

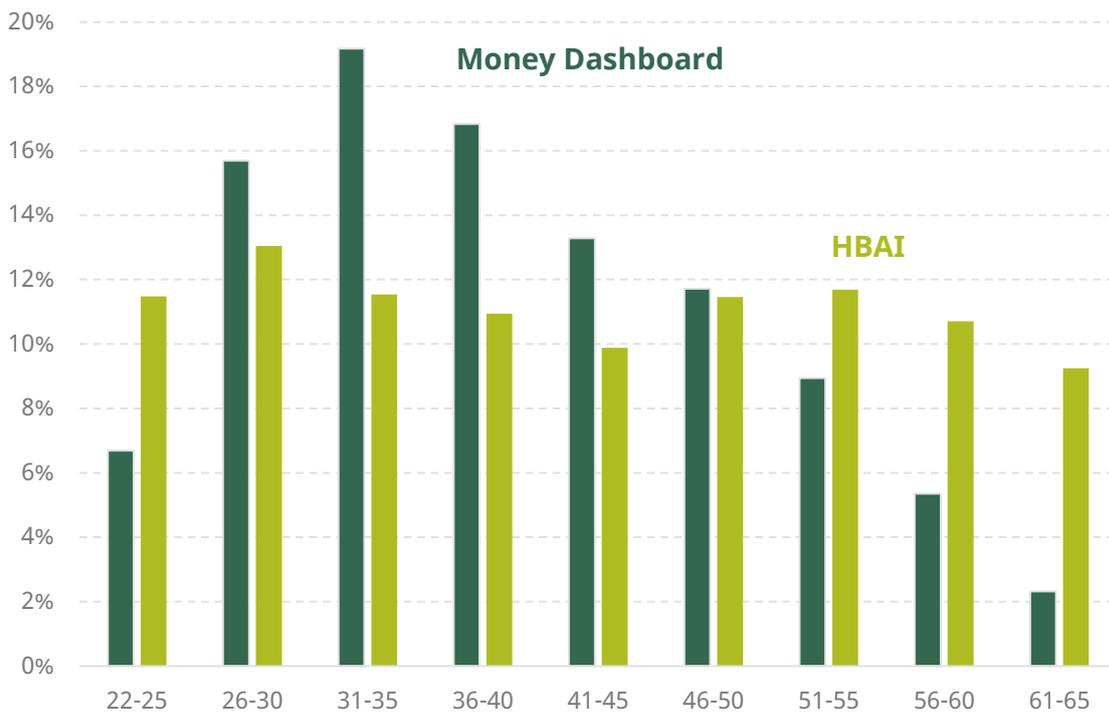
# Appendix B. Representativeness

A chief concern with using data from the Money Dashboard (MDB) app is the extent to which this sample of users is representative of UK households overall. We now present descriptive statistics on our working sample from MDB: we assess its representativeness by comparing characteristics to samples drawn from the 2018–19 Households Below Average Income (HBAI) data set and the wave 6 (2016 to 2018) Wealth and Assets Survey (WAS), which are representative of the UK population.<sup>1</sup>

## Demographics

Figure B1 shows the age distribution of our balanced panel of MDB users against that of the HBAI. As might have been expected, the MDB sample is slightly younger with a greater share of users in the 26–45 age range, although the youngest and oldest individuals are less likely to be in the MDB data. However, there is nonetheless a wide spread of ages in the MDB sample: 7% of users are aged 22–25 and 8% are aged 56 or over.

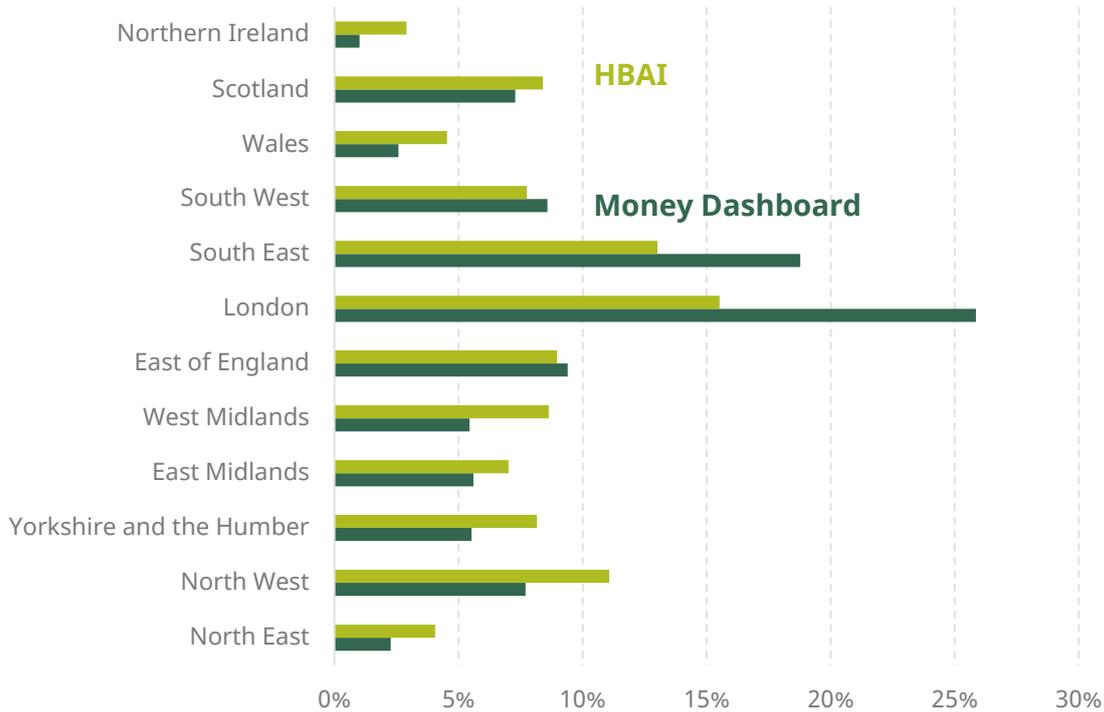
**Figure B1. Share of HBAI and MDB balanced panel users, by age group**



Source: Authors' calculations using Money Dashboard data available 12 June 2020 and HBAI 2018–19.

<sup>1</sup> Department for Work and Pensions. (2020). *Households Below Average Income, 1994/95-2018/19*. [data collection]. 14th Edition. UK Data Service. SN: 5828, <http://doi.org/10.5255/UKDA-SN-5828-12>; Department for Work and Pensions, Office for National Statistics, NatCen Social Research. (2020). *Family Resources Survey, 2018-2019*. [data collection]. UK Data Service. SN: 8633, <http://doi.org/10.5255/UKDA-SN-8633-1>; Office for National Statistics, Social Survey Division. (2020). *Wealth and Assets Survey, Waves 1-5 and Rounds 5-6, 2006-2018*. [data collection]. 11th Edition. UK Data Service. SN: 7215, <http://doi.org/10.5255/UKDA-SN-7215-11>.

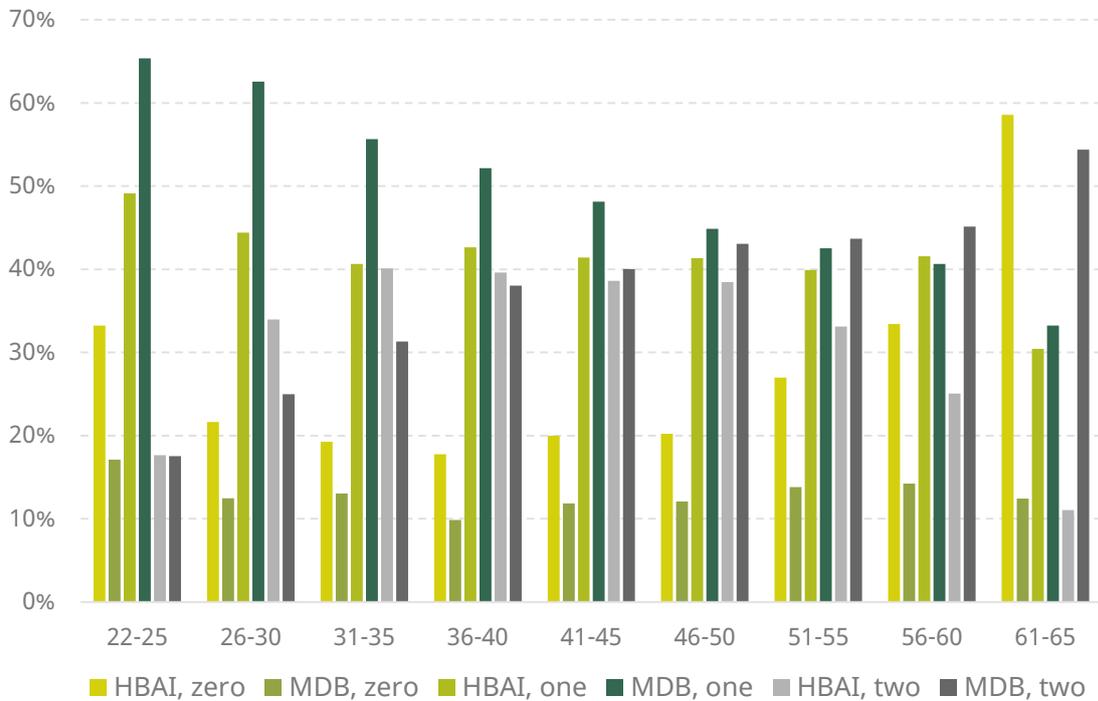
**Figure B2. Share of HBAI and MDB balanced panel users, by region**



Note: MDB users for whom we do not have a postcode are excluded from the figure.

Source: Authors' calculations using Money Dashboard data available 12 June 2020 and HBAI 2018-19.

**Figure B3. Number of earners per household, by age**



Note: MDB data have been reweighted to match the national age and region distribution, as described in the text. Number of workers per household in MDB calculated using the method described in Appendix A. Users who appear to have more than two jobs are coded as two.

Source: Authors' calculations using Money Dashboard data available 12 June 2020 and HBAI 2018-19.

We next examine the regional spread of users in our working sample against that of HBAI (Figure B2). Our sample is weighed more heavily towards London and the South East, though overall the patterns are fairly similar.

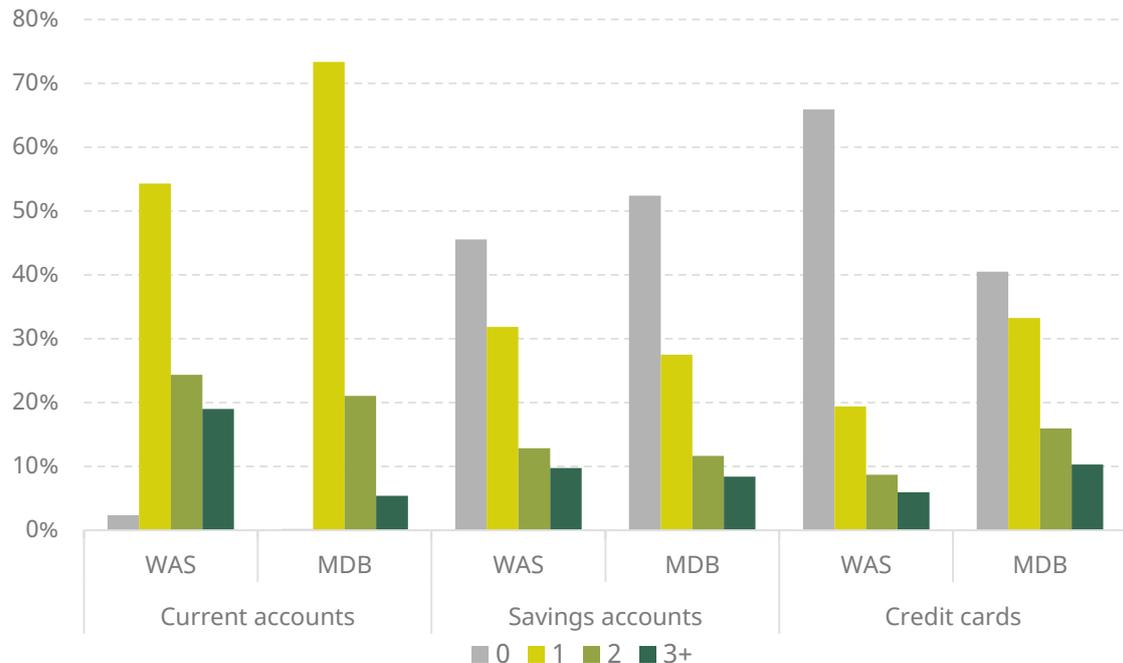
As noted in the main text, we reweight our sample to make it more representative of the population as a whole. To do this, we assign each user a weight, based on the combination of their age (in five-year age bands) and region. The weighted sample matches the actual region and age composition of the age 22–64 population (specifically, the joint distribution of the two) as reported in the HBAI 2018–19 data. All figures other than Figures B1 and B2 are based on the weighted MDB data.

Figure B3 examines the number of earners per household across different age categories, again against HBAI data. For most of the age groups, MDB matches the distribution of households with zero, one or two workers fairly closely, though it is much less close for users at the top of the age distribution. This adds confidence both that the bulk of users have linked in their partners’ financial accounts and that we are able to identify earnings transactions pertaining to separate jobs.

## Financial accounts

Much of our analysis relies on us being able to observe all the financial accounts of a user (current, savings, credit card). Figure B4 shows the share of households with zero, one, two, or three or more of each type of account, in the WAS and in our working sample of MDB users. The two samples are fairly well matched, especially on the distribution of savings accounts.

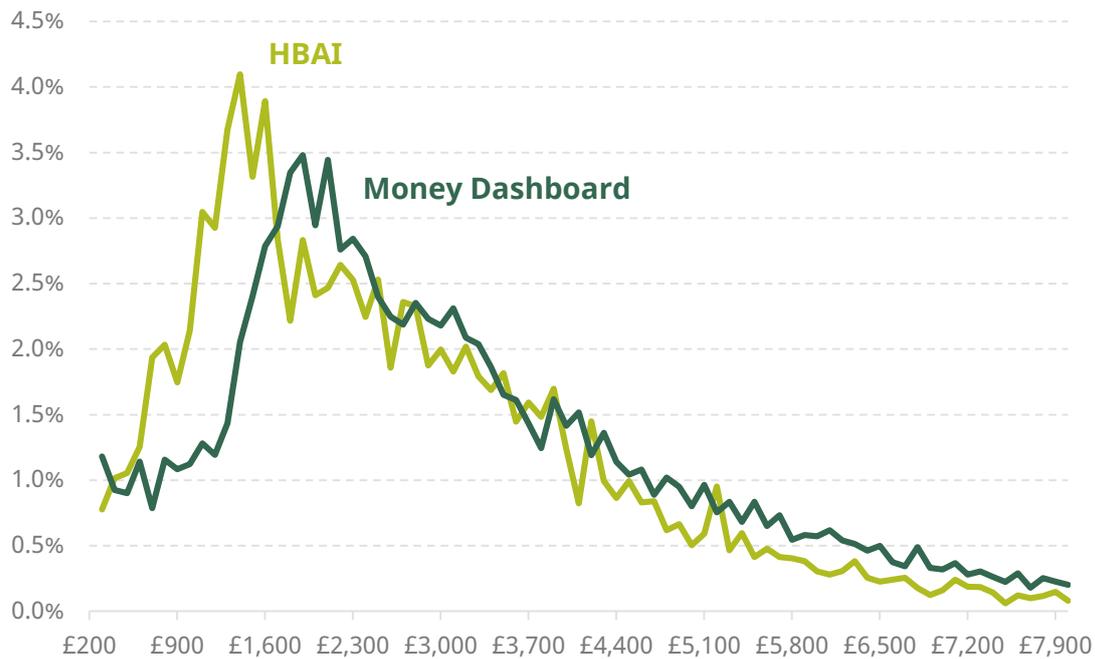
**Figure B4. Share of WAS and MDB balanced panel users, by financial account type and number**



Note: MDB data have been reweighted to match the national age and region distribution, as described in the text. The WAS measure of credit cards includes store cards.

Source: Authors’ calculations using Money Dashboard data available 12 June 2020 and WAS wave 6.

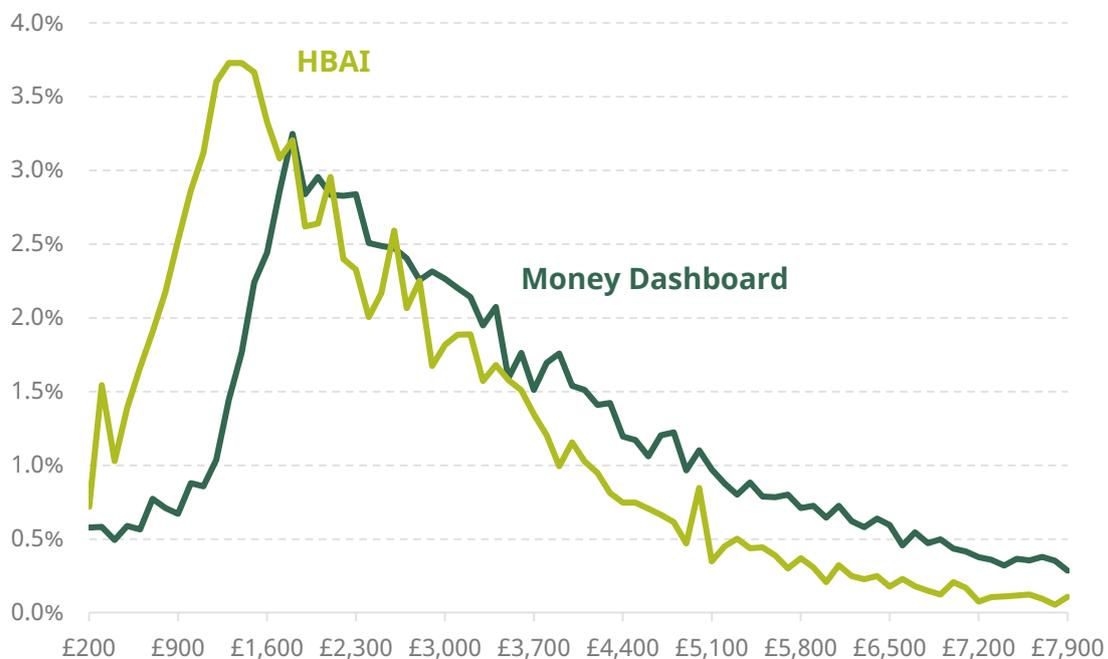
**Figure B5. Distribution of monthly household earnings, HBAI and MDB samples**



Note: MDB data have been reweighted to match the national age and region distribution, as described in the text. Earnings transactions are identified in the Money Dashboard data using the algorithm described in Appendix A. The sample is trimmed to exclude households with earnings of less than £150 or more than £8,000.

Source: Authors' calculations using Money Dashboard data available 12 June 2020 and HBAI 2018-19.

**Figure B6. Distribution of monthly household income, HBAI and MDB samples**



Note: MDB data have been reweighted to match the national age and region distribution, as described in the text. The measure of income used in the Money Dashboard data is as described in Section 2. The sample is trimmed to exclude households with monthly incomes of less than £150 or more than £8,000.

Source: Authors' calculations using Money Dashboard data available 12 June 2020 and HBAI 2018-19.

---

## Pre-crisis distribution of household income and household earnings

Figure B5 shows the distribution of monthly household earnings in the MDB data (before the crisis) where, for expositional ease, we trim the distribution to exclude households with earnings of less than £150 or more than £8,000. The distribution is somewhat right shifted relative to the HBAI sample, though the match is quite close.

Figure B6 repeats the analysis but for the distribution of monthly household incomes (again trimming the sample to remove those households with monthly incomes of less than £150 or more than £8,000). Again, the MDB sample provides a somewhat right-shifted distribution, more so than seen for earnings. Part of the difference may be that our measure of income occasionally includes transfers from unlinked accounts, whereas this is unlikely to affect the measure of earnings substantially. Not shown in the figure is that the upper tail of the income distribution is over-represented in MDB relative to HBAI. Whereas 2.7% of households in HBAI have a monthly income in excess of £8,000, that figure is 10.5% for MDB. Both data sets have a small number of users with incomes under £150 (2.0% and 0.7% for MDB and HBAI respectively).

## Pre-crisis financial distress

We might think that those using a budgeting app such as MDB may systematically differ from the rest of the population with regards to budgeting ability. This could have consequences for our measures of financial distress, such as making bill payments on time. To check for representativeness on this margin, ideally we would compare missed bills in MDB with those in another data source. However, while the MDB data can be used to obtain the *change* in missed bills, it is not suitable for obtaining the *level* of missed bills. This is because if someone does not pay a particular bill, we do not know whether they have 'missed' it, they are not liable for it, it is not tagged or it is paid out of an unlinked account.

Instead, we compare overdraft usage in our MDB sample with that reported by families in WAS. In the MDB data, we can observe whether a user is subject to an overdraft *charge*, but not all overdraft usage generates such a charge. This causes us to undercount the number of MDB users using their overdraft. Moreover, even if a user is subject to an overdraft charge, it is not clear when they stop using their overdraft. Nonetheless, frequency of overdraft charges can give an indication of the budgeting ability of the sample. We find that:

- 13% of families in WAS report being overdrawn on a current account;
- 2.5% of our MDB sample are subject to an overdraft charge each weekday on average;<sup>2</sup>
- 5% of our MDB sample are subject to at least one such charge each week;
- 12.5% of our MDB sample are subject to at least one such charge each month.

For the reasons given above, we cannot directly compare the MDB and WAS statistics. What we can see, however, is that MDB users do frequently use overdrafts at a rate in at least the same neighbourhood as the population at large.

---

<sup>2</sup> The vast majority of overdraft charges are on weekdays.