

This chapter looks at measures of ethnic parity for New Deal for Lone Parents (NDLP) customers who entered the programme in 2003. Ninety-four per cent of NDLP participants are female and 95 per cent of Ethnic Minority NDLP participants are female (see Table 9.2 below).

## 9.2 Description of the New Deal for Lone Parents sample

From Table 9.1, it can be seen that just under 133,000 individuals started NDLP in 2003. Of these, around 86 per cent are White, eight per cent are from an Ethnic Minority background and five per cent are of an unknown ethnic background. Further disaggregation shows that 4.9 per cent of customers are of Black ethnic origin (of whom 52 per cent are Black Caribbean and 37 per cent are Black African), 1.6 per cent are of Asian ethnic origin (of whom 40 per cent are Indian and 38 per cent are Pakistani) and 1.9 per cent are of some other ethnic background (of whom 49 per cent are of mixed ethnic origin).

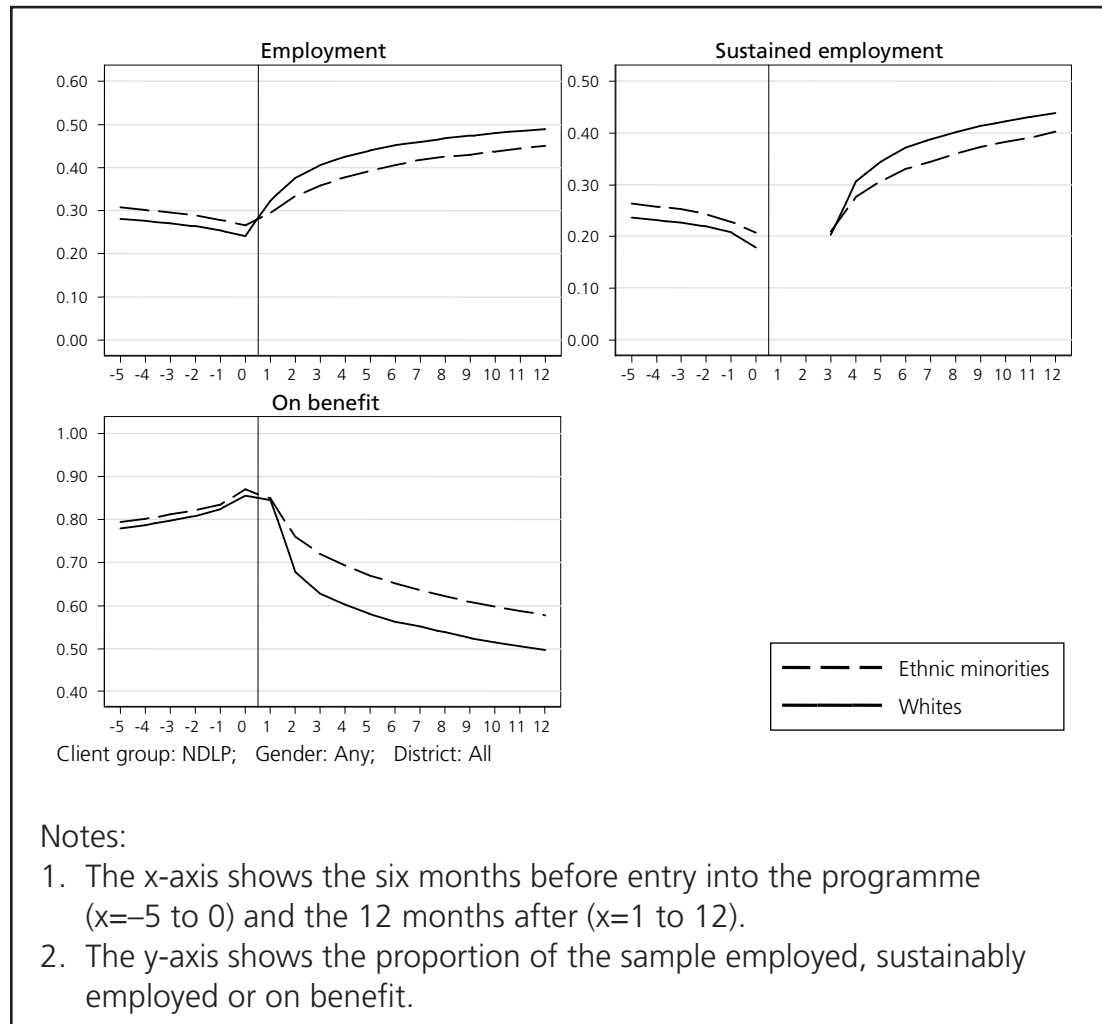
**Table 9.1 Ethnic breakdown of NDLP sample**

| Ethnic subgroup    | All        |                | Males      |              | Females    |                |
|--------------------|------------|----------------|------------|--------------|------------|----------------|
|                    | %          | Number         | %          | Number       | %          | Number         |
| White              | 86.3       | 114,560        | 87.1       | 6,460        | 86.2       | 108,100        |
| Ethnic Minority    | 8.3        | 11,040         | 7.5        | 560          | 8.4        | 10,480         |
| Black              | 4.9        | 6,500          | 4.6        | 340          | 4.9        | 6,160          |
| Caribbean          | 2.5        | 3,360          | 2.3        | 160          | 2.5        | 3,180          |
| African            | 1.8        | 2,380          | 1.8        | 140          | 1.8        | 2,240          |
| Other              | 0.6        | 780            | 0.5        | 40           | 0.6        | 740            |
| Asian              | 1.6        | 2,060          | 1.3        | 100          | 1.6        | 1,960          |
| Indian             | 0.6        | 820            | 0.5        | 40           | 0.6        | 800            |
| Pakistani          | 0.6        | 780            | 0.5        | 40           | 0.6        | 740            |
| Bangladeshi        | 0.1        | 180            | 0.1        | 20           | 0.1        | 160            |
| Other              | 0.2        | 280            | 0.2        | 20           | 0.2        | 260            |
| Other              | 1.9        | 2,480          | 1.5        | 120          | 1.9        | 2,360          |
| Mixed              | 0.9        | 1,220          | 0.5        | 40           | 0.9        | 1,180          |
| Chinese            | 0.1        | 140            | 0.1        | 0            | 0.1        | 120            |
| Other ethnic group | 0.8        | 1,120          | 1.0        | 80           | 0.8        | 1,040          |
| Unknown            | 5.4        | 7,200          | 5.5        | 400          | 5.4        | 6,800          |
| <b>All</b>         | <b>100</b> | <b>132,800</b> | <b>100</b> | <b>7,420</b> | <b>100</b> | <b>125,380</b> |

Figure 9.1 illustrates the employment and benefit outcomes for all Ethnic Minorities and Whites in the NDLP sample over an 18-month period, starting six months before entering NDLP. Differences in outcomes between the two groups represent raw estimates of ethnic parity. A person is classified as being employed or on benefit in a particular month if they were employed or on benefit for at least 15 of the previous 30 days.<sup>154</sup> An individual is classified as being in sustained employment if they have been continuously employed for the past three months (90 days).

<sup>154</sup> Note that benefit receipt is not a condition of participation in NDLP; hence the rate of benefit receipt does not jump to 100 per cent at the time of inflow (as it does for the Income Support (IS) and Incapacity Benefit (IB) samples).

**Figure 9.1 Labour market status over time for unmatched NDLP sample**



From Figure 9.1, it is clear that there are significant<sup>155</sup> differences in the raw employment outcomes of the two groups. Interestingly, while Ethnic Minorities are **more** likely to be in work than Whites before joining NDLP – in the month immediately prior to entry, approximately 27 per cent of Ethnic Minorities are in employment, compared with approximately 24 per cent of Whites – they are **less** likely to be employed in each of the 12 months after inflow. This significant ethnic **penalty** in terms of raw employment outcomes ranges from 2.9 to 4.8 percentage

<sup>155</sup> Note that the significance of raw differences in outcomes is only assessed in the 12 months after entering NDLP (not in the six months before). See Table A9.1.4 in Appendix A9A.1 for more details.

points (between 7.8 and 11.6 per cent).<sup>156</sup> The same pattern is observed for the proportion of Ethnic Minorities and Whites in sustained employment.<sup>157</sup>

Figure 9.1 also shows that Ethnic Minorities are marginally more likely to be receiving benefits than Whites in the six months prior to joining NDLP. After starting the programme, however, Whites experience a large fall in the likelihood that they will be claiming benefits (in the first two months after entry), which is not matched by a similar decrease for Ethnic Minorities. This means that a large and significant ethnic **penalty** in benefit receipt emerges in the year after inflow, ranging from 8.0 to 9.2 percentage points (12.1 to 16.2 per cent).<sup>158</sup>

It is clear, however, that Whites and Ethnic Minorities in the NDLP sample differ in terms of a number of observed pre-programme characteristics, and that these differences are likely to affect estimates of ethnic parity.<sup>159</sup> In Table 9.2, comparisons are made between major ethnic groups across a range of key background characteristics and labour market outcome variables.

Ethnic minorities as a whole are more likely (than Whites) to be female, are slightly older, are less likely to be on IB and are more likely to have larger families, to have younger children, to have a basic skills need, to have participated in a voluntary programme in the three years prior to inflow and to live in higher unemployment areas. In terms of labour market histories, they have spent a larger proportion of their time in employment (and a greater proportion on benefits) in the three years prior to inflow than Whites.

Black NDLP participants (who make up 59 per cent of the Ethnic Minority sample) generally differ from Whites in the same ways that Ethnic Minorities do. Asian NDLP participants, and those of non-Black, non-Asian ethnic origin, on the other hand, have spent a **smaller** proportion of the three years prior to inflow in employment (than Whites). In terms of labour market outcomes, all Ethnic Minority subgroups have spent a smaller proportion of the year following inflow in work, and a larger proportion on benefits, than have White NDLP participants.

<sup>156</sup> It should be noted that the percentage point and per cent differences quoted in this section (and throughout the remainder of the chapter) do not necessarily correspond to the same months; they are simply designed to provide an indication of the spectrum of significant results.

<sup>157</sup> A finding of ethnic parity, penalty or premium tends to be consistent across employment and sustained employment outcomes for a particular subgroup. In this summary report, therefore, only employment outcomes will be discussed. Interested readers can refer to Chapter 9 of the main report for full details of the sustained employment outcomes.

<sup>158</sup> See Table A9.1.4 in Appendix A9A.1 of the main report for more details.

<sup>159</sup> See Table A9.1.1 in Appendix A9A.1 of the main report for more details.

**Table 9.2 Characteristics of NDLP sample by ethnicity**

|  | Ethnic |       |          |          |          |          |          |
|--|--------|-------|----------|----------|----------|----------|----------|
|  | All    | White | Minority | Black    | Asian    | Other    | Unknown  |
| Female   | 0.944  | 0.944 | 0.950*** | 0.948    | 0.951    | 0.954**  | 0.944    |
| Age at inflow  | 32.8   | 32.8  | 33.0**   | 33.2***  | 32.9     | 32.6     | 32.5***  |
| On Incapacity Benefit at inflow                          | 0.041  | 0.042 | 0.034*** | 0.033*** | 0.037    | 0.034*   | 0.035**  |
| Number of kids at inflow                                 | 1.642  | 1.637 | 1.683*** | 1.686*** | 1.748*** | 1.618    | 1.665**  |
| Age of youngest child at inflow                          | 6.294  | 6.396 | 5.591*** | 5.379*** | 5.987*** | 5.816*** | 5.723*** |
| Percentage of time employed, years 1–3 before inflow     | 0.319  | 0.317 | 0.336*** | 0.367*** | 0.281*** | 0.300**  | 0.333*** |
| Percentage of time on benefits, years 1–3 before inflow  | 0.689  | 0.694 | 0.703**  | 0.703**  | 0.693    | 0.711**  | 0.592*** |
| Basic skills need  | 0.065  | 0.066 | 0.073*** | 0.075**  | 0.081**  | 0.061    | 0.042*** |
| Participated in a voluntary programme prior to inflow    | 0.278  | 0.281 | 0.303*** | 0.315*** | 0.284    | 0.287    | 0.189*** |
| Unemployment rate in travel-to-work area                 | 0.056  | 0.056 | 0.058*** | 0.059*** | 0.056    | 0.057*** | 0.056    |
| Percentage of time employed, months 1–12 after inflow    | 0.433  | 0.438 | 0.396*** | 0.409*** | 0.369*** | 0.384*** | 0.404*** |
| Percentage of time on benefits, months 1–12 after inflow | 0.587  | 0.584 | 0.663*** | 0.673*** | 0.659*** | 0.640*** | 0.519*** |

**Notes:**

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- Percentage of time on benefits/employed is given as a proportion, i.e. between 0 and 1.

What is clear from Table 9.2 is that the composition of the White NDLP sample is significantly different from that of the Ethnic Minority sample and that if these differences are not taken into account, estimates of ethnic parity may be biased. Moreover, variation in background characteristics across Ethnic Minority subgroups highlights the importance of considering ethnic parity measures at both broad and disaggregated levels. With this in mind, Section 9.3 reports estimates for the Ethnic Minority sample as a whole, as well as the three broad ethnic subgroups (Black, Asian and other); in all cases, groups are further broken down by gender and region where possible. Section 9.4 concludes and provides some brief policy implications.

## 9.3 Estimates of ethnic parity for New Deal for Lone Parents

### 9.3.1 All Ethnic Minorities

The raw ethnic parity estimates (discussed in Section 9.2) suggest that there is an ethnic penalty in employment and benefit outcomes for all Ethnic Minority NDLP participants living in Great Britain. These estimates (for months 3, 6, 9 and 12 after entering the programme) are replicated in Column 1 of Table 9.3. Columns 2 to 6 of the table additionally provide estimates using ordinary least squares (OLS), fully interacted linear matching (FILM), kernel matching and difference-in-differences ((DiD); two methods, described in Section 2.5.5) respectively.<sup>160</sup>

All the methods suggest that there is an ethnic penalty in employment, but the magnitude and persistence of this penalty vary by method, although in all cases it is smaller than the raw estimate. All methods also suggest that there is a penalty in benefit receipt but again, these estimates are smaller than the raw estimates.

As discussed in Section 2.6, however, this report relies on the diagnostic tests provided by the matching method to assess the reliability of these estimates. In this case, while matching has succeeded in reweighting the White sample (to make it 'look like' the Ethnic Minority sample of interest) without losing anyone to common support, 46 covariates remain significantly unbalanced, including employment, sustained employment and benefit history variables. This means that the Ethnic Minority and White samples that have been used differed significantly across 46 background characteristics, casting doubt over the comparability of the two groups (and hence, on the estimates of ethnic parity for all Ethnic Minorities living in Great Britain described in Table 9.3).

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<sup>160</sup> These estimates can be found in Table A9.1.2 in Appendix A9A of the main report. The DiD estimates come from Table A12A.49 in Appendix A12A of the main report.

**Table 9.3 NDLP: parity estimates for all Ethnic Minorities living in Great Britain – comparison of methods**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.047*** | -0.029*** | -0.026*** | -0.014**        | -0.022*** | -0.024***     |
| Employed in month 6                                  | -0.046*** | -0.020*** | -0.017*** | -0.008          | -0.019*** | -0.017***     |
| Employed in month 9                                  | -0.044*** | -0.017*** | -0.015*** | -0.008          | -0.018*** | -0.016**      |
| Employed in month 12                                 | -0.038*** | -0.009*   | -0.006    | 0.000           | -0.014**  | -0.008        |
| On benefit in month 3                                | 0.092***  | 0.047***  | 0.041***  | 0.031***        | 0.043***  | 0.043***      |
| On benefit in month 6                                | 0.089***  | 0.041***  | 0.037***  | 0.027***        | 0.036***  | 0.037***      |
| On benefit in month 9                                | 0.083***  | 0.037***  | 0.033***  | 0.025***        | 0.035***  | 0.033***      |
| On benefit in month 12                               | 0.080***  | 0.031***  | 0.027***  | 0.021***        | 0.022***  | 0.028***      |
| N – Ethnic Minorities                                | 11,040    |           |           |                 |           |               |
| N – Whites   | 114,560   |           |           |                 |           |               |
| Median bias  | 7.6       |           |           | 1.5             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 8.3%          |
| Whites   |           |           |           |                 |           | 4.7%          |

**Notes:**

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- In Kernel matching column:  
CS(xx) means that xx per cent of the Ethnic Minority sample was lost to common support (where xx will always be 95 or less);  
UC(yy) means that even after matching, yy covariates remain unbalanced at the 5 per cent significance level;  
UH(E,S,B) means that after matching, variables in parentheses were not balanced in at least one of the six months prior to entering the NDLP sample (at the 5 per cent significance level) – E = employment history variables, S = sustainable employment history variables and B = benefit history variables.

A summary of the reliable matching estimates of ethnic parity in employment outcomes for all Ethnic Minority groups is given in Table 9.4 (benefit outcomes are shown in Table 9.5 later). All but seven of the 35 potential subgroups appear in this table, i.e. estimates for the majority of subgroups where sample sizes are large enough are reliable. (Note that the group 'all Ethnic Minorities in Great Britain', discussed previously, does not appear in the table.)

**Table 9.4 NDLP: reliable estimates of ethnic parity in employment outcomes for Ethnic Minorities (compared with Whites)**

| Ethnic parity  | Ethnic penalty   | Ethnic premium |
|--|--|----------------|
| Males in Great Britain<br>Any and females in<br>Birmingham | Any and females in 272 wards<br>Any and females in<br>Manchester | None           |
| Females in Birmingham and<br>Solihull                      | Any and females in Great<br>Britain excluding six cities         |                |
| Any and females in City and<br>East London                 | Any and females in Black<br>Country                              |                |
| Any and females in Central<br>London                       | Females in South London  |                |
| Any and females in North East<br>London                    |  |                |
| Any and females in North<br>London                         |  |                |
| Any and females in Brent,<br>Harrow and Hillingdon         |  |                |
| Any in South London  |  |                |
| Any and females in South East<br>London                    |  |                |
| Any and females in West<br>London                          |  |                |

Note: This table summarises the reliable employment estimates in Chapter 9, Table 9.3 of the main report.

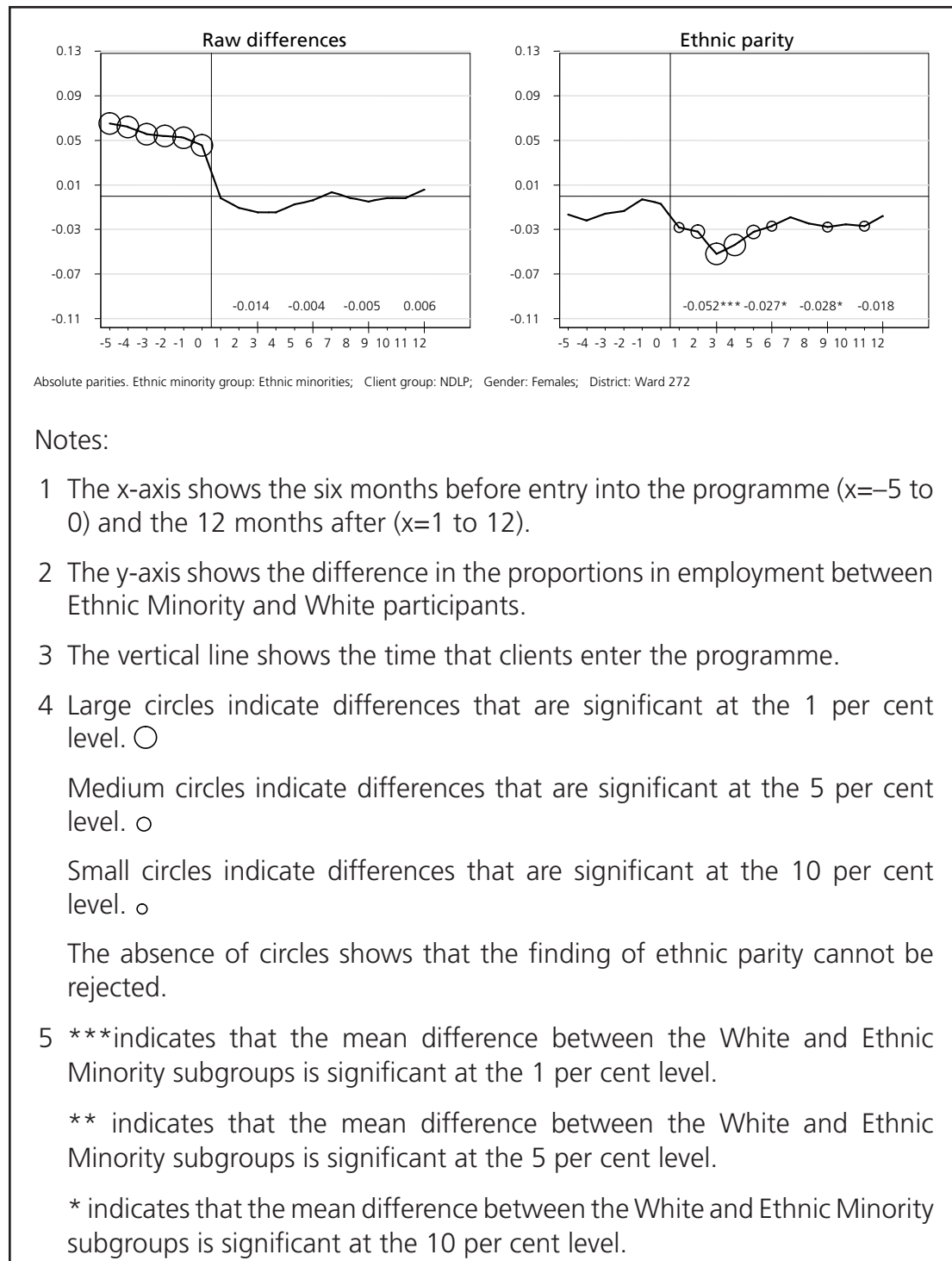
From Table 9.4, it is clear that the predominant finding is that ethnic parity in employment outcomes cannot be rejected. For nine subgroups, including females living in the 272 disadvantaged group wards, there is reliable evidence of an ethnic penalty in employment outcomes (consistent with the – albeit unreliable – finding for all NDLP customers).

Figure 9.2 provides graphical illustration for women living in the 272 disadvantaged group wards, who make up 44 per cent of the overall Ethnic Minority sample.<sup>161</sup> If raw estimates were relied upon, one would conclude that Ethnic Minorities are more likely to be in work before entering NDLP and equally as likely as Whites to be in work after entering NDLP. Once the White sample has been appropriately reweighted, however, there is evidence of an ethnic penalty in employment, which is significant at conventional levels in four of the 12 months after entering NDLP.

<sup>161</sup> See Appendices A9A.1 and A9A.5 in the main report for more details.



**Figure 9.2 Estimates of ethnic parity in employment outcomes for NDLP participants living in the 272 disadvantaged group wards**



A summary of the reliable estimates of ethnic parity in benefit receipt can be found in Table 9.5. Here, the findings are fairly evenly split between not rejecting parity (15 groups) and there being an ethnic penalty (11 groups).

**Table 9.5 NDLP: reliable estimates of ethnic parity in benefit receipt for Ethnic Minorities (compared with Whites)**

| <b>Ethnic parity</b>                            | <b>Ethnic penalty</b>                         | <b>Ethnic premium</b> |
|---|---|-----------------------|
| Males in Great Britain                          | Any and females in Birmingham                 | None                  |
| Females in Black Country                        | Any and females in London                     |                       |
| Any and females in City and East London         | Any and females in Manchester                 |                       |
| Any and females in Central London               | Females in Great Britain excluding six cities |                       |
| Any and females in North East London            | Females in Birmingham and Solihull            |                       |
| Females in North London                         | Any in Black Country                          |                       |
| Any and females in Brent, Harrow and Hillingdon | Any and females in South London               |                       |
| Any and females in South East London            |   |                       |
| Any and females in West London                  |   |                       |

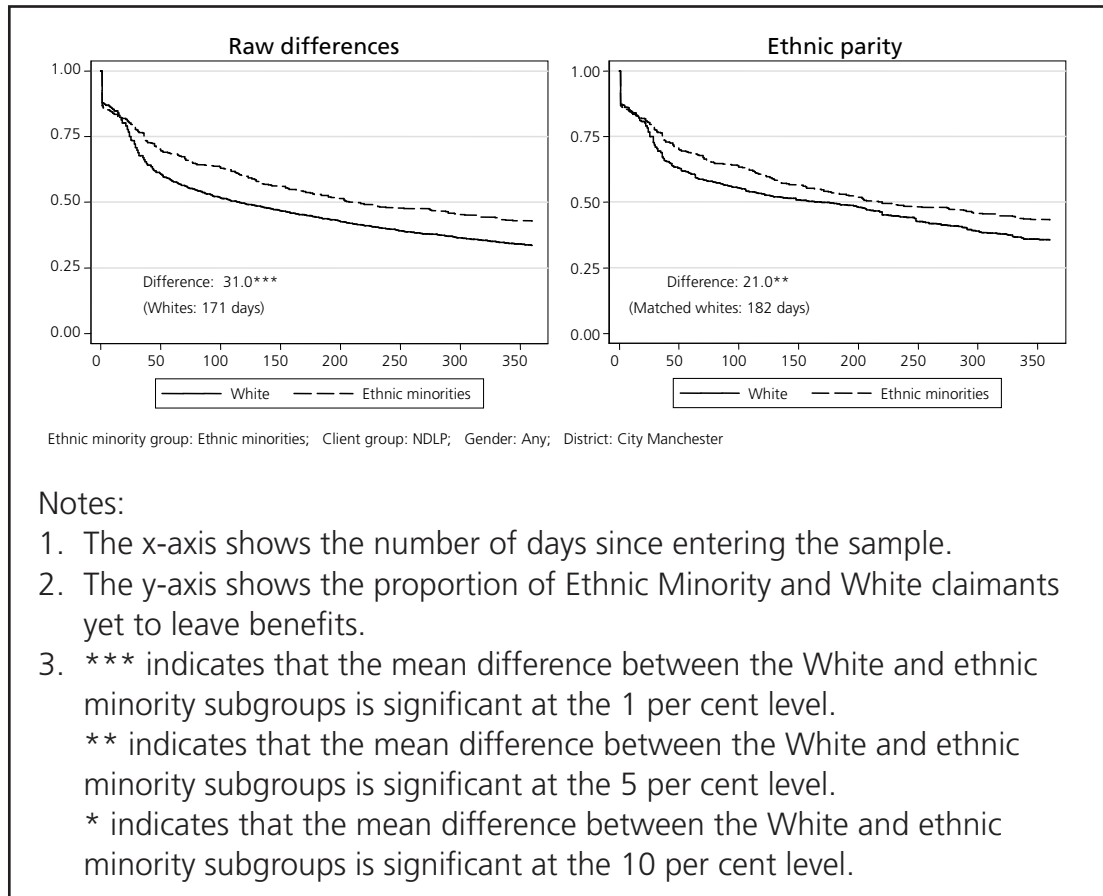
Note: This table summarises the reliable benefit receipt estimates in Chapter 9, Table 9.3 of the main report.

The results in terms of benefit receipt – albeit unreliable – of a significant penalty for Ethnic Minorities overall are replicated in many of the (larger) regions for which results are available. For example, Ethnic Minorities living in Manchester are between 7.3 and 11.1 percentage points (13.2 to 20.4 per cent) more likely to be claiming benefits than their matched White counterparts.

Duration analysis has been carried out on NDLP claimants living in Manchester, the results for which are shown in Figure 9.3.<sup>162</sup> On the basis of the raw results, there is evidence of a large increase in the rate at which White NDLP claimants leave benefits at the end of the first month following entry to the programme, after which both Ethnic Minorities and Whites seem to exit benefits at roughly the same rate. Once the White sample has been reweighted, this period of rapid exit remains (at the end of the first month), after which the rate at which White individuals leave benefits slows considerably (allowing Ethnic Minorities to catch up slightly), before speeding up again towards the end of the year following inflow. This pattern gives rise to an ethnic penalty of 21 days, on average, over the period in question, i.e. it takes Ethnic Minority customers 21 days longer to leave benefits, on average, than comparable White customers.

<sup>162</sup> See Appendices A9A.10 and A9B.10 for more details.

**Figure 9.3 Duration analysis of benefit receipt for NDLP participants living in Manchester**



To summarise, the significant (though unreliable) ethnic penalties in employment and benefit outcomes for Ethnic Minorities overall are reliably replicated in some of the largest subgroups for NDLP. For other subgroups, however, one cannot reject the finding of ethnic parity in both employment and benefit receipt.

### 9.3.2 Black Ethnic Minorities

For Black Ethnic Minorities, there are a possible 39 groups to consider. Table 9.6 summarises the reliable employment estimates, which are obtained for 15 of those 39 groups. It is clear from the table that the predominant finding is that ethnic parity cannot be rejected, although for three groups there are findings that replicate the overall (unreliable) finding of employment penalty.

**Table 9.6 NDLP: reliable estimates of ethnic parity in employment outcomes for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b> |
|--|---|-----------------------|
| <b>Black:</b><br>Any and females in Great Britain excluding six cities<br>Any and females in North London<br>Any in Brent, Harrow and Hillingdon<br>Any and females in South East London | <b>Black African:</b><br>Females in Great Britain<br><b>Other Black:</b><br>Any and females in London | None                  |
| <b>Black Caribbean:</b><br>Any and females in Great Britain excluding six cities   |   |                       |
| <b>Black African:</b><br>Females in 272 wards  |   |                       |
| <b>Other Black:</b><br>Any and females in Great Britain  |   |                       |

Note: This table summarises the reliable employment estimates in Chapter 9, Table 9.4 of the main report.

The reliable estimates of ethnic parity in benefit receipt are summarised in Table 9.7. Similarly to Ethnic Minorities overall, the groups are evenly split between not rejecting ethnic parity (13 groups) and finding an ethnic penalty (15 groups). Again, the finding of an ethnic penalty arises for some of the larger subgroups, such as any and females living in the 272 disadvantaged group wards.<sup>163</sup>

<sup>163</sup> See Appendices A9A.1, A9A.38 and A9A.39 in the main report.

**Table 9.7 NDLP: reliable estimates of ethnic parity in benefit receipt for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b> |
|--|---|-----------------------|
| <b>Black:</b><br>Any and females in London<br>Any and females in North London<br>Any in Brent, Harrow and Hillingdon<br>Any and females in South East London | <b>Black:</b><br>Any and females in 272 wards<br>Any and females in Great Britain excluding six cities<br>Any and females in City and East London | None                  |
| <b>Black Caribbean:</b><br>Any and females in London   | <b>Black Caribbean:</b><br>Females in Great Britain<br>Any and females in 272 wards<br>Any and females in Great Britain excluding six cities      |                       |
| <b>Black African:</b><br>Any and females in 272 wards<br>Any and females in London   | <b>Other Black:</b><br>Any and females in Great Britain<br>Any and females in London  |                       |

Note: This table summarises the reliable benefit receipt estimates in Chapter 9, Table 9.4 of the main report.

### 9.3.3 Asian Ethnic Minorities

For Asian Ethnic Minorities entering NDLP during 2003, for 15 of the possible 17 groups there are reliable estimates for employment outcomes (see Table 9.8) and for 15 of the possible 17 groups there are reliable estimates for benefit receipt outcomes (see Table 9.9). For both of these outcomes, the predominant finding is of an ethnic penalty. These findings support the (unreliable) overall results for Great Britain.

**Table 9.8 NDLP: reliable estimates of ethnic parity in employment outcomes for individuals of Asian ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>   | <b>Ethnic premium</b> |
|---|---|-----------------------|
| Asian:<br>Any in London   | Asian:<br>Any and females in Great Britain  | None                  |
| Indian:<br>Any in Great Britain   | Females in London<br>Any and females in Great Britain excluding six cities  |                       |
| Pakistani and Bangladeshi:<br>Any in Great Britain excluding six cities | Indian:<br>Females in Great Britain<br>Pakistani and Bangladeshi:<br>Any and females in Great Britain<br>Any and females in 272 wards |                       |
|   | Pakistani:<br>Any and females in Great Britain  |                       |

Note: This table summarises the reliable employment estimates in Chapter 9, Table 9.5 of the main report.

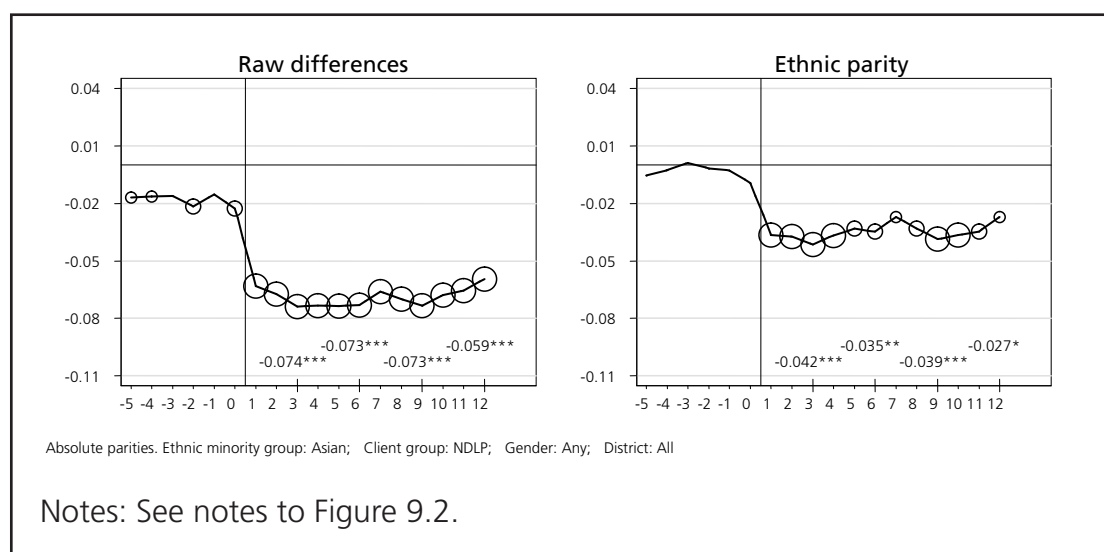
**Table 9.9 NDLP: reliable estimates of ethnic parity in benefit receipt for individuals of Asian ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>  | <b>Ethnic premium</b> |
|---|--|-----------------------|
| Asian:<br>Any and females in Great Britain excluding six cities | Asian:<br>Any and females in Great Britain   | None                  |
| Pakistani and Bangladeshi:<br>Females in 272 wards              | Any and females in London<br>Indian:<br>Any and females in Great Britain           |                       |
| Any in Great Britain excluding six cities                       | Pakistani and Bangladeshi:<br>Any and females in Great Britain<br>Any in 272 wards |                       |
|   | Pakistani:<br>Any and females in Great Britain                                     |                       |

Note: This table summarises the reliable benefit receipt estimates in Chapter 9, Table 9.5 of the main report.

Figure 9.4 provides estimates of ethnic parity in employment outcomes for all Asian NDLP participants living in Great Britain.<sup>164</sup> Once the White sample has been reweighted, evidence of a significant ethnic penalty remains, ranging from 3.3 to 4.2 percentage points (7.7 to 12.3 per cent),<sup>165</sup> such that Asian individuals are significantly less likely (than comparable White NDLP participants) to be in employment in most months of the year following inflow. Simple regression techniques (both OLS and FILM) are able to replicate these findings.<sup>166</sup>

**Figure 9.4 Estimates of ethnic parity in employment outcomes for Asian NDLP participants**



### 9.3.4 Mixed, Chinese and other Ethnic Minorities

A summary of the reliable estimates of ethnic parity in terms of employment outcomes (benefit receipt) for NDLP participants of Mixed, Chinese or other ethnic origin is shown in Table 9.10 (Table 9.11). All of the 20 subgroups with large enough sample sizes produce reliable estimates for employment and 19 of the 20 possible subgroups produce reliable estimates for benefit receipts. As can be seen from the tables, for these subgroups, the predominant finding is of not rejecting ethnic parity for both outcomes, although for Mixed, Chinese and other Ethnic Minorities as a whole there is evidence of an ethnic penalty in both outcomes. This suggests that for a number of subgroups, the inability to reject ethnic parity may be due to small sample sizes.

<sup>164</sup> See Appendix A9A.75 for more details.

<sup>165</sup> These ranges exclude the months in which the penalty is significant at only the ten per cent level (where it is at its smallest).

<sup>166</sup> Table A9.75.2 in Appendix A9A.75 for more details.

**Table 9.10 NDLP: reliable estimates of ethnic parity in employment outcomes for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>  | <b>Ethnic premium</b> |
|--|--|-----------------------|
| Mixed, Chinese and other:<br>Females in Great Britain<br>Females in 272 wards<br>Any and females in London<br>Any and females in Great Britain excluding six cities<br><b>Mixed:</b><br>Any and females in Great Britain<br>Any and females in 272 wards<br>Any and females in London<br>Any and females in Great Britain excluding six cities<br><b>Other:</b><br>Any and females in London | Mixed, Chinese and other:<br>Any in Great Britain<br>Any in 272 wards<br><b>Other:</b><br>Any and females in Great Britain | None                  |

Note: This table summarises the reliable employment estimates in Chapter 9, Table 9.6 of the main report.

**Table 9.11 NDLP: reliable estimates of ethnic parity in benefit receipt for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>  | <b>Ethnic premium</b> |
|--|--|-----------------------|
| Mixed, Chinese and Other:<br>Any and females in London<br>Females in Great Britain excluding six cities<br><b>Mixed:</b><br>Any and females in 272 wards<br>Any and females in London<br>Any and females in Great Britain excluding six cities<br><b>Other:</b><br>Any and females in Great Britain<br>Any in London | Mixed, Chinese and Other:<br>Any and females in Great Britain<br>Any and females in 272 wards<br><b>Mixed:</b><br>Any and females in Great Britain<br><b>Other:</b><br>Females in London | None                  |

Note: This table summarises the reliable benefit receipt estimates in Chapter 9, Table 9.6 of the main report.



## 9.4 Summary of findings and policy implications

For Jobcentre Plus customers who entered the NDLP during 2003:

- A significant **penalty** is found in terms of employment outcomes and benefit receipt for Ethnic Minorities living in Great Britain. These results cannot be relied upon, however, as labour market history variables and several district-level dummies remain unbalanced after matching.
- Women make up 95 per cent of the Ethnic Minority NDLP sample, so it is unsurprising that their results mirror those for Ethnic Minorities overall (although again these are unreliable).
- The overall results for Ethnic Minorities are replicated in many of the smaller regions under analysis, including large groups such as women living in the 272 disadvantaged group wards (who make up 44 per cent of the Ethnic Minority NDLP sample).
- A few reliable results are available for individuals of Black ethnic origin. Where estimates can be relied upon, they generally cannot reject the finding of ethnic **parity** in employment outcomes. For benefit receipt, the groups are evenly split between not rejecting ethnic parity and finding an ethnic penalty.
- The results for individuals of Asian ethnic origin mirror those for Ethnic Minorities overall, i.e. there is a significant ethnic **penalty** in both outcomes.
- For individuals of Mixed, Chinese or other ethnic origin, the overall results find evidence of ethnic penalties in employment and benefit outcomes, but subgroup analysis generally finds that ethnic **parity** cannot be rejected for both outcomes.
- The fact that the overall penalty (for Ethnic Minority customers who started the programme in 2003) is confirmed by many of the ethnic subgroups and in many of the Jobcentre Plus districts under consideration indicates that this penalty is not necessarily entirely driven by matching dissimilar individuals across districts.
- The Department for Work and Pensions (DWP) should pay close attention to Ethnic Minorities (particularly those living in the 272 disadvantaged group wards and customers of Asian ethnic origin) who join the NDLP programme, as they do not appear to benefit from the services on offer in the same way that White customers do. This difference could be due to:
  - discrimination by local employers (for example, by interviewing fewer Ethnic Minority customers for a given job vacancy);
  - White NDLP participants facing fewer barriers to work than Ethnic Minority customers (for example, in terms of access to informal childcare).

On the basis of the evidence here, it is not possible to say which of these points apply and the list is not exhaustive.



# 10 Ethnic parity in New Deal for 25 plus

## 10.1 Introduction

The estimates of ethnic parity in New Deal for individuals aged 25 plus (ND25+) are based on individuals who entered the programme in 2003. Estimates are then derived for the sample disaggregated by gender, geography and ethnic group (where possible): there are 127 groups in total.

## 10.2 Description of the New Deal for 25 plus sample

Table 10.1 shows that over 95,000 individuals joined ND25+ in 2003, of whom 83 per cent were men. Around 83 per cent of participants were from a White ethnic background, 14 per cent from an Ethnic Minority background and three per cent were of unknown ethnic origin. Of the Ethnic Minority sample, 46 per cent are of Black ethnic origin (of which 51 per cent are Black Caribbean and 37 per cent are Black African), 28 per cent are of Asian ethnic origin (of which 39 per cent are Pakistani and 35 per cent are Indian) and 26 per cent are of some other ethnic origin.

**Table 10.1 Ethnic breakdown of ND25+ sample**

| Ethnic subgroup    | All  |        | Males |        | Females |        |
|--------------------|------|--------|-------|--------|---------|--------|
|                    | %    | Number | %     | Number | %       | Number |
| White              | 82.9 | 78,860 | 83.1  | 65,420 | 81.9    | 13,440 |
| Ethnic Minority    | 13.7 | 13,080 | 13.5  | 10,660 | 14.7    | 2,420  |
| Black              | 6.4  | 6,080  | 6.3   | 4,940  | 7.0     | 1,160  |
| Caribbean          | 3.3  | 3,100  | 3.3   | 2,580  | 3.2     | 520    |
| African            | 2.4  | 2,260  | 2.3   | 1,780  | 2.9     | 480    |
| Other              | 0.8  | 720    | 0.7   | 580    | 0.9     | 140    |
| Asian              | 3.8  | 3,620  | 3.8   | 2,960  | 4.0     | 660    |
| Indian             | 1.3  | 1,280  | 1.2   | 940    | 2.1     | 360    |
| Pakistani          | 1.5  | 1,420  | 1.6   | 1,240  | 1.2     | 200    |
| Bangladeshi        | 0.4  | 400    | 0.5   | 360    | 0.2     | 40     |
| Other              | 0.5  | 500    | 0.5   | 420    | 0.5     | 80     |
| Other              | 3.5  | 3,360  | 3.5   | 2,760  | 3.6     | 600    |
| Mixed              | 0.8  | 760    | 0.8   | 620    | 0.9     | 160    |
| Chinese            | 0.2  | 240    | 0.2   | 180    | 0.4     | 60     |
| Other ethnic group | 2.5  | 2,360  | 2.5   | 1,980  | 2.4     | 380    |
| Unknown            | 3.3  | 3,180  | 3.3   | 2,620  | 3.4     | 560    |
| <b>All</b>         | 100  | 95,120 | 100   | 78,700 | 100     | 16,420 |

Figure 10.1 illustrates the observed raw employment and benefit outcomes for all Ethnic Minorities and Whites in the ND25+ sample over an 18-month period, starting six months before entry. Differences in outcomes between the two groups represent raw estimates of ethnic parity. A person is classified as being employed or on benefit in a particular month if they were employed or on benefit for at least 15 of the previous 30 days.<sup>167</sup> An individual is classified as being in sustained employment if they have been continuously employed for the past three months (90 days).

<sup>167</sup> Note that although most individuals who join ND25+ will be on JSA at the time of entry, some early entrants may not be; hence, at the time of inflow, the proportion claiming benefits is less than one.

**Figure 10.1 Labour market status over time for unmatched ND25+ sample**

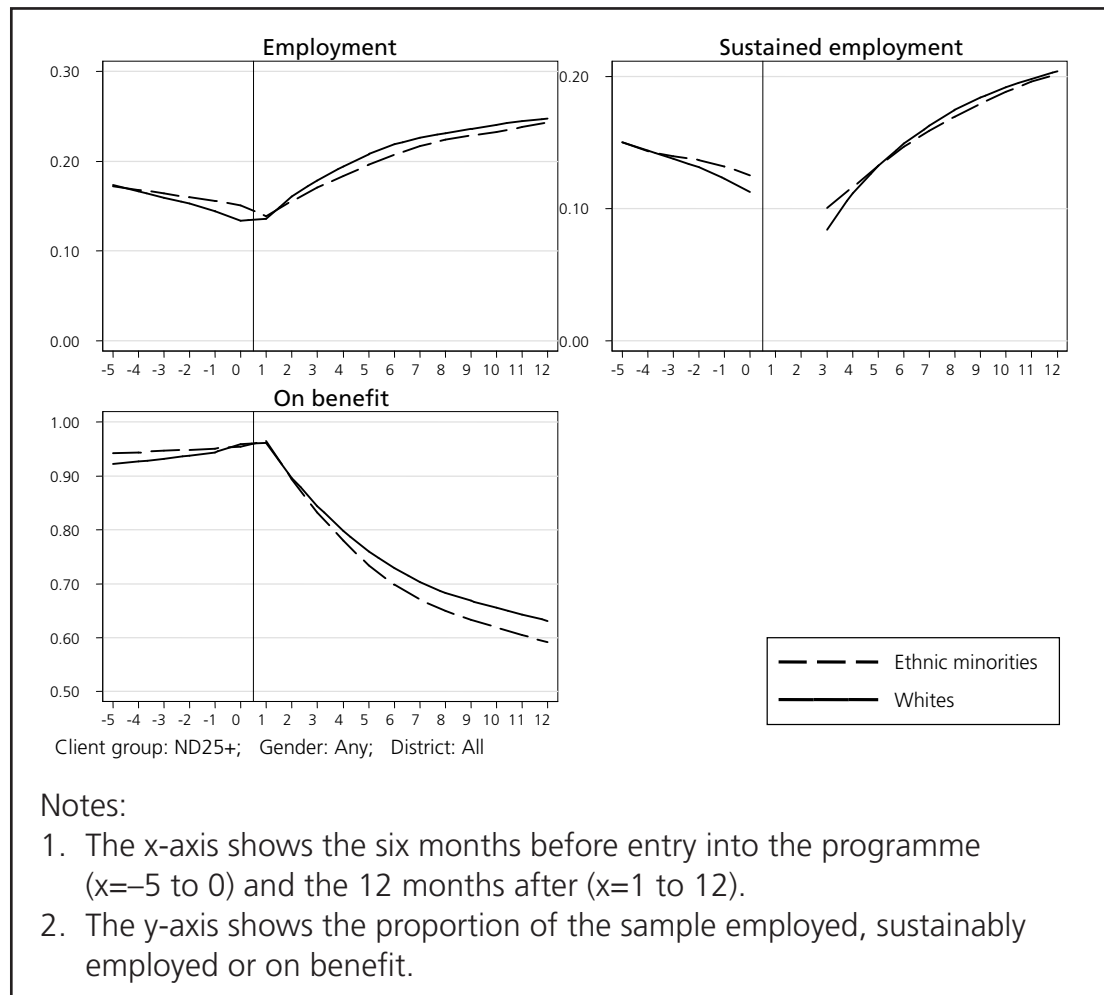


Figure 10.1 shows that there are small differences in the raw employment and sustainable employment<sup>168</sup> outcomes of the two groups both before and after entering ND25+ and these differences are only sometimes significant.<sup>169</sup> In the months leading up to programme entry, a greater proportion of Ethnic Minorities than Whites are claiming benefits. At the point of inflow, these proportions have equalised, and in the first month after joining ND25+, approximately 97 per cent of individuals have been on benefit for at least 15 of the previous 30 days (both Whites and Ethnic Minorities). Twelve months after joining ND25+, around 59 per

<sup>168</sup> A finding of ethnic parity, penalty or premium tends to be consistent across employment and sustained employment outcomes for a particular subgroup. In this summary report, therefore, only employment outcomes will be discussed. Interested readers can refer to Chapter 10 of the main report for full details of the sustained employment outcomes.

<sup>169</sup> Note that the significance of raw differences in outcomes is only assessed in the 12 months after joining ND25+ (not in the six months beforehand). See Table A10.1.4 in Appendix A10A.1 for details.

cent of Ethnic Minorities and 63 per cent of Whites are still claiming benefits. This suggests that there is an ethnic **premium** with respect to benefit receipt.

However, it is clear that Whites and Ethnic Minorities in the ND25+ sample are very different in terms of a number of observed pre-programme characteristics and that these differences are likely to affect estimates of ethnic parity.<sup>170</sup> Table 10.2 makes comparisons between a number of broad ethnic groupings across a range of key background characteristics and outcome variables.

Ethnic minorities as a whole are more likely (than Whites) to be female, to be younger, to be married/cohabiting and to have participated in a voluntary programme and are less likely to be on Incapacity Benefit (IB) and to have a basic skills need. On average, they have also spent a larger proportion of time on benefits (and a smaller proportion of time in employment) before inflow.

There is also significant variation within the Ethnic Minority sample (compared with Whites). For example, ND25+ participants of Black ethnic origin are much less likely to be married/cohabiting than Whites, whilst those of Asian ethnic origin are much more likely to be married/cohabiting than Whites. This highlights the importance of considering ethnic parity measures at both the broad and more disaggregated levels.

This chapter will now proceed as follows: Section 10.3 considers ethnic parity measures for the Ethnic Minority sample as a whole and then for the more disaggregated ethnic groupings; in all cases, samples are broken down by gender and geography (where possible). Section 10.4 concludes and provides some brief policy implications.

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<sup>170</sup> See Table A10.1.1 in Appendix A10A.1 for full details of the ways in which Whites and Ethnic Minorities differ.

Table 10.2 Characteristics of the ND25+ sample by ethnicity

|  | Ethnic |       |          |          |          |          |          |
|--|--------|-------|----------|----------|----------|----------|----------|
|  | All    | White | Minority | Black    | Asian    | Other    | Unknown  |
| Female   | 0.173  | 0.170 | 0.185*** | 0.189*** | 0.183*   | 0.178    | 0.176    |
| Age at inflow  | 39.8   | 40.3  | 37.5***  | 37.4***  | 38.0***  | 37.4***  | 39.1***  |
| Married/cohabiting                                       | 0.177  | 0.163 | 0.262*** | 0.107*** | 0.513*** | 0.270*** | 0.169    |
| On IB at inflow  | 0.289  | 0.308 | 0.178*** | 0.156*** | 0.224*** | 0.168*** | 0.273*** |
| Percentage of time employed, years 1–3 before inflow     | 0.276  | 0.278 | 0.258*** | 0.284    | 0.245*** | 0.224*** | 0.284    |
| Percentage of time on benefits, years 1–3 before inflow  | 0.770  | 0.770 | 0.777*** | 0.788*** | 0.760**  | 0.776    | 0.731*** |
| Early entrant to ND25+                                   | 0.373  | 0.373 | 0.391*** | 0.351*** | 0.440*** | 0.410*** | 0.310*** |
| Basic skills need  | 0.185  | 0.184 | 0.175**  | 0.156*** | 0.169**  | 0.217*** | 0.243*** |
| Participated in a voluntary programme prior to inflow    | 0.122  | 0.117 | 0.148*** | 0.161*** | 0.124    | 0.151*** | 0.123    |
| Unemployment rate in travel-to-work area                 | 0.057  | 0.057 | 0.057    | 0.058*** | 0.057*** | 0.057*** | 0.056*** |
| Percentage of time employed, months 1–12 after inflow    | 0.209  | 0.210 | 0.202**  | 0.208    | 0.198**  | 0.198**  | 0.212    |
| Percentage of time on benefits, months 1–12 after inflow | 0.742  | 0.747 | 0.721*** | 0.759*** | 0.685*** | 0.692*** | 0.722*** |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- Percentage of time on benefits / employed is given as a proportion, i.e. between 0 and 1.

## 10.3 Estimates of ethnic parity for New Deal for 25 plus

### 10.3.1 All Ethnic Minorities

The raw ethnic parity estimates (discussed in Section 10.2) suggest that there is a small ethnic penalty in employment and an ethnic premium in benefit outcomes for all Ethnic Minority ND25+ participants living in Great Britain. These estimates (for months 3, 6, 9 and 12 after entering the programme) are replicated in Column 1 of Table 10.3. Columns 2 to 6 of the table provide additional estimates using ordinary least squares (OLS), fully interacted linear matching (FILM), kernel matching and difference-in-differences ((DiD); two methods, described in Section 2.5.5) respectively.<sup>171</sup>

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<sup>171</sup> These estimates can be found in Tables A10.1.2 in Appendix A10A of the main report. The DiD estimates come from Table A12A.58 in Appendix A12A of the main report.



**Table 10.3 ND25+: parity estimates for all Ethnic Minorities living in Great Britain – comparison of methods**

|  | Raw       | OLS       | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|----------|-----------------|-----------|---------------|
| All  |           |           |          |                 |           |               |
| Employed in month 3                                  | -0.008**  | 0.004     | -0.004   | 0.005           | -0.004    | -0.010**      |
| Employed in month 6                                  | -0.012*** | 0.007     | 0.002    | 0.017**         | -0.005    | -0.008        |
| Employed in month 9                                  | -0.007*   | 0.011**   | 0.005    | 0.022***        | -0.008    | -0.006        |
| Employed in month 12                                 | -0.004    | 0.016***  | 0.014*** | 0.030***        | -0.007    | 0.001         |
| On benefit in month 3                                | -0.013*** | -0.002    | -0.001   | -0.007          | 0.002     | 0.003         |
| On benefit in month 6                                | -0.032*** | -0.008    | -0.004   | -0.013          | -0.005    | -0.001        |
| On benefit in month 9                                | -0.035*** | -0.015*** | -0.006   | -0.016*         | -0.002    | -0.003        |
| On benefit in month 12                               | -0.040*** | -0.023*** | -0.013** | -0.021**        | -0.005    | -0.011*       |
| N – Ethnic Minorities                                | 13,080    |           |          |                 |           |               |
| N – Whites   | 78,860    |           |          |                 |           |               |
| Median bias  | 7.7       |           |          | 1.7             |           |               |
| Reliability of kernel matching                       |           |           |          | CS(0)UC(47)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |          |                 |           |               |
| Ethnic minorities                                    |           |           |          |                 |           | 3.3%          |
| Whites   |           |           |          |                 |           | 1.6%          |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- In Kernel matching column:  
CS(xx) means that xx per cent of the Ethnic Minority sample was lost to common support (where xx will always be 95 or less);  
UC(yy) means that even after matching, yy covariates remain unbalanced at the 5 per cent significance level.

All the regression-based methods suggest that there is an overall ethnic premium in employment and in benefit receipt. The DiD methods suggest employment parity or penalty and benefit receipt parity or premium. The preferred propensity score matching method estimates, however, are unreliable, as 47 covariates remain unbalanced after matching. This suggests that for ND25+, it is simply impossible to find a similar White group to the Ethnic Minority sample, even after reweighting.

Unreliable estimates also dominate when the sample is split into subgroups. But within a number of Jobcentre Plus districts (15 out of a possible 36 groups), it can be seen from Table 10.4 that reliable employment estimates are found that suggest ethnic parity cannot be rejected (nine subgroups) or exhibit an ethnic premium (six subgroups) in employment outcomes.

**Table 10.4 ND25+: reliable estimates of ethnic parity in employment outcomes for Ethnic Minorities (compared with Whites)**

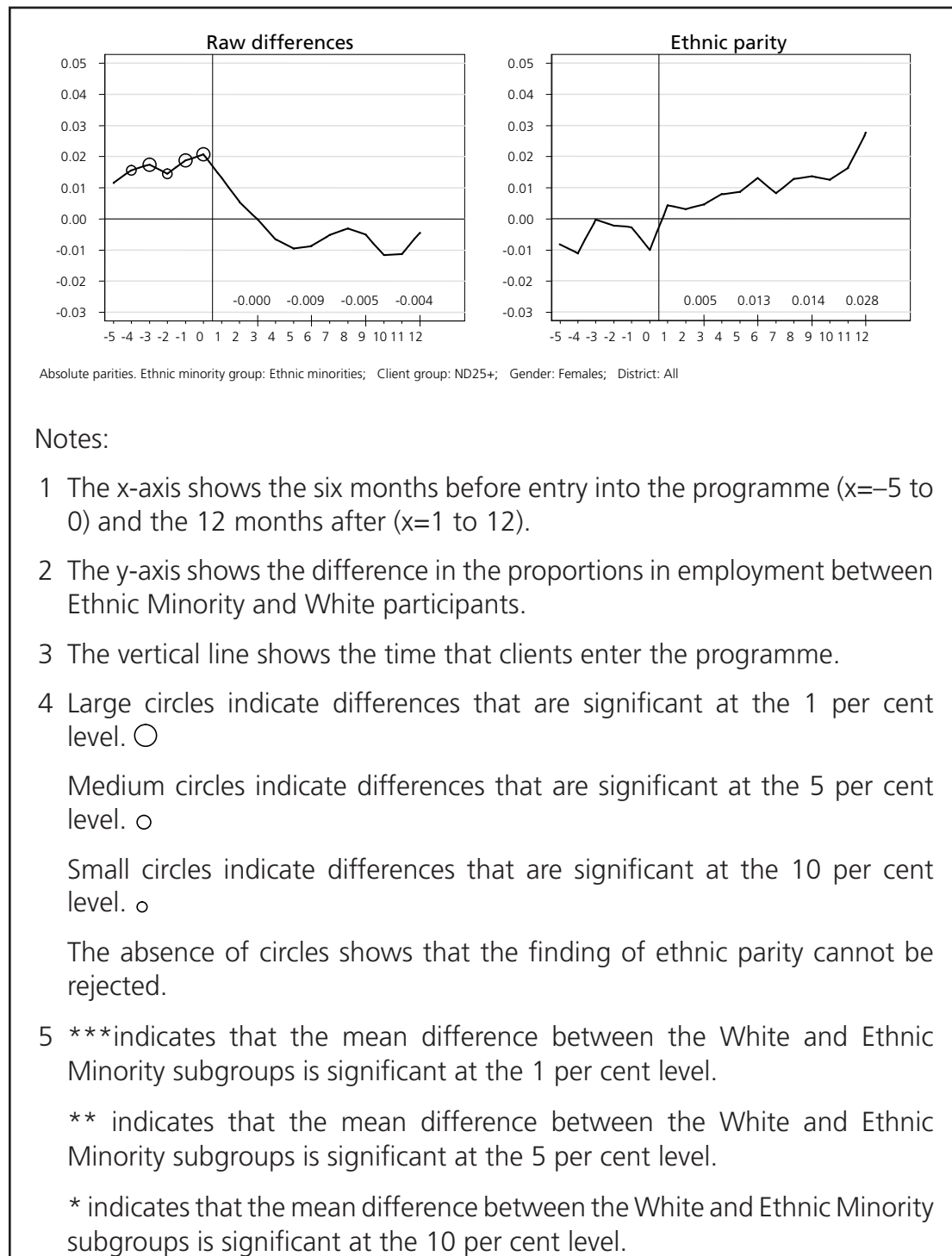
| <b>Ethnic parity</b>   | <b>Ethnic penalty</b> | <b>Ethnic premium</b>                       |
|--|-----------------------|---|
| Females in Great Britain                                     | None                  | Any and males in London                     |
| Females in London  |                       | Any and males in Manchester                 |
| Any, males and females in Great Britain excluding six cities |                       | Any and males in Greater Manchester Central |
| Any and males in North London                                |                       |   |
| Any and males in South London                                |                       |   |

Note: This table summarises the reliable employment estimates in Chapter 10, Table 10.3 of the main report.

Figure 10.2 shows the results for females in Great Britain. The results for women are reliable (as only 18 covariates remain unbalanced after matching, compared with 47 for the sample as a whole) but should be taken as evidence of an insignificant premium rather than of genuine ethnic parity. Both OLS and FILM confirm this finding of an insignificant premium.<sup>172</sup>

<sup>172</sup> See Table A10.3.2 in Appendix A10A.3 for more details.

**Figure 10.2** Estimates of ethnic parity in employment outcomes for female ND25+ participants



A summary of the findings for the 17 groups for which reliable estimates of ethnic parity in benefit receipt can be found is shown in Table 10.5. Here the predominant finding is of not rejecting ethnic parity, in contrast to the overall unreliable finding of an ethnic premium. However, there are three groups for which a reliable finding of an ethnic premium is found and these include any in Great Britain excluding the

six cities with the highest Ethnic Minority populations, which represents about 26 per cent of the total Ethnic Minority ND25+ population.<sup>173</sup>

**Table 10.5 ND25+: reliable estimates of ethnic parity in benefit receipt for Ethnic Minorities (compared with Whites)**

| <b>Ethnic parity</b>                             | <b>Ethnic penalty</b>            | <b>Ethnic premium</b>                                  |
|--|----------------------------------|--|
| Females in Great Britain<br>Any in 272 wards     | Any and males in North<br>London | Any and males in Great Britain<br>excluding six cities |
| Any, males and females in<br>London              |                                  | Males in North London                                  |
| Any and males in Manchester                      |                                  |  |
| Females in Great Britain<br>excluding six cities |                                  |  |
| Any and males in Greater<br>Manchester Central   |                                  |  |
| Any and males in South<br>London                 |                                  |  |

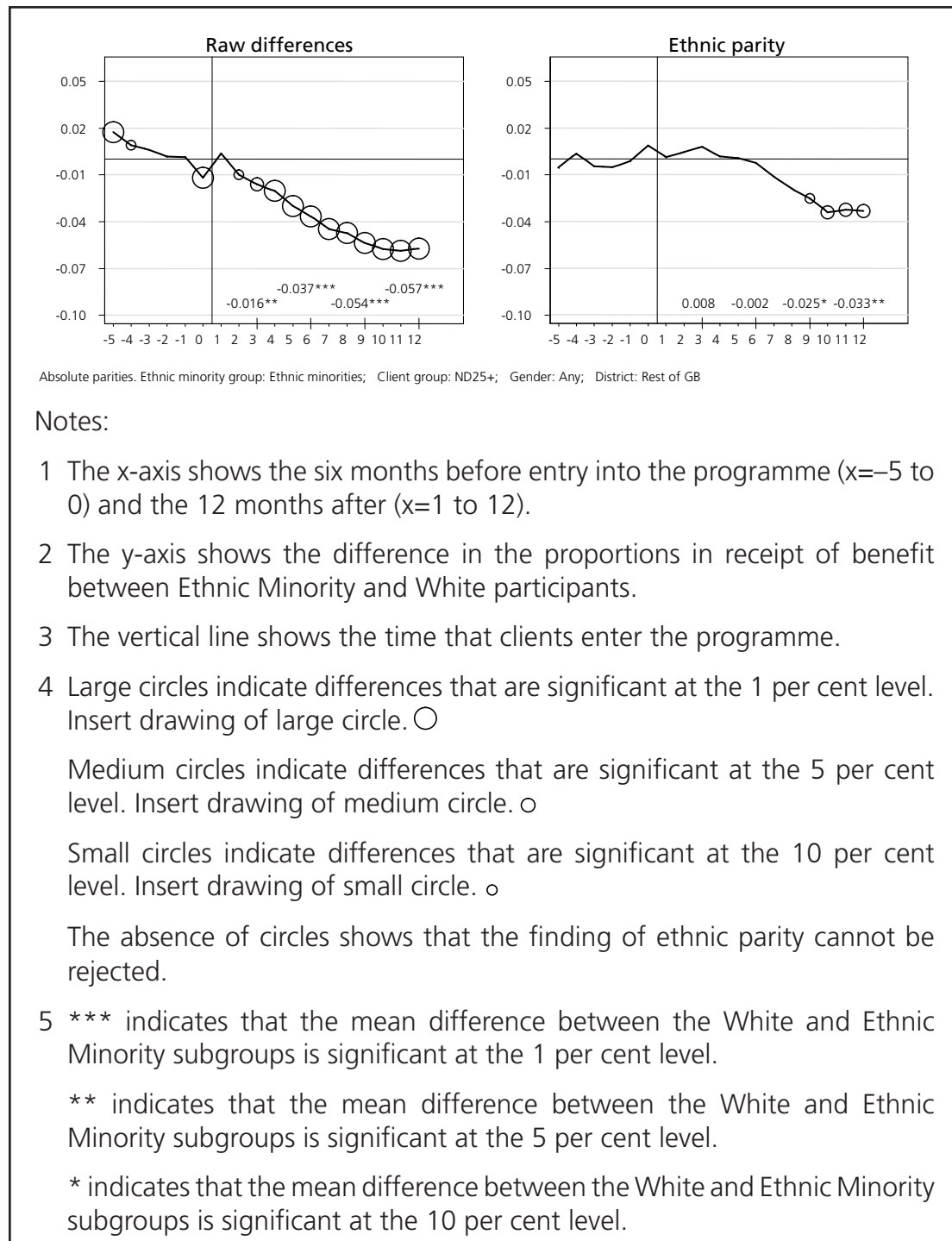
Note: This table summarises the reliable benefit estimates in Chapter 10, Table 10.3 of the main report.

The results for this subgroup are given in Figure 10.3, which shows that there is only a significant premium in the last three months (where the premium averages about 3.3 percentage points or 5.4 per cent). Both OLS and FILM tend to underestimate the magnitude of the premium.<sup>174</sup>

<sup>173</sup> See Tables A10A.1 and A10A.13 in Appendix A10A of the main report.

<sup>174</sup> See Table A10.13.2 in Appendix A10A for more details.

**Figure 10.3** Estimates of ethnic parity in benefit receipt for ND25+ participants living in Great Britain excluding the six cities with the highest Ethnic Minority populations



### 10.3.2 Black Ethnic Minorities

Tables 10.6 and 10.7 summarise the employment and benefit results respectively for 42 subgroups of the Black ND25+ sample, split according to gender and geography. From Table 10.6, it is clear that reliable employment estimates are only

found for 14 of the 42 groups. Among these 14 groups, the predominant finding is not rejecting ethnic parity in employment outcomes.

**Table 10.6 ND25+: reliable estimates of ethnic parity in employment outcomes for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b> | <b>Ethnic premium</b>   |
|---|-----------------------|---|
| <b>Black:</b><br>Males in London<br>Any in Great Britain excluding<br>six cities  | None                  | <b>Black:</b><br>Males in Great Britain<br>excluding six cities |
| <b>Black Caribbean:</b><br>Males and females in Great<br>Britain<br>Any and males in 272 wards<br>Any, males and females in<br>London<br>Any and males in Great Britain<br>excluding six cities |                       |   |
| <b>Other Black:</b><br>Any and males in Great Britain   |                       |   |

Note: This table summarises the reliable employment estimates in Chapter 10, Table 10.4 of the main report.

**Table 10.7 ND25+: reliable estimates of ethnic parity in benefit receipt for individuals of Black ethnic origin (compared with Whites)**

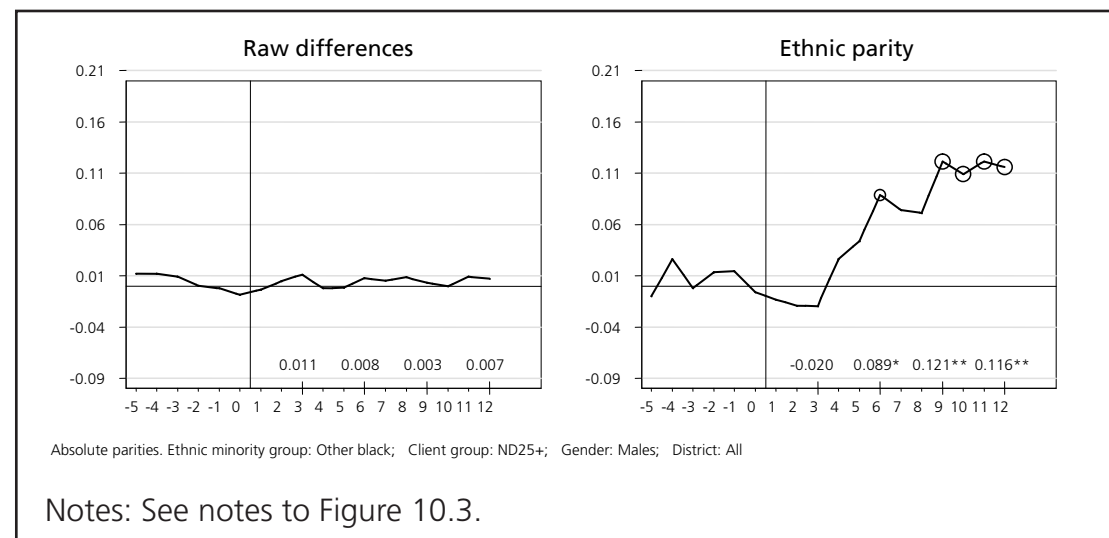
| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b> |
|--|---|-----------------------|
| <b>Black:</b><br>Females in Great Britain<br>Any in 272 wards<br>Any and males in London   | <b>Black:</b><br>Any and males in Great Britain<br>excluding six cities                           | None                  |
| <b>Black Caribbean:</b><br>Females in Great Britain<br>Any and males in 272 wards<br>Any, males and females in<br>London<br>Males in Great Britain<br>excluding six cities | <b>Black Caribbean:</b><br>Males in Great Britain<br>Any in Great Britain excluding<br>six cities |                       |
| <b>Black African:</b><br>Males in Great Britain  | <b>Other Black:</b><br>Males in Great Britain   |                       |
| <b>Other Black:</b><br>Any in Great Britain  |   |                       |

Note: This table summarises the reliable benefit receipt estimates in Chapter 10, Table 10.4 of the main report.

With benefit receipt, there are only 18 groups for which reliable results are found. Whilst the predominant finding is again of not rejecting ethnic parity, there is also evidence of an ethnic penalty for five relatively large groups.

Figure 10.4 provides estimates for one such subgroup – namely, Other Black men.<sup>175</sup>

**Figure 10.4 Estimates of ethnic parity in benefit receipt for other Black male ND25+ participants**



The raw results imply that there is no difference between the benefit receipt rates of Other Black and White male ND25+ participants, either before or after programme entry. Once the White sample is reweighted, however,<sup>176</sup> Other Black men are more likely (than otherwise-identical White men) to be claiming benefits from month 4 onwards, with the difference attaining significance (at conventional levels) in the ninth month after inflow. This means that Other Black men are between 10.9 and 12.1 percentage points (19.4 and 22.3 per cent) more likely to be receiving benefits in the last four months of the year following programme entry.<sup>177</sup> Simple regression techniques (OLS and FILM) also predict significant ethnic penalties, although of far smaller magnitude than the preferred matching estimates suggest.<sup>178</sup>

<sup>175</sup> See Appendix A10A.77 of the main report for more details.

<sup>176</sup> Remember that the samples are likely to differ in ways other than the proportion that are claiming benefits – see Table A10.77.1 in Appendix A10A.77 for full details of the ways in which the samples differ.

<sup>177</sup> It should be noted that the percentage point and per cent differences quoted in this section (and throughout the remainder of the chapter) do not necessarily correspond to the same months; they are simply designed to provide an indication of the spectrum of significant results.

<sup>178</sup> See Table A10.77.2 in Appendix A10A.77 for more details.

### 10.3.3 Asian Ethnic Minorities

For Asian Ethnic Minorities entering ND25+ during 2003, eight of the possible 28 groups have reliable estimates for employment outcomes (see Table 10.8) and five of the possible 28 groups have reliable estimates for benefit receipt outcomes (see Table 10.9). Hence, for Asian Ethnic Minorities, it is very difficult to find an appropriate White group with which to compare them. For the few cases where reliable estimates are found, ethnic parity cannot be rejected (for Asian and Indian subgroups) or there is a premium (for Other Asian subgroups) in employment outcomes, and there is an ethnic penalty (for Indian subgroups) or premium (for Other Asian subgroups) in benefit outcomes.

**Table 10.8 ND25+: reliable estimates of ethnic parity in employment outcomes for individuals of Asian ethnic origin (compared with Whites)**

| Ethnic parity   | Ethnic penalty | Ethnic premium                                 |
|---|----------------|--|
| Asian:<br>Any, males and females in<br>Great Britain                                      | None           | Other Asian:<br>Any and males in Great Britain |
| Indian:<br>Any and males in Great Britain<br>Any in Great Britain excluding<br>six cities |                |  |

Note: This table summarises the reliable employment estimates in Chapter 10, Table 10.5 of the main report.

**Table 10.9 ND25+: reliable estimates of ethnic parity in benefit receipt for individuals of Asian ethnic origin (compared with Whites)**

| Ethnic parity | Ethnic penalty  | Ethnic premium                                 |
|---------------|---|--|
| None          | Indian:<br>Any and males in Great Britain<br>Any in Great Britain excluding<br>six cities | Other Asian:<br>Any and males in Great Britain |

Note: This table summarises the reliable benefit receipt estimates in Chapter 10, Table 10.5 of the main report.

### 10.3.4 Mixed, Chinese and other Ethnic Minorities

A summary of the reliable estimates of ethnic parity in terms of employment outcomes (benefit receipt) for ND25+ claimants of Mixed, Chinese or other ethnic origin is shown in Table 10.10 (Table 10.11). Of the 21 subgroups with large enough sample sizes, 17 produce reliable estimates for employment and benefit receipts. As can be seen from the tables, for Mixed, Chinese and other Ethnic



Minorities, the predominant finding is of an ethnic premium in both outcomes. For employment, there are seven groups for which ethnic parity could not be rejected; for benefit receipt, there are four groups for which parity could not be rejected and three groups for which a penalty is found. For a number of subgroups, the inability to reject ethnic parity may be due to small sample sizes.

**Table 10.10 ND25+: reliable estimates of ethnic parity in employment outcomes for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b> | <b>Ethnic premium</b>  |
|--|-----------------------|--|
| <b>Mixed, Chinese and other:</b><br>Females in Great Britain<br>Any and females in London<br>Any and males in Great Britain<br>excluding six cities<br>Any in Central London<br><b>Other ethnic group:</b><br>Any in Great Britain excluding<br>six cities | None                  | <b>Mixed, Chinese and other:</b><br>Any and males in Great Britain<br>Males in London<br><b>Other ethnic group:</b><br>Any and males in Great Britain<br>Any and males in 272 wards<br>Any and males in London<br>Males in Great Britain<br>excluding six cities |

Note: This table summarises the reliable employment estimates in Chapter 10, Table 10.6 of the main report.

**Table 10.11 ND25+: reliable estimates of ethnic parity in benefit receipt for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>  | <b>Ethnic penalty</b>  | <b>Ethnic premium</b>   |
|---|--|---|
| <b>Mixed, Chinese and other:</b><br>Females in Great Britain<br>Females in London<br><b>Other ethnic group:</b><br>Males in 272 wards<br>Males in Great Britain<br>excluding six cities | <b>Mixed, Chinese and other:</b><br>Any and males in Great Britain<br>excluding six cities<br><b>Other ethnic group:</b><br>Any in Great Britain excluding<br>six cities | <b>Mixed, Chinese and other:</b><br>Any and males in Great Britain<br>Any and males in London<br>Any in Central London<br><b>Other ethnic group:</b><br>Any and males in Great Britain<br>Any in 272 wards<br>Any and males in London |

Note: This table summarises the reliable benefit receipt estimates in Chapter 10, Table 10.6 of the main report.

## 10.4 Summary of findings and policy implications

For Jobcentre Plus customers who entered ND25+ during 2003:

- For all Ethnic Minorities, there is evidence of a significant **premium** in employment and benefit outcomes. These results cannot be relied upon, however, as 47 covariates – including many district-level dummies – remain unbalanced after matching.
- It is clear that the overall results are primarily driven by the outcomes for men (who make up approximately 83 per cent of the sample). For women, there is reliable evidence of ethnic parity (or at least no significant penalties or premiums) in employment and benefit outcomes.
- While significant and reliable premiums (particularly in employment outcomes) are found for a number of smaller regional subgroups (mirroring the overall results), the predominant finding for subgroups is of ethnic parity (or at least no significant penalties or premiums) in employment and benefit receipt.
- Few reliable results are available for Black ND25+ participants. Those that there are show fewer premiums and more penalties than for Ethnic Minorities overall.
- There are very few reliable results for individuals of Asian ethnic origin, almost all of which indicate ethnic parity (or at least no significant penalties or premiums) in employment outcomes.
- For individuals of Mixed, Chinese or other ethnic origin, most results are reliable, and they tend to support the findings for Ethnic Minorities overall (of a significant premium in employment and benefit outcomes), although some findings of an ethnic penalty in benefit receipt are found.
- Most of the evidence suggests that the ND25+ programme helps Ethnic Minorities to obtain similar (or better) labour market outcomes than otherwise-identical Whites. This indicates that the subgroups for which significant benefit penalties are observed may be worthy of further investigation.

# 11 Ethnic parity in New Deal for Young People

## 11.1 Introduction

This chapter presents estimates of ethnic parity for all customers who entered the New Deal for Young People (NDYP) programme in 2003. Estimates are then derived for the sample disaggregated by gender, geography and ethnic group (where possible): there are 222 subgroups in total.

## 11.2 Description of the New Deal for Young People sample

Table 11.1 shows that over 158,000 customers entered NDYP in 2003, of whom 70 per cent were males. Approximately 80 per cent of the sample are from a White ethnic background, 17 per cent are from an Ethnic Minority background and four per cent are of unknown ethnic origin. Further disaggregation shows that 6.5 per cent of the sample are of Black ethnic origin (of which 46 per cent are Black Caribbean and 39 per cent are Black African), 6.8 per cent are of Asian ethnic origin (of which 25 per cent are Indian and 49 per cent are Pakistani) and 3.8 per cent are of some non-Black, non-Asian ethnic origin.

**Table 11.1 Ethnic breakdown of NDYP sample**

| Ethnic subgroup    | All  |         | Males |         | Females |        |
|--------------------|------|---------|-------|---------|---------|--------|
|                    | %    | Number  | %     | Number  | %       | Number |
| White              | 79.5 | 126,000 | 80.4  | 89,860  | 77.3    | 36,140 |
| Ethnic Minority    | 17.0 | 26,960  | 16.3  | 18,160  | 18.8    | 8,800  |
| Black              | 6.5  | 10,260  | 6.3   | 7,020   | 7.0     | 3,260  |
| Caribbean          | 3.0  | 4,740   | 3.1   | 3,480   | 2.7     | 1,260  |
| African            | 2.5  | 3,980   | 2.2   | 2,500   | 3.2     | 1,480  |
| Other              | 1.0  | 1,540   | 0.9   | 1,020   | 1.1     | 500    |
| Asian              | 6.8  | 10,720  | 6.2   | 6,880   | 8.2     | 3,840  |
| Indian             | 1.7  | 2,640   | 1.5   | 1,700   | 2.0     | 940    |
| Pakistani          | 3.3  | 5,200   | 3.0   | 3,320   | 4.0     | 1,880  |
| Bangladeshi        | 1.3  | 2,040   | 1.1   | 1,240   | 1.7     | 800    |
| Other              | 0.5  | 840     | 0.6   | 620     | 0.4     | 220    |
| Other              | 3.8  | 5,960   | 3.8   | 4,260   | 3.6     | 1,700  |
| Mixed              | 1.3  | 2,060   | 1.2   | 1,380   | 1.4     | 680    |
| Chinese            | 0.2  | 300     | 0.2   | 200     | 0.2     | 80     |
| Other ethnic group | 2.3  | 3,620   | 2.4   | 2,680   | 2.0     | 940    |
| Unknown            | 3.5  | 5,500   | 3.3   | 3,680   | 3.9     | 1,820  |
| <b>All</b>         | 100  | 158,440 | 100   | 111,700 | 100     | 46,760 |

Figure 11.1 illustrates the observed raw employment and benefit outcomes for all Ethnic Minorities and Whites in the NDYP sample over an 18-month period, starting six months before entry. Differences in outcomes between the two groups represent raw estimates of ethnic parity. A person is classified as being employed or on benefit in a particular month if they were employed or on benefit for at least 15 of the previous 30 days. An individual is classified as being in sustained employment if they have been continuously employed for the past three months (90 days).

**Figure 11.1 Labour market status over time for unmatched NDYP sample**

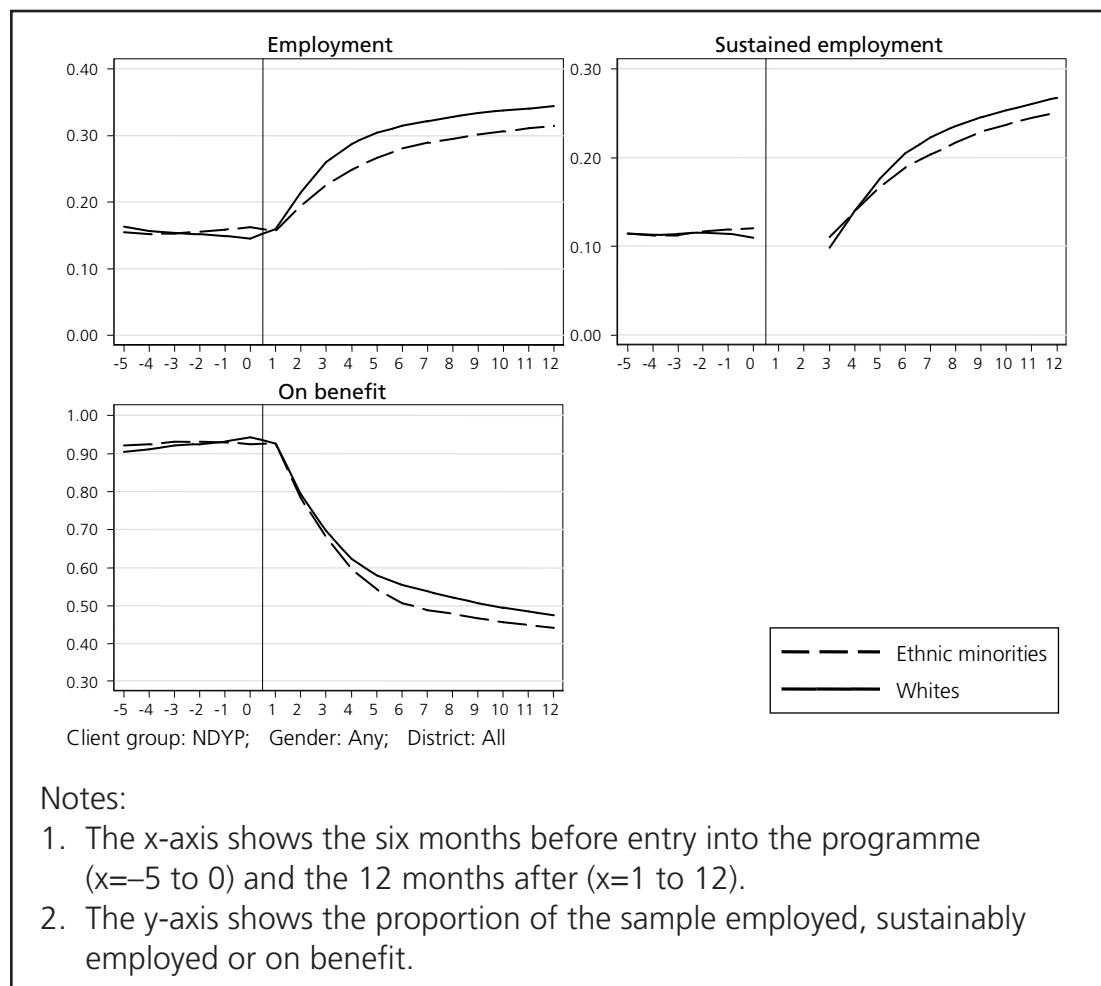


Figure 11.1 shows that there are differences in the raw employment, sustained employment<sup>179</sup> and benefit outcomes of the two groups after commencing NDYP. In the later months, these gaps are always significant.

The proportion of individuals in employment increases over time, from 15.7 per cent of Ethnic Minorities (and 16.0 per cent of Whites) in the first month after starting NDYP to 31.4 per cent of Ethnic Minorities (and 34.4 per cent of Whites) 12 months later. Over the same period, the proportion of individuals on benefits decreases from 92.6 per cent (of both Ethnic Minorities and Whites) to 44.2 per cent of Ethnic Minorities (and 47.5 per cent of Whites).

<sup>179</sup> A finding of ethnic parity, penalty or premium tends to be consistent across employment and sustained employment outcomes for a particular subgroup. In this summary report, therefore, only employment outcomes will be discussed. Interested readers can refer to Chapter 11 of the main report for full details of the sustained employment outcomes.

These results suggest an ethnic **penalty** in employment outcomes and ethnic premium in benefit receipt, i.e. that Ethnic Minorities in NDYP are less likely to be employed and less likely to be on benefits than Whites.<sup>180</sup>

However, it is clear, that Whites and Ethnic Minorities in the NDYP sample are very different in terms of a number of observed pre-programme characteristics and that these differences are likely to affect estimates of ethnic parity.<sup>181</sup> Table 11.2 makes comparisons between a number of broad ethnic groupings across a range of key background characteristics and outcome variables.

Ethnic minorities as a whole are more likely (than Whites) to be female, older, married/cohabiting and not on Incapacity Benefit (IB); they are less likely to have a basic skills need and they tend to live in higher unemployment areas. On average, they have also spent a smaller proportion of time in employment and a greater proportion on benefits before entering NDYP.

There is also significant variation **within** the Ethnic Minority sample (compared with Whites). For example, NDYP participants of Asian ethnic origin are, on average, significantly **more** likely to be married or cohabiting (than Whites), while individuals of Black ethnic origin are significantly **less** likely to be. This highlights the importance of considering ethnic parity measures at both the broad and more disaggregated levels.

This chapter will now proceed as follows: Section 11.3 considers ethnic parity measures for the Ethnic Minority sample as a whole and then for the more disaggregated ethnic groupings; in all cases, samples are broken down by gender and geography (where possible). Section 11.4 concludes and provides some brief policy implications.

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<sup>180</sup> See Table A11.1.4 in Appendix A11A.1 of the main report for more details.

<sup>181</sup> See Table A11.1.1 in Appendix A11A.1 of the main report for more details on the ways in which Ethnic Minorities differ from Whites.

Table 11.2 Characteristics of the NDYP sample by ethnicity

|  | Ethnic Minority |       |          |          |          | Unknown  |
|--|-----------------|-------|----------|----------|----------|----------|
|  | All             | White | Black    | Asian    | Other    |          |
| Female   | 0.295           | 0.287 | 0.317*** | 0.359*** | 0.285    | 0.330*** |
| Age at inflow  | 20.6            | 20.5  | 20.9***  | 21.0***  | 20.8***  | 20.7***  |
| Married/cohabiting                                       | 0.026           | 0.020 | 0.014*** | 0.087*** | 0.037*** | 0.032*** |
| On IB at inflow  | 0.125           | 0.140 | 0.064*** | 0.057*** | 0.066*** | 0.106*** |
| Percentage of time employed, years 1–3 before inflow     | 0.320           | 0.328 | 0.293*** | 0.284*** | 0.250*** | 0.336*   |
| Percentage of time on benefits, years 1–3 before inflow  | 0.516           | 0.516 | 0.538*** | 0.522*   | 0.509    | 0.459*** |
| Basic skills need  | 0.386           | 0.406 | 0.299*** | 0.294*** | 0.367*** | 0.302*** |
| Early entrant to NDYP                                    | 0.195           | 0.186 | 0.227*** | 0.168*** | 0.300*** | 0.257*** |
| Participated in a voluntary programme prior to inflow    | 0.013           | 0.013 | 0.019*** | 0.005*** | 0.014    | 0.014    |
| Unemployment rate in travel-to-work area                 | 0.059           | 0.059 | 0.060*** | 0.060*** | 0.059    | 0.057*** |
| Percentage of time employed, months 1–12 after inflow    | 0.290           | 0.294 | 0.257*** | 0.279*** | 0.252*** | 0.305**  |
| Percentage of time on benefits, months 1–12 after inflow | 0.591           | 0.598 | 0.640*** | 0.508*** | 0.550*** | 0.533*** |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- Percentage of time on benefits / employed is given as a proportion, i.e. between 0 and 1.

## 11.3 Estimates of ethnic parity for New Deal for Young People

### 11.3.1 All Ethnic Minorities

The raw ethnic parity estimates (discussed in Section 11.2) suggest that there is an ethnic penalty in employment outcomes and an ethnic premium in benefit receipt for all Ethnic Minority NDYP participants living in Great Britain. These estimates (for months 3, 6, 9 and 12 after entering the programme) are replicated in Column 1 of Table 11.3. Columns 2 to 6 of the table additionally provide estimates using ordinary least squares (OLS), fully interacted linear matching (FILM), kernel matching and difference-in-differences ((DiD); two methods, described in Section 2.5.5) respectively.<sup>182</sup>

The OLS, FILM and DiD estimates all suggest that there is an ethnic penalty in employment and benefit outcomes for NDYP customers. However, whilst the preferred matching estimator also finds a penalty in benefit outcomes, it suggests that there is a premium in employment outcomes. Moreover, the magnitudes of the ethnic penalties in employment and benefit outcomes vary a lot across different methods.

As discussed in Section 2.6, however, this report relies on the diagnostic tests provided by the matching method to assess the reliability of these estimates. For NDYP, the Ethnic Minority and White samples entering the programme differed significantly across 79 background characteristics, casting severe doubt over the comparability of the two groups (and hence, on all the estimates described in Table 11.3).

This suggests that for NDYP, it is simply impossible to find a similar comparable White group to the Ethnic Minority sample, even after reweighting. The preferred matching estimates suggest that there is an ethnic premium in employment outcomes and an ethnic penalty in benefit receipt but these results are unlikely to be reliable.<sup>183</sup> All of the other methods (OLS, FILM and DiD) estimate that there is an ethnic penalty in employment outcomes, the magnitude of which varies a lot, and a larger ethnic penalty in benefit outcomes. But again, there is a large amount of doubt about whether the assumptions underlying these models are appropriate and there are no equivalent diagnostics for these methods to assess whether the assumptions required to produce unbiased results hold.

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<sup>182</sup> These estimates can be found in Table A11.1.2 in Appendix A11A of the main report. The DiD estimates come from Table A12A.70 in Appendix A12A of the main report.

<sup>183</sup> The median bias is smaller for the propensity score matching estimates than for the raw estimates, but other diagnostics suggest that matching has not been fully successful.



**Table 11.3 NDYP: parity estimates for all Ethnic Minorities living in Great Britain – comparison of methods**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.034*** | -0.009*** | -0.019*** | 0.037***        | 0.003     | -0.017***     |
| Employed in month 6                                  | -0.034*** | 0.004     | -0.003    | 0.060***        | 0.002     | -0.001        |
| Employed in month 9                                  | -0.032*** | 0.004     | -0.003    | 0.066***        | -0.020*** | -0.003        |
| Employed in month 12                                 | -0.030*** | 0.006     | 0.002     | 0.066***        | -0.025*** | -0.002        |
| On benefit in month 3                                | -0.016*** | 0.015***  | 0.029***  | 0.042***        | 0.027***  | 0.027***      |
| On benefit in month 6                                | -0.047*** | 0.001     | 0.019***  | 0.051***        | -0.003    | 0.013*        |
| On benefit in month 9                                | -0.040*** | 0.004     | 0.024***  | 0.038***        | 0.023***  | 0.020***      |
| On benefit in month 12                               | -0.033*** | 0.008*    | 0.023***  | 0.052***        | 0.027***  | 0.016**       |
| N – Ethnic Minorities                                | 26,960    |           |           |                 |           |               |
| N – Whites   | 126,000   |           |           |                 |           |               |
| Median bias  | 11.3      |           |           | 4.1             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 26.3%         |
| Whites   |           |           |           |                 |           | 14.4%         |

## Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1 per cent level of significance.  
\*\* indicates that mean is significantly different from corresponding mean for White sample at 5 per cent level of significance.  
\* indicates that mean is significantly different from corresponding mean for White sample at 10 per cent level of significance.
- In Kernel matching column:  
CS(xx) means that xx per cent of the Ethnic Minority sample was lost to common support (where xx will always be 95 or less);  
UC(yy) means that even after matching, yy covariates remain unbalanced at the 5 per cent significance level.  
UH(B) means that after matching, benefit history variables were not balanced in at least one of the six months prior to entering the NDYP sample (at the 5 per cent significance level).

Unreliable estimates dominate when the sample is split by all possible subgroups, as shown in Table 11.4. There are only six groups out of a possible 59 for which there are reliable employment estimates. These find either that ethnic parity could not be rejected (three groups) or an ethnic premium (three groups) in employment outcomes.

**Table 11.4 NDYP: reliable estimates of ethnic parity in employment outcomes for Ethnic Minorities (compared with Whites)**

| Ethnic parity  | Ethnic penalty | Ethnic premium  |
|--|----------------|---|
| Females in Great Britain<br>excluding six cities<br>Any and males in Greater<br>Manchester Central | None           | Males in Great Britain<br>excluding six cities<br>Any in Leicestershire<br>Any in Berkshire, Bucks and<br>Oxfordshire |

Note: This table summarises the reliable employment estimates found in Chapter 11, Table 11.3 of the main report.

Figure 11.2 illustrates the findings for one group for which an ethnic premium in employment outcomes was found. Both the raw and matched figures show an ethnic premium for Ethnic Minorities in the Jobcentre Plus district of Leicestershire, although the preferred matching estimates are significantly larger than the raw estimates in most months.<sup>184</sup>

<sup>184</sup> See Table A11.34.4 in Appendix A11A.34.

**Figure 11.2** Estimates of ethnic parity in employment outcomes for NDYP participants living in Leicestershire

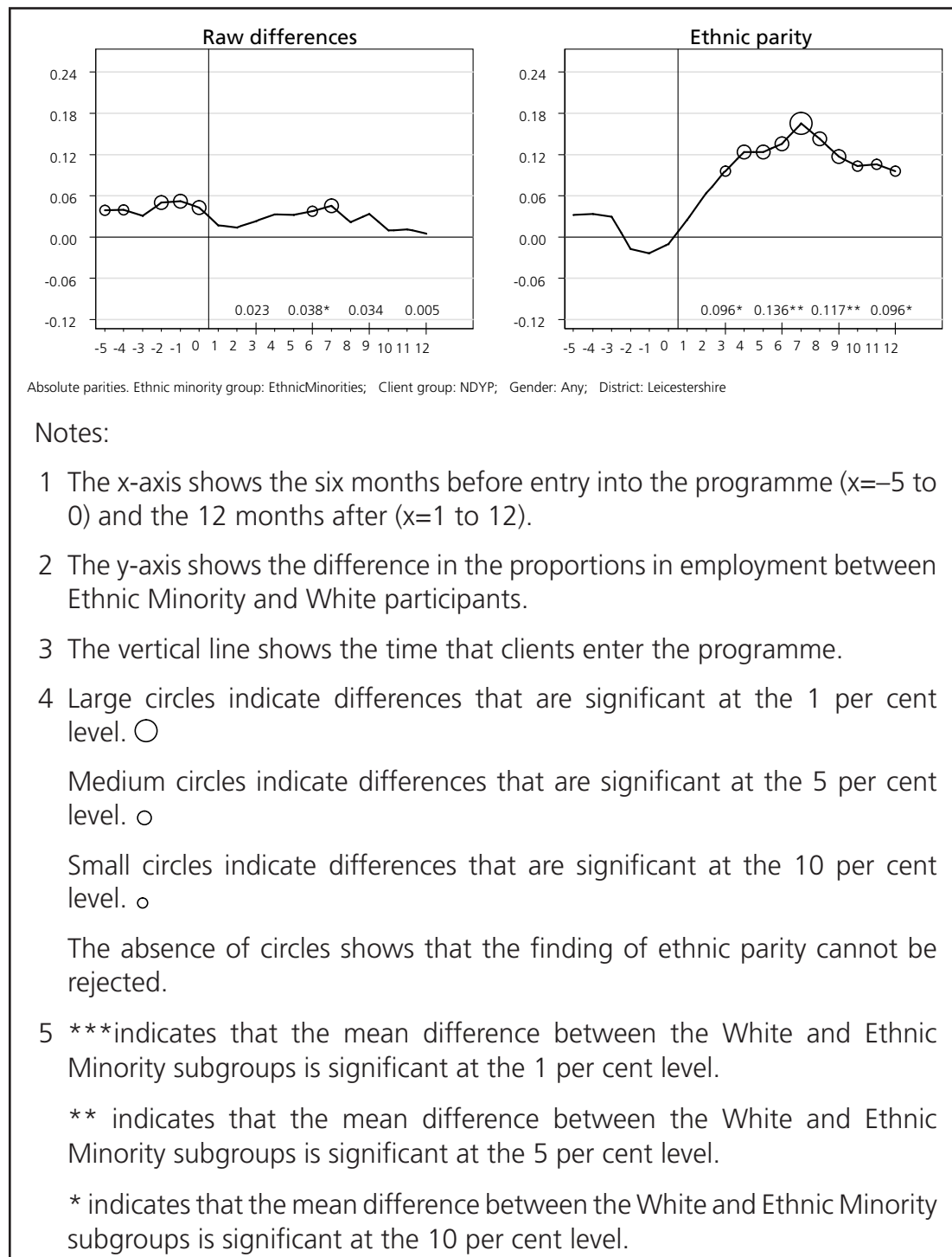


Table 11.5 shows reliable estimates are only found for four of the possible 59 groups for benefit receipt outcomes. These are evenly split between not rejecting parity (two groups) and an ethnic penalty (two groups) in benefit receipt.

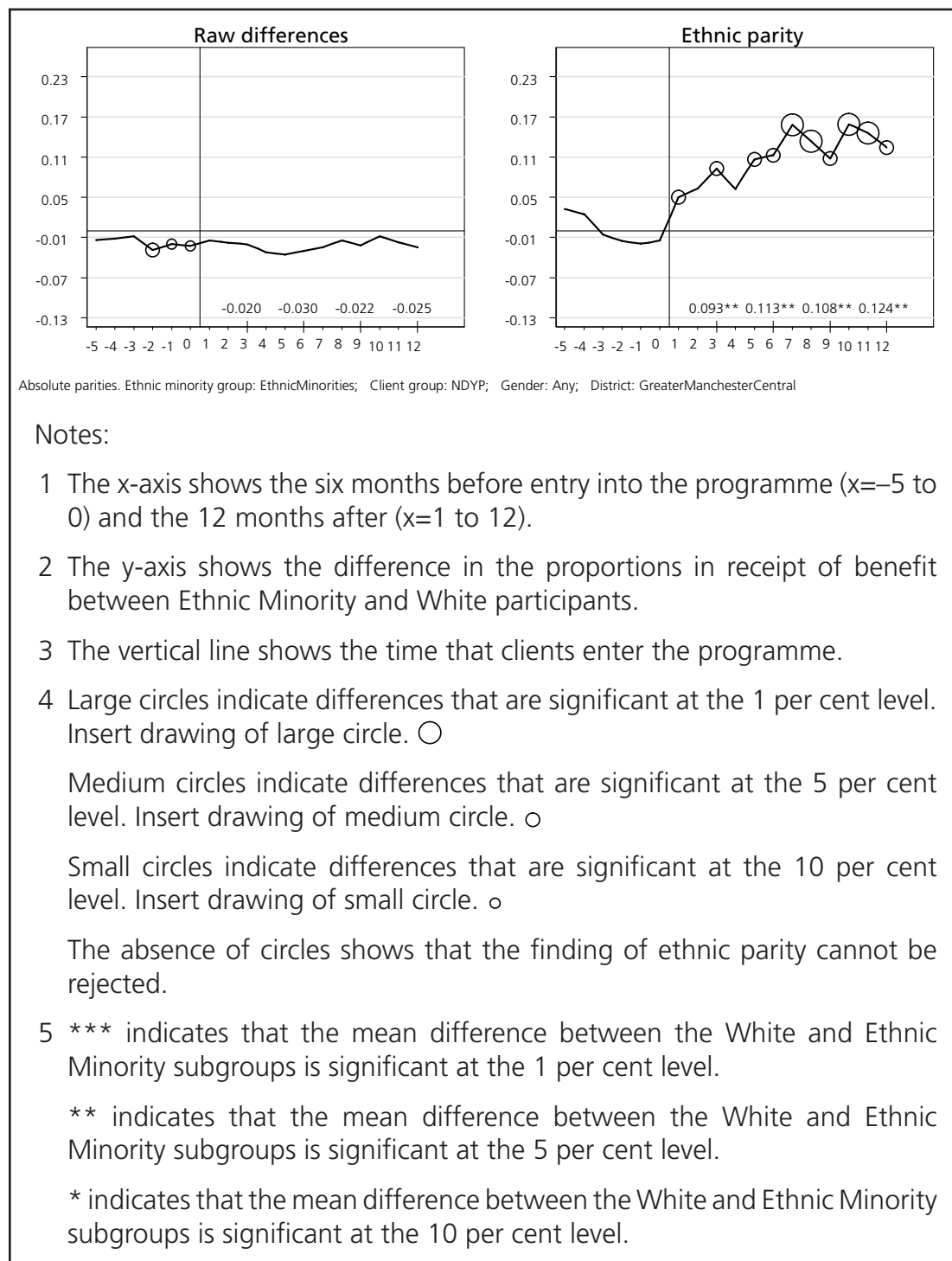
**Table 11.5 NDYP: reliable estimates of ethnic parity in benefit receipt for Ethnic Minorities (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>                       | <b>Ethnic premium</b> |
|--|---|-----------------------|
| Males in Great Britain excluding six cities<br>Any in Berkshire, Bucks and Oxfordshire | Any and males in Greater Manchester Central | None                  |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 11, Table 11.3 of the main report.

One group for which an ethnic penalty in benefit receipt was found was all customers in the Jobcentre Plus district of Greater Manchester Central. Figure 11.3 illustrates that matching turns the raw estimate of benefit receipt parity into a significant penalty. By month 12, the proportion of Ethnic Minorities on benefits is 34 per cent higher than that of the matched White group.

**Figure 11.3** Estimates of ethnic parity in benefit receipt for NDYP participants living in Greater Manchester Central



### 11.3.2 Black Ethnic Minorities

For all NDYP participants of Black ethnic origin in Great Britain, there are unreliable estimates of an ethnic premium in employment and an ethnic penalty in benefit receipt (as was found for all Ethnic Minorities).<sup>185</sup> Tables 11.6 and 11.7 summarise

<sup>185</sup> See Table A.73 in the Appendix to this summary.

the **reliable** employment and benefit results respectively for 66 subgroups of the Black NDYP sample, split according to gender and geography.

Table 11.6 shows that reliable employment estimates are found for 29 of the 66 subgroups. The predominant finding amongst them is of not rejecting ethnic parity in employment outcomes (18 groups) but there is also evidence of ethnic penalties (eight groups) and ethnic premiums (three groups).

**Table 11.6 NDYP: reliable estimates of ethnic parity in employment outcomes for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b>                                   |
|--|---|---|
| <b>Black:</b><br>Any and females in London<br>Any, males and females in Great Britain excluding six cities | <b>Black:</b><br>Males in Birmingham<br>Any and males in Birmingham and Solihull      | <b>Black Caribbean:</b><br>Females in Great Britain     |
| <b>Black Caribbean:</b><br>Any in Great Britain<br>Any, males and females in 272 wards                     | <b>Black Caribbean:</b><br>Males in Great Britain<br>Females in London                | <b>Black African:</b><br>Any and males in Great Britain |
| Any and males in Birmingham<br>Any and males in London<br>Males in Birmingham and Solihull                 | Any and males in Great Britain excluding six cities<br>Any in Birmingham and Solihull |   |
| <b>Black African:</b><br>Females in Great Britain  |   |   |
| <b>Other Black:</b><br>Any, males and females in Great Britain   |   |   |

Note: This table summarises the reliable employment estimates found in Chapter 11, Table 11.4 of the main report.

Figure 11.4 considers this evidence of parity in employment outcomes for males of Black Caribbean origin in the 272 disadvantaged group wards. It shows that after reweighting the White sample, there is evidence of parity (or a non-significant premium), turning over the raw estimate of an ethnic penalty in employment.<sup>186</sup>

<sup>186</sup> See Table A11.93.4 in Appendix A11A.93 of the main report for more details.

**Figure 11.4** Estimates of ethnic parity in employment outcomes for Black Caribbean male NDYP participants living in the 272 disadvantaged group wards

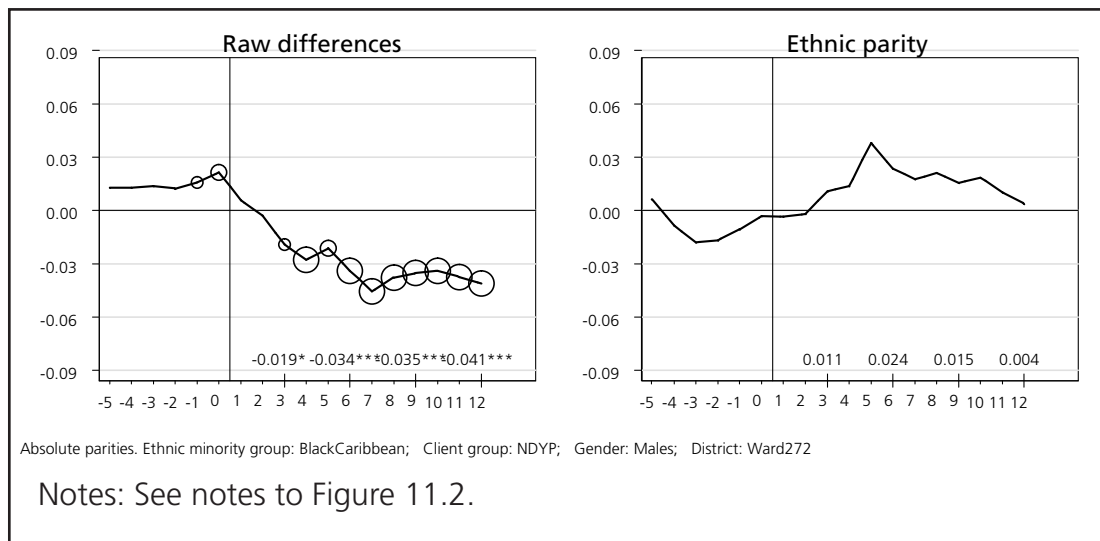


Table 11.7 shows that with benefit receipt, there are 29 groups for which reliable results are found. The predominant finding is of an ethnic penalty (22 groups) but ethnic parity cannot be rejected in seven cases.

**Table 11.7 NDYP: reliable estimates of ethnic parity in benefit receipt for individuals of Black ethnic origin (compared with Whites)**

| <b>Ethnic parity</b>   | <b>Ethnic penalty</b>   | <b>Ethnic premium</b> |
|--|---|-----------------------|
| <b>Black:</b><br>Males in Birmingham and Solihull  | <b>Black:</b><br>Any and males in Birmingham<br>Any and females in London   | None                  |
| <b>Black Caribbean:</b><br>Any, males and females in 272 wards<br>Males in Birmingham<br>Females in London<br>Males in Birmingham and Solihull | Any, males and females in Great Britain excluding six cities<br>Any in Birmingham and Solihull  |                       |
|  | <b>Black Caribbean:</b><br>Any, males and females in Great Britain<br>Any in Birmingham<br>Any and males in London<br>Any and males in Great Britain excluding six cities<br>Any in Birmingham and Solihull |                       |
|  | <b>Black African:</b><br>Males in Great Britain<br>Any and males in Great Britain excluding six cities  |                       |
|  | <b>Other Black:</b><br>Any and males in Great Britain   |                       |

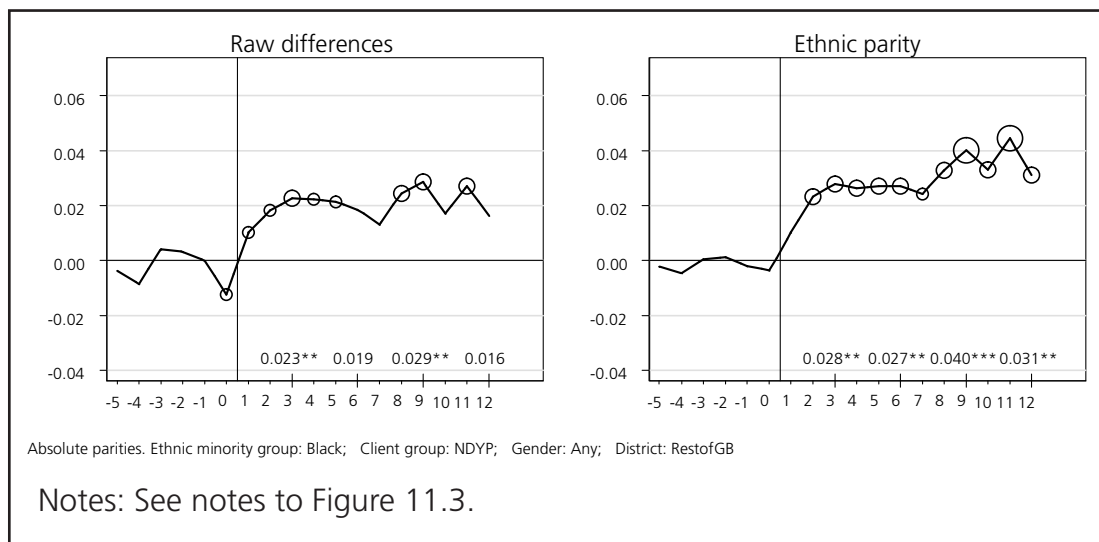
Note: This table summarises the reliable benefit receipt estimates found in Chapter 11, Table 11.4 of the main report.

Figure 11.5 shows one of the subgroups for which an ethnic penalty is found – Black Ethnic Minorities in Great Britain excluding the six cities with the highest Ethnic Minority populations. The figure illustrates that for this group, both the raw and matched estimates find evidence of an ethnic penalty in benefit receipt, although the matched estimates are marginally larger.<sup>187</sup>

<sup>187</sup> See Table A11.71.4 in Appendix A11A.71 of the main report for more details.



**Figure 11.5 Estimate of ethnic parity in benefit receipt for Black NDYP participants living in Great Britain excluding the six cities with the highest Ethnic Minority populations**



### 11.3.3 Asian Ethnic Minorities

For Asian Ethnic Minorities entering NDYP during 2003, for four of the possible 59 groups there are reliable estimates for employment outcomes (see Table 11.8) and benefit receipt outcomes (see Table 11.9). Hence, for Asian Ethnic Minorities, it is very difficult to find an appropriate White group with which to compare them. For a lot of the groups (Pakistani, Bangladeshi and Indian groups in particular), there are problems with common support: in order to get reliable estimates, a large proportion of the Ethnic Minority sample has to be thrown away. Those excluded tend to be more disadvantaged, particularly in terms of pre-programme labour market outcomes.<sup>188</sup>

**Table 11.8 NDYP: reliable estimates of ethnic parity in employment outcomes for individuals of Asian ethnic origin (compared with Whites)**

| Ethnic parity                             | Ethnic penalty | Ethnic premium                       |
|---|----------------|--------------------------------------|
| Indian:<br>Any and males in Great Britain | None           | Other Asian:<br>Any in Great Britain |
| Other Asian:<br>Any in London             |                |                                      |

Note: This table summarises the reliable employment estimates found in Chapter 11, Table 11.5 of the main report.

<sup>188</sup> See Chapter 11 of the main report for a full discussion of this issue.

**Table 11.9 NDYP: reliable estimates of ethnic parity in benefit receipt for individuals of Asian ethnic origin (compared with Whites)**

| Ethnic parity                             | Ethnic penalty | Ethnic premium  |
|---|----------------|---|
| Indian:<br>Any and males in Great Britain | None           | Other Asian:<br>Males in Great Britain<br>Any in London |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 11, Table 11.5 of the main report.

### 11.3.4 Mixed, Chinese and other Ethnic Minorities

A summary of the reliable estimates of ethnic parity in terms of employment outcomes (benefit receipt) for NDYP claimants of Mixed, Chinese or other ethnic origin is shown in Table 11.10 (Table 11.11). Only 20 (10) of the 38 subgroups have large enough samples to produce reliable estimates for employment (benefit receipt). As can be seen from the tables, for participants of Mixed, Chinese or other ethnic origin, the predominant reliable finding is of being unable to reject ethnic parity in both outcomes. For employment, there are two groups for which an ethnic penalty is found and seven groups for which an ethnic premium is found. For benefit receipt, there is one group for which a penalty is found and four groups for which a premium is found. For a number of subgroups, the inability to reject ethnic parity may be due to small sample sizes.

**Table 11.10 NDYP: reliable estimates of ethnic parity in employment outcomes for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| Ethnic parity   | Ethnic penalty  | Ethnic premium  |
|---|---|---|
| Mixed, Chinese and other:<br>Females in London<br>Females in Great Britain<br>excluding 6 cities<br>Any in North London<br><br>Other:<br>Females in Great Britain<br>Any, males and females in<br>272 wards<br>Any, males and females in<br>London<br>Any in North London | Mixed, Chinese and other:<br>Any in City and East London<br>Any in Lambeth, Southwark<br>and Wandsworth | Mixed, Chinese and other:<br>Any, males and females in<br>Great Britain<br>Any and males in Great Britain<br>excluding six cities<br><br>Other:<br>Any and males in Great Britain |

Note: This table summarises the reliable employment estimates found in Chapter 11, Table 11.6 of the main report.

**Table 11.11 NDYP: reliable estimates of ethnic parity in benefit receipt for individuals of Mixed, Chinese or other ethnic origin (compared with Whites)**

| Ethnic parity   | Ethnic penalty   | Ethnic premium   |
|---|--|--|
| <p>Mixed, Chinese and other:<br/>Females in Great Britain<br/>excluding six cities<br/>Any in Lambeth, Southwark<br/>and Wandsworth</p> <p><b>Other:</b><br/>Males in 272 wards<br/>Males and females in London</p> | <p>Mixed, Chinese and other:<br/>Any in City and East London</p> | <p>Mixed, Chinese and other:<br/>Any in Great Britain excluding<br/>six cities</p> <p><b>Other:</b><br/>Any and males in Great Britain<br/>Any in North London</p> |

Note: This table summarises the reliable benefit receipt estimates found in Chapter 11, Table 11.6 of the main report.

## 11.4 Summary of findings and policy implications

For Jobcentre Plus customers who entered the New Deal for Young People during 2003:

- For all Ethnic Minorities in Great Britain, there is evidence of a significant **premium** in employment and **penalty** in benefit outcomes. These results cannot be relied upon, however, as 79 covariates – including benefit history variables and many district-level dummies – remain unbalanced after matching.
- Across a number of Jobcentre Plus districts, ethnic parity in employment outcomes could not be rejected or premiums were found.
- For benefit outcomes across Jobcentre Plus districts, there is evidence of not rejecting parity and of penalties.
- For customers of Black ethnic origin, there is evidence of a significant premium in employment and penalty in benefit outcomes – but these results are also unreliable.
- For the Black Ethnic Minority subgroups for which reliable estimates can be found, the predominant results are failing to reject parity in employment outcomes and finding penalties for benefit outcomes.
- Much of the evidence on penalties for customers of Black ethnic origin is driven by the outcomes for Black Caribbeans (particularly men), who experience ethnic penalties across all of the outcomes considered.
- The findings for individuals of Mixed, Chinese or other ethnic origin – in terms of both employment and benefit outcomes – are mixed and there are few reliable results for individuals of Asian ethnic origin.



# 12 Summary and conclusions

## Methodological conclusions

- Previous Department for Work and Pensions (DWP) measures of ethnic parity are inadequate because they:
  - make no attempt to compare Ethnic Minorities with **otherwise-identical** White individuals;
  - consider only those individuals who leave DWP programmes (in the case of the New Deal measures) or confuse new and existing claimants (in the case of the Jobcentre Plus measure of ethnic parity);
  - are based on spells rather than individuals;
  - consider only employment outcomes and treat job entry as an absorbing state.

Consequently, it is recommended that these measures should no longer be calculated.

- Any future attempts to measure ethnic parity should (as done in this study):
  - control for **observed differences** between Ethnic Minorities and Whites;
  - select individuals on the basis of **inflow** onto the benefit or programme;
  - choose **individuals** as the unit of analysis (rather than spells);
  - consider outcomes **over time**, ideally for both employment and benefit receipt.
- Observed characteristics that it is important to control for include (but are not limited to) age, sex, region, labour market history, education, wealth and characteristics of the local labour market. Because the reasons for its inclusion may be less obvious, the importance of controlling for region needs to be emphasised: service quality may vary across different Jobcentre Plus offices, so it is important to take this into account by comparing individuals living in the same region or controlling for region when analysis is conducted at a more aggregated level.

- The preferred method for controlling for observed characteristics is propensity score matching: it is far more flexible than simple regression techniques, and provides helpful diagnostics to assess how successfully Whites have been reweighted to look like Ethnic Minorities. In many cases, simple regression techniques give misleading answers, meaning that the results of previous studies that have relied solely on these techniques to estimate ethnic parity (see Chapter 1) should be treated with some caution.
- Using this approach, reliable overall results for Income Support (IS) and Incapacity Benefit (IB) have been calculated. However, reliable overall results for other benefits and programmes (Jobcentre Plus overall, Jobseeker's Allowance (JSA), New Deal for Lone Parents (NDLP), New Deal for individuals aged 25 plus (ND25+) and New Deal for Young People (NDYP)) could not be calculated. This was because White individuals could not be reweighted to look sufficiently like Ethnic Minority claimants. Although it is difficult to know exactly why this was the case, an important factor seems to have been that similar Ethnic Minorities and Whites tend to live in different areas, something that it is important to control for (see above). Indeed, where covariates remained unbalanced, often, many were regional variables. Another contributory factor may have been having to use Census proxies for education and wealth.
- Although reliable **overall** results could not be calculated for the majority of benefits and programmes under consideration, it was possible to estimate results for many subgroups of these benefits and programmes. Where sample sizes were sufficient (and often they were not), results were reliable in between 20.1 per cent and 89.8 per cent of cases (NDYP benefit results and IB employment results, respectively).<sup>189</sup>
- The difficulty in finding reliable results was a surprise. Given the amount of effort required to calculate satisfactory estimates, repeating the exercise in the future does not seem worthwhile. Even though IS and IB have both produced reliable results this time round, there is no guarantee that this will be the case in the future. There is also the problem of Census-based proxies becoming increasingly out-of-date (until the next Census in 2011).
- Were a specific need to arise, it may be worthwhile to repeat the analysis for specific subgroups (regions with a reasonable balance of Ethnic Minorities and Whites), particularly if the quality of the available data improves (for example, through the addition of education, wealth and immigration information).

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<sup>189</sup> See Table 4.1 for details.

- Given the fundamental problem that similar White DWP clients do not tend to live in the same areas as Ethnic Minority clients, it seems that other methods may need to be used to estimate ethnic parity. One possibility is for DWP to construct some type of experiment, where it sends Ethnic Minority and otherwise-identical White clients to the same office and monitors the treatment and outcomes that these 'otherwise-identical' individuals receive (probably using qualitative methods). This could be done using real clients and/or actors. The results of this report highlight areas and ethnic groups that might be of particular interest for such an experiment.

### **Work and Pensions Longitudinal Study dataset recommendations**

This project was one of the first projects external to DWP to use the Work and Pensions Longitudinal Study (WPLS). Not surprisingly, a number of problems and shortcomings with the data were uncovered. The main issues are listed below, some of which may be relatively straightforward to rectify. Problems of particular relevance for this project include:

- Ethnicity is recorded poorly. For some small benefits and programmes, it does not exist at all. For the benefits and programmes where it does exist, there are often as many individuals of unknown ethnic origin as there are Ethnic Minorities. If further analysis of Ethnic Minorities is to be undertaken, it is important to improve the recording of ethnicity.
- In a project comparing Ethnic Minorities and Whites, immigration is likely to be a considerable issue. The WPLS, however, contains nothing that allows recent immigrants to be identified: individuals who have just arrived in the UK look the same as individuals who have never been employed or on benefit. Date of entry into the UK (or periods of residence) would allow these individuals to be distinguished.
- Recent immigrants may not speak English as their first language. The only source of information about language needs is in the Basic Skills dataset but it isn't clear that this captures all individuals. Better-quality information about the standard of English of all individuals in the WPLS would be helpful.
- The lack of any information about education and wealth in the WPLS is a serious shortcoming for the analysis of labour market programmes. Census-based proxies are likely to fall some way short of having the actual information itself.

Other issues with the WPLS posed less of a problem for this project but may be serious for other projects using the data. These include:

- Employment spells in the WPLS are very messy. Particular problems include:
  - the large number of uncertain (5 and 6 April) dates;
  - many spells lasting one day (commonly indicating the end of employment spells the start date of which Her Majesty's Revenue & Customs (HMRC) has no knowledge about);

- duplicated spells (for example, implausibly, many spells starting on the same day but with different end dates); this seems to be an issue with updating employment information in the WPLS;
- some, but not all, employment spells below the income tax threshold appearing in the data without it being possible to identify which spells fall into this category; it would be extremely helpful if they could be identified;
- uncertainty over exactly what some ‘employment’ spells are (a number are spells on taxable benefits or employment options in New Deals); there is no indication of which spells fall into this category (it is understood that it is possible to establish the identity of some, but not all, spells using payroll numbers).

An indication of the extent to which there are problems with the employment data is the fact that roughly 20 per cent of individuals appear employed at the start of benefit and programme claims (see, for example, Figure 5.1 for Jobcentre Plus), a figure that DWP believes is too high. For this project, this matters only to the extent that Ethnic Minorities and Whites are **differentially** affected.

- The WPLS now contains earnings data. Had these been available in time for this project, they would have been useful, for example, in identifying poorly paid employment spells that might fall below the income tax threshold. However, the usefulness of the earnings information depends on its form – particularly how it is linked to employment spells. The source of earnings data is P14 forms. Not only does this make linking to specific employment spells difficult, it also means that additional information about the source of earnings (available, for example, from the P60) is not known. P45 forms include information about cumulative earnings to date and earnings in this employment. This information might be helpful in linking earnings to specific employment spells.

In all, ethnic parity estimates are obtained for 2,658 different Ethnic Minority subgroups<sup>190</sup> accessing a range of Jobcentre Plus services and programmes. The key results for each chapter are summarised below.

### **Jobcentre Plus overall (Chapter 5)**

For Jobcentre Plus customers who joined a relevant programme (or started claiming a relevant benefit) in 2003:

- In the majority of cases, reliable estimates of ethnic parity could not be found: it was simply not possible to reweight the White sample in such a way as to make it comparable with the Ethnic Minority group of interest. This included the results for Great Britain as a whole. The preferred matching estimates suggested a significant ethnic **premium** in employment outcomes and a significant ethnic **penalty** in benefit outcomes but the diagnostic tests suggest that these results cannot be relied upon: the two samples are just not similar enough.

<sup>190</sup> These subgroups are defined by Ethnic Minority group, programme/benefit accessed, gender and region.



- Amongst the subgroups that produced reliable estimates of ethnic parity, there did not seem to be much evidence to reject a finding of at least ethnic **parity** in employment outcomes and there were some groups for which a reliable and significant **premium** was observed – in accordance with the (albeit unreliable) overall finding. These results seem to indicate that Ethnic Minorities are at least as likely as White Jobcentre Plus customers to find employment in the year following entry into the sample.
- In terms of benefit receipt, on the other hand, the most predominant finding amongst Ethnic Minority subgroups for which reliable estimates were available was of a significant ethnic **penalty**; this was particularly prevalent amongst individuals of Black ethnic origin. This means that Ethnic Minority Jobcentre Plus customers are more likely than Whites to be claiming benefits in at least one of the 12 months following access to Jobcentre Plus services.

### **Incapacity Benefit (Chapter 6)**

For Jobcentre Plus customers who, in 2003, had a Work Focused Interview (WFI) as part of an IB claim:

- For all Ethnic Minorities in Great Britain, there is insufficient evidence to reject a finding of ethnic parity in employment outcomes, whilst there is a significant ethnic **penalty** in terms of benefit receipt. Once the sample is split by gender, there is evidence of a significant **premium** in employment outcomes for men, whilst there is insufficient evidence to reject a finding of ethnic parity in benefit receipt for women.
- For most regional subgroups, one cannot reject a finding of ethnic parity in both employment and benefit outcomes. This should not be taken as evidence against the significant results for the group at a more aggregated level, however, as many of the subgroups comprise a relatively small number of individuals and show evidence of insignificant differences rather than of genuine ethnic parity.

### **Income Support (Chapter 7)**

For Jobcentre Plus customers who, in 2003, had a WFI as part of an IS claim:

- For all Ethnic Minorities in Great Britain, there is evidence of a significant ethnic **premium** in employment outcomes for men and women: this means that male and female Ethnic Minority IS claimants are significantly more likely than otherwise-identical White IS claimants to be in work in at least one of the 12 months following WFI date. In terms of benefit receipt, for women (who make up about 60 per cent of the sample), there is a significant ethnic **penalty** in the months immediately following WFI date, after which a significant ethnic **premium** emerges (month 5 onwards). For men, a finding of ethnic parity in benefit receipt cannot be rejected.

- As was the case for IB, for most regional subgroups one cannot reject a finding of ethnic parity in either employment or benefit outcomes. This means that Ethnic Minority IS claimants are equally likely to be in work or claiming benefits as otherwise-identical White IS claimants in the year following WFI date.
- The few subgroups in which the overall finding of a significant **penalty** in benefit receipt was confirmed tended to be of Asian ethnic origin (although Asian subgroups also posted a number of significant **premiums**).

### **Jobseeker's Allowance (Chapter 8)**

For Jobcentre Plus customers who started a JSA claim in 2003:

- In many cases (including for all Ethnic Minorities living in Great Britain), it was not possible to reweight the White sample in such a way as to make it sufficiently comparable with the Ethnic Minority sample of interest. Thus, whilst the overall results suggest that there is a significant ethnic **premium** in employment outcomes and a significant ethnic **penalty** in terms of benefit receipt, the diagnostic tests indicate that the individuals being compared differed in a number of key ways, so these results should not be relied upon.
- Amongst the subgroups for which reliable estimates are available, the weight of evidence suggests that a finding of ethnic **parity** in employment outcomes cannot be rejected. This means that Ethnic Minorities and otherwise-identical Whites are equally likely to be in employment in the year following the start of their JSA claim.
- In terms of benefit receipt, on the other hand, the (albeit unreliable) overall finding of a significant ethnic **penalty** is replicated amongst the majority of subgroups for which reliable results are available. This is also true for most subgroups amongst all Ethnic Minority Jobcentre Plus customers (for which reliable results are available), perhaps suggesting that the overall results are being driven by those for JSA claimants.

### **New Deal for Lone Parents (Chapter 9)**

For Jobcentre Plus customers who started NDLP in 2003:

- For the overall estimate of ethnic parity amongst all Ethnic Minorities in Great Britain, the diagnostic tests indicate that a comparable White sample could not be created. Thus the finding of a significant **penalty** in both employment and benefit outcomes should not be relied upon.

- These overall (if unreliable) results are replicated amongst many of the subgroups under consideration<sup>191</sup> – particularly individuals of Asian ethnic origin.<sup>192</sup> This means that Ethnic Minorities are significantly less (more) likely than comparable White customers to be in employment (on benefits) in at least one of the 12 months following programme start date.
- The finding of a significant penalty in employment outcomes runs contrary to the findings for any other programmes/benefits discussed in this report and may perhaps warrant special attention from DWP.

### **New Deal for individuals aged 25 plus (Chapter 10)**

For Jobcentre Plus customers who started ND25+ in 2003:

- Again, the diagnostic tests generated by the matching process indicate that the results – of a significant **premium** in employment and benefit outcomes – for all Ethnic Minorities in Great Britain cannot be relied upon. These overall results appear to be driven by the outcomes for men (who make up around 83 per cent of the sample): they too show evidence of significant, if unreliable, premiums in both outcomes, while for women a finding of ethnic **parity** cannot be rejected.
- While significant and reliable **premiums** are found amongst a number of subgroups (particularly in employment outcomes and for individuals of Mixed, Chinese or other ethnic origin), the majority of results indicate that a finding of ethnic **parity** in employment and benefit outcomes (particularly amongst Asian participants) cannot be rejected. However, this still means that Ethnic Minority customers are at least as likely to be in employment (off benefits) as Whites throughout the year following programme entry.

### **New Deal for Young People (Chapter 11)**

For Jobcentre Plus customers who started NDYP in 2003:

- As with other programmes under analysis in this report, the diagnostic tests for the overall findings (for all Ethnic Minorities in Great Britain) are unreliable: the Ethnic Minority and White samples remain fundamentally incomparable in a number of key ways, such that the finding of a significant **premium** in employment outcomes and a significant **penalty** in benefit receipt cannot be relied upon.
- For Black ethnic subgroups, there are predominant findings of not rejecting ethnic parity in employment outcomes and of penalties in benefit outcomes.

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<sup>191</sup> By contrast, for many of the other programmes/benefits discussed in this report, the overall findings were **not** replicated by a majority of smaller subgroups.

<sup>192</sup> Where significant penalties are not observed, a finding of ethnic parity could generally not be rejected.

- Much of the evidence on penalties is being driven by the outcomes of Black Caribbeans (particularly men), who experience penalties for both employment and benefit outcomes.

Whilst the fundamental incomparability of the Ethnic Minority and White customer groups has meant that reliable results have only been obtained for a frustratingly small number of groups, there are, nevertheless, some key general messages that should be drawn from the analysis and that should be borne in mind in future research:

- The characteristics of different Ethnic Minority groups and White customers accessing the range of Jobcentre Plus programmes and services are different. These differences need to be taken into account **in an appropriate way** in order to obtain reliable estimates of ethnic parity – otherwise, policy conclusions and decisions will be based on potentially misleading results.
- If a White comparison group cannot be found, it is much better to acknowledge this fact rather than to produce an estimate that might be wrong. The report has clearly shown that in most cases where a good comparison group could not be found, different estimation methods gave very different results. Clearly, those Ethnic Minority groups for which no comparison could be found need further investigation to ensure they are getting appropriate Jobcentre Plus provision, but **empirical** methods cannot be relied on to provide a **reliable** estimate of the extent of ethnic parity. It is simply not possible to know how the Ethnic Minority group would have been treated if they were White, because none of the empirical methods available can construct the appropriate counterfactual to measure this **in a reliable way**.
- Findings of ethnic penalties, where reliable, tend to be concentrated in Black ethnic male subgroups, particularly Black Caribbean males, and the reasons behind this need further investigation.

### Overarching conclusions

This final section attempts to draw together the results for each of the benefits and programmes to provide some overarching conclusions. This is difficult because:

- relatively few subgroups have reliable results across the majority of programmes and benefits;
- JSA claimants make up the majority of the Jobcentre Plus sample, so it would not be surprising if results for these two groups were similar;
- there is a danger that overarching conclusions are dominated by benefits/programmes with the largest number of reliable results (Jobcentre Plus and JSA). This highlights the importance of looking separately at each benefit/programme;
- ethnic parity could not be rejected for many IB and IS subgroups but this may be due to small sample sizes rather than true parity.

For each benefit and programme, Tables 12.1 to 12.3 give:

- the number of subgroups for which reliable results exist;
- the percentage of these results that are penalties;
- the percentage that are premiums.

Results are presented separately for employment and benefit outcomes and only those results that are reliable are included.

To ensure the patterns picked up are **across** benefits/programmes, only those cases where there are at least five reliable results for each of at least five benefits/programmes are considered. This is satisfied for the overall results but less often for more disaggregated results.

Although the subgroups differ vastly in size, no account is taken of this in the tables. It should also be noted that some subgroups are subsets of others (for example, 'females' and 'males' together make up 'any'). Any conclusions drawn from the tables must, therefore, be used with caution.

Table 12.1 considers all subgroups together. For employment, most benefits/programmes exhibit a higher fraction of premiums than penalties. The main exception is NDLP, where there are almost no premiums and a substantial number of penalties. For benefits, the pattern is less clear but NDLP again stands out for its high fraction of penalties.

**Table 12.1 Comparison of results across programmes**

|                            | Jobcentre Plus | IB | IS  | JSA | NDLP | ND25+ | NDYP |
|----------------------------|----------------|----|-----|-----|------|-------|------|
| <b>Employment</b>          |                |    |     |     |      |       |      |
| <i>Number of subgroups</i> | 458            | 79 | 107 | 406 | 83   | 61    | 68   |
| Percentage of penalties    | 22             | 4  | 0   | 29  | 35   | 0     | 15   |
| Percentage of premiums     | 32             | 10 | 19  | 27  | 0    | 31    | 24   |
| <b>Benefits</b>            |                |    |     |     |      |       |      |
| <i>Number of subgroups</i> | 322            | 71 | 102 | 341 | 93   | 63    | 56   |
| Percentage of penalties    | 38             | 27 | 23  | 33  | 47   | 24    | 45   |
| Percentage of premiums     | 43             | 7  | 27  | 48  | 1    | 27    | 23   |

Table 12.2 splits subgroups by sex. Cells that have not been shaded should be ignored because the figures relate to fewer than five subgroups. For employment, males tend to have a higher fraction of premiums than penalties, whereas for females the opposite is more often true. For both employment and benefits, the

high fraction of NDLP penalties again stands out. For benefits, there is no clear pattern across programmes/benefits in general.

**Table 12.2 Comparison of results across programmes, split by sex**

|                            | Jobcentre Plus | IB | IS | JSA | NDLP | ND25+ | NDYP |
|----------------------------|----------------|----|----|-----|------|-------|------|
| <b>Employment</b>          |                |    |    |     |      |       |      |
| <b>Any</b>                 |                |    |    |     |      |       |      |
| <i>Number of subgroups</i> | 171            | 41 | 54 | 153 | 40   | 26    | 28   |
| Percentage of penalties    | 25             | 0  | 0  | 30  | 35   | 0     | 18   |
| Percentage of premiums     | 36             | 2  | 17 | 32  | 0    | 31    | 25   |
| <b>Males</b>               |                |    |    |     |      |       |      |
| <i>Number of subgroups</i> | 163            | 24 | 22 | 142 | 2    | 26    | 22   |
| Percentage of penalties    | 19             | 4  | 0  | 27  | 0    | 0     | 18   |
| Percentage of premiums     | 40             | 29 | 27 | 30  | 0    | 42    | 27   |
| <b>Females</b>             |                |    |    |     |      |       |      |
| <i>Number of subgroups</i> | 124            | 14 | 31 | 111 | 41   | 9     | 18   |
| Percentage of penalties    | 23             | 14 | 0  | 31  | 37   | 0     | 6    |
| Percentage of premiums     | 18             | 0  | 16 | 15  | 0    | 0     | 17   |
| <b>Benefits</b>            |                |    |    |     |      |       |      |
| <b>Any</b>                 |                |    |    |     |      |       |      |
| <i>Number of subgroups</i> | 111            | 38 | 49 | 121 | 44   | 28    | 23   |
| Percentage of penalties    | 48             | 24 | 27 | 40  | 48   | 29    | 57   |
| Percentage of premiums     | 35             | 11 | 31 | 49  | 0    | 32    | 26   |
| <b>Males</b>               |                |    |    |     |      |       |      |
| <i>Number of subgroups</i> | 114            | 22 | 22 | 124 | 2    | 26    | 22   |
| Percentage of penalties    | 39             | 27 | 9  | 35  | 0    | 27    | 41   |
| Percentage of premiums     | 40             | 5  | 14 | 43  | 0    | 31    | 23   |
| <b>Females</b>             |                |    |    |     |      |       |      |
| <i>Number of subgroups</i> | 97             | 11 | 31 | 96  | 47   | 9     | 11   |
| Percentage of penalties    | 25             | 36 | 26 | 20  | 49   | 0     | 27   |
| Percentage of premiums     | 56             | 0  | 32 | 55  | 2    | 0     | 18   |

Table 12.3 splits subgroups by ethnicity. Again, cells that have not been shaded should be ignored. For employment, Blacks exhibit more premiums than penalties for the majority of benefits/programmes. Among Asians, there are generally few employment penalties or premiums, apart from for NDLP, which shows a substantial fraction of penalties.

**Table 12.3 Comparison of results across programmes, split by ethnicity**

|                                 | Jobcentre Plus | IB | IS | JSA | NDLP | ND25+ | NDYP |
|---------------------------------|----------------|----|----|-----|------|-------|------|
| <b>Employment</b>               |                |    |    |     |      |       |      |
| <b>Ethnic minorities</b>        |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 46             | 21 | 24 | 38  | 28   | 15    | 6    |
| Percentage% of penalties        | 11             | 0  | 0  | 26  | 32   | 0     | 0    |
| Percentage of premiums          | 24             | 10 | 38 | 16  | 0    | 40    | 50   |
| <b>Black</b>                    |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 43             | 6  | 9  | 35  | 7    | 3     | 8    |
| Percentage of penalties         | 16             | 0  | 0  | 11  | 0    | 0     | 38   |
| Percentage of premiums          | 44             | 0  | 33 | 60  | 0    | 33    | 0    |
| <b>Black Caribbean</b>          |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 30             | 4  | 6  | 27  | 2    | 9     | 15   |
| Percentage of penalties         | 33             | 0  | 0  | 33  | 0    | 0     | 33   |
| Percentage of premiums          | 3              | 0  | 17 | 11  | 0    | 0     | 7    |
| <b>Asian</b>                    |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 15             | 10 | 12 | 12  | 6    | 3     | 0    |
| Percentage of penalties         | 20             | 10 | 0  | 0   | 83   | 0     | –    |
| Percentage of premiums          | 33             | 10 | 8  | 0   | 0    | 0     | –    |
| <b>Mixed, Chinese and other</b> |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 50             | 5  | 6  | 42  | 8    | 9     | 10   |
| Percentage of penalties         | 8              | 0  | 0  | 14  | 25   | 0     | 20   |
| Percentage of premiums          | 20             | 0  | 17 | 10  | 0    | 33    | 50   |
| <b>Other</b>                    |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 35             | 3  | 5  | 28  | 4    | 8     | 10   |
| Percentage of penalties         | 6              | 0  | 0  | 7   | 50   | 0     | 0    |
| Percentage of premiums          | 20             | 0  | 20 | 14  | 0    | 88    | 20   |
| <b>Benefits</b>                 |                |    |    |     |      |       |      |
| <b>Ethnic minorities</b>        |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 36             | 21 | 25 | 27  | 26   | 16    | 4    |
| Percentage of penalties         | 58             | 33 | 32 | 44  | 42   | 13    | 50   |
| Percentage of premiums          | 6              | 5  | 28 | 11  | 0    | 19    | 0    |
| <b>Black</b>                    |                |    |    |     |      |       |      |
| <i>Number of subgroups</i>      | 32             | 6  | 9  | 24  | 13   | 6     | 9    |
| Percentage of penalties         | 97             | 33 | 11 | 96  | 46   | 33    | 89   |
| Percentage of premiums          | 3              | 0  | 0  | 0   | 0    | 0     | 0    |

Continued

Table 12.3 Continued

|                                 | Jobcentre Plus | IB  | IS | JSA | NDLP | ND25+ | NDYP |
|---------------------------------|----------------|-----|----|-----|------|-------|------|
| <b>Black Caribbean</b>          |                |     |    |     |      |       |      |
| <i>Number of subgroups</i>      | 14             | 4   | 5  | 14  | 7    | 9     | 15   |
| Percentage of penalties         | 93             | 50  | 20 | 86  | 71   | 22    | 60   |
| Percentage of premiums          | 0              | 0   | 0  | 0   | 0    | 0     | 0    |
| <b>Asian</b>                    |                |     |    |     |      |       |      |
| <i>Number of subgroups</i>      | 8              | 8   | 10 | 8   | 6    | 0     | 0    |
| Percentage of penalties         | 50             | 13  | 20 | 50  | 67   | –     | –    |
| Percentage of premiums          | 38             | 25  | 40 | 0   | 0    | –     | –    |
| <b>Mixed, Chinese and Other</b> |                |     |    |     |      |       |      |
| <i>Number of subgroups</i>      | 34             | 5   | 6  | 30  | 7    | 9     | 4    |
| Percentage of penalties         | 59             | 40  | 0  | 53  | 57   | 22    | 25   |
| Percentage of premiums          | 3              | 0   | 0  | 7   | 0    | 56    | 25   |
| <b>Other</b>                    |                |     |    |     |      |       |      |
| <i>Number of subgroups</i>      | 24             | 3   | 5  | 23  | 4    | 8     | 6    |
| Percentage of penalties         | 42             | 100 | 0  | 57  | 25   | 13    | 0    |
| Percentage of premiums          | 29             | 0   | 0  | 17  | 0    | 63    | 50   |

For benefits, by far the most noticeable is the high fraction of penalties across all benefits/programmes for both Blacks and Black Caribbeans. Benefit penalties also predominate for Ethnic Minorities overall, for Mixed, Chinese and other Ethnic Minorities and for other Ethnic Minorities. For Asians, there is no clear pattern since, for IS and IB, there are substantial fractions of premiums.

Disaggregation by region was possible for only four large regions, so provided little in addition to what has already been presented above. Consequently, these results are not reported.



# Appendix Tables

**Table A.1 Jobcentre Plus overall parity estimates using different methods for all Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.086*** | -0.009*** | -0.014*** | 0.019***        | -0.009*** | -0.011***     |
| Employed in month 6                                  | -0.098*** | -0.010*** | -0.017*** | 0.025***        | -0.014*** | -0.015***     |
| Employed in month 9                                  | -0.095*** | -0.007*** | -0.015*** | 0.034***        | -0.012*** | -0.014***     |
| Employed in month 12                                 | -0.089*** | -0.004*** | -0.011*** | 0.038***        | -0.022*** | -0.011***     |
| On benefit in month 3                                | 0.099***  | 0.043***  | 0.046***  | 0.035***        | 0.047***  | 0.049***      |
| On benefit in month 6                                | 0.091***  | 0.033***  | 0.038***  | 0.020***        | 0.038***  | 0.041***      |
| On benefit in month 9                                | 0.076***  | 0.022***  | 0.029***  | 0.004           | 0.030***  | 0.031***      |
| On benefit in month 12                               | 0.059***  | 0.013***  | 0.021***  | -0.006*         | 0.034***  | 0.023***      |
| N – Ethnic Minorities                                | 210,360   |           |           |                 |           |               |
| N – Whites   | 1,651,540 |           |           |                 |           |               |
| Median bias  | 12.6      |           |           | 3.2             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 17.4%         |
| Whites   |           |           |           |                 |           | 9.1%          |

Notes:

- \*\*\* indicates that mean is significantly different from corresponding mean for White sample at 1% level of significance, \*\* indicates that mean is significantly different from corresponding mean for White sample at 5% level of significance, and \* indicates that mean is significantly different from corresponding mean for White sample at 10% level of significance.
- In Kernel matching column: CS(xx) means that xx% of the Ethnic Minority sample was lost to common support (where xx will always be 95 or less); UC(xx) means that even after matching, xx covariates remain unbalanced at the 5% significance level; UH(E,S,B) means that after matching, variables in brackets were not balanced in at least one of the six months prior to entering the Jobcentre Plus sample (at the 5% significance level).

**Table A.2 Jobcentre Plus overall parity estimates using different methods for Ethnic Minorities compared to Whites: Males**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.082*** | -0.003*   | -0.008*** | 0.024***        | -0.006**  | -0.007***     |
| Employed in month 6                                  | -0.097*** | -0.005*** | -0.012*** | 0.030***        | -0.011*** | -0.013***     |
| Employed in month 9                                  | -0.096*** | -0.003**  | -0.012*** | 0.037***        | -0.011*** | -0.013***     |
| Employed in month 12                                 | -0.090*** | -0.001    | -0.009*** | 0.042***        | -0.021*** | -0.010***     |
| On benefit in month 3                                | 0.099***  | 0.041***  | 0.043***  | 0.032***        | 0.048***  | 0.048***      |
| On benefit in month 6                                | 0.093***  | 0.031***  | 0.037***  | 0.016***        | 0.037***  | 0.041***      |
| On benefit in month 9                                | 0.077***  | 0.019***  | 0.027***  | 0.002           | 0.025***  | 0.029***      |
| On benefit in month 12                               | 0.059***  | 0.009***  | 0.018***  | -0.009**        | 0.029***  | 0.019***      |
| N – Ethnic Minorities                                | 138,120   |           |           |                 |           |               |
| N – Whites   | 1,055,060 |           |           |                 |           |               |
| Median bias  | 12.6      |           |           | 2.4             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 16.5%         |
| Whites   |           |           |           |                 |           | 8.3%          |

Notes: See notes to Table A.1.

**Table A.3 Jobcentre Plus overall parity estimates using different methods for all Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.092*** | -0.020*** | -0.024*** | 0.005           | -0.014*** | -0.019***     |
| Employed in month 6                                  | -0.097*** | -0.019*** | -0.025*** | 0.011           | -0.019*** | -0.018***     |
| Employed in month 9                                  | -0.091*** | -0.013*** | -0.019*** | 0.024***        | -0.014*** | -0.013***     |
| Employed in month 12                                 | -0.085*** | -0.010*** | -0.015*** | 0.028***        | -0.023*** | -0.010***     |
| On benefit in month 3                                | 0.098***  | 0.046***  | 0.050***  | 0.044***        | 0.044***  | 0.051***      |
| On benefit in month 6                                | 0.085***  | 0.034***  | 0.039***  | 0.033***        | 0.038***  | 0.039***      |
| On benefit in month 9                                | 0.074***  | 0.026***  | 0.031***  | 0.013*          | 0.037***  | 0.034***      |
| On benefit in month 12                               | 0.060***  | 0.020***  | 0.025***  | 0.005           | 0.040***  | 0.029***      |
| N – Ethnic Minorities                                | 72,240    |           |           |                 |           |               |
| N – Whites   | 596,460   |           |           |                 |           |               |
| Median bias  | 12.9      |           |           | 3.8             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 19.1%         |
| Whites   |           |           |           |                 |           | 10.6%         |

Notes: See notes to Table A.1.

**Table A.4 Jobcentre Plus overall parity estimates using different methods for Black Ethnic Minorities: Any**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.080*** | 0.005*** | 0.005*** | 0.022***        | 0.017***  | 0.010***      |
| Employed in month 6                                  | -0.108*** | -0.003*  | -0.003   | 0.026***        | 0.002     | -0.000        |
| Employed in month 9                                  | -0.109*** | -0.003   | -0.003   | 0.032***        | -0.003    | -0.001        |
| Employed in month 12                                 | -0.106*** | -0.001   | -0.001   | 0.038***        | -0.016*** | 0.001         |
| On benefit in month 3                                | 0.143***  | 0.048*** | 0.045*** | 0.049***        | 0.045***  | 0.048***      |
| On benefit in month 6                                | 0.160***  | 0.054*** | 0.053*** | 0.040***        | 0.049***  | 0.053***      |
| On benefit in month 9                                | 0.158***  | 0.052*** | 0.052*** | 0.032***        | 0.051***  | 0.051***      |
| On benefit in month 12                               | 0.146***  | 0.048*** | 0.050*** | 0.023***        | 0.058***  | 0.048***      |
| N – Ethnic Minorities                                | 74,260    |          |          |                 |           |               |
| N – Whites   | 1,651,540 |          |          |                 |           |               |
| Median bias  | 15.6      |          |          | 3.7             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 15.0%         |
| Whites   |           |          |          |                 |           | 9.1%          |

Notes: See notes to Table A.1.

**Table A.5 Jobcentre Plus overall parity estimates using different methods for Black Ethnic Minorities: Males**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.086*** | 0.007*** | 0.008*** | 0.020***        | 0.015***  | 0.011***      |
| Employed in month 6                                  | -0.117*** | -0.003   | -0.002   | 0.018***        | 0.001     | -0.002        |
| Employed in month 9                                  | -0.122*** | -0.005** | -0.006** | 0.021***        | -0.005*   | -0.005*       |
| Employed in month 12                                 | -0.119*** | -0.005** | -0.005*  | 0.026***        | -0.018*** | -0.005*       |
| On benefit in month 3                                | 0.141***  | 0.044*** | 0.042*** | 0.045***        | 0.045***  | 0.044***      |
| On benefit in month 6                                | 0.160***  | 0.053*** | 0.052*** | 0.039***        | 0.048***  | 0.052***      |
| On benefit in month 9                                | 0.157***  | 0.051*** | 0.052*** | 0.032***        | 0.048***  | 0.050***      |
| On benefit in month 12                               | 0.142***  | 0.045*** | 0.048*** | 0.021***        | 0.055***  | 0.045***      |
| N – Ethnic Minorities                                | 47,740    |          |          |                 |           |               |
| N – Whites   | 1,055,060 |          |          |                 |           |               |
| Median bias  | 15.7      |          |          | 3.5             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 14.1%         |
| Whites   |           |          |          |                 |           | 8.3%          |

Notes: See notes to Table A.1.

**Table A.6 Jobcentre Plus overall parity estimates using different methods for Black Ethnic Minorities: Females**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.069*** | 0.001    | 0.002    | 0.015           | 0.022***  | 0.011***      |
| Employed in month 6                                  | -0.090*** | -0.002   | -0.001   | 0.025**         | 0.007*    | 0.006         |
| Employed in month 9                                  | -0.086*** | 0.004    | 0.004    | 0.040***        | 0.006     | 0.011***      |
| Employed in month 12                                 | -0.080*** | 0.009*** | 0.009*** | 0.050***        | -0.009*   | 0.015***      |
| On benefit in month 3                                | 0.146***  | 0.051*** | 0.048*** | 0.073***        | 0.043***  | 0.049***      |
| On benefit in month 6                                | 0.160***  | 0.053*** | 0.051*** | 0.061***        | 0.049***  | 0.050***      |
| On benefit in month 9                                | 0.160***  | 0.049*** | 0.048*** | 0.040***        | 0.054***  | 0.049***      |
| On benefit in month 12                               | 0.151***  | 0.051*** | 0.051*** | 0.043***        | 0.061***  | 0.050***      |
| N – Ethnic Minorities                                | 26,520    |          |          |                 |           |               |
| N – Whites   | 596,460   |          |          |                 |           |               |
| Median bias  | 15.2      |          |          | 4.0             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 16.8%         |
| Whites   |           |          |          |                 |           | 10.6%         |

Notes: See notes to Table A.1.

**Table A.7 Jobcentre Plus overall parity estimates using different methods for Asian Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.089*** | -0.031*** | -0.037*** | 0.007           | -0.033*** | -0.031***     |
| Employed in month 6                                  | -0.086*** | -0.026*** | -0.035*** | 0.021**         | -0.029*** | -0.030***     |
| Employed in month 9                                  | -0.078*** | -0.020*** | -0.031*** | 0.038***        | -0.021*** | -0.026***     |
| Employed in month 12                                 | -0.070*** | -0.016*** | -0.025*** | 0.043***        | -0.031*** | -0.021***     |
| On benefit in month 3                                | 0.075***  | 0.053***  | 0.061***  | 0.025***        | 0.058***  | 0.060***      |
| On benefit in month 6                                | 0.045***  | 0.033***  | 0.042***  | 0.015*          | 0.038***  | 0.041***      |
| On benefit in month 9                                | 0.018***  | 0.014***  | 0.024***  | -0.011          | 0.021***  | 0.023***      |
| On benefit in month 12                               | -0.002    | 0.003     | 0.012***  | -0.023***       | 0.025***  | 0.012***      |
| N – Ethnic Minorities                                | 85,320    |           |           |                 |           |               |
| N – Whites   | 1,651,540 |           |           |                 |           |               |
| Median bias  | 12.9      |           |           | 3.1             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 16.9%         |
| Whites   |           |           |           |                 |           | 9.1%          |

Notes: See notes to Table A.1.



**Table A.8 Jobcentre Plus overall parity estimates using different methods for Asian Ethnic Minorities: Males**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.076*** | -0.025*** | -0.031*** | 0.022**         | -0.027*** | -0.024***     |
| Employed in month 6                                  | -0.077*** | -0.021*** | -0.030*** | 0.035***        | -0.023*** | -0.025***     |
| Employed in month 9                                  | -0.070*** | -0.016*** | -0.028*** | 0.047***        | -0.017*** | -0.023***     |
| Employed in month 12                                 | -0.062*** | -0.012*** | -0.023*** | 0.053***        | -0.029*** | -0.018***     |
| On benefit in month 3                                | 0.078***  | 0.054***  | 0.062***  | 0.009           | 0.062***  | 0.061***      |
| On benefit in month 6                                | 0.053***  | 0.036***  | 0.046***  | 0.006           | 0.041***  | 0.044***      |
| On benefit in month 9                                | 0.025***  | 0.016***  | 0.028***  | -0.016          | 0.019***  | 0.024***      |
| On benefit in month 12                               | 0.006***  | 0.006**   | 0.017***  | -0.023**        | 0.024***  | 0.013***      |
| N – Ethnic Minorities                                | 56,020    |           |           |                 |           |               |
| N – Whites   | 1,055,060 |           |           |                 |           |               |
| Median bias  | 12.6      |           |           | 3.0             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 14.7%         |
| Whites   |           |           |           |                 |           | 8.3%          |

Notes: See notes to Table A.1.

**Table A.9 Jobcentre Plus overall parity estimates using different methods for Asian Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.110*** | -0.042*** | -0.049*** | -0.020          | -0.048*** | -0.048***     |
| Employed in month 6                                  | -0.100*** | -0.036*** | -0.044*** | -0.006          | -0.043*** | -0.040***     |
| Employed in month 9                                  | -0.090*** | -0.027*** | -0.035*** | 0.024*          | -0.029*** | -0.032***     |
| Employed in month 12                                 | -0.082*** | -0.023*** | -0.028*** | 0.028**         | -0.033*** | -0.027***     |
| On benefit in month 3                                | 0.067***  | 0.054***  | 0.061***  | 0.047***        | 0.053***  | 0.062***      |
| On benefit in month 6                                | 0.029***  | 0.028***  | 0.034***  | 0.033**         | 0.034***  | 0.035***      |
| On benefit in month 9                                | 0.003     | 0.011***  | 0.017***  | -0.003          | 0.025***  | 0.022***      |
| On benefit in month 12                               | -0.017*** | -0.002    | 0.001     | -0.020          | 0.024***  | 0.009**       |
| N – Ethnic Minorities                                | 29,300    |           |           |                 |           |               |
| N – Whites   | 596,460   |           |           |                 |           |               |
| Median bias  | 13.4      |           |           | 3.4             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 21.1%         |
| Whites   |           |           |           |                 |           | 10.6%         |

Notes: See notes to Table A.1.

**Table A.10 Jobcentre Plus overall parity estimates using different methods for other Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.089*** | -0.002    | -0.003    | 0.008***        | -0.006**  | -0.009***     |
| Employed in month 6                                  | -0.103*** | -0.005*** | -0.006*** | 0.011***        | -0.014*** | -0.014***     |
| Employed in month 9                                  | -0.103*** | -0.005**  | -0.007*** | 0.015***        | -0.012*** | -0.013***     |
| Employed in month 12                                 | -0.098*** | -0.003    | -0.004*   | 0.019***        | -0.018*** | -0.010***     |
| On benefit in month 3                                | 0.076***  | 0.023***  | 0.021***  | 0.035***        | 0.030***  | 0.031***      |
| On benefit in month 6                                | 0.066***  | 0.011***  | 0.012***  | 0.018***        | 0.018***  | 0.021***      |
| On benefit in month 9                                | 0.053***  | 0.003     | 0.004*    | 0.004           | 0.011***  | 0.012***      |
| On benefit in month 12                               | 0.036***  | -0.006*** | -0.005**  | -0.006**        | 0.010***  | 0.003         |
| N – Ethnic Minorities                                | 507,80    |           |           |                 |           |               |
| N – Whites   | 1,651,540 |           |           |                 |           |               |
| Median bias  | 11.4      |           |           | 2.1             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 21.5%         |
| Whites   |           |           |           |                 |           | 9.1%          |

Notes: See notes to Table A.1.

**Table A.11 Jobcentre Plus overall parity estimates using different methods for other Ethnic Minorities: Males**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.083*** | 0.007***  | 0.007***  | 0.012***        | -0.002    | -0.004        |
| Employed in month 6                                  | -0.100*** | 0.005**   | 0.005*    | 0.015***        | -0.011*** | -0.010***     |
| Employed in month 9                                  | -0.101*** | 0.006**   | 0.004*    | 0.019***        | -0.008**  | -0.009***     |
| Employed in month 12                                 | -0.095*** | 0.009***  | 0.008***  | 0.023***        | -0.012*** | -0.004        |
| On benefit in month 3                                | 0.076***  | 0.018***  | 0.015***  | 0.031***        | 0.029***  | 0.029***      |
| On benefit in month 6                                | 0.066***  | 0.003     | 0.003     | 0.012***        | 0.013***  | 0.017***      |
| On benefit in month 9                                | 0.050***  | -0.008*** | -0.008*** | -0.004          | 0.002     | 0.004         |
| On benefit in month 12                               | 0.029***  | -0.021*** | -0.021*** | -0.016***       | -0.004    | -0.009***     |
| N – Ethnic Minorities                                | 34,360    |           |           |                 |           |               |
| N – Whites   | 1,055,060 |           |           |                 |           |               |
| Median bias  | 11.2      |           |           | 2.0             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 22.6%         |
| Whites   |           |           |           |                 |           | 8.3%          |

Notes: See notes to Table A.1.

**Table A.12 Jobcentre Plus overall parity estimates using different methods for other Ethnic Minorities:  
Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.095*** | -0.023*** | -0.024*** | 0.002           | -0.015*** | -0.018***     |
| Employed in month 6                                  | -0.102*** | -0.028*** | -0.028*** | 0.004           | -0.021*** | -0.020***     |
| Employed in month 9                                  | -0.100*** | -0.028*** | -0.027*** | 0.009           | -0.019*** | -0.020***     |
| Employed in month 12                                 | -0.097*** | -0.027*** | -0.026*** | 0.012           | -0.029*** | -0.020***     |
| On benefit in month 3                                | 0.075***  | 0.031***  | 0.032***  | 0.034***        | 0.031***  | 0.034***      |
| On benefit in month 6                                | 0.064***  | 0.026***  | 0.028***  | 0.024***        | 0.027***  | 0.026***      |
| On benefit in month 9                                | 0.060***  | 0.027***  | 0.028***  | 0.018**         | 0.028***  | 0.028***      |
| On benefit in month 12                               | 0.050***  | 0.024***  | 0.027***  | 0.010           | 0.032***  | 0.027***      |
| N – Ethnic Minorities                                | 16,420    |           |           |                 |           |               |
| N – Whites   | 596,460   |           |           |                 |           |               |
| Median bias  | 11.4      |           |           | 2.3             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 19.2%         |
| Whites   |           |           |           |                 |           | 10.6%         |

Notes: See notes to Table A.1.

Table A.13 IB overall parity estimates using different methods for all Ethnic Minorities: Any

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.060*** | -0.006   | -0.003   | -0.003          | 0.002     | 0.003         |
| Employed in month 6                                  | -0.069*** | -0.006   | -0.004   | -0.004          | 0.003     | 0.000         |
| Employed in month 9                                  | -0.070*** | 0.002    | 0.002    | 0.004           | 0.006     | 0.006         |
| Employed in month 12                                 | -0.070*** | 0.004    | 0.006    | 0.006           | 0.008     | 0.010         |
| On benefit in month 3                                | 0.022***  | 0.008*** | 0.006*** | 0.004           | 0.013**   | 0.011**       |
| On benefit in month 6                                | 0.055***  | 0.020*** | 0.017*** | 0.012**         | 0.021***  | 0.021***      |
| On benefit in month 9                                | 0.066***  | 0.021*** | 0.018*** | 0.014*          | 0.015*    | 0.019***      |
| On benefit in month 12                               | 0.064***  | 0.011*   | 0.010    | 0.007           | 0.006     | 0.012         |
| N – Ethnic Minorities                                | 5,660     |          |          |                 |           |               |
| N – Whites   | 66,920    |          |          |                 |           |               |
| Median bias  | 11.1      |          |          | 0.9             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(0)UC(28)     |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 12.8%         |
| Whites   |           |          |          |                 |           | 7.3%          |

Notes: See notes to Table A.1.

**Table A.14 IB overall parity estimates using different methods for Ethnic Minorities compared to Whites:  
Males**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.049*** | -0.004   | -0.000   | 0.002           | -0.001    | 0.000         |
| Employed in month 6                                  | -0.056*** | 0.001    | 0.003    | 0.006           | 0.004     | 0.003         |
| Employed in month 9                                  | -0.058*** | 0.009    | 0.010    | 0.016*          | 0.010     | 0.009         |
| Employed in month 12                                 | -0.058*** | 0.013*   | 0.016**  | 0.019**         | 0.021**   | 0.017*        |
| On benefit in month 3                                | 0.025***  | 0.010*** | 0.008*** | 0.006           | 0.019**   | 0.015**       |
| On benefit in month 6                                | 0.055***  | 0.018*** | 0.014**  | 0.008           | 0.028***  | 0.020**       |
| On benefit in month 9                                | 0.069***  | 0.023*** | 0.021*** | 0.016*          | 0.017     | 0.024***      |
| On benefit in month 12                               | 0.063***  | 0.009    | 0.008    | 0.003           | -0.008    | 0.013         |
| N – Ethnic Minorities                                | 3,480     |          |          |                 |           |               |
| N – Whites   | 40,880    |          |          |                 |           |               |
| Median bias  | 9.3       |          |          | 1.1             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(0)UC(19)     |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 11.2%         |
| Whites   |           |          |          |                 |           | 6.8%          |

Notes: See notes to Table A.1.

**Table A.15 IB overall parity estimates using different methods for all Ethnic Minorities: Females**

|  | Raw       | OLS      | FILM    | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|---------|-----------------|-----------|---------------|
| All  |           |          |         |                 |           |               |
| Employed in month 3                                  | -0.077*** | -0.009   | -0.009  | -0.010          | 0.009     | 0.006         |
| Employed in month 6                                  | -0.089*** | -0.016*  | -0.015* | -0.017          | 0.002     | -0.004        |
| Employed in month 9                                  | -0.090*** | -0.012   | -0.013  | -0.013          | -0.005    | -0.001        |
| Employed in month 12                                 | -0.090*** | -0.013   | -0.013  | -0.013          | -0.017    | -0.003        |
| On benefit in month 3                                | 0.018***  | 0.003    | 0.004   | 0.002           | 0.004     | 0.006         |
| On benefit in month 6                                | 0.055***  | 0.022*** | 0.020** | 0.016*          | 0.011     | 0.025**       |
| On benefit in month 9                                | 0.062***  | 0.018*   | 0.015   | 0.010           | 0.014     | 0.016         |
| On benefit in month 12                               | 0.065***  | 0.014    | 0.014   | 0.012           | 0.034**   | 0.015         |
| N – Ethnic Minorities                                | 2,200     |          |         |                 |           |               |
| N – Whites   | 26,040    |          |         |                 |           |               |
| Median bias  | 13.5      |          |         | 1.5             |           |               |
| Reliability of kernel matching                       |           |          |         | CS(0)UC(0)      |           |               |
| Percentage of sample lost due to incomplete history: |           |          |         |                 |           |               |
| Ethnic minorities                                    |           |          |         |                 |           | 15.5%         |
| Whites   |           |          |         |                 |           | 8.0%          |

Notes: See notes to Table A.1.



**Table A.16 IB overall parity estimates using different methods for Black Ethnic Minorities: Any**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.034*** | 0.011    | 0.011    | 0.012           | 0.018     | 0.019*        |
| Employed in month 6                                  | -0.058*** | 0.006    | 0.005    | 0.003           | 0.017     | 0.012         |
| Employed in month 9                                  | -0.064*** | 0.013    | 0.012    | 0.011           | 0.013     | 0.014         |
| Employed in month 12                                 | -0.054*** | 0.029*** | 0.027*** | 0.027           | 0.017     | 0.026**       |
| On benefit in month 3                                | 0.038***  | 0.009*** | 0.009*** | 0.012*          | 0.004     | 0.010         |
| On benefit in month 6                                | 0.095***  | 0.013*   | 0.007    | 0.038***        | 0.011     | 0.005         |
| On benefit in month 9                                | 0.129***  | 0.019**  | 0.011    | 0.029*          | 0.005     | 0.009         |
| On benefit in month 12                               | 0.128***  | 0.010    | 0.004    | 0.023           | 0.009     | 0.007         |
| N – Ethnic Minorities                                | 1,760     |          |          |                 |           |               |
| N – Whites   | 66,920    |          |          |                 |           |               |
| Median bias  | 13.1      |          |          | 3.0             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(2)UC(23)     |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 9.1%          |
| Whites   |           |          |          |                 |           | 7.3%          |

Notes: See notes to Table A.1.

**Table A.17** IB overall parity estimates using different methods for Black Ethnic Minorities: Males

|  | Raw       | OLS     | FILM    | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|---------|---------|-----------------|-----------|---------------|
| All  |           |         |         |                 |           |               |
| Employed in month 3                                  | -0.043*** | 0.008   | 0.008   | 0.000           | 0.005     | 0.007         |
| Employed in month 6                                  | -0.066*** | 0.002   | 0.003   | -0.003          | 0.002     | 0.004         |
| Employed in month 9                                  | -0.075*** | 0.012   | 0.011   | 0.010           | 0.006     | 0.007         |
| Employed in month 12                                 | -0.066*** | 0.027** | 0.025** | 0.027           | 0.029**   | 0.020         |
| On benefit in month 3                                | 0.041***  | 0.008** | 0.008** | 0.015**         | -0.004    | 0.011         |
| On benefit in month 6                                | 0.098***  | 0.011   | 0.004   | 0.026*          | 0.019     | 0.003         |
| On benefit in month 9                                | 0.137***  | 0.020*  | 0.012   | 0.025           | 0.014     | 0.011         |
| On benefit in month 12                               | 0.139***  | 0.013   | 0.006   | 0.025           | -0.011    | 0.008         |
| N – Ethnic Minorities                                | 1,040     |         |         |                 |           |               |
| N – Whites   | 40,880    |         |         |                 |           |               |
| Median bias  | 12.9      |         |         | 2.6             |           |               |
| Reliability of kernel matching                       |           |         |         | CS(1)UC(12)     |           |               |
| Percentage of sample lost due to incomplete history: |           |         |         |                 |           |               |
| Ethnic minorities                                    |           |         |         |                 |           | 8.2%          |
| Whites   |           |         |         |                 |           | 6.8%          |

Notes: See notes to Table A.1.

**Table A.18** IB overall parity estimates using different methods for Black Ethnic Minorities: Females

|  | Raw       | OLS     | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|---------|----------|-----------------|-----------|---------------|
| All  |           |         |          |                 |           |               |
| Employed in month 3                                  | -0.022    | 0.017   | 0.014    | 0.022           | 0.036*    | 0.036**       |
| Employed in month 6                                  | -0.049*** | 0.012   | 0.008    | 0.012           | 0.039*    | 0.023         |
| Employed in month 9                                  | -0.049*** | 0.011   | 0.009    | 0.013           | 0.016     | 0.018         |
| Employed in month 12                                 | -0.037**  | 0.030*  | 0.025    | 0.028           | -0.004    | 0.031*        |
| On benefit in month 3                                | 0.034***  | 0.011** | 0.013*** | 0.012           | 0.018     | 0.008         |
| On benefit in month 6                                | 0.089***  | 0.016   | 0.011    | 0.021           | 0.006     | 0.010         |
| On benefit in month 9                                | 0.115***  | 0.019   | 0.012    | 0.028           | -0.009    | 0.011         |
| On benefit in month 12                               | 0.111***  | 0.007   | 0.006    | 0.014           | 0.038     | 0.005         |
| N – Ethnic Minorities                                | 720       |         |          |                 |           |               |
| N – Whites   | 26,040    |         |          |                 |           |               |
| Median bias  | 16.8      |         |          | 3.1             |           |               |
| Reliability of kernel matching                       |           |         |          | CS(16)UC(9)     |           |               |
| Percentage of sample lost due to incomplete history: |           |         |          |                 |           |               |
| Ethnic minorities                                    |           |         |          |                 |           | 10.5%         |
| Whites   |           |         |          |                 |           | 8.0%          |

Notes: See notes to Table A.1.

**Table A.19 IB overall parity estimates using different methods for Asian Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.077*** | -0.015*** | -0.015*** | 0.002           | -0.008    | -0.002        |
| Employed in month 6                                  | -0.080*** | -0.016**  | -0.015**  | 0.009           | -0.002    | -0.004        |
| Employed in month 9                                  | -0.076*** | -0.006    | -0.006    | 0.021           | 0.011     | 0.007         |
| Employed in month 12                                 | -0.080*** | -0.008    | -0.007    | 0.013           | 0.011     | 0.008         |
| On benefit in month 3                                | 0.008**   | 0.003     | 0.002     | -0.008          | 0.017**   | 0.007         |
| On benefit in month 6                                | 0.023***  | 0.022***  | 0.021***  | -0.007          | 0.027**   | 0.030***      |
| On benefit in month 9                                | 0.023***  | 0.022**   | 0.022**   | -0.002          | 0.015     | 0.023**       |
| On benefit in month 12                               | 0.012     | 0.003     | 0.003     | -0.022          | -0.004    | 0.004         |
| N – Ethnic Minorities                                | 2,600     |           |           |                 |           |               |
| N – Whites   | 66,920    |           |           |                 |           |               |
| Median bias  | 11.1      |           |           | 2.8             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 13.8%         |
| Whites   |           |           |           |                 |           | 7.3%          |

Notes: See notes to Table A.1.

**Table A.20** IB overall parity estimates using different methods for Asian Ethnic Minorities: Males

|  | Raw       | OLS     | FILM    | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|---------|---------|-----------------|-----------|---------------|
| All  |           |         |         |                 |           |               |
| Employed in month 3                                  | -0.054*** | -0.010  | -0.009  | 0.006           | -0.004    | 0.002         |
| Employed in month 6                                  | -0.053*** | -0.002  | -0.001  | 0.022           | 0.015     | 0.009         |
| Employed in month 9                                  | -0.045*** | 0.010   | 0.010   | 0.042**         | 0.023*    | 0.020*        |
| Employed in month 12                                 | -0.052*** | 0.008   | 0.010   | 0.028           | 0.026**   | 0.023*        |
| On benefit in month 3                                | 0.010**   | 0.008   | 0.006   | -0.006          | 0.028***  | 0.009         |
| On benefit in month 6                                | 0.013     | 0.014   | 0.012   | -0.030*         | 0.023*    | 0.020*        |
| On benefit in month 9                                | 0.021*    | 0.023** | 0.024** | -0.005          | 0.008     | 0.022*        |
| On benefit in month 12                               | 0.006     | 0.001   | 0.000   | -0.032          | -0.021    | 0.002         |
| N – Ethnic Minorities                                | 1,600     |         |         |                 |           |               |
| N – Whites   | 40,880    |         |         |                 |           |               |
| Median bias  | 9.5       |         |         | 2.4             |           |               |
| Reliability of kernel matching                       |           |         |         | CS(1)UC(6)      |           |               |
| Percentage of sample lost due to incomplete history: |           |         |         |                 |           |               |
| Ethnic minorities                                    |           |         |         |                 |           | 11.6%         |
| Whites   |           |         |         |                 |           | 6.8%          |

Notes: See notes to Table A.1.

**Table A.21 IB overall parity estimates using different methods for Asian Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.113*** | -0.025*** | -0.024*** | -0.018          | -0.012    | -0.009        |
| Employed in month 6                                  | -0.121*** | -0.037*** | -0.037*** | -0.026          | -0.030*   | -0.025*       |
| Employed in month 9                                  | -0.125*** | -0.035*** | -0.034*** | -0.036*         | -0.013    | -0.018        |
| Employed in month 12                                 | -0.124*** | -0.037*** | -0.036*** | -0.034          | -0.017    | -0.021        |
| On benefit in month 3                                | 0.005     | -0.005    | -0.004    | -0.011          | -0.001    | 0.005         |
| On benefit in month 6                                | 0.038***  | 0.032***  | 0.033***  | 0.021           | 0.033**   | 0.048***      |
| On benefit in month 9                                | 0.027**   | 0.018     | 0.017     | 0.000           | 0.030     | 0.027*        |
| On benefit in month 12                               | 0.022     | 0.005     | 0.006     | 0.001           | 0.028     | 0.011         |
| N – Ethnic Minorities                                | 1,000     |           |           |                 |           |               |
| N – Whites   | 26,040    |           |           |                 |           |               |
| Median bias  | 11.8      |           |           | 3.3             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(3)UC(7)      |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 17.2%         |
| Whites   |           |           |           |                 |           | 8.0%          |

Notes: See notes to Table A.1.

Table A.22 IB overall parity estimates using different methods for other Ethnic Minorities: Any

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.060*** | -0.002   | -0.002   | -0.001          | 0.002     | -0.010        |
| Employed in month 6                                  | -0.063*** | 0.004    | 0.004    | 0.006           | -0.006    | -0.008        |
| Employed in month 9                                  | -0.067*** | 0.007    | 0.007    | 0.010           | -0.012    | -0.005        |
| Employed in month 12                                 | -0.073*** | 0.002    | 0.002    | 0.007           | -0.014    | -0.008        |
| On benefit in month 3                                | 0.029***  | 0.014*** | 0.014*** | 0.011**         | 0.019*    | 0.021***      |
| On benefit in month 6                                | 0.064***  | 0.024*** | 0.024*** | 0.005           | 0.026*    | 0.026**       |
| On benefit in month 9                                | 0.068***  | 0.023**  | 0.023**  | 0.011           | 0.027*    | 0.028**       |
| On benefit in month 12                               | 0.081***  | 0.032*** | 0.031*** | 0.020           | 0.020     | 0.035**       |
| N – Ethnic Minorities                                | 1,300     |          |          |                 |           |               |
| N – Whites   | 66,920    |          |          |                 |           |               |
| Median bias  | 12.0      |          |          | 1.8             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(1)UC(9)      |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 16.0%         |
| Whites   |           |          |          |                 |           | 7.3%          |

Notes: See notes to Table A.1.

Table A.23 IB overall parity estimates using different methods for other Ethnic Minorities: Males

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.045*** | 0.002    | 0.006    | 0.008           | -0.004    | -0.014        |
| Employed in month 6                                  | -0.051*** | 0.010    | 0.012    | 0.019           | -0.019    | -0.012        |
| Employed in month 9                                  | -0.060*** | 0.009    | 0.010    | 0.024           | -0.012    | -0.010        |
| Employed in month 12                                 | -0.058*** | 0.015    | 0.017    | 0.021           | 0.006     | 0.001         |
| On benefit in month 3                                | 0.033***  | 0.017*** | 0.015*** | 0.015**         | 0.036***  | 0.036***      |
| On benefit in month 6                                | 0.079***  | 0.034*** | 0.032*** | 0.014           | 0.064***  | 0.049***      |
| On benefit in month 9                                | 0.076***  | 0.027*   | 0.025*   | 0.011           | 0.046**   | 0.053***      |
| On benefit in month 12                               | 0.077***  | 0.021    | 0.021    | 0.006           | 0.014     | 0.040**       |
| N – Ethnic Minorities                                | 820       |          |          |                 |           |               |
| N – Whites   | 40,880    |          |          |                 |           |               |
| Median bias  | 11.0      |          |          | 2.1             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(3)UC(0)      |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 14.1%         |
| Whites   |           |          |          |                 |           | 6.8%          |

Notes: See notes to Table A.1.



**Table A.24 IB overall parity estimates using different methods for other Ethnic Minorities: Females**

|  | Raw       | OLS     | FILM    | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|---------|---------|-----------------|-----------|---------------|
| All  |           |         |         |                 |           |               |
| Employed in month 3                                  | -0.082*** | -0.008  | -0.010  | 0.001           | 0.010     | -0.009        |
| Employed in month 6                                  | -0.081*** | -0.005  | -0.006  | 0.004           | 0.010     | -0.003        |
| Employed in month 9                                  | -0.077*** | 0.003   | 0.003   | 0.009           | -0.020    | 0.004         |
| Employed in month 12                                 | -0.097*** | -0.019  | -0.019  | 0.002           | -0.035    | -0.022        |
| On benefit in month 3                                | 0.023***  | 0.009   | 0.009   | 0.005           | -0.013    | -0.000        |
| On benefit in month 6                                | 0.039**   | 0.006   | 0.004   | -0.009          | -0.031    | -0.008        |
| On benefit in month 9                                | 0.055***  | 0.017   | 0.011   | -0.001          | 0.016     | 0.000         |
| On benefit in month 12                               | 0.089***  | 0.050** | 0.042** | 0.039           | 0.042     | 0.038*        |
| N – Ethnic Minorities                                | 480       |         |         |                 |           |               |
| N – Whites   | 26,040    |         |         |                 |           |               |
| Median bias  | 15.8      |         |         | 2.5             |           |               |
| Reliability of kernel matching                       |           |         |         | CS(0)UC(0)      |           |               |
| Percentage of sample lost due to incomplete history: |           |         |         |                 |           |               |
| Ethnic minorities                                    |           |         |         |                 |           | 19.2%         |
| Whites   |           |         |         |                 |           | 8.0%          |

Notes: See notes to Table A.1.

Table A.25 IS overall parity estimates using different methods for all Ethnic Minorities: Any

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.012*** | 0.009**   | 0.011***  | 0.017***        | 0.025***  | 0.023***      |
| Employed in month 6                                  | -0.020*** | 0.013***  | 0.014***  | 0.018***        | 0.026***  | 0.024***      |
| Employed in month 9                                  | -0.023*** | 0.013***  | 0.014***  | 0.016**         | 0.022***  | 0.024***      |
| Employed in month 12                                 | -0.028*** | 0.014***  | 0.017***  | 0.021***        | 0.022***  | 0.027***      |
| On benefit in month 3                                | 0.011***  | 0.000     | -0.000    | -0.001          | -0.004    | -0.006        |
| On benefit in month 6                                | 0.013***  | -0.011**  | -0.014*** | -0.014***       | -0.013*   | -0.015***     |
| On benefit in month 9                                | 0.015***  | -0.016*** | -0.020*** | -0.018***       | -0.027*** | -0.024***     |
| On benefit in month 12                               | 0.019***  | -0.017*** | -0.019*** | -0.020***       | -0.042*** | -0.026***     |
| N – Ethnic Minorities                                | 8,560     |           |           |                 |           |               |
| N – Whites   | 78,140    |           |           |                 |           |               |
| Median bias  | 9.3       |           |           | 1.2             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(0)UC(35)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 16.5%         |
| Whites   |           |           |           |                 |           | 7.5%          |

Notes: See notes to Table A.1.

**Table A.26 IS overall parity estimates using different methods for Ethnic Minorities compared to Whites:  
Males**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.013**  | 0.011**  | 0.011**  | 0.015*          | 0.013     | 0.010         |
| Employed in month 6                                  | -0.019*** | 0.016*** | 0.017*** | 0.019**         | 0.015*    | 0.016**       |
| Employed in month 9                                  | -0.019*** | 0.019*** | 0.017*** | 0.020**         | 0.014     | 0.016*        |
| Employed in month 12                                 | -0.022*** | 0.022*** | 0.021*** | 0.024**         | 0.019**   | 0.021**       |
| On benefit in month 3                                | 0.011***  | 0.004    | 0.003    | 0.003           | 0.008     | 0.003         |
| On benefit in month 6                                | 0.021***  | -0.002   | -0.004   | -0.005          | -0.005    | -0.001        |
| On benefit in month 9                                | 0.027***  | -0.001   | -0.001   | -0.003          | -0.007    | -0.001        |
| On benefit in month 12                               | 0.024***  | -0.007   | -0.006   | -0.008          | -0.017    | -0.009        |
| N – Ethnic Minorities                                | 3,440     |          |          |                 |           |               |
| N – Whites   | 32,760    |          |          |                 |           |               |
| Median bias  | 9.5       |          |          | 1.1             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(0)UC(22)     |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 11.1%         |
| Whites   |           |          |          |                 |           | 5.4%          |

Notes: See notes to Table A.1.

**Table A.27 IS overall parity estimates using different methods for all Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.014**  | 0.008     | 0.012**   | 0.018**         | 0.033***  | 0.033***      |
| Employed in month 6                                  | -0.023*** | 0.010*    | 0.014**   | 0.018**         | 0.033***  | 0.030***      |
| Employed in month 9                                  | -0.028*** | 0.008     | 0.011*    | 0.014           | 0.026***  | 0.028***      |
| Employed in month 12                                 | -0.035*** | 0.007     | 0.014**   | 0.020**         | 0.024**   | 0.031***      |
| On benefit in month 3                                | 0.012***  | -0.003    | -0.003    | -0.002          | -0.012    | -0.010        |
| On benefit in month 6                                | 0.009*    | -0.019*** | -0.021*** | -0.019***       | -0.017*   | -0.023***     |
| On benefit in month 9                                | 0.009     | -0.029*** | -0.033*** | -0.028***       | -0.038*** | -0.037***     |
| On benefit in month 12                               | 0.016**   | -0.025*** | -0.029*** | -0.028***       | -0.055*** | -0.037***     |
| N – Ethnic Minorities                                | 5,120     |           |           |                 |           |               |
| N – Whites   | 45,360    |           |           |                 |           |               |
| Median bias  | 9.0       |           |           | 1.6             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(0)UC(29)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 20.2%         |
| Whites   |           |           |           |                 |           | 9.0%          |

Notes t: See notes to Table A.1.

Table A.28 IS overall parity estimates using different methods for Black Ethnic Minorities: Any

|  | Raw      | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|----------|----------|-----------------|-----------|---------------|
| All  |          |          |          |                 |           |               |
| Employed in month 3                                  | 0.049*** | 0.031*** | 0.030*** | 0.016           | 0.049***  | 0.043***      |
| Employed in month 6                                  | 0.038*** | 0.032*** | 0.032*** | 0.034*          | 0.044***  | 0.042***      |
| Employed in month 9                                  | 0.039*** | 0.039*** | 0.037*** | 0.042**         | 0.033***  | 0.043***      |
| Employed in month 12                                 | 0.041*** | 0.051*** | 0.051*** | 0.059***        | 0.042***  | 0.054***      |
| On benefit in month 3                                | 0.020*** | 0.008**  | 0.006    | 0.000           | -0.002    | 0.001         |
| On benefit in month 6                                | 0.034*** | -0.000   | -0.007   | -0.010          | -0.006    | -0.014        |
| On benefit in month 9                                | 0.044*** | -0.007   | -0.018** | -0.013          | -0.028**  | -0.026***     |
| On benefit in month 12                               | 0.053*** | -0.003   | -0.011   | -0.018          | -0.036*** | -0.021**      |
| N – Ethnic Minorities                                | 3,360    |          |          |                 |           |               |
| N – Whites   | 78,140   |          |          |                 |           |               |
| Median bias  | 7.0      |          |          | 3.0             |           |               |
| Reliability of kernel matching                       |          |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |          |          |          |                 |           |               |
| Ethnic minorities                                    |          |          |          |                 |           | 13.6%         |
| Whites   |          |          |          |                 |           | 7.5%          |

Notes: See notes to Table A.1.

**Table A.29 IS overall parity estimates using different methods for Black Ethnic Minorities: Males**

|  | Raw      | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|----------|----------|-----------------|-----------|---------------|
| All  |          |          |          |                 |           |               |
| Employed in month 3                                  | -0.008   | 0.021**  | 0.019**  | 0.012           | 0.031**   | 0.020*        |
| Employed in month 6                                  | -0.024** | 0.017*   | 0.015*   | 0.013           | 0.015     | 0.018         |
| Employed in month 9                                  | -0.026** | 0.026**  | 0.021**  | 0.025           | 0.013     | 0.021*        |
| Employed in month 12                                 | -0.018   | 0.039*** | 0.034*** | 0.040**         | 0.023*    | 0.031**       |
| On benefit in month 3                                | 0.019*** | 0.003    | 0.003    | 0.002           | -0.005    | -0.003        |
| On benefit in month 6                                | 0.054*** | 0.006    | 0.001    | 0.003           | -0.010    | -0.008        |
| On benefit in month 9                                | 0.076*** | 0.005    | -0.001   | 0.001           | -0.013    | -0.011        |
| On benefit in month 12                               | 0.085*** | 0.010    | 0.007    | 0.008           | -0.014    | -0.001        |
| N – Ethnic Minorities                                | 1,160    |          |          |                 |           |               |
| N – Whites   | 32,760   |          |          |                 |           |               |
| Median bias  | 10.4     |          |          | 2.1             |           |               |
| Reliability of kernel matching                       |          |          |          | CS(5)UC(9)      |           |               |
| Percentage of sample lost due to incomplete history: |          |          |          |                 |           |               |
| Ethnic minorities                                    |          |          |          |                 |           | 9.3%          |
| Whites   |          |          |          |                 |           | 5.4%          |

Notes: See notes to Table A.1.

**Table A.30 IS overall parity estimates using different methods for Black Ethnic Minorities: Females**

|  | Raw      | OLS      | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|----------|-----------|-----------------|-----------|---------------|
| All  |          |          |           |                 |           |               |
| Employed in month 3                                  | 0.071*** | 0.037*** | 0.035***  | 0.014           | 0.059***  | 0.057***      |
| Employed in month 6                                  | 0.062*** | 0.040*** | 0.043***  | 0.033           | 0.062***  | 0.056***      |
| Employed in month 9                                  | 0.064*** | 0.044*** | 0.046***  | 0.036           | 0.046***  | 0.056***      |
| Employed in month 12                                 | 0.063*** | 0.058*** | 0.063***  | 0.051*          | 0.054***  | 0.070***      |
| On benefit in month 3                                | 0.024*** | 0.010*   | 0.006     | 0.005           | 0.001     | 0.004         |
| On benefit in month 6                                | 0.028*** | -0.003   | -0.013    | -0.027          | -0.004    | -0.017        |
| On benefit in month 9                                | 0.032*** | -0.014   | -0.028*** | -0.023          | -0.038**  | -0.034**      |
| On benefit in month 12                               | 0.041*** | -0.012   | -0.025**  | -0.025          | -0.048*** | -0.033**      |
| N – Ethnic Minorities                                | 2,200    |          |           |                 |           |               |
| N – Whites   | 45,360   |          |           |                 |           |               |
| Median bias  | 10.5     |          |           | 3.9             |           |               |
| Reliability of kernel matching                       |          |          |           | CS(1)UC(27)     |           |               |
| Percentage of sample lost due to incomplete history: |          |          |           |                 |           |               |
| Ethnic minorities                                    |          |          |           |                 |           | 15.9%         |
| Whites   |          |          |           |                 |           | 9.0%          |

Notes: See notes to Table A.1.

**Table A.31 IS overall parity estimates using different methods for Asian Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.068*** | -0.005    | -0.005    | 0.013           | 0.007     | 0.013*        |
| Employed in month 6                                  | -0.074*** | -0.002    | -0.002    | 0.021           | 0.014     | 0.014*        |
| Employed in month 9                                  | -0.076*** | -0.004    | -0.004    | 0.017           | 0.021**   | 0.016**       |
| Employed in month 12                                 | -0.089*** | -0.013**  | -0.014**  | 0.010           | 0.011     | 0.009         |
| On benefit in month 3                                | -0.004    | -0.010**  | -0.011*** | -0.015**        | -0.016**  | -0.021***     |
| On benefit in month 6                                | -0.019*** | -0.029*** | -0.029*** | -0.046***       | -0.039*** | -0.030***     |
| On benefit in month 9                                | -0.027*** | -0.035*** | -0.034*** | -0.053***       | -0.043*** | -0.037***     |
| On benefit in month 12                               | -0.028*** | -0.039*** | -0.038*** | -0.055***       | -0.051*** | -0.045***     |
| N – Ethnic Minorities                                | 3,380     |           |           |                 |           |               |
| N – Whites   | 78,140    |           |           |                 |           |               |
| Median bias  | 10.7      |           |           | 2.3             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(1)UC(22)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 17.7%         |
| Whites   |           |           |           |                 |           | 7.5%          |

Notes: See notes to Table A.1.



**Table A.32 IS overall parity estimates using different methods for Asian Ethnic Minorities: Males**

|  | Raw      | OLS    | FILM   | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|--------|--------|-----------------|-----------|---------------|
| All  |          |        |        |                 |           |               |
| Employed in month 3                                  | -0.016*  | 0.003  | 0.002  | 0.031           | 0.003     | 0.009         |
| Employed in month 6                                  | -0.016   | 0.013  | 0.014  | 0.043**         | 0.025**   | 0.021**       |
| Employed in month 9                                  | -0.011   | 0.013  | 0.014  | 0.045**         | 0.025*    | 0.021*        |
| Employed in month 12                                 | -0.024** | 0.008  | 0.009  | 0.031           | 0.018     | 0.018         |
| On benefit in month 3                                | 0.003    | 0.004  | 0.002  | 0.004           | 0.008     | -0.002        |
| On benefit in month 6                                | -0.010   | -0.009 | -0.010 | -0.016          | -0.021    | -0.010        |
| On benefit in month 9                                | -0.018   | -0.008 | -0.006 | -0.010          | -0.021    | -0.012        |
| On benefit in month 12                               | -0.022*  | -0.015 | -0.014 | -0.010          | -0.022    | -0.025*       |
| N – Ethnic Minorities                                | 1,460    |        |        |                 |           |               |
| N – Whites   | 32,760   |        |        |                 |           |               |
| Median bias  | 10.7     |        |        | 3.3             |           |               |
| Reliability of kernel matching                       |          |        |        | CS(2)UC(10)     |           |               |
| Percentage of sample lost due to incomplete history: |          |        |        |                 |           |               |
| Ethnic minorities                                    |          |        |        |                 |           | 10.4%         |
| Whites   |          |        |        |                 |           | 5.4%          |

Notes: See notes to Table A.1.

**Table A.33 IS overall parity estimates using different methods for Asian Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.106*** | -0.011*   | -0.011*   | -0.008          | 0.007     | 0.014         |
| Employed in month 6                                  | -0.117*** | -0.014*   | -0.016**  | -0.006          | 0.001     | 0.006         |
| Employed in month 9                                  | -0.125*** | -0.018**  | -0.019**  | -0.019          | 0.016     | 0.008         |
| Employed in month 12                                 | -0.137*** | -0.030*** | -0.032*** | -0.020          | 0.002     | -0.002        |
| On benefit in month 3                                | -0.010*   | -0.022*** | -0.023*** | -0.025**        | -0.036*** | -0.033***     |
| On benefit in month 6                                | -0.027*** | -0.044*** | -0.044*** | -0.053***       | -0.050*** | -0.041***     |
| On benefit in month 9                                | -0.035*** | -0.058*** | -0.057*** | -0.072***       | -0.055*** | -0.055***     |
| On benefit in month 12                               | -0.034*** | -0.057*** | -0.057*** | -0.073***       | -0.065*** | -0.058***     |
| N – Ethnic Minorities                                | 1,920     |           |           |                 |           |               |
| N – Whites   | 45,360    |           |           |                 |           |               |
| Median bias  | 12.4      |           |           | 2.1             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(3)UC(16)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 23.3%         |
| Whites   |           |           |           |                 |           | 9.0%          |

Notes: See notes to Table A.1.

**Table A.34 IS overall parity estimates using different methods for other Ethnic Minorities: Any**

|  | Raw       | OLS     | FILM    | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|---------|---------|-----------------|-----------|---------------|
| All  |           |         |         |                 |           |               |
| Employed in month 3                                  | -0.020**  | 0.009   | 0.009   | 0.011           | 0.012     | 0.007         |
| Employed in month 6                                  | -0.028*** | 0.015*  | 0.015*  | 0.015           | 0.013     | 0.008         |
| Employed in month 9                                  | -0.040*** | 0.006   | 0.006   | 0.005           | 0.001     | 0.000         |
| Employed in month 12                                 | -0.043*** | 0.010   | 0.010   | 0.013           | 0.004     | 0.006         |
| On benefit in month 3                                | 0.023***  | 0.009** | 0.009** | 0.006           | 0.015     | 0.009         |
| On benefit in month 6                                | 0.035***  | 0.005   | 0.004   | -0.003          | 0.021*    | 0.010         |
| On benefit in month 9                                | 0.042***  | 0.004   | 0.004   | -0.003          | 0.004     | 0.007         |
| On benefit in month 12                               | 0.043***  | 0.002   | 0.001   | -0.003          | -0.036**  | -0.002        |
| N – Ethnic Minorities                                | 1,820     |         |         |                 |           |               |
| N – Whites   | 78,140    |         |         |                 |           |               |
| Median bias  | 8.3       |         |         | 1.5             |           |               |
| Reliability of kernel matching                       |           |         |         | CS(1)UC(11)     |           |               |
| Percentage of sample lost due to incomplete history: |           |         |         |                 |           |               |
| Ethnic minorities                                    |           |         |         |                 |           | 19.7%         |
| Whites   |           |         |         |                 |           | 7.5%          |

Notes: See notes to Table A.1.

**Table A.35 IS overall parity estimates using different methods for other Ethnic Minorities: Males**

|  | Raw      | OLS     | FILM    | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|---------|---------|-----------------|-----------|---------------|
| All  |          |         |         |                 |           |               |
| Employed in month 3                                  | -0.013   | 0.016*  | 0.017*  | 0.021           | 0.006     | -0.003        |
| Employed in month 6                                  | -0.019   | 0.026** | 0.025** | 0.029*          | -0.002    | 0.003         |
| Employed in month 9                                  | -0.025*  | 0.021*  | 0.020*  | 0.026           | 0.001     | 0.000         |
| Employed in month 12                                 | -0.024*  | 0.029** | 0.027** | 0.033*          | 0.019     | 0.014         |
| On benefit in month 3                                | 0.016*** | 0.007   | 0.006   | 0.005           | 0.026*    | 0.023**       |
| On benefit in month 6                                | 0.030*** | 0.000   | -0.001  | -0.012          | 0.032*    | 0.026*        |
| On benefit in month 9                                | 0.036*** | 0.004   | 0.005   | -0.008          | 0.027     | 0.035**       |
| On benefit in month 12                               | 0.021    | -0.015  | -0.014  | -0.024          | -0.011    | 0.006         |
| N – Ethnic Minorities                                | 820      |         |         |                 |           |               |
| N – Whites   | 32,760   |         |         |                 |           |               |
| Median bias  | 9.4      |         |         | 2.4             |           |               |
| Reliability of kernel matching                       |          |         |         | CS(1)UC(6)      |           |               |
| Percentage of sample lost due to incomplete history: |          |         |         |                 |           |               |
| Ethnic minorities                                    |          |         |         |                 |           | 14.8%         |
| Whites   |          |         |         |                 |           | 5.4%          |

Notes: See notes to Table A.1.

**Table A.36 IS overall parity estimates using different methods for other Ethnic Minorities: Females**

|  | Raw       | OLS    | FILM   | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|--------|--------|-----------------|-----------|---------------|
| All  |           |        |        |                 |           |               |
| Employed in month 3                                  | -0.022*   | 0.004  | 0.004  | -0.003          | 0.020     | 0.014         |
| Employed in month 6                                  | -0.031**  | 0.008  | 0.009  | 0.002           | 0.027     | 0.014         |
| Employed in month 9                                  | -0.047*** | -0.005 | -0.003 | -0.016          | -0.002    | -0.001        |
| Employed in month 12                                 | -0.053*** | -0.004 | -0.002 | -0.005          | -0.008    | 0.001         |
| On benefit in month 3                                | 0.027***  | 0.012* | 0.012* | 0.008           | 0.005     | 0.001         |
| On benefit in month 6                                | 0.036***  | 0.006  | 0.006  | -0.001          | 0.013     | -0.001        |
| On benefit in month 9                                | 0.044***  | 0.003  | 0.001  | 0.001           | -0.005    | -0.010        |
| On benefit in month 12                               | 0.059***  | 0.014  | 0.013  | 0.011           | -0.051**  | -0.005        |
| N – Ethnic Minorities                                | 1,000     |        |        |                 |           |               |
| N – Whites   | 45,360    |        |        |                 |           |               |
| Median bias  | 10.5      |        |        | 1.9             |           |               |
| Reliability of kernel matching                       |           |        |        | CS(1)UC(0)      |           |               |
| Percentage of sample lost due to incomplete history: |           |        |        |                 |           |               |
| Ethnic minorities                                    |           |        |        |                 |           | 23.6%         |
| Whites   |           |        |        |                 |           | 9.0%          |

Notes: See notes to Table A.1.

Table A.37 JSA overall parity estimates using different methods for all Ethnic Minorities: Any

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.089*** | -0.013*** | -0.018*** | 0.018***        | -0.018*** | -0.016***     |
| Employed in month 6                                  | -0.101*** | -0.014*** | -0.021*** | 0.025***        | -0.022*** | -0.022***     |
| Employed in month 9                                  | -0.098*** | -0.011*** | -0.019*** | 0.035***        | -0.016*** | -0.020***     |
| Employed in month 12                                 | -0.090*** | -0.008*** | -0.015*** | 0.037***        | -0.025*** | -0.017***     |
| On benefit in month 3                                | 0.127***  | 0.058***  | 0.063***  | 0.031***        | 0.061***  | 0.063***      |
| On benefit in month 6                                | 0.117***  | 0.045***  | 0.051***  | 0.013***        | 0.050***  | 0.051***      |
| On benefit in month 9                                | 0.097***  | 0.034***  | 0.041***  | -0.007          | 0.039***  | 0.040***      |
| On benefit in month 12                               | 0.076***  | 0.023***  | 0.030***  | -0.015***       | 0.041***  | 0.031***      |
| N – Ethnic Minorities                                | 159,500   |           |           |                 |           |               |
| N – Whites   | 1,322,000 |           |           |                 |           |               |
| Median bias  | 12.1      |           |           | 2.9             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 16.2%         |
| Whites   |           |           |           |                 |           | 9.3%          |

Notes: See notes to Table A.1.

**Table A.38 JSA overall parity estimates using different methods for Ethnic Minorities compared to Whites:  
Males**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.084*** | -0.009*** | -0.016*** | 0.020***        | -0.018*** | -0.015***     |
| Employed in month 6                                  | -0.098*** | -0.012*** | -0.021*** | 0.025***        | -0.023*** | -0.023***     |
| Employed in month 9                                  | -0.097*** | -0.011*** | -0.021*** | 0.031***        | -0.018*** | -0.023***     |
| Employed in month 12                                 | -0.090*** | -0.009*** | -0.018*** | 0.033***        | -0.027*** | -0.022***     |
| On benefit in month 3                                | 0.127***  | 0.059***  | 0.065***  | 0.034***        | 0.066***  | 0.065***      |
| On benefit in month 6                                | 0.119***  | 0.047***  | 0.053***  | 0.017***        | 0.054***  | 0.055***      |
| On benefit in month 9                                | 0.097***  | 0.034***  | 0.041***  | -0.003          | 0.038***  | 0.041***      |
| On benefit in month 12                               | 0.075***  | 0.023***  | 0.031***  | -0.008          | 0.040***  | 0.031***      |
| N – Ethnic Minorities                                | 110,960   |           |           |                 |           |               |
| N – Whites   | 908,560   |           |           |                 |           |               |
| Median bias  | 12.3      |           |           | 3.2             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 15.0%         |
| Whites   |           |           |           |                 |           | 8.2%          |

Notes: See notes to Table A.1.

**Table A.39 JSA overall parity estimates using different methods for all Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.100*** | -0.024*** | -0.028*** | 0.008           | -0.025*** | -0.026***     |
| Employed in month 6                                  | -0.106*** | -0.022*** | -0.030*** | 0.014           | -0.029*** | -0.027***     |
| Employed in month 9                                  | -0.098*** | -0.015*** | -0.022*** | 0.036***        | -0.016*** | -0.019***     |
| Employed in month 12                                 | -0.089*** | -0.010*** | -0.016*** | 0.042***        | -0.023*** | -0.014***     |
| On benefit in month 3                                | 0.125***  | 0.059***  | 0.065***  | 0.031***        | 0.055***  | 0.061***      |
| On benefit in month 6                                | 0.111***  | 0.045***  | 0.049***  | 0.008           | 0.045***  | 0.047***      |
| On benefit in month 9                                | 0.096***  | 0.035***  | 0.040***  | -0.013          | 0.041***  | 0.039***      |
| On benefit in month 12                               | 0.076***  | 0.026***  | 0.029***  | -0.024***       | 0.042***  | 0.029***      |
| N – Ethnic Minorities                                | 48,560    |           |           |                 |           |               |
| N – Whites   | 413,440   |           |           |                 |           |               |
| Median bias  | 12.7      |           |           | 2.3             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 18.9%         |
| Whites   |           |           |           |                 |           | 11.7%         |

Notes: See notes to Table A.1.



Table A.40 JSA overall parity estimates using different methods for Black Ethnic Minorities: Any

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.090*** | 0.005**  | 0.006*** | 0.018***        | 0.009***  | 0.008***      |
| Employed in month 6                                  | -0.119*** | -0.004*  | -0.003   | 0.019***        | -0.005    | -0.004*       |
| Employed in month 9                                  | -0.120*** | -0.003   | -0.003   | 0.028***        | -0.002    | -0.005*       |
| Employed in month 12                                 | -0.114*** | -0.001   | -0.001   | 0.036***        | -0.013*** | -0.004        |
| On benefit in month 3                                | 0.170***  | 0.058*** | 0.055*** | 0.039***        | 0.054***  | 0.055***      |
| On benefit in month 6                                | 0.187***  | 0.063*** | 0.061*** | 0.031***        | 0.059***  | 0.060***      |
| On benefit in month 9                                | 0.182***  | 0.060*** | 0.060*** | 0.019***        | 0.055***  | 0.057***      |
| On benefit in month 12                               | 0.164***  | 0.055*** | 0.056*** | 0.012**         | 0.063***  | 0.053***      |
| N – Ethnic Minorities                                | 52,040    |          |          |                 |           |               |
| N – Whites   | 1,322,000 |          |          |                 |           |               |
| Median bias  | 14.1      |          |          | 2.8             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 14.3%         |
| Whites   |           |          |          |                 |           | 9.3%          |

Notes: See notes to Table A.1.

**Table A.41 JSA overall parity estimates using different methods for Black Ethnic Minorities: Males**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.089*** | 0.005**  | 0.006**  | 0.013*          | 0.007**   | 0.008***      |
| Employed in month 6                                  | -0.121*** | -0.005*  | -0.004   | 0.011           | -0.006*   | -0.005*       |
| Employed in month 9                                  | -0.125*** | -0.006** | -0.006** | 0.018**         | -0.004    | -0.008***     |
| Employed in month 12                                 | -0.120*** | -0.005*  | -0.005*  | 0.025***        | -0.013*** | -0.009***     |
| On benefit in month 3                                | 0.165***  | 0.056*** | 0.053*** | 0.041***        | 0.055***  | 0.053***      |
| On benefit in month 6                                | 0.184***  | 0.062*** | 0.060*** | 0.040***        | 0.059***  | 0.059***      |
| On benefit in month 9                                | 0.177***  | 0.060*** | 0.060*** | 0.027***        | 0.053***  | 0.057***      |
| On benefit in month 12                               | 0.158***  | 0.052*** | 0.054*** | 0.021***        | 0.060***  | 0.051***      |
| N – Ethnic Minorities                                | 37,000    |          |          |                 |           |               |
| N – Whites   | 908,560   |          |          |                 |           |               |
| Median bias  | 13.6      |          |          | 2.7             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 13.0%         |
| Whites   |           |          |          |                 |           | 8.2%          |

Notes: See notes to Table A.1.

Table A.42 JSA overall parity estimates using different methods for Black Ethnic Minorities: Females

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.087*** | 0.003    | 0.005    | 0.031*          | 0.012**   | 0.007         |
| Employed in month 6                                  | -0.109*** | -0.002   | -0.001   | 0.043**         | 0.001     | -0.001        |
| Employed in month 9                                  | -0.104*** | 0.005    | 0.005    | 0.061***        | 0.004     | 0.005         |
| Employed in month 12                                 | -0.095*** | 0.010**  | 0.009**  | 0.071***        | -0.010    | 0.009*        |
| On benefit in month 3                                | 0.179***  | 0.064*** | 0.062*** | 0.024           | 0.053***  | 0.058***      |
| On benefit in month 6                                | 0.191***  | 0.066*** | 0.065*** | 0.003           | 0.058***  | 0.061***      |
| On benefit in month 9                                | 0.187***  | 0.059*** | 0.059*** | -0.014          | 0.058***  | 0.055***      |
| On benefit in month 12                               | 0.174***  | 0.061*** | 0.062*** | -0.027*         | 0.068***  | 0.055***      |
| N – Ethnic Minorities                                | 15,020    |          |          |                 |           |               |
| N – Whites   | 413,440   |          |          |                 |           |               |
| Median bias  | 15.0      |          |          | 3.5             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 17.5%         |
| Whites   |           |          |          |                 |           | 11.7%         |

Notes: See notes to Table A.1.

Table A.43 JSA overall parity estimates using different methods for Asian Ethnic Minorities: Any

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.090*** | -0.038*** | -0.043*** | 0.015           | -0.040*** | -0.038***     |
| Employed in month 6                                  | -0.089*** | -0.035*** | -0.044*** | 0.019           | -0.039*** | -0.039***     |
| Employed in month 9                                  | -0.081*** | -0.029*** | -0.039*** | 0.049***        | -0.029*** | -0.035***     |
| Employed in month 12                                 | -0.071*** | -0.025*** | -0.034*** | 0.051***        | -0.039*** | -0.030***     |
| On benefit in month 3                                | 0.104***  | 0.072***  | 0.081***  | 0.024*          | 0.074***  | 0.078***      |
| On benefit in month 6                                | 0.075***  | 0.049***  | 0.058***  | 0.012           | 0.054***  | 0.056***      |
| On benefit in month 9                                | 0.044***  | 0.031***  | 0.040***  | -0.023*         | 0.038***  | 0.038***      |
| On benefit in month 12                               | 0.020***  | 0.018***  | 0.026***  | -0.031**        | 0.040***  | 0.026***      |
| N – Ethnic Minorities                                | 69,560    |           |           |                 |           |               |
| N – Whites   | 1,322,000 |           |           |                 |           |               |
| Median bias  | 11.8      |           |           | 4.1             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 15.8%         |
| Whites   |           |           |           |                 |           | 9.3%          |

Notes: See notes to Table A.1.

**Table A.44 JSA overall parity estimates using different methods for Asian Ethnic Minorities: Males**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.082*** | -0.038*** | -0.044*** | 0.040**         | -0.041*** | -0.037***     |
| Employed in month 6                                  | -0.083*** | -0.037*** | -0.046*** | 0.039**         | -0.040*** | -0.041***     |
| Employed in month 9                                  | -0.077*** | -0.034*** | -0.046*** | 0.050**         | -0.033*** | -0.040***     |
| Employed in month 12                                 | -0.067*** | -0.030*** | -0.042*** | 0.047**         | -0.044*** | -0.037***     |
| On benefit in month 3                                | 0.106***  | 0.076***  | 0.085***  | 0.012           | 0.083***  | 0.083***      |
| On benefit in month 6                                | 0.079***  | 0.056***  | 0.065***  | 0.010           | 0.061***  | 0.063***      |
| On benefit in month 9                                | 0.046***  | 0.036***  | 0.045***  | -0.029          | 0.039***  | 0.042***      |
| On benefit in month 12                               | 0.023***  | 0.025***  | 0.035***  | -0.027          | 0.044***  | 0.032***      |
| N – Ethnic Minorities                                | 47,160    |           |           |                 |           |               |
| N – Whites   | 908,560   |           |           |                 |           |               |
| Median bias  | 12.3      |           |           | 4.5             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 13.8%         |
| Whites   |           |           |           |                 |           | 8.2%          |

Notes: See notes to Table A.1.

Table A.45 JSA overall parity estimates using different methods for Asian Ethnic Minorities: Females

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.109*** | -0.045*** | -0.052*** | -0.007          | -0.051*** | -0.050***     |
| Employed in month 6                                  | -0.104*** | -0.040*** | -0.049*** | 0.001           | -0.049*** | -0.046***     |
| Employed in month 9                                  | -0.092*** | -0.028*** | -0.037*** | 0.050**         | -0.030*** | -0.033***     |
| Employed in month 12                                 | -0.081*** | -0.022*** | -0.029*** | 0.061***        | -0.032*** | -0.027***     |
| On benefit in month 3                                | 0.101***  | 0.067***  | 0.076***  | 0.033           | 0.061***  | 0.073***      |
| On benefit in month 6                                | 0.067***  | 0.038***  | 0.045***  | 0.005           | 0.042***  | 0.044***      |
| On benefit in month 9                                | 0.041***  | 0.024***  | 0.029***  | -0.034*         | 0.037***  | 0.031***      |
| On benefit in month 12                               | 0.015***  | 0.005     | 0.007*    | -0.054***       | 0.031***  | 0.015***      |
| N – Ethnic Minorities                                | 22,400    |           |           |                 |           |               |
| N – Whites   | 413,440   |           |           |                 |           |               |
| Median bias  | 11.7      |           |           | 3.2             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 20.0%         |
| Whites   |           |           |           |                 |           | 11.7%         |

Notes: See notes to Table A.1.

**Table A.46 JSA overall parity estimates using different methods for other Ethnic Minorities: Any**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.085*** | -0.003   | -0.003   | 0.005           | -0.012*** | -0.010***     |
| Employed in month 6                                  | -0.099*** | -0.005*  | -0.005** | 0.010**         | -0.018*** | -0.015***     |
| Employed in month 9                                  | -0.097*** | -0.003   | -0.004*  | 0.015***        | -0.009*** | -0.014***     |
| Employed in month 12                                 | -0.090*** | -0.001   | -0.002   | 0.015***        | -0.015*** | -0.011***     |
| On benefit in month 3                                | 0.109***  | 0.043*** | 0.042*** | 0.037***        | 0.045***  | 0.045***      |
| On benefit in month 6                                | 0.096***  | 0.026*** | 0.026*** | 0.015***        | 0.031***  | 0.031***      |
| On benefit in month 9                                | 0.079***  | 0.015*** | 0.016*** | -0.002          | 0.017***  | 0.020***      |
| On benefit in month 12                               | 0.057***  | 0.003    | 0.004    | -0.014***       | 0.012***  | 0.007**       |
| N – Ethnic Minorities                                | 37,920    |          |          |                 |           |               |
| N – Whites   | 1,322,000 |          |          |                 |           |               |
| Median bias  | 10.4      |          |          | 2.2             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 19.4%         |
| Whites   |           |          |          |                 |           | 9.3%          |

Notes: See notes to Table A.1.

Table A.47 JSA overall parity estimates using different methods for other Ethnic Minorities: Males

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.078*** | 0.004    | 0.003    | 0.009**         | -0.011*** | -0.008**      |
| Employed in month 6                                  | -0.094*** | 0.003    | 0.002    | 0.011**         | -0.017*** | -0.014***     |
| Employed in month 9                                  | -0.093*** | 0.005    | 0.003    | 0.017***        | -0.009**  | -0.013***     |
| Employed in month 12                                 | -0.087*** | 0.007**  | 0.005*   | 0.019***        | -0.014*** | -0.011***     |
| On benefit in month 3                                | 0.110***  | 0.044*** | 0.044*** | 0.041***        | 0.049***  | 0.048***      |
| On benefit in month 6                                | 0.097***  | 0.023*** | 0.023*** | 0.017***        | 0.030***  | 0.031***      |
| On benefit in month 9                                | 0.075***  | 0.008**  | 0.008*** | -0.002          | 0.012***  | 0.015***      |
| On benefit in month 12                               | 0.051***  | -0.007** | -0.006** | -0.015***       | 0.003     | -0.000        |
| N – Ethnic Minorities                                | 26,780    |          |          |                 |           |               |
| N – Whites   | 908,560   |          |          |                 |           |               |
| Median bias  | 10.6      |          |          | 1.9             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 19.7%         |
| Whites   |           |          |          |                 |           | 8.2%          |

Notes: See notes to Table A.1.



**Table A.48 JSA overall parity estimates using different methods for other Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.098*** | -0.026*** | -0.026*** | -0.009          | -0.024*** | -0.024***     |
| Employed in month 6                                  | -0.105*** | -0.030*** | -0.030*** | -0.003          | -0.028*** | -0.024***     |
| Employed in month 9                                  | -0.101*** | -0.028*** | -0.027*** | 0.004           | -0.016**  | -0.021***     |
| Employed in month 12                                 | -0.094*** | -0.024*** | -0.023*** | 0.007           | -0.025*** | -0.018***     |
| On benefit in month 3                                | 0.102***  | 0.046***  | 0.045***  | 0.032***        | 0.044***  | 0.043***      |
| On benefit in month 6                                | 0.091***  | 0.037***  | 0.038***  | 0.017**         | 0.034***  | 0.032***      |
| On benefit in month 9                                | 0.084***  | 0.036***  | 0.036***  | 0.003           | 0.026***  | 0.031***      |
| On benefit in month 12                               | 0.067***  | 0.027***  | 0.028***  | -0.007          | 0.030***  | 0.023***      |
| N – Ethnic Minorities                                | 11,140    |           |           |                 |           |               |
| N – Whites   | 413,440   |           |           |                 |           |               |
| Median bias  | 10.1      |           |           | 2.1             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 18.6%         |
| Whites   |           |           |           |                 |           | 11.7%         |

Notes: See notes to Table A.1.

Table A.49 NDLP overall parity estimates using different methods for all Ethnic Minorities: Any

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.047*** | -0.029*** | -0.026*** | -0.014**        | -0.022*** | -0.024***     |
| Employed in month 6                                  | -0.046*** | -0.020*** | -0.017*** | -0.008          | -0.019*** | -0.017***     |
| Employed in month 9                                  | -0.044*** | -0.017*** | -0.015*** | -0.008          | -0.018*** | -0.016***     |
| Employed in month 12                                 | -0.038*** | -0.009*   | -0.006    | 0.000           | -0.014**  | -0.008        |
| On benefit in month 3                                | 0.092***  | 0.047***  | 0.041***  | 0.031***        | 0.043***  | 0.043***      |
| On benefit in month 6                                | 0.089***  | 0.041***  | 0.037***  | 0.027***        | 0.036***  | 0.037***      |
| On benefit in month 9                                | 0.083***  | 0.037***  | 0.033***  | 0.025***        | 0.035***  | 0.033***      |
| On benefit in month 12                               | 0.080***  | 0.031***  | 0.027***  | 0.021***        | 0.022***  | 0.028***      |
| N – Ethnic Minorities                                | 11,040    |           |           |                 |           |               |
| N – Whites   | 114,560   |           |           |                 |           |               |
| Median bias  | 7.6       |           |           | 1.5             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 8.3%          |
| Whites   |           |           |           |                 |           | 4.7%          |

Notes: See notes to Table A.1.

**Table A.50 NDLP overall parity estimates using different methods for Ethnic Minorities compared to Whites:  
Males**

|  | Raw      | OLS     | FILM   | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|---------|--------|-----------------|-----------|---------------|
| All  |          |         |        |                 |           |               |
| Employed in month 3                                  | -0.025   | -0.001  | 0.000  | -0.000          | 0.001     | 0.001         |
| Employed in month 6                                  | -0.051** | 0.000   | 0.004  | -0.001          | 0.008     | 0.001         |
| Employed in month 9                                  | -0.043** | 0.011   | 0.015  | 0.013           | 0.004     | 0.015         |
| Employed in month 12                                 | -0.042*  | 0.013   | 0.019  | 0.010           | -0.009    | 0.020         |
| On benefit in month 3                                | 0.080*** | 0.054** | 0.037* | 0.033           | 0.050*    | 0.033         |
| On benefit in month 6                                | 0.071*** | 0.025   | 0.009  | 0.004           | -0.005    | 0.004         |
| On benefit in month 9                                | 0.077*** | 0.019   | 0.015  | 0.006           | 0.001     | 0.008         |
| On benefit in month 12                               | 0.080*** | 0.034   | 0.032  | 0.023           | 0.030     | 0.031         |
| N – Ethnic Minorities                                | 560      |         |        |                 |           |               |
| N – Whites   | 6,460    |         |        |                 |           |               |
| Median bias  | 8.4      |         |        | 2.3             |           |               |
| Reliability of kernel matching                       |          |         |        | CS(1)UC(0)      |           |               |
| Percentage of sample lost due to incomplete history: |          |         |        |                 |           |               |
| Ethnic minorities                                    |          |         |        |                 |           | 6.1%          |
| Whites   |          |         |        |                 |           | 3.6%          |

Notes: See notes to Table A.1.

Table A.51 NDLP overall parity estimates using different methods for all Ethnic Minorities: Females

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.049*** | -0.030*** | -0.027*** | -0.015**        | -0.023*** | -0.025***     |
| Employed in month 6                                  | -0.046*** | -0.021*** | -0.018*** | -0.008          | -0.019*** | -0.016***     |
| Employed in month 9                                  | -0.044*** | -0.018*** | -0.016*** | -0.008          | -0.018**  | -0.016**      |
| Employed in month 12                                 | -0.039*** | -0.010*   | -0.007    | -0.000          | -0.013*   | -0.008        |
| On benefit in month 3                                | 0.093***  | 0.047***  | 0.040***  | 0.030***        | 0.044***  | 0.043***      |
| On benefit in month 6                                | 0.090***  | 0.042***  | 0.038***  | 0.027***        | 0.037***  | 0.038***      |
| On benefit in month 9                                | 0.084***  | 0.038***  | 0.033***  | 0.025***        | 0.035***  | 0.033***      |
| On benefit in month 12                               | 0.081***  | 0.030***  | 0.026***  | 0.020***        | 0.021***  | 0.027***      |
| N – Ethnic Minorities                                | 10,480    |           |           |                 |           |               |
| N – Whites   | 108,100   |           |           |                 |           |               |
| Median bias  | 7.8       |           |           | 1.4             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 8.4%          |
| Whites   |           |           |           |                 |           | 4.7%          |

Notes: See notes to Table A.1.

Table A.52 NDLP overall parity estimates using different methods for Black Ethnic Minorities: Any

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.037*** | -0.026*** | -0.025*** | -0.029**        | -0.011    | -0.018**      |
| Employed in month 6                                  | -0.032*** | -0.009    | -0.009    | -0.012          | -0.009    | -0.006        |
| Employed in month 9                                  | -0.029*** | -0.003    | -0.004    | -0.008          | -0.006    | -0.002        |
| Employed in month 12                                 | -0.023*** | 0.007     | 0.008     | 0.002           | -0.002    | 0.010         |
| On benefit in month 3                                | 0.102***  | 0.047***  | 0.040***  | 0.062***        | 0.044***  | 0.043***      |
| On benefit in month 6                                | 0.099***  | 0.040***  | 0.036***  | 0.059***        | 0.037***  | 0.037***      |
| On benefit in month 9                                | 0.096***  | 0.037***  | 0.032***  | 0.055***        | 0.034***  | 0.031***      |
| On benefit in month 12                               | 0.092***  | 0.027***  | 0.021***  | 0.042***        | 0.015*    | 0.022**       |
| N – Ethnic Minorities                                | 6,500     |           |           |                 |           |               |
| N – Whites   | 114,560   |           |           |                 |           |               |
| Median bias  | 10.0      |           |           | 2.3             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(1)UC(48)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 8.2%          |
| Whites   |           |           |           |                 |           | 4.7%          |

Notes: See notes to Table A.1.

Table A.53 NDLP overall parity estimates using different methods for Black Ethnic Minorities: Females

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.040*** | -0.029*** | -0.027*** | -0.027**        | -0.013    | -0.021***     |
| Employed in month 6                                  | -0.033*** | -0.011*   | -0.011    | -0.011          | -0.012    | -0.007        |
| Employed in month 9                                  | -0.030*** | -0.005    | -0.006    | -0.008          | -0.007    | -0.004        |
| Employed in month 12                                 | -0.024*** | 0.005     | 0.006     | 0.003           | -0.001    | 0.008         |
| On benefit in month 3                                | 0.103***  | 0.048***  | 0.041***  | 0.062***        | 0.044***  | 0.044***      |
| On benefit in month 6                                | 0.100***  | 0.040***  | 0.037***  | 0.057***        | 0.038***  | 0.037***      |
| On benefit in month 9                                | 0.097***  | 0.039***  | 0.033***  | 0.055***        | 0.036***  | 0.032***      |
| On benefit in month 12                               | 0.093***  | 0.026***  | 0.022***  | 0.043***        | 0.014     | 0.021**       |
| N – Ethnic Minorities                                | 6,160     |           |           |                 |           |               |
| N – Whites   | 108,100   |           |           |                 |           |               |
| Median bias  | 10.3      |           |           | 2.4             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(1)UC(48)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 8.4%          |
| Whites   |           |           |           |                 |           | 4.7%          |

Notes: See notes to Table A.1.

Table A.54 NDLP overall parity estimates using different methods for Asian Ethnic Minorities: Any

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.074*** | -0.040*** | -0.042*** | -0.042***       | -0.054*** | -0.051***     |
| Employed in month 6                                  | -0.073*** | -0.038*** | -0.039*** | -0.035**        | -0.051*** | -0.048***     |
| Employed in month 9                                  | -0.073*** | -0.042*** | -0.042*** | -0.039***       | -0.054*** | -0.052***     |
| Employed in month 12                                 | -0.059*** | -0.030*** | -0.030*** | -0.027*         | -0.037*** | -0.043***     |
| On benefit in month 3                                | 0.092***  | 0.063***  | 0.062***  | 0.055***        | 0.066***  | 0.069***      |
| On benefit in month 6                                | 0.082***  | 0.054***  | 0.055***  | 0.037***        | 0.052***  | 0.056***      |
| On benefit in month 9                                | 0.072***  | 0.051***  | 0.052***  | 0.034**         | 0.059***  | 0.055***      |
| On benefit in month 12                               | 0.064***  | 0.046***  | 0.046***  | 0.018           | 0.041***  | 0.051***      |
| N – Ethnic Minorities                                | 2,060     |           |           |                 |           |               |
| N – Whites   | 114,560   |           |           |                 |           |               |
| Median bias  | 7.6       |           |           | 2.0             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(3)UC(12)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 9.2%          |
| Whites   |           |           |           |                 |           | 4.7%          |

Notes: See notes to Table A.1.

Table A.55 NDLP overall parity estimates using different methods for Asian Ethnic Minorities: Females

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.074*** | -0.040*** | -0.041*** | -0.044***       | -0.053*** | -0.050***     |
| Employed in month 6                                  | -0.072*** | -0.037*** | -0.038*** | -0.036**        | -0.049*** | -0.046***     |
| Employed in month 9                                  | -0.074*** | -0.043*** | -0.043*** | -0.041***       | -0.054*** | -0.052***     |
| Employed in month 12                                 | -0.060*** | -0.030*** | -0.030*** | -0.030**        | -0.037*** | -0.043***     |
| On benefit in month 3                                | 0.094***  | 0.064***  | 0.063***  | 0.057***        | 0.066***  | 0.070***      |
| On benefit in month 6                                | 0.084***  | 0.056***  | 0.056***  | 0.041***        | 0.053***  | 0.057***      |
| On benefit in month 9                                | 0.073***  | 0.051***  | 0.050***  | 0.033**         | 0.058***  | 0.055***      |
| On benefit in month 12                               | 0.064***  | 0.045***  | 0.045***  | 0.017           | 0.041***  | 0.050***      |
| N – Ethnic Minorities                                | 1,960     |           |           |                 |           |               |
| N – Whites   | 108,100   |           |           |                 |           |               |
| Median bias  | 7.4       |           |           | 2.0             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(3)UC(13)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 9.3%          |
| Whites   |           |           |           |                 |           | 4.7%          |

Notes: See notes to Table A.1.



Table A.56 NDLP overall parity estimates using different methods for other Ethnic Minorities: Any

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.053*** | -0.019** | -0.018** | -0.012          | -0.024**  | -0.016*       |
| Employed in month 6                                  | -0.059*** | -0.022** | -0.021** | -0.017          | -0.016    | -0.019*       |
| Employed in month 9                                  | -0.059*** | -0.021** | -0.020** | -0.017          | -0.018    | -0.019*       |
| Employed in month 12                                 | -0.060*** | -0.025** | -0.023** | -0.021*         | -0.025**  | -0.024**      |
| On benefit in month 3                                | 0.063***  | 0.022**  | 0.021**  | 0.021*          | 0.024**   | 0.020**       |
| On benefit in month 6                                | 0.066***  | 0.026*** | 0.024**  | 0.021*          | 0.020*    | 0.023**       |
| On benefit in month 9                                | 0.060***  | 0.021**  | 0.019*   | 0.015           | 0.016     | 0.018*        |
| On benefit in month 12                               | 0.062***  | 0.026**  | 0.023**  | 0.016           | 0.023**   | 0.025**       |
| N – Ethnic Minorities                                | 2,480     |          |          |                 |           |               |
| N – Whites   | 114,560   |          |          |                 |           |               |
| Median bias  | 7.3       |          |          | 1.5             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(1)UC(7)      |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 7.8%          |
| Whites   |           |          |          |                 |           | 4.7%          |

Notes: See notes to Table A.1.

Table A.57 NDLP overall parity estimates using different methods for other Ethnic Minorities: Females

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.053*** | -0.019** | -0.017** | -0.013          | -0.024**  | -0.016*       |
| Employed in month 6                                  | -0.057*** | -0.022** | -0.020** | -0.018          | -0.014    | -0.019*       |
| Employed in month 9                                  | -0.057*** | -0.021** | -0.019** | -0.017          | -0.018    | -0.019*       |
| Employed in month 12                                 | -0.059*** | -0.024** | -0.022** | -0.021*         | -0.023**  | -0.023**      |
| On benefit in month 3                                | 0.064***  | 0.020**  | 0.019**  | 0.021*          | 0.021*    | 0.019*        |
| On benefit in month 6                                | 0.069***  | 0.026*** | 0.024**  | 0.022*          | 0.021*    | 0.024**       |
| On benefit in month 9                                | 0.061***  | 0.021**  | 0.018*   | 0.014           | 0.016     | 0.018         |
| On benefit in month 12                               | 0.061***  | 0.023**  | 0.021**  | 0.014           | 0.023*    | 0.023**       |
| N – Ethnic Minorities                                | 2,360     |          |          |                 |           |               |
| N – Whites   | 108,100   |          |          |                 |           |               |
| Median bias  | 7.4       |          |          | 1.5             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(1)UC(6)      |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 7.6%          |
| Whites   |           |          |          |                 |           | 4.7%          |

Notes: See notes to Table A.1.

**Table A.58 ND25+ overall parity estimates using different methods for all Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|----------|-----------------|-----------|---------------|
| All  |           |           |          |                 |           |               |
| Employed in month 3                                  | -0.008**  | 0.004     | -0.004   | 0.005           | -0.004    | -0.010**      |
| Employed in month 6                                  | -0.012*** | 0.007     | 0.002    | 0.017**         | -0.005    | -0.008        |
| Employed in month 9                                  | -0.007*   | 0.011**   | 0.005    | 0.022***        | -0.008    | -0.006        |
| Employed in month 12                                 | -0.004    | 0.016***  | 0.014*** | 0.030***        | -0.007    | 0.001         |
| On benefit in month 3                                | -0.013*** | -0.002    | -0.001   | -0.007          | 0.002     | 0.003         |
| On benefit in month 6                                | -0.032*** | -0.008    | -0.004   | -0.013          | -0.005    | -0.001        |
| On benefit in month 9                                | -0.035*** | -0.015*** | -0.006   | -0.016*         | -0.002    | -0.003        |
| On benefit in month 12                               | -0.040*** | -0.023*** | -0.013** | -0.021**        | -0.005    | -0.011*       |
| N – Ethnic Minorities                                | 13,080    |           |          |                 |           |               |
| N – Whites   | 78,860    |           |          |                 |           |               |
| Median bias  | 7.7       |           |          | 1.7             |           |               |
| Reliability of kernel matching                       |           |           |          | CS(0)UC(47)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |          |                 |           |               |
| Ethnic minorities                                    |           |           |          |                 |           | 3.3%          |
| Whites   |           |           |          |                 |           | 1.6%          |

Notes: See Nntes to Table A.1.

**Table A.59 ND25+ overall parity estimates using different methods for Ethnic Minorities compared to Whites:  
Males**

|  | Raw       | OLS       | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|----------|-----------------|-----------|---------------|
| All  |           |           |          |                 |           |               |
| Employed in month 3                                  | -0.010*** | 0.004     | -0.006   | 0.006           | -0.007    | -0.012**      |
| Employed in month 6                                  | -0.013*** | 0.008*    | 0.002    | 0.017**         | -0.004    | -0.008        |
| Employed in month 9                                  | -0.009**  | 0.013***  | 0.006    | 0.022**         | -0.007    | -0.006        |
| Employed in month 12                                 | -0.005    | 0.017**   | 0.013**  | 0.029***        | -0.009    | 0.001         |
| On benefit in month 3                                | -0.016*** | -0.003    | -0.001   | -0.014*         | 0.001     | 0.003         |
| On benefit in month 6                                | -0.036*** | -0.010*   | -0.005   | -0.018*         | -0.006    | -0.002        |
| On benefit in month 9                                | -0.040*** | -0.018*** | -0.009   | -0.020**        | -0.003    | -0.006        |
| On benefit in month 12                               | -0.044*** | -0.024*** | -0.014** | -0.022**        | -0.006    | -0.011        |
| N – Ethnic Minorities                                | 10,660    |           |          |                 |           |               |
| N – Whites   | 65,420    |           |          |                 |           |               |
| Median bias  | 8.3       |           |          | 1.7             |           |               |
| Reliability of kernel matching                       |           |           |          | CS(0)UC(49)     |           |               |
| Percentage of sample lost due to incomplete history: |           |           |          |                 |           |               |
| Ethnic minorities                                    |           |           |          |                 |           | 3.3%          |
| Whites   |           |           |          |                 |           | 1.5%          |

Notes: See notes to Table A.1.

**Table A.60 ND25+ overall parity estimates using different methods for all Ethnic Minorities: Females**

|  | Raw      | OLS    | FILM   | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|--------|--------|-----------------|-----------|---------------|
| All  |          |        |        |                 |           |               |
| Employed in month 3                                  | -0.000   | 0.007  | 0.006  | 0.005           | 0.010     | 0.003         |
| Employed in month 6                                  | -0.009   | 0.003  | -0.004 | 0.013           | -0.009    | -0.009        |
| Employed in month 9                                  | -0.005   | 0.003  | -0.003 | 0.014           | -0.012    | -0.008        |
| Employed in month 12                                 | -0.004   | 0.011  | 0.010  | 0.028           | -0.004    | 0.003         |
| On benefit in month 3                                | 0.002    | -0.001 | -0.002 | 0.006           | 0.008     | 0.004         |
| On benefit in month 6                                | -0.011   | -0.003 | 0.002  | -0.012          | 0.006     | 0.008         |
| On benefit in month 9                                | -0.010   | -0.005 | 0.004  | -0.017          | 0.003     | 0.008         |
| On benefit in month 12                               | -0.022** | -0.020 | -0.013 | -0.036*         | -0.002    | -0.011        |
| N – Ethnic Minorities                                | 2,420    |        |        |                 |           |               |
| N – Whites   | 13,440   |        |        |                 |           |               |
| Median bias  | 6.2      |        |        | 2.1             |           |               |
| Reliability of kernel matching                       |          |        |        | CS(5)UC(18)     |           |               |
| Percentage of sample lost due to incomplete history: |          |        |        |                 |           |               |
| Ethnic minorities                                    |          |        |        |                 |           | 3.1%          |
| Whites   |          |        |        |                 |           | 1.8%          |

Notes: See notes to Table A.1.

**Table A.61 ND25+ overall parity estimates using different methods for Black Ethnic Minorities: Any**

|  | Raw      | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|----------|----------|-----------------|-----------|---------------|
| All  |          |          |          |                 |           |               |
| Employed in month 3                                  | 0.005    | 0.008    | 0.004    | -0.012          | 0.010     | -0.000        |
| Employed in month 6                                  | -0.009   | 0.010*   | 0.008    | -0.000          | 0.003     | -0.002        |
| Employed in month 9                                  | -0.006   | 0.013**  | 0.011*   | 0.011           | -0.008    | -0.001        |
| Employed in month 12                                 | -0.007   | 0.016*** | 0.016**  | 0.007           | -0.012*   | 0.001         |
| On benefit in month 3                                | 0.017*** | 0.013**  | 0.014**  | 0.014           | 0.017***  | 0.020***      |
| On benefit in month 6                                | 0.014**  | 0.019*** | 0.019*** | 0.023           | 0.017**   | 0.024***      |
| On benefit in month 9                                | 0.007    | 0.001    | 0.003    | 0.026           | 0.010     | 0.009         |
| On benefit in month 12                               | 0.012*   | -0.001   | 0.001    | 0.033*          | 0.015*    | 0.006         |
| N – Ethnic Minorities                                | 6,080    |          |          |                 |           |               |
| N – Whites   | 78,860   |          |          |                 |           |               |
| Median bias  | 8.7      |          |          | 3.7             |           |               |
| Reliability of kernel matching                       |          |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |          |          |          |                 |           |               |
| Ethnic minorities                                    |          |          |          |                 |           | 2.6%          |
| Whites   |          |          |          |                 |           | 1.6%          |

Notes: See notes to Table A.1.

**Table A.62 ND25+ overall parity estimates using different methods for Black Ethnic Minorities: Males**

|  | Raw      | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|----------|----------|----------|-----------------|-----------|---------------|
| All  |          |          |          |                 |           |               |
| Employed in month 3                                  | 0.001    | 0.007    | 0.003    | -0.015          | 0.011     | 0.000         |
| Employed in month 6                                  | -0.012** | 0.011*   | 0.009    | -0.008          | 0.007     | 0.001         |
| Employed in month 9                                  | -0.010   | 0.015**  | 0.012*   | 0.001           | -0.005    | 0.001         |
| Employed in month 12                                 | -0.011*  | 0.016**  | 0.015**  | -0.000          | -0.014*   | 0.002         |
| On benefit in month 3                                | 0.018*** | 0.015**  | 0.016**  | 0.021*          | 0.017**   | 0.021***      |
| On benefit in month 6                                | 0.014**  | 0.019*** | 0.022*** | 0.029**         | 0.019**   | 0.025***      |
| On benefit in month 9                                | 0.007    | -0.001   | 0.003    | 0.025*          | 0.010     | 0.007         |
| On benefit in month 12                               | 0.016**  | -0.001   | 0.005    | 0.032**         | 0.014     | 0.007         |
| N – Ethnic Minorities                                | 4,940    |          |          |                 |           |               |
| N – Whites   | 65,420   |          |          |                 |           |               |
| Median bias  | 8.6      |          |          | 4.2             |           |               |
| Reliability of kernel matching                       |          |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |          |          |          |                 |           |               |
| Ethnic minorities                                    |          |          |          |                 |           | 2.5%          |
| Whites   |          |          |          |                 |           | 1.5%          |

Notes: See notes to Table A.1.

**Table A.63 ND25+ overall parity estimates using different methods for Black Ethnic Minorities: Females**

|  | Raw    | OLS    | FILM   | Kernel matching | DiD (-12) | DiD (average) |
|--|--------|--------|--------|-----------------|-----------|---------------|
| All  |        |        |        |                 |           |               |
| Employed in month 3                                  | 0.019  | 0.013  | 0.008  | -0.021          | 0.010     | -0.002        |
| Employed in month 6                                  | 0.002  | 0.002  | -0.002 | -0.004          | -0.017    | -0.015        |
| Employed in month 9                                  | 0.007  | 0.005  | 0.004  | 0.026           | -0.017    | -0.009        |
| Employed in month 12                                 | 0.006  | 0.016  | 0.017  | 0.032           | -0.006    | 0.000         |
| On benefit in month 3                                | 0.017  | 0.004  | 0.006  | -0.014          | 0.023     | 0.018         |
| On benefit in month 6                                | 0.016  | 0.017  | 0.015  | -0.006          | 0.020     | 0.026         |
| On benefit in month 9                                | 0.010  | 0.012  | 0.012  | -0.007          | 0.011     | 0.022         |
| On benefit in month 12                               | -0.000 | -0.004 | -0.006 | 0.008           | 0.020     | 0.004         |
| N – Ethnic Minorities                                | 1,160  |        |        |                 |           |               |
| N – Whites   | 13,440 |        |        |                 |           |               |
| Median bias  | 11.8   |        |        | 3.9             |           |               |
| Reliability of kernel matching                       |        |        |        |                 |           |               |
| Percentage of sample lost due to incomplete history: |        |        |        |                 |           |               |
| Ethnic minorities                                    |        |        |        |                 |           | 3.1%          |
| Whites   |        |        |        |                 |           | 1.8%          |

Notes: See notes to Table A.1.



**Table A.64 ND25+ overall parity estimates using different methods for Asian Ethnic Minorities: Any**

|  | Raw       | OLS      | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|-----------|-----------------|-----------|---------------|
| All  |           |          |           |                 |           |               |
| Employed in month 3                                  | -0.023*** | -0.014** | -0.026*** | 0.033           | -0.032*** | -0.030***     |
| Employed in month 6                                  | -0.011    | -0.006   | -0.015*   | -0.016          | -0.018*   | -0.022**      |
| Employed in month 9                                  | -0.008    | -0.007   | -0.016*   | -0.018          | -0.018*   | -0.024**      |
| Employed in month 12                                 | -0.006    | 0.000    | -0.006    | -0.004          | -0.021**  | -0.014        |
| On benefit in month 3                                | -0.039*** | -0.008   | -0.007    | -0.045          | -0.004    | -0.003        |
| On benefit in month 6                                | -0.072*** | -0.016   | -0.009    | 0.064           | -0.010    | -0.007        |
| On benefit in month 9                                | -0.078*** | -0.009   | -0.001    | 0.069           | 0.005     | 0.002         |
| On benefit in month 12                               | -0.093*** | -0.022** | -0.013    | 0.036           | -0.008    | -0.012        |
| N – Ethnic Minorities                                | 3,620     |          |           |                 |           |               |
| N – Whites   | 78,860    |          |           |                 |           |               |
| Median bias  | 8.7       |          |           | 5.2             |           |               |
| Reliability of kernel matching                       |           |          |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |           |                 |           |               |
| Ethnic minorities                                    |           |          |           |                 |           | 2.6%          |
| Whites   |           |          |           |                 |           | 1.6%          |

Notes: See notes to Table A.1.

**Table A.65 ND25+ overall parity estimates using different methods for Asian Ethnic Minorities: Males**

|  | Raw       | OLS      | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|-----------|-----------------|-----------|---------------|
| All  |           |          |           |                 |           |               |
| Employed in month 3                                  | -0.024*** | -0.017** | -0.031*** | 0.048           | -0.041*** | -0.038***     |
| Employed in month 6                                  | -0.013*   | -0.008   | -0.017*   | 0.047           | -0.021**  | -0.026***     |
| Employed in month 9                                  | -0.009    | -0.008   | -0.017*   | 0.041           | -0.020*   | -0.028***     |
| Employed in month 12                                 | -0.008    | -0.004   | -0.010    | 0.051           | -0.024**  | -0.021*       |
| On benefit in month 3                                | -0.043*** | -0.010   | -0.006    | -0.062          | -0.003    | -0.001        |
| On benefit in month 6                                | -0.078*** | -0.018   | -0.011    | -0.002          | -0.013    | -0.008        |
| On benefit in month 9                                | -0.083*** | -0.005   | 0.002     | 0.030           | 0.007     | 0.005         |
| On benefit in month 12                               | -0.099*** | -0.020*  | -0.008    | -0.018          | -0.004    | -0.007        |
| N – Ethnic Minorities                                | 2,960     |          |           |                 |           |               |
| N – Whites   | 65,420    |          |           |                 |           |               |
| Median bias  | 8.9       |          |           | 5.2             |           |               |
| Reliability of kernel matching                       |           |          |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |           |                 |           |               |
| Ethnic minorities                                    |           |          |           |                 |           | 2.8%          |
| Whites   |           |          |           |                 |           | 1.5%          |

Notes: See notes to Table A.1.

**Table A.66 ND25+ overall parity estimates using different methods for Asian Ethnic Minorities: Females**

|  | Raw       | OLS     | FILM    | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|---------|---------|-----------------|-----------|---------------|
| All  |           |         |         |                 |           |               |
| Employed in month 3                                  | -0.021    | -0.002  | -0.005  | -0.085          | 0.007     | 0.003         |
| Employed in month 6                                  | -0.006    | 0.001   | -0.007  | -0.069          | -0.006    | -0.004        |
| Employed in month 9                                  | -0.007    | -0.005  | -0.012  | -0.068          | -0.013    | -0.009        |
| Employed in month 12                                 | -0.001    | 0.014   | 0.008   | -0.062          | -0.009    | 0.008         |
| On benefit in month 3                                | -0.021    | -0.008  | -0.014  | 0.015           | -0.016    | -0.015        |
| On benefit in month 6                                | -0.045**  | -0.016  | -0.012  | 0.079           | -0.004    | -0.008        |
| On benefit in month 9                                | -0.055*** | -0.033  | -0.024  | 0.032           | -0.015    | -0.020        |
| On benefit in month 12                               | -0.062*** | -0.040* | -0.037* | 0.018           | -0.035    | -0.039*       |
| N – Ethnic Minorities                                | 660       |         |         |                 |           |               |
| N – Whites   | 13,440    |         |         |                 |           |               |
| Median bias  | 5.7       |         |         | 4.9             |           |               |
| Reliability of kernel matching                       |           |         |         |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |         |         |                 |           |               |
| Ethnic minorities                                    |           |         |         |                 |           | 2.0%          |
| Whites   |           |         |         |                 |           | 1.8%          |

Notes: See notes to Table A.1.

**Table A.67 ND25+ overall parity estimates using different methods for other Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.015**  | 0.006     | 0.004     | 0.008           | -0.001    | -0.004        |
| Employed in month 6                                  | -0.019*** | 0.008     | 0.008     | 0.014           | -0.004    | -0.004        |
| Employed in month 9                                  | -0.010    | 0.018**   | 0.017**   | 0.017           | 0.005     | 0.005         |
| Employed in month 12                                 | 0.002     | 0.031***  | 0.032***  | 0.035***        | 0.017*    | 0.019**       |
| On benefit in month 3                                | -0.038*** | -0.020*** | -0.023*** | -0.020*         | -0.019**  | -0.020***     |
| On benefit in month 6                                | -0.070*** | -0.038*** | -0.038*** | -0.037***       | -0.039*** | -0.038***     |
| On benefit in month 9                                | -0.066*** | -0.032*** | -0.030*** | -0.033**        | -0.031*** | -0.031***     |
| On benefit in month 12                               | -0.077*** | -0.043*** | -0.041*** | -0.036***       | -0.039*** | -0.042***     |
| N – Ethnic Minorities                                | 3,360     |           |           |                 |           |               |
| N – Whites   | 78,860    |           |           |                 |           |               |
| Median bias  | 9.2       |           |           | 1.7             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(1)UC(9)      |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 5.1%          |
| Whites   |           |           |           |                 |           | 1.6%          |

Notes: See notes to Table A.1.

**Table A.68 ND25+ overall parity estimates using different methods for other Ethnic Minorities: Males**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.016**  | 0.005     | 0.003     | 0.009           | -0.002    | -0.008        |
| Employed in month 6                                  | -0.016**  | 0.010     | 0.011     | 0.013           | -0.004    | -0.003        |
| Employed in month 9                                  | -0.006    | 0.021***  | 0.021***  | 0.022**         | 0.005     | 0.006         |
| Employed in month 12                                 | 0.008     | 0.036***  | 0.037***  | 0.036***        | 0.018*    | 0.023**       |
| On benefit in month 3                                | -0.046*** | -0.024*** | -0.028*** | -0.034***       | -0.025*** | -0.024***     |
| On benefit in month 6                                | -0.080*** | -0.043*** | -0.045*** | -0.051***       | -0.044*** | -0.044***     |
| On benefit in month 9                                | -0.080*** | -0.041*** | -0.041*** | -0.051***       | -0.039*** | -0.041***     |
| On benefit in month 12                               | -0.089*** | -0.050*** | -0.050*** | -0.054***       | -0.047*** | -0.050***     |
| N – Ethnic Minorities                                | 2,760     |           |           |                 |           |               |
| N – Whites   | 65,420    |           |           |                 |           |               |
| Median bias  | 9.1       |           |           | 1.4             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(4)UC(5)      |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 5.3%          |
| Whites   |           |           |           |                 |           | 1.5%          |

Notes: See notes to Table A.1.

**Table A.69 ND25+ overall parity estimates using different methods for other Ethnic Minorities: Females**

|  | Raw     | OLS    | FILM   | Kernel matching | DiD (-12) | DiD (average) |
|--|---------|--------|--------|-----------------|-----------|---------------|
| All  |         |        |        |                 |           |               |
| Employed in month 3                                  | -0.014  | 0.014  | 0.013  | 0.020           | 0.011     | 0.014         |
| Employed in month 6                                  | -0.033* | -0.002 | -0.007 | 0.007           | -0.001    | -0.005        |
| Employed in month 9                                  | -0.027  | 0.002  | -0.004 | 0.015           | 0.002     | 0.000         |
| Employed in month 12                                 | -0.029  | 0.005  | 0.003  | 0.014           | 0.007     | 0.004         |
| On benefit in month 3                                | -0.002  | -0.001 | -0.001 | 0.018           | 0.009     | -0.002        |
| On benefit in month 6                                | -0.025  | -0.012 | -0.008 | 0.005           | -0.007    | -0.007        |
| On benefit in month 9                                | 0.001   | 0.012  | 0.016  | 0.014           | 0.008     | 0.016         |
| On benefit in month 12                               | -0.019  | -0.010 | -0.002 | -0.005          | -0.007    | -0.007        |
| N – Ethnic Minorities                                | 600     |        |        |                 |           |               |
| N – Whites   | 13,440  |        |        |                 |           |               |
| Median bias  | 7.2     |        |        | 2.4             |           |               |
| Reliability of kernel matching                       |         |        |        | CS(6)UC(0)      |           |               |
| Percentage of sample lost due to incomplete history: |         |        |        |                 |           |               |
| Ethnic minorities                                    |         |        |        |                 |           | 4.2%          |
| Whites   |         |        |        |                 |           | 1.8%          |

Notes: See notes to Table A.1.

**Table A.70 NDYP overall parity estimates using different methods for all Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.034*** | -0.009*** | -0.019*** | 0.037***        | 0.003     | -0.017***     |
| Employed in month 6                                  | -0.034*** | 0.004     | -0.003    | 0.060***        | 0.002     | -0.001        |
| Employed in month 9                                  | -0.032*** | 0.004     | -0.003    | 0.066***        | -0.020*** | -0.003        |
| Employed in month 12                                 | -0.030*** | 0.006     | 0.002     | 0.066***        | -0.025*** | -0.002        |
| On benefit in month 3                                | -0.016*** | 0.015***  | 0.029***  | 0.042***        | 0.027***  | 0.027***      |
| On benefit in month 6                                | -0.047*** | 0.001     | 0.019***  | 0.051***        | -0.003    | 0.013*        |
| On benefit in month 9                                | -0.040*** | 0.004     | 0.024***  | 0.038***        | 0.023***  | 0.020***      |
| On benefit in month 12                               | -0.033*** | 0.008*    | 0.023***  | 0.052***        | 0.027***  | 0.016**       |
| N – Ethnic Minorities                                | 26,960    |           |           |                 |           |               |
| N – Whites   | 126,000   |           |           |                 |           |               |
| Median bias  | 11.3      |           |           | 4.1             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 26.3%         |
| Whites   |           |           |           |                 |           | 14.4%         |

Notes: See notes to Table A.1.

**Table A.71 NDYP overall parity estimates using different methods for Ethnic Minorities compared to Whites:  
Males**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.033*** | -0.006   | -0.013** | 0.049***        | 0.012     | -0.011        |
| Employed in month 6                                  | -0.037*** | 0.005    | -0.003   | 0.062***        | 0.006     | -0.004        |
| Employed in month 9                                  | -0.038*** | 0.001    | -0.006   | 0.065***        | -0.030*** | -0.009        |
| Employed in month 12                                 | -0.036*** | 0.005    | 0.002    | 0.069***        | -0.031*** | -0.005        |
| On benefit in month 3                                | -0.018*** | 0.014*** | 0.030*** | 0.022*          | 0.029***  | 0.032***      |
| On benefit in month 6                                | -0.047*** | 0.004    | 0.023*** | 0.026*          | 0.001     | 0.024***      |
| On benefit in month 9                                | -0.037*** | 0.008    | 0.031*** | 0.033**         | 0.037***  | 0.032***      |
| On benefit in month 12                               | -0.027*** | 0.012**  | 0.027*** | 0.043***        | 0.041***  | 0.026***      |
| N – Ethnic Minorities                                | 18,160    |          |          |                 |           |               |
| N – Whites   | 89,860    |          |          |                 |           |               |
| Median bias  | 11.8      |          |          | 3.8             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 24.6%         |
| Whites   |           |          |          |                 |           | 13.0%         |

Notes: See notes to Table A.1.



Table A.72 NDYP overall parity estimates using different methods for all Ethnic Minorities: Females

|  | Raw       | OLS      | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|-----------|-----------------|-----------|---------------|
| All  |           |          |           |                 |           |               |
| Employed in month 3                                  | -0.037*** | -0.015** | -0.032*** | -0.021          | -0.019    | -0.030***     |
| Employed in month 6                                  | -0.029*** | 0.002    | -0.001    | 0.038           | -0.007    | 0.006         |
| Employed in month 9                                  | -0.019*** | 0.010    | 0.004     | 0.047           | 0.007     | 0.012         |
| Employed in month 12                                 | -0.016*** | 0.008    | 0.001     | 0.036           | -0.008    | 0.005         |
| On benefit in month 3                                | -0.014*** | 0.016**  | 0.025**   | 0.069**         | 0.024     | 0.016         |
| On benefit in month 6                                | -0.049*** | -0.006   | 0.006     | 0.054*          | -0.012    | -0.014        |
| On benefit in month 9                                | -0.050*** | -0.003   | 0.003     | 0.020           | -0.012    | -0.007        |
| On benefit in month 12                               | -0.049*** | 0.002    | 0.017     | 0.048           | 0.000     | -0.003        |
| N – Ethnic Minorities                                | 8,800     |          |           |                 |           |               |
| N – Whites   | 36,140    |          |           |                 |           |               |
| Median bias  | 11.0      |          |           | 5.7             |           |               |
| Reliability of kernel matching                       |           |          |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |           |                 |           |               |
| Ethnic minorities                                    |           |          |           |                 |           | 29.7%         |
| Whites   |           |          |           |                 |           | 17.8%         |

Notes: See notes to Table A.1.

**Table A.73 NDYP overall parity estimates using different methods for Black Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.035*** | -0.013*** | -0.015*** | 0.004           | 0.019**   | -0.006        |
| Employed in month 6                                  | -0.047*** | -0.006    | -0.005    | 0.016           | 0.011     | 0.003         |
| Employed in month 9                                  | -0.045*** | -0.005    | -0.004    | 0.021           | -0.019**  | 0.001         |
| Employed in month 12                                 | -0.048*** | -0.003    | -0.000    | 0.026           | -0.024*** | 0.003         |
| On benefit in month 3                                | 0.048***  | 0.057***  | 0.065***  | 0.088***        | 0.050***  | 0.052***      |
| On benefit in month 6                                | 0.039***  | 0.060***  | 0.070***  | 0.098***        | 0.030***  | 0.048***      |
| On benefit in month 9                                | 0.043***  | 0.058***  | 0.066***  | 0.102***        | 0.055***  | 0.048***      |
| On benefit in month 12                               | 0.051***  | 0.061***  | 0.066***  | 0.103***        | 0.056***  | 0.045***      |
| N – Ethnic Minorities                                | 10,260    |           |           |                 |           |               |
| N – Whites   | 126,000   |           |           |                 |           |               |
| Median bias  | 12.9      |           |           | 2.8             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 | 22.3%     |               |
| Whites   |           |           |           |                 | 14.4%     |               |

Notes: See notes to Table A.1.

**Table A.74 NDYP overall parity estimates using different methods for Black Ethnic Minorities: Males**

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.044*** | -0.012** | -0.013** | 0.020           | 0.018*    | -0.004        |
| Employed in month 6                                  | -0.057*** | -0.007   | -0.008   | 0.023           | 0.014     | 0.001         |
| Employed in month 9                                  | -0.061*** | -0.012*  | -0.013*  | 0.022           | -0.029*** | -0.008        |
| Employed in month 12                                 | -0.062*** | -0.009   | -0.006   | 0.029*          | -0.030*** | -0.003        |
| On benefit in month 3                                | 0.047***  | 0.059*** | 0.067*** | 0.073***        | 0.055***  | 0.058***      |
| On benefit in month 6                                | 0.044***  | 0.069*** | 0.079*** | 0.088***        | 0.040***  | 0.065***      |
| On benefit in month 9                                | 0.050***  | 0.065*** | 0.074*** | 0.090***        | 0.070***  | 0.059***      |
| On benefit in month 12                               | 0.059***  | 0.065*** | 0.070*** | 0.086***        | 0.063***  | 0.053***      |
| N – Ethnic Minorities                                | 7,020     |          |          |                 |           |               |
| N – Whites   | 89,860    |          |          |                 |           |               |
| Median bias  | 12.5      |          |          | 3.1             |           |               |
| Reliability of kernel matching                       |           |          |          | CS(4)UC(41)     |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 20.0%         |
| Whites   |           |          |          |                 |           | 13.0%         |

Notes: See notes to Table A.1.

Table A.75 NDYP overall parity estimates using different methods for Black Ethnic Minorities: Females

|  | Raw       | OLS      | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|----------|----------|-----------------|-----------|---------------|
| All  |           |          |          |                 |           |               |
| Employed in month 3                                  | -0.017**  | -0.013   | -0.014   | -0.027          | 0.021     | -0.007        |
| Employed in month 6                                  | -0.026*** | -0.001   | 0.005    | 0.002           | 0.005     | 0.012         |
| Employed in month 9                                  | -0.011    | 0.012    | 0.020*   | 0.022           | 0.013     | 0.029**       |
| Employed in month 12                                 | -0.018**  | 0.010    | 0.013    | 0.021           | -0.004    | 0.021         |
| On benefit in month 3                                | 0.050***  | 0.054*** | 0.061*** | 0.102***        | 0.039**   | 0.039***      |
| On benefit in month 6                                | 0.028***  | 0.043*** | 0.050*** | 0.105***        | 0.012     | 0.011         |
| On benefit in month 9                                | 0.027***  | 0.047*** | 0.048*** | 0.108***        | 0.022     | 0.022         |
| On benefit in month 12                               | 0.032***  | 0.056*** | 0.060*** | 0.114***        | 0.039***  | 0.029**       |
| N – Ethnic Minorities                                | 3,260     |          |          |                 |           |               |
| N – Whites   | 36,140    |          |          |                 |           |               |
| Median bias  | 14.8      |          |          | 3.7             |           |               |
| Reliability of kernel matching                       |           |          |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |          |          |                 |           |               |
| Ethnic minorities                                    |           |          |          |                 |           | 27.1%         |
| Whites   |           |          |          |                 |           | 17.8%         |

Notes: See notes to Table A.1.

**Table A.76 NDYP overall parity estimates using different methods for Asian Ethnic Minorities: Any**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.028*** | -0.017*** | -0.029*** | 0.026           | -0.010    | -0.026***     |
| Employed in month 6                                  | -0.016*** | 0.005     | -0.006    | 0.091***        | -0.005    | -0.004        |
| Employed in month 9                                  | -0.011**  | 0.006     | -0.005    | 0.084**         | -0.020*   | -0.006        |
| Employed in month 12                                 | -0.003    | 0.011     | 0.003     | 0.077**         | -0.021**  | -0.002        |
| On benefit in month 3                                | -0.074*** | -0.019**  | 0.001     | 0.009           | 0.007     | 0.003         |
| On benefit in month 6                                | -0.119*** | -0.040*** | -0.021**  | -0.015          | -0.032**  | -0.022**      |
| On benefit in month 9                                | -0.104*** | -0.030*** | -0.006    | -0.034          | -0.004    | -0.002        |
| On benefit in month 12                               | -0.096*** | -0.028*** | -0.009    | -0.022          | 0.004     | -0.009        |
| N – Ethnic Minorities                                | 10,720    |           |           |                 |           |               |
| N – Whites   | 126,000   |           |           |                 |           |               |
| Median bias  | 10.3      |           |           | 4.7             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 25.9%         |
| Whites   |           |           |           |                 |           | 14.4%         |

Notes: See notes to Table A.1.

**Table A.77 NDYP overall parity estimates using different methods for Asian Ethnic Minorities: Males**

|  | Raw       | OLS       | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|----------|-----------------|-----------|---------------|
| All  |           |           |          |                 |           |               |
| Employed in month 3                                  | -0.016*** | -0.012    | -0.020** | 0.067*          | 0.008     | -0.015        |
| Employed in month 6                                  | -0.011*   | 0.004     | -0.008   | 0.097**         | -0.001    | -0.007        |
| Employed in month 9                                  | -0.008    | 0.003     | -0.008   | 0.085**         | -0.032**  | -0.011        |
| Employed in month 12                                 | -0.000    | 0.012     | 0.005    | 0.078**         | -0.027**  | -0.002        |
| On benefit in month 3                                | -0.076*** | -0.016*   | 0.004    | -0.022          | 0.004     | 0.006         |
| On benefit in month 6                                | -0.125*** | -0.037*** | -0.015   | -0.046          | -0.034**  | -0.014        |
| On benefit in month 9                                | -0.102*** | -0.022**  | 0.007    | -0.059          | 0.014     | 0.012         |
| On benefit in month 12                               | -0.087*** | -0.020**  | 0.001    | -0.042          | 0.026**   | 0.005         |
| N – Ethnic Minorities                                | 6,880     |           |          |                 |           |               |
| N – Whites   | 89,860    |           |          |                 |           |               |
| Median bias  | 10.6      |           |          | 5.8             |           |               |
| Reliability of kernel matching                       |           |           |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |          |                 |           |               |
| Ethnic minorities                                    |           |           |          |                 |           | 22.3%         |
| Whites   |           |           |          |                 |           | 13.0%         |

Notes: See notes to Table A.1.

Table A.78 NDYP overall parity estimates using different methods for Asian Ethnic Minorities: Females

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.052*** | -0.027**  | -0.048*** | -0.040          | -0.049**  | -0.050***     |
| Employed in month 6                                  | -0.028*** | 0.005     | -0.002    | 0.061           | -0.018    | 0.002         |
| Employed in month 9                                  | -0.018**  | 0.011     | -0.001    | 0.054           | 0.007     | 0.005         |
| Employed in month 12                                 | -0.008    | 0.007     | -0.003    | 0.062           | -0.010    | -0.004        |
| On benefit in month 3                                | -0.072*** | -0.026**  | -0.009    | 0.013           | 0.011     | -0.008        |
| On benefit in month 6                                | -0.114*** | -0.045*** | -0.036**  | 0.011           | -0.027    | -0.041**      |
| On benefit in month 9                                | -0.113*** | -0.048*** | -0.038**  | 0.019           | -0.045**  | -0.034*       |
| On benefit in month 12                               | -0.118*** | -0.043*** | -0.023    | 0.037           | -0.040**  | -0.036*       |
| N – Ethnic Minorities                                | 3,840     |           |           |                 |           |               |
| N – Whites   | 36,140    |           |           |                 |           |               |
| Median bias  | 10.2      |           |           | 6.1             |           |               |
| Reliability of kernel matching                       |           |           |           | CS(31)UC(50)    |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 32.4%         |
| Whites   |           |           |           |                 |           | 17.8%         |

Notes: See notes to Table A.1.

**Table A.79 NDYP overall parity estimates using different methods for other Ethnic Minorities: Any**

|  | Raw       | OLS    | FILM     | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|--------|----------|-----------------|-----------|---------------|
| All  |           |        |          |                 |           |               |
| Employed in month 3                                  | -0.044*** | -0.007 | -0.011** | 0.028***        | -0.003    | -0.022***     |
| Employed in month 6                                  | -0.044*** | 0.011* | 0.005    | 0.045***        | -0.002    | -0.006        |
| Employed in month 9                                  | -0.045*** | 0.008  | 0.004    | 0.043***        | -0.022**  | -0.008        |
| Employed in month 12                                 | -0.046*** | 0.008  | 0.004    | 0.046***        | -0.031*** | -0.012        |
| On benefit in month 3                                | -0.023*** | 0.012* | 0.019*** | 0.021*          | 0.022**   | 0.027***      |
| On benefit in month 6                                | -0.066*** | -0.010 | 0.003    | 0.012           | -0.015    | 0.010         |
| On benefit in month 9                                | -0.068*** | -0.006 | 0.007    | 0.010           | 0.010     | 0.009         |
| On benefit in month 12                               | -0.064*** | -0.003 | 0.008    | 0.027**         | 0.018*    | 0.008         |
| N – Ethnic Minorities                                | 5,960     |        |          |                 |           |               |
| N – Whites   | 126,000   |        |          |                 |           |               |
| Median bias  | 9.2       |        |          | 2.9             |           |               |
| Reliability of kernel matching                       |           |        |          |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |        |          |                 |           |               |
| Ethnic minorities                                    |           |        |          |                 |           | 33.9%         |
| Whites   |           |        |          |                 |           | 14.4%         |

Notes: See notes to Table A.1.



**Table A.80 NDYP overall parity estimates using different methods for other Ethnic Minorities: Males**

|  | Raw       | OLS     | FILM   | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|---------|--------|-----------------|-----------|---------------|
| All  |           |         |        |                 |           |               |
| Employed in month 3                                  | -0.044*** | -0.000  | -0.003 | 0.026**         | 0.008     | -0.018**      |
| Employed in month 6                                  | -0.046*** | 0.017** | 0.012* | 0.040***        | 0.001     | -0.008        |
| Employed in month 9                                  | -0.049*** | 0.014*  | 0.010  | 0.039***        | -0.028*** | -0.009        |
| Employed in month 12                                 | -0.052*** | 0.014*  | 0.011  | 0.039***        | -0.039*** | -0.016        |
| On benefit in month 3                                | -0.029*** | 0.002   | 0.009  | -0.003          | 0.023*    | 0.029***      |
| On benefit in month 6                                | -0.072*** | -0.017* | -0.005 | -0.007          | -0.010    | 0.017         |
| On benefit in month 9                                | -0.074*** | -0.011  | 0.003  | 0.006           | 0.018     | 0.016         |
| On benefit in month 12                               | -0.069*** | -0.011  | -0.000 | 0.017           | 0.025**   | 0.011         |
| N – Ethnic Minorities                                | 4,260     |         |        |                 |           |               |
| N – Whites   | 89,860    |         |        |                 |           |               |
| Median bias  | 8.7       |         |        | 2.8             |           |               |
| Reliability of kernel matching                       |           |         |        |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |         |        |                 |           |               |
| Ethnic minorities                                    |           |         |        |                 |           | 36.1%         |
| Whites   |           |         |        |                 |           | 13.0%         |

Notes: See notes to Table A.1.

**Table A.81 NDYP overall parity estimates using different methods for other Ethnic Minorities: Females**

|  | Raw       | OLS       | FILM      | Kernel matching | DiD (-12) | DiD (average) |
|--|-----------|-----------|-----------|-----------------|-----------|---------------|
| All  |           |           |           |                 |           |               |
| Employed in month 3                                  | -0.044*** | -0.026*** | -0.031*** | 0.012           | -0.029    | -0.031**      |
| Employed in month 6                                  | -0.038*** | -0.005    | -0.010    | 0.055*          | -0.011    | 0.002         |
| Employed in month 9                                  | -0.037*** | -0.009    | -0.014    | 0.050*          | -0.006    | -0.005        |
| Employed in month 12                                 | -0.030*** | -0.011    | -0.014    | 0.053*          | -0.013    | -0.006        |
| On benefit in month 3                                | -0.007    | 0.030**   | 0.036***  | 0.078***        | 0.018     | 0.021         |
| On benefit in month 6                                | -0.051*** | -0.001    | 0.013     | 0.042           | -0.028    | -0.009        |
| On benefit in month 9                                | -0.055*** | -0.000    | 0.009     | -0.001          | -0.007    | -0.008        |
| On benefit in month 12                               | -0.051*** | 0.012     | 0.024*    | 0.028           | 0.007     | 0.005         |
| N – Ethnic Minorities                                | 1,700     |           |           |                 |           |               |
| N – Whites   | 36,140    |           |           |                 |           |               |
| Median bias  | 11.0      |           |           | 2.8             |           |               |
| Reliability of kernel matching                       |           |           |           |                 |           |               |
| Percentage of sample lost due to incomplete history: |           |           |           |                 |           |               |
| Ethnic minorities                                    |           |           |           |                 |           | 28.4%         |
| Whites   |           |           |           |                 |           | 17.8%         |

Notes: See notes to Table A.1.

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