

Using Survey and Banking Data to Measure Financial Wellbeing

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Commonwealth Bank of Australia and
Melbourne Institute Financial Wellbeing
Scales Technical Report No. 1
Appendices A-D
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CommonwealthBank



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Appendix A. Description of the On-line Survey

The project's on-line survey collected self-reported measures of financial wellbeing corresponding to each of the elements in our definition of financial wellbeing. It additionally asked other financial wellbeing questions that had been included in other research and gathered demographic, socioeconomic, behavioural, attitudinal, and ecological data. This appendix describes the on-line survey instrument, including the rationale for adoption of an on-line survey, the survey sampling framework, the procedure for recruitment of respondents, and the linkage between the survey and the CBA customer financial record information.

A.1 Considerations

The survey data were collected in the form of an on-line questionnaire that could be completed by customers at any location on any device providing they had an internet connection. Telephone and direct interview survey methods were also considered. The costs associated with these alternatives were, however, significantly higher than those for an on-line survey. Furthermore, both would have required a substantially more time to achieve the desired sample size.

There were, however, potential disadvantages associated with the adoption of an on-line survey. These included: (i) biases in the respondent profile (for example, a skewing towards younger respondents); (ii) low response rates; (iii) the potential for non-compliance (deliberate or inadvertent); (iv) technology constraints; and (v) privacy.

To address the first two risks, a large number of invitations (Invitations = 300,000) were sent to targeted customers with the aim of obtaining a reasonable sample size (N=6,000). To address the third risk, extensive care was taken to ensure that the wording of the survey was clear and that respondents could complete the survey in their own time. In this respect, each customer received his or her own unique survey link to begin the survey, and the customers were allowed to close (and re-commence) the survey at any time. Finally, the University of Melbourne Human Ethics Advisory Group approved the survey and survey procedures, including its protections of privacy.

A.2 Sampling Strata

The on-line survey was limited to digitally-engaged CBA customers and drew data from three target groups (strata), resulting in a partially-overlapping stratified sampling framework. The strata were:

Stratum A: A nationally representative sample of CBA customers. Invitations were e-mailed to approximately 60,000 customers from this sample.

Stratum B: A sample of sole-MFI customers for which the bank has a relatively complete view of their financial position and behaviours. These were customers believed to undertake their banking solely through CBA and who were identified by reference to information collected through transactional data. This sample was selected to ensure that we had enough customers for whom we had a complete view of their financial data and could link their financial-record data to their survey responses to construct the financial wellbeing scales. Approximately 180,000 e-mail invitations were sent to this sample.

Stratum C: A sample of 'high-visibility' split-MFI customers for whom the CBA appeared to be the main—but not sole—banking provider but for whom CBA also had either recent product application or Financial Health Check data. This sample was selected to allow us to construct a view of the financial wellbeing of non-exclusive CBA customers, and to analyse the properties of our financial wellbeing scale and its determinants among customers for whom we have incomplete financial

record information. CBA e-mailed invitations to approximately 60,000 customers from this sample.

A.3 Recruitment

The recruitment of participants and the execution of the survey were overseen by market research company FiftyFive5. Parallel Data—an on-line survey provider and sub-contractor to Fiftyfive5—was responsible for scripting and hosting the survey. To provide a social incentive and assist in the recruitment process, CBA agreed to donate \$5,000 to three charity partners who support Australians in vulnerable financial circumstances. Participants' votes decided which charities received proportions of the donations.

The recruitment process was follows:

- (i) The final sample pool of potential survey respondents constructed by CBA was sent an electronic survey invitation e-mail by CBA in html format (to ensure that no external organisations required access to customer names and e-mail addresses). The e-mail referenced and included a Plain Language Statement information sheet as an attachment. The recruitment e-mail and Plain Language Statement are shown in Appendix C.
- (ii) Each survey invitation included a unique survey link that allowed each individual survey respondent to begin the survey, allowed them to close the survey and re-start where they left, and allowed them to be identified later by CBA for the purposes of linking the survey answers to the customers' financial records.
- (iii) An initial page of the survey linked to and administered the consent document, which is shown in Appendix C; if consent was given, the first few questions of the survey included additional screeners to confirm location and final respondent age, and to ensure that no one under 18 completed the survey.
- (iv) The e-mail invitations were sent in tranches over the course of several days.
- (v) An e-mail reminder was sent to customers who did not respond to the initial request. For this, FiftyFive5 sent CBA the list of links for completed surveys. CBA used these links to form a list of e-mail addresses that had not responded for the purpose of sending e-mail reminders. The reminder statement is shown in Appendix C.

A.4 Description

The full survey instrument is given in Appendix B. The instrument was divided into the six sections.

The survey's first section asked demographic profiling questions about the respondent's age, gender, and geographic location.

The second asked questions about the person's perceptions and experiences with financial outcomes, including 33 questions about financial wellbeing. The wellbeing questions were selected from existing scales and analyses, including the CFPB (2015), FiftyFive5 (2017), Muir et al. (2017), and other studies. Section C also asked questions about major life events and intermediate financial behaviours.

This was followed by a third section with additional demographic and economic questions about the person's work status, household composition, household tenure, and housing payments.

The survey's fourth section focused on objective financial circumstances, including the person's banking relationships, the value of household deposits, loans, and investments. The information from this section helped to validate the identification of sole- and split-MFI customers and to help us determine the visibility of the financial records.

The fifth section focused on financial literacy, habits, attitudes, and intermediate behaviours.

The sixth section asked a final set of profiling questions about household income, other economic circumstances, household responsibilities, health, and personal background.

A.5 Linking to CBA Financial-Record Data

In addition to the self-reported data from the survey, the wellbeing scales were developed using data sourced from CBA's own financial databases. In order to derive a robust wellbeing scale, survey data were be used to validate CBA's financial data by exploring whether the self-reported measures were consistent with the evidence produced by CBA's internal datasets.

Appendix B: CommBank Financial Wellbeing Survey Instrument

August 2017

Programmer instructions:

- All responses single response unless otherwise indicated as multiple (**MR**)
- Randomise indicated statements between respondents, *not* within respondent
- All respondents are eligible – no termination points
- Include flat-line checks – if same code across all pop up “For this question, you cannot have the same answer for every statement, please can you re-check and revise your answers”
- Each screen needs an ‘escape hatch’ to comply with university ethics – a link that someone can click before exiting the survey that requests that the data collected be deleted

Sample and quotas:

- **Core sample frame:** All CommBank customers with email addresses available for contact. We will include both a nationally representative customer sample, along with boosts of pre-identified MFI customers for which we are confident we have a reasonably complete view of their financial and transactional objective data

Sample stream	N
Nat rep customer sample	60,000
MFI customer boost	180,000
Complete view through product application data	60,000
Total invited sample	300,000

Questionnaire outline:

SECTION ORDER	KEY QUESTIONS	ROLE
A1 <i>Profilers</i>	<i>Basic demographics</i>	<i>Profiling</i>
C <i>Subjective financial wellbeing measures</i>	<i>Financial situation, goals, attitudes and behaviours across every day, rainy day and one day elements of financial wellbeing</i>	<i>Creation of Subjective Financial Wellbeing Index</i>
A2 <i>Further profilers</i>	<i>Snapshot of household set-up</i>	<i>Profiling</i>
B <i>My banking and financial set-up</i>	<i>My currently financial set-up – relationships, products, snapshot of footings and CommBank share of wallet/footings. Individual vs household level and financial systems</i>	<i>Context & alignment to internal classification data</i>
D <i>Additional subjective and stated behavioural measures</i>	<i>Known influencers, needs, attitudes, engagement and behaviour used to bring to life and understand key drivers of financial wellbeing</i>	<i>Further understanding, profiling and commercialising the index</i>
F <i>Classification</i>	<i>Further demographic, household and socioeconomic classifiers</i>	<i>Further profiling</i>

Survey introduction screen

SCREEN 1:

Great, thanks for taking part!

To make life easier, if you need to complete the survey over multiple sessions you can simply close your browser and re-click on your original survey link to start back where you left off.

At the end of the survey, we'll ask you to choose which of one of the three charities that support Australians in vulnerable financial circumstances you'd like CommBank to donate to on your behalf.

Before we get started, please take a moment to read the following research consent form.

[^INSERT CONSENT STATEMENT]

I agree [NEXT BUTTON LABEL CHANGE FOR THIS SCREEN]

PROGRAMMER NOTE: STORE BUTTON CLICKS AS A 'SURVEY CONSENT' VARIABLE IF NOT CLICKED, THEN SURVEY TERMINATED

.

SECTION A1: Initial profilers

SHOW INTRO AND A2A-A4 ON SAME SCREEN

Before you start the survey, we would like to ask you a few questions to make sure that we are surveying a good cross section of the community.

A2a Please type in your age? _____ (please enter below) **TERMINATE IF <18**

A2b **HIDDEN QUESTION: PLEASE CODE AGE INTO THE FOLLOWING:**

1. 18-21
2. 22-24
3. 25-29
4. 30-34
5. 35-39
6. 40-44
7. 45-49
8. 50-54
9. 55-59
10. 60-64
11. 65-69
12. 70-74
13. 75-79
14. 80+

A3 And are you...

1. Male
2. Female
3. Other <Please specify>

A4a Please type in your postcode: _____

A4b **HIDDEN QUESTION: STATE:**

1. NSW
2. VIC
3. QLD
4. WA
5. SA
6. TAS
7. ACT
8. NT

A4c **HIDDEN QUESTION: PLEASE CODE INTO METRO AND RURAL:**

1. Metro
2. Rural

SECTION C: Subjective financial wellbeing measures (and related ecological questions)

We'd now like to ask you some questions about your **financial situation** as well as about some of your **financial experiences, goals, attitudes and behaviours**. Firstly...

C3a Which, if any, of these major events that have happened in your life over the past 12 months?
Please select all that apply

PROGRAMMER: ROTATE ORDER OF CODES 1-16, ALLOW MULTIPLE RESPONSE

1. Got married
2. Separated from spouse or long-term partner
3. Got back together with spouse or long-term partner after a separation
4. Pregnancy / pregnancy of partner
5. Partner or I gave birth to, or adopted a new child
6. Serious personal injury or illness to self
7. Serious illness or death of an immediate or close family member
8. Serious illness or death of a close friend
9. Retired from the workforce
10. Fired or made redundant by an employer
11. Changed jobs (i.e., employers)
12. Promoted at work
13. Major improvement in financial situation (e.g., received an inheritance, significant bonus, etc)
14. Major worsening in financial situation (e.g., went bankrupt)
15. Changed residence

- 16. A weather-related disaster (e.g., flood, bushfire, cyclone)
- 17. None of these

C2a How **satisfied** are you with your **financial situation**?
Please pick a number between 0 and 10, where 0 means totally dissatisfied' and '10 means totally satisfied'.

Totally dissatisfied		Neutral						Totally satisfied		
0	1	2	3	4	5	6	7	8	9	10

C2b Given your current needs and financial responsibilities, **would you say that you (and your family) are...**
Please select one response only

- 1. Prosperous
- 2. Very comfortable
- 3. Reasonably comfortable
- 4. Just getting along
- 5. Poor
- 6. Very poor

C4a What is your **current level of savings** (including cash, bank deposits and other formal savings like bonds and term deposits)?
Please select one response only. Please consider monthly income as the sum total of the post-tax income that you (or the main income earner in your household) generate from all sources.

- 1. I have no savings
- 2. I have savings equal to less than 1 month's income
- 3. I have savings equal to 1-3 month's income
- 4. I have savings equal to 4-6 month's income
- 5. I have savings equal to more than 6 month's income

C4b **What is your current level of debt?**
Please select one response only

- 1. More debts than I can pay back
- 2. Debts that I am just managing to pay back
- 3. Debts that I am paying back comfortably
- 4. Debts that I am paying back very comfortably
- 5. No debts

C5a **How well** do the following statements describe you or your situation?

	RANDOMISE ORDER	Not at all	Very little	Somewhat	Very well	Completely
A	I could handle a major unexpected expense	1	2	3	4	5
B	I am securing my financial future	1	2	3	4	5
C	Because of my money situation, I feel like I will never have the things I want in life	1	2	3	4	5
D	I can enjoy life because of the way I'm managing	1	2	3	4	5

	my money					
E	I am just getting by financially	1	2	3	4	5
F	I am concerned that the money I have or will save won't last	1	2	3	4	5
G	I am very organised when it comes to managing my money day to day	1	2	3	4	5
H	I do a good job of balancing my spending and savings	1	2	3	4	5
I**	I run short of money because I overspend	1	2	3	4	5
J**	I am impulsive and tend to buy things even when I can't really afford them	1	2	3	4	5
K**	I try to save money to have something to fall back on in the future	1	2	3	4	5
L**	I try to save some money regularly even if it is only a small amount	1	2	3	4	5
M**	I always make sure I have money saved for bad times	1	2	3	4	5

*Note: Statements A-F represent Statements 1-6 from CFPB Financial Well-Being Scale

**Note: Represent key behaviours from Kempson

C5b How often do the following statements apply to you?

	RANDOMISE ORDER	Never	Rarely	Sometimes	Often	Always
A	Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month	1	2	3	4	5
B	I have money left over at the end of the month	1	2	3	4	5
C	I am behind with my finances	1	2	3	4	5
D	My finances control my life	1	2	3	4	5
E	I feel optimistic and upbeat about my financial future	1	2	3	4	5
F	I am confident about meeting my expenses later in retirement	1	2	3	4	5

*Note: Statements A-D represent Statements 7-10 from CFPB Financial Well-Being Scale

C6a In the last 12 months, **how difficult was it for you to meet your necessary cost of living expenses** like housing, electricity, water, health care, food, clothing or transport?
Please select one response only

1. Very difficult
2. Difficult
3. Neither difficult nor easy
4. Easy
5. Very easy

C6b When was the last time you bought **something special for yourself** – something that you wouldn't normally buy?
Please select one response only

1. Within the last week
2. Within the last month
3. Within the last 3 months
4. Within the last 12 months
5. More than a year ago
6. I've never bought something special for myself

C7a And when it comes to how you **think and feel about your finances**, please indicate the extent to which you agree or disagree with the following statements.

	RANDOMISE ORDER SPLIT OVER 3 SCREENS	Disagree strongly	Disagree	Neither agree nor disagree	Agree	Agree strongly
A*	I am making progress towards my financial goals	1	2	3	4	5
D	I prefer to live within my means and am not comfortable living on credit	1	2	3	4	5
E**	I am willing to make sacrifices today for a secure financial future tomorrow	1	2	3	4	5
F	I find managing my finances difficult and confusing	1	2	3	4	5
G*	I feel like I will never pay off all my debt	1	2	3	4	5
H	I often put off making financial decisions	1	2	3	4	5
J*	I feel on top of my day to day finances	1	2	3	4	5
L*	I am comfortable with my current levels of spending relative to the funds I have coming in	1	2	3	4	5
M*	I am comfortable with my current levels of debt and my ability to repay it	1	2	3	4	5
N**	I am confident in my ability to manage my day to day finances	1	2	3	4	5
O*	I feel that I have enough set aside that I could manage financially if I was to lose my source of income for a period of time	1	2	3	4	5
Q**	I have some clear savings goals that I am working towards	1	2	3	4	5
S**	I regularly sit down and review my finances to ensure everything is on track	1	2	3	4	5
W*	My financial situation is largely outside of my control	1	2	3	4	5
X	My financial situation will look after itself and I don't think or worry about it	1	2	3	4	5
Z*	I am on track to have enough money for my financial needs in the future	1	2	3	4	5

* Statements flagged for use in index construction by MI

** Statements not flagged for use in index construction but suggested by MI to include for analysis purposes

C7b And **how often** do you (or your household) do each of the following?

	RANDOMISE ORDER	Never	Rarely	Sometimes	Often	Always
A	Save money so that you could cover major unexpected expenses or a fall in income	1	2	3	4	5
B	Use a credit card/ overdraft or borrow money to buy food or to pay expenses because you have run short of money	1	2	3	4	5
C	Borrow money to pay off debts	1	2	3	4	5
D	Overdraw on your bank account/s	1	2	3	4	5

*Note: Represent key behaviours from Kempson

C8a In the last 12 months, did any of the following happen to you **because of a shortage of money?**

	RANDOMISE ORDER	Yes	No
--	------------------------	------------	-----------

A	Could not pay electricity, gas or telephone bills on time	1	2
B	Could not pay the mortgage or rent on time	1	2
C	Pawned or sold something	1	2
D	Went without meals	1	2
E	Asked for financial help from friends or family	1	2
F	Asked for help from welfare/community organisations	1	2

C9a Suppose you faced an **emergency expense** tomorrow that is **equal to one month of your income**. What statement best describes **your ability to meet this expense**?
Please select one response only

1. I could easily raise the money
2. I could raise the money, but it would involve sacrifices (such as, reduced spending, using more credit than I would like)
3. I would have to do something drastic to raise the money (such as taking out personal lending, payday lending, pawning or selling a possession, applying for additional credit, borrowing from family or friends)
4. I don't think I could raise the money

SECTION A2: Further household questions

We'd now like to ask you a few more questions about you and your household.

A5a Which of the following best describes your work status?

1. Working full time (35 hours or more per week)
2. Working part time (less than 35 hours per week)
3. Home duties
4. Semi-retired (still doing some work, but less than 35 hours per week)
5. Fully retired (not working at all)
6. Unemployed
7. Student attending school / university
8. Other (please specify)

A5b (ASK IF WORKING FULL TIME, PART TIME OR SEMI-RETIRED, A5A=1/2/4)

Are you happy with the amount of hours you're currently working?

1. I'd like to be working more hours
2. I'm happy with the amount of hours I'm working
3. I'd like to be working less hours

A6a Which of the following best describes your household?

1. Live alone
2. Live with a partner (married or de facto)
3. Living with parents
4. Living with partner (married or de facto) and parents
5. Living with other family members

6. Living with flatmates or friends

A6b And do you have any **dependent children** of any age?

That is, that you support financially.

1. Yes, living in my household (please type in how many _____)
2. Yes, living in another household (please type in how many _____)
3. No

A6c **(ASK IF A6B=1/2)** Which of the following age groups do your dependent children fall?

Please select all that apply. MR

1. 0-2 years
2. 3-5 years
3. 6-11 years
4. 12-14 years
5. 15-18 years
6. Over 18 years

A6d At present, how many people in total live in your household?

Please type a number into the box below.

[INSERT TEXT BOX]

A7a Where you live, do you...?

1. Live at home or elsewhere without paying rent or board
2. Rent
3. Own your home with a mortgage
4. Own your home outright (no mortgage)
5. Other (please specify)

A7b **(ASK IF RENTING OR PAYING MORTGAGE, A7A=2/3, OTHERWISE SKIP AND AUTOFILL CODE 5)**

Which of the below statements best describes you/ your family's [**INSERT IF A7A=2 "rent", IF A7A=3 "mortgage"**] payments?

Please select one response only

1. I am behind on my payments
2. I am just managing to make my payments
3. I am managing to make my payments but with some strain on my budget
4. I make my payments comfortably
5. I don't have any payments

SECTION B: My banking and financial set-up

We'd now like to ask you some questions about **your current banking and how you go about managing your personal and household finances**. To start with...

B1a Which of these banks or financial institutions do you hold personal **banking** products or accounts with? **(MR)**

Please select all that apply.

B1b In total, how many different banks in total do you hold personal banking products or accounts with?

1. One bank only
2. Two banks
3. Three banks
4. Four banks
5. Five or more banks

B1c And which do you consider to be your **main** financial institution?

By main financial institution we are referring to the bank where you hold the account/s that you mainly use for your day to banking and transactions.

SHOW SELECTED AT B1a

	ROTATE ORDER OF BRANDS	B1a HOLD PRODUCTS	B1c. MFI
A	AMP	1	1
B	ANZ	2	2
C	Bank of Melbourne	3	3
D	Bank of Queensland	4	4
E	Bank SA	5	5
F	Bankwest	6	6
G	Bendigo Bank	7	7
H	Citibank	8	8
I	Commonwealth Bank	9	9
J	HSBC	10	10
K	ING	11	11
L	Macquarie Bank	12	12
M	NAB	13	13
N	RAMs	14	14
O	St.George	15	15
P	Suncorp	16	16
Q	Westpac	17	17
R	A Building Society (please specify)	18	18
S	A Credit Union (please specify)	19	19
T	An industry superfund	20	20
U	Other (please specify)	21	21
V	Unsure	99	NA

B1d Thinking about the **transactional banking in your household** (eg. paying bills and day to day spending), how much is **done through your main financial institution**, from accounts held in your name?

1. All of it
2. Most of it
3. Some of it
4. Very little of it
5. None of it

B2a Which of the following banking, investment or insurance products or services do you **currently** have or use? **(MR)**
Please select all that apply.

1. Everyday transaction account (with EFTPOS or Debit Card)
2. Savings account
3. Term deposit
4. Credit card
5. Personal loan/car loan
6. Home loan/ mortgage for a home you live in
7. Home loan/ mortgage for an investment property
8. A mortgage offset account (that offsets mortgage interest with your deposits/savings)
9. Investment or margin loan (for investing in shares)
10. Managed funds or share portfolio (outside of superannuation)
11. Home & contents insurance
12. Car insurance
13. Life insurance (life, trauma/TPD, income)
14. Annuities/ allocated pensions (outside of superannuation)

B2b And which of the following financial institutions do you hold the following products and services with?
Please select all that apply

	<DOWN THE SIDE> INSERT SPECIFIC 'BANKING' PRODUCTS SELECTED AT B2A.	<ACROSS THE TOP> INSERT BRANDS SELECTED AT B1A PROGRAMMER TO INCLUDE 'OTHER'

B3 Using the table below, please provide your **best estimate of the total value you hold** in each of the following...

	B3a. YOUR CURRENT BANK DEPOSITS <i>(transaction account, savings, term deposits)</i> [SHOW ALL]	B3b. YOUR CREDIT CARDS OR PERSONAL LOANS <i>[SHOW IF B2A=4/5]</i>	B3c. YOUR MORTGAGES OR INVESTMENT LOANS <i>(values still owing on all loans)</i> [SHOW IF B2A=6/8]	B3d. YOUR MORTGAGE OFFSET OR REDRAW <i>[SHOW IF B2A=6/7]</i>	B3e. YOUR LIFE INSURANCE COVERAGE <i>[SHOW IF B2A=12]</i>	B3f. YOUR INVESTMENT PORTFOLIO <i>[ONLY SHOW IF B2A=7/10]</i>	B4g. YOUR SUPER-ANNUATION <i>[SHOW ALL]</i>
Less than \$1,000	1	1	1	1	1	1	1
\$1,000 - \$1,999	2	2	2	2	2	2	2
\$2,000 - \$4,999	3	3	3	3	3	3	3
\$5,000 - \$9,999	4	4	4	4	4	4	4
\$10,000 - \$14,999	5	5	5	5	5	5	5
\$15,000 - \$19,999	6	6	6	6	6	6	6
\$20,000 - \$49,999	7	7	7	7	7	7	7
\$50,000 - \$99,999	8	8	8	8	8	8	8
\$100,000 - \$199,999	9	9	9	9	9	9	9
\$200,000 - \$299,999	10	10	10	10	10	10	10
\$300,000 - \$399,999	11	11	11	11	11	11	11
\$400,000 - \$499,999	12	12	12	12	12	12	12
\$500,000 - \$599,999	13	13	13	13	13	13	13

\$600,000 - \$699,999	14	14	14	14	14	14	14
\$700,000 - \$799,999	15	15	15	15	15	15	15
\$800,000 - \$999,999	16	16	16	16	16	16	16
\$1,000,000 - \$1,499,999	17	17	17	17	17	17	17
\$1,500,000 - \$1,999,999	18	18	18	18	18	18	18
\$2,000,000 - \$2,499,999	19	19	19	19	19	19	19
\$2,500,000 - \$2,999,999	20	20	20	20	20	20	20
\$3,000,000 or more	21	21	21	21	21	21	21
<i>Unsure (please attempt to provide best guess before selecting this)</i>	22	22	22	22	22	22	22
<i>I do not wish to answer this question</i>	23	23	23	23	23	23	23
<i>I don't have this</i>	24	24	24	24	24	24	24

B4a (ASK IF RENT OR PAY A MORTGAGE, A7A=2/3) You mentioned you [^INSERT IF A7A=2 “rent”, IF A7A=3 “have a mortgage”. How much are your [^INSERT IF A7A=2 “rental payments”, IF A7A=3 “mortgage payments”] each month?
SHOW IF RENT (A7A=2) AND HOUSE SHARE (A6A=5/6) If you share housing/boarding please only select the amount that you are contributing to the total.

1. Less than \$500
2. \$500-999
3. \$1,000-1,499
4. \$1,500-1,999
5. \$2,000-2,499
6. \$2,500-2,999
7. \$3,000-3,499
8. \$3,500-3,999
9. \$4,000-4,499
10. \$4,500-4,999
11. \$5,000-5,499
12. \$5,500-5,999
13. \$6,000-6,499
14. \$6,500-\$6,999
15. \$7,000 or more

B5b Which of the following best describes who in your household does the following?

	RANDOMISE ORDER	Always me	Usually me	Shared equally between myself and another in household	Usually another in household	Always another in household	Always/ usually someone not living in my household (eg. relative)
A	Paying bills and managing day to day spending	1	2	3	4	5	6
B	Managing large household purchases (eg. major appliances, cars, etc)	1	2	3	4	5	6
C	Savings, investments and borrowings	1	2	3	4	5	6

B5c (ASK IF LIVE WITH PARTNER, A6A=2/4) Which of the following best describes how your banking and finances are structured in your household?

1. All joint accounts
2. A mix of joint accounts and personal/individual accounts
3. All accounts held individually

SECTION D: Additional subjective and stated behavioural measures (incl. CSI ecological questions)

D1a How much understanding do you have about financial services and products?

1. I have a very good understanding
2. I have a good understanding
3. I have a basic understanding
4. I don't understand them at all

D1b Which of the following statements best describes you in relation to your finances?

1. I'm primarily focussed on my finances today and haven't put much thought into planning for my financial future
2. I'm starting to think about planning for my financial future but have not yet taken active steps towards this
3. I am actively planning for my financial future

D2a Which of the following best describes your **current approach to budgeting**?
Please select one response only.

1. I have a formal budget that's documented (e.g. spreadsheet, book or online tool) that calculates my outgoing expenses and the amount of money I need to allocate each week or month
2. I have a 'mental' budget – no documentation or spreadsheets, but I still keep track of my finances and spending
3. I don't really work to a budget – I just spend what I think I can afford at the time
4. I don't work to a budget at all

D2b Which of the following statements comes closest to describing your (and your family's) **savings habits**?
Please select one response only

1. Don't save: usually spend more than income
2. Don't save: usually spend about as much as income
3. Save whatever is left over at the end of the month – no regular plan
4. Spend regular income, save other income
5. Save regularly by putting money aside each month

D2c **(SHOW IF HAVE A CREDIT CARD, B2A=4)** Which of the following best describes how you manage your **credit card payments**?

1. I **always pay** my credit card/s off at the end of each month
2. I **try to pay** my credit card/s off at the end of each month
3. I **sometimes** pay my credit card/s off at the end of each month
4. I **tend to carry** credit card debt over each month

5. I **always** carry credit card debt over each month

D3a Below are six different statements describing how people feel and behave with their finances. Which **one** of these statements do you feel best describes you when it comes to your finances?

PROGRAMMER: SHOW SLIDE RULE ACROSS TOP. DON'T SHOW CODES OR LABELS – ONLY STATEMENT DESCRIPTIONS

1 Struggling Survivor	2 Impulsive Survivor	3 Coaster	4 Optimiser	5 Overseer	6 Maximiser
I find my finances overwhelming. There's not much left for me to spend after my everyday expenses are paid. I tend to avoid thinking too much about my finances as it worries me.	I'm not really on top of my finances. I tend to spend money when I have it, don't really save or stick to a budget. I don't do much research into financial matters.	My finances are all set up and running, there is probably room to optimise them but I feel that there are more important things in life to worry about. I keep a bit of a budget (usually in my head) and do a little research here and there.	I'm on top of my finances and enjoy managing them. I'm constantly looking at ways to optimise them and willing to put in the time and effort. I'm quite disciplined and will cut back on spending to achieve a savings goal. I keep a detailed budget and do a lot of research.	I have a healthy overview of my finances and am happy to get into the detail when I need to. I'm comfortable with my financial position and I have investments working for my future. I always try to have a healthy buffer in place so I can still enjoy the good things in life.	I'm on top of my finances and actively maximising my wealth for the future. I manage my own portfolio and investments and it's important for my money to work hard for me. I keep a detailed budget and enjoy engaging with the details of my finances.

SECTION F: Classification

Last, a few final questions about you and your household.

F1a In which of the following broad groups does your total (pre-tax) **household annual** income fall? **(IF RETIREE (A5A=4/5): Please include the value of any allocated pensions or annuities here. SHOW CODEFRAME**

1. Under \$10,000 per year (under \$385 per fortnight)
2. \$10,000 to \$19,999 per year (\$385 to \$769 per fortnight)
3. \$20,000 to \$29,999 per year (\$770 to \$1,154 per fortnight)
4. \$30,000 to \$39,999 per year (\$1,155 to \$1,538 per fortnight)
5. \$40,000 to \$49,999 per year (\$1,539 to \$1,923 per fortnight)
6. \$50,000 to \$59,999 per year (\$1,924 to \$2,308 per fortnight)
7. \$60,000 to \$69,999 per year (\$2,309 to \$2,692 per fortnight)
8. \$70,000 to \$79,999 per year (\$2,693 to \$3,077 per fortnight)
9. \$80,000 to \$89,999 per year (\$3,078 to \$3,462 per fortnight)
10. \$90,000 to \$99,999 per year (\$3,463 to \$3,846 per fortnight)
11. \$100,000 to \$109,999 per year (\$3,847 to \$4,231 per fortnight)
12. \$110,000 to \$119,999 per year (\$4,232 to \$4,615 per fortnight)
13. \$120,000 to \$129,999 per year (\$4,616 to \$5,000 per fortnight)
14. \$130,000 to \$139,999 per year (\$5,001 to \$5,385 per fortnight)
15. \$140,000 to \$149,999 per year (\$5,386 to \$5,769 per fortnight)
16. \$150,000 to \$199,999 per year (\$5,770 to \$7,692 per fortnight)
17. \$200,000 to \$249,999 per year (\$7,693 to \$9,615 per fortnight)
18. \$250,000 or more per year (\$9,616 or more per fortnight)
19. Prefer not to say

F1b Do you own a business, either solely or in partnership with others?

1. Yes
2. No

F1c **(ASK IF F1B=1, OTHERWISE SKIP AND AUTOFILL AS CODE 1 "PERSONAL ONLY")**

Are the accounts you hold with CommBank used for...

1. Personal banking only
2. A mix of personal and business banking
3. Business banking only

F1d Which of the below best describes your income?

1. I earn a **fixed salary** (ie. a regular amount each week, fortnight, month, etc)
2. I earn a **wage** (ie. paid by the hour or day) but it is **largely consistent** from month to month
3. I earn a **wage** (ie. paid by the hour or day) and it **varies considerably** from month to month
4. I earn **varied amounts** from month-to-month based on sale of goods or services, project-based work, casual work contracts, etc
5. I am on a **fixed pension**
6. I own/run a business **(SHOW IF F1B=1)**
7. I do not earn an income

F1e And do you have any other sources of income?

Please select all that apply. MR

1. Income generated by others (partner, parent, child, etc) that contributes to the running of the household
2. Property investment returns (eg. rental yields)
3. Non-property investment returns (eg. interest, dividends, etc)
4. Work bonuses
5. I own/run a business **(SHOW IF F1B=1)**
6. Other (please specify)

F3a Which of the following best describes your current situation?

1. Single
2. Married
3. De facto / living with a partner
4. Widowed
5. Divorced
6. Separated
99. Prefer not to say

F3b What is the highest level of education that you have **already** completed?

If you were educated in a country other than Australia, please choose the closest option from the list

1. Year 9 or below
2. Year 10 or 11
3. Year 12
4. Certificate (level unknown)
5. Certificate I or II
6. Certificate III or IV
7. Advanced Diploma or Diploma
8. Bachelor's degree or higher
99. Prefer not to say

F4a Over the past 30 days, about how often did you feel...

	RANDOMISE ORDER	All of the time	Most of the time	Some of the time	A little of the time	None of the time	Don't know
A	Nervous	1	2	3	4	5	99
B	Hopeless	1	2	3	4	5	99
C	Restless or fidgety	1	2	3	4	5	99
D	So depressed that nothing could cheer you up	1	2	3	4	5	99
E	That everything was an effort	1	2	3	4	5	99
F	Worthless	1	2	3	4	5	99

F4b Over the past 12 months, how would you describe your level of contact with social connections?
Social connections refer to **connections with family, friends, work colleagues, neighbours or clubs.**

1. I am isolated or alone most of the time
2. I have occasional contact
3. I have regular contact with more distant social connections
4. I have regular contact with close connections
98. Don't know

F4c How likely are you to get financial support from your social connections (family, friends, work colleagues, neighbours, clubs etc.) in times of crisis?

1. Always/Very Likely
2. Fairly likely
3. Unsure
4. Fairly unlikely
5. Never/Very unlikely

F4d How much support have you had from community or government organisations to help with your financial situation over the past 12 months?

1. I did not need any community or Government support
2. I've needed support, but I had no access to it
3. I receive emergency support services (e.g. food-banks or vouchers)
4. I receive specialised support services (e.g. meals on wheels, financial counselling, no interest loan, homecare services)
5. I used their support occasionally, but I was not reliant on them

F5a In the last two weeks did you spend time providing unpaid care, help or assistance to family members or others because of a disability, a long term illness or problems related to old age?

1. Yes
2. No

IF NO TA F5a SKIP F5b

F5b To what extent do you feel that the unpaid work you provided in the last week has impacted your ability to work and earn an income?

1. Impacted a lot
2. Impacted a little
3. Did not impact much
4. Not impacted at all

F5c Do you have any long-term health condition, impairment or disability that restricts you in your everyday activities, and has lasted or is likely to last, for 6 months or more?

1. Yes
2. No

IF YES SELECTED AT F5C ASK F5D

F5d To what extent does your disability affect your ability to work?

1. Impacts a lot
2. Impacts a little
3. Does not impact much
4. No impact at all

F6a In general, would you say your health is:

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

F6b Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them.

Please use this scale where 1 means "no choice at all" and 10 means "a great deal of choice" to indicate how much freedom of choice and control you feel you have over the way your life turns out.

No choice at all			Neutral				A great deal of choice			
0	1	2	3	4	5	6	7	8	9	10

F7a What country were you born in?
Please select the one that best applies

1. Australia
2. New Zealand
3. Pacific Islands
4. UK
5. Europe
6. North America or Canada
7. South America
8. China
9. Japan
10. Another Asian country (eg. Vietnam, Thailand, Korea)
11. India, Pakistan, Bangladesh or Sri Lanka
12. A Middle Eastern country (e.g. Lebanon, Turkey, Iraq)
13. Africa
14. Other (please specify)

F7b And around how many years have you lived in Australia?
ASK IF NOT BORN IN AUSTRALIA - CODE 2-98 F7A [INSERT TYPE IN BOX]
PROGRAMMER NOTE: YEARS MUST BE LESS THAN AGE PROVIDED AT A2A

F8a Finally, which of the below three charities would you like us to donate to on your behalf?
CommBank will donate \$1,000 for every 500 completed surveys up to a total of \$5,000. We will distribute the final donation across the three charities based on the final responses to this question. All of these charities are currently supported by CommBank.

RANDOMISE ORDER CHARITIES ARE SHOWN

1. **Domestic Violence NSW** – Commbank have worked with them to develop the Addressing Financial Abuse Guide
2. **AIME (Australian Indigenous Mentoring Experience)** – Commbank have developed a financial capability workbook for indigenous youth and their mentors
3. **St Vincent de Paul NSW** – CommBank are working with this charity on a financial capability module to support community workers with financially vulnerable clients

That's the end of our survey. Thanks for your time.

If you have any specific feedback about this survey, please type it into the box below.

Appendix C: Recruiting E-mails and Participant Information Statements

Invitation e-mail



**Help us
understand.**

CommonwealthBank 

Dear <Name>,

We believe that we have an important role to play in helping Australians improve their financial wellbeing. That's why we've partnered with researchers at the University of Melbourne to understand and measure the financial wellbeing of Australians.

We'd value your input and would like to invite you to answer a few survey questions, which should take around **15-20 minutes** to complete. To thank you for your time, we'll make a donation to 3 charity partners who support Australians in vulnerable financial circumstances, up to a total of \$5,000. You'll be able to choose the charity by voting at the end of the survey.

Participation in this research is voluntary and responses will remain completely confidential.

Attached to this email is an information statement, describing the

research and how we will use and protect your data. We encourage you to read and keep the statement in case you have questions or concerns about the research.

If you'd like to take part in shaping the future of financial wellbeing for Australians, click on the link to start.

Start now

Yours sincerely,
The CommBank Team.

Your privacy is important to us - please be assured we have not provided your personal details to any third parties. We will never send an email that asks you to provide your log in or password details.

This survey will expire on **Friday 11th August**.

About the Survey

Participation in this study is voluntary and your responses will remain confidential. We'll link your survey responses to information we have about how you use our products and services. This will help the University of Melbourne gain a more complete understanding of how different financial behaviours contribute to financial wellbeing.

Your confidentiality and privacy will be protected and the information will be used for research purposes only. At no point will our research partners have access to any of your personal information, and how you respond to the survey will have no impact on your current or future relationship with us or on any products or services that you use now or in the future. This research is only about gaining a better understanding financial wellbeing.

The survey will be conducted by independent survey company FiftyFive5 for market research purposes only. No personal information will be shared with FiftyFive5. Should you wish to check the bona fides of this research company, the Australian Market & Social Research Society can be contacted on 1300 364830.

[View the CBA Privacy Policy](#)

[View FiftyFive5's Privacy Policy](#)

If you wish to be removed from this survey please click here.

If you have any technical problems with the survey you can email our survey partners at surveysupport@fiftyfive5.com.

If you have any questions or comments about this research, or no longer wish to receive email invitations to take part in Commonwealth Bank surveys, please contact Commonwealth Bank directly at cba_research@cba.com.au



Help us understand.

CommonwealthBank 

Dear <Name>,

There's still time to share your input before the survey closes on **Friday 11th August.**

Your responses to the survey will help us and researchers at the University of Melbourne understand and measure the financial wellbeing of Australians.

The survey should take around **15-20 minutes** to complete.

To thank you for your time, we'll make a donation to 3 charity partners who support Australians in vulnerable financial circumstances, up to a total of \$5,000. You'll be able to choose the charity by voting at the end of the survey.

Participation in this research is voluntary and responses will remain completely confidential.

Attached to this email is an information statement, describing the research and how we will use and protect your data. We encourage

you to read and keep the statement in case you have questions or concerns about the research.

To begin the survey click the link below or copy and paste the link below into your browser.

Start now

Yours sincerely,
The CommBank Team.

Your privacy is important to us - please be assured we have not provided your personal details to any third parties. We will never send an email that asks you to provide your log in or password details.

This survey will expire on **Friday 11th August**.

About the Survey

Participation in this study is voluntary and your responses will remain confidential. We'll link your survey responses to information we have about how you use our products and services. This will help the University of Melbourne gain a more complete understanding of how different financial behaviours contribute to financial wellbeing.

Your confidentiality and privacy will be protected and the information will be used for research purposes only. At no point will our research partners have access to any of your personal information, and how you respond to the survey will have no impact on your current or future relationship with us or on any products or services that you use now or in the future. This research is only about gaining a better understanding financial wellbeing.

The survey will be conducted by independent survey company FiftyFive5 for market research purposes only. No personal information will be shared with FiftyFive5. Should you wish to check the bona fides of this research company, the Australian Market & Social Research Society can be contacted on 1300 364830.

[View the CBA Privacy Policy](#)

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If you have any questions or comments about this research, or no longer wish to receive email invitations to take part in Commonwealth Bank surveys, please contact Commonwealth Bank directly at cba_research@cba.com.au

Plain Language Statement and Consent Form



Plain Language Statement Measuring Financial Well-Being

Introduction

You are invited to complete a survey on financial well-being as part of a research project. The survey should take no longer than 15-20 minutes in total. The research is carried out by the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne (UoM) and the Commonwealth Bank of Australia (CBA). Your participation is voluntary and you are free to withdraw from the survey at any time and ask for unprocessed data to be deleted.

How will my confidentiality be protected?

With your agreement, the researchers involved in this project will link the answers you provide in the survey with information about the products and services that you use from CBA. This allows us to gain a more complete understanding of how different factors contribute to financial well-being. The information will be used by researchers at the University of Melbourne and at CBA; it will be used only for research purposes and will have no impact on your current or future relationship with the CBA or on any products or services that you are currently using or may choose to use in the future. The processed data will remain confidential, non-identifiable and securely stored by researchers. Anonymous results from the research may be published in academic journals and presented at conferences. The non-identifiable data will be retained for five years from the last publication so that other researchers may review the accuracy and consistency of the analysis in the future upon request.

Who can I contact if I have any concerns about the project?

This research project has been approved by the Human Research Ethics Committee of The University of Melbourne. If you have any concerns or complaints about the conduct of this research project, which you do not wish to discuss with the research team, you should contact the Manager, Human Research Ethics, Research Ethics and Integrity, University of Melbourne, VIC 3010. Tel: +61 3 8344 2073 or Email: humanethics-complaints@unimelb.edu.au. All complaints will be treated confidentially. In any correspondence please provide the name of the research team or the name or ethics ID number of the research project.

Investigators

Principal Investigator:

Prof. David Ribar (Melbourne Institute) email: Financial-Wellbeing@unimelb.edu.au, tel: +61 3 8344 8309

UoM Co-Investigators: Carole Comerton-Forde (Department of Finance), Edwin Ip (Department of Economics), Carsten Murawski (Department of Finance), Nicolas Salamanca (Melbourne Institute), Sam Tsiaplias (Melbourne Institute), Roger Wilkins (Melbourne Institute)

CBA Co-Investigators: Ben Grauer (Financial Well-being)

FHEAC No: 1749750

Date: 26 July 2017

Melbourne Institute of Applied Economic and Social Research

The University of Melbourne Victoria 3010 Australia

Telephone: +61 3 8344 2100 Fax: + 61 3 8344 2111

<http://melbourneinstitute.unimelb.edu.au>



Consent Form
Project Title: Measuring Financial Well-Being

This is a project designed to help understand the financial well-being of Australians. My participation is completely voluntary. If, prior to processing the data, I do not wish for my data to be included in the project, I may request to have my responses withdrawn from the data set.

With my permission, the researchers in this project would like to link my survey answers to information on the products and services that I use from Commonwealth Bank. I understand that this is entirely for research purposes and will not affect my current or future relationships or standing with the Commonwealth Bank. I also understand that confidentiality of data will be preserved subject to any legal requirements and my data will become non-identifiable upon processing.

If I have any questions about this research project, I can contact its principal researcher Prof. David Ribar (email: Financial-Wellbeing@unimelb.edu.au, tel: 03 8344 8309) from the Melbourne Institute. If I have any concerns about the treatment of research participants, I can contact the Human Research Ethics Committee at The University of Melbourne (Phone: 03 8344 2073 or Fax: 03 9347 6739).

By clicking "I agree", I declare myself fully informed and I agree to participate on a purely voluntary basis.

Appendix D. Quantitative Analysis

D.1 Data Preparation and Linkage

To develop the scales, we first prepared an analysis data set that linked customers' self-reported financial wellbeing measures from the on-line survey with observable measures constructed from financial records. We initially prepared an analysis file that linked survey and financial-record data for the sole-MFI customers from the survey. Sole-MFI customers were an initial focus because CBA has the best visibility of their objective financial circumstances. We also prepared an analysis file that linked all MFI customers in the survey, including split-MFI customers; this second analysis data set was used to examine whether the split-MFI customer-record data are of sufficient quality and coverage to permit pooling.

D.2 Preliminary Analyses with Self-Reported Measures

The survey asked 33 questions about financial outcomes that we considered for inclusion in the financial wellbeing scales. The questions, sources, and situational domains are listed in Table D.1.

Table D.1. Candidate Self-Reported Financial Wellbeing Questions

Question	Source	Everyday finances	Rainy day finances	One day finances
How satisfied are you with your financial situation?	HILDA, FF5, Muir et al.	x	x	x
Given your current needs and financial responsibilities, would you say that you (and your family) are ... {from 'prosperous' to 'very poor'}	HILDA	x	x	x
What is your current level of debt?	Muir et al.*	x		
I am just getting by financially	CFPB	x		
I am behind with my finances	CFPB	x		
My finances control my life	CFPB	x		
In the last 12 months, how difficult was it for you to meet your necessary cost of living expenses like housing, electricity, water, health care, food, clothing or transport?	Muir et al.	x		
I feel on top of my day to day finances	FF5	x		
My financial situation is largely outside of my control	Muir et al.	x		
<u>In the last 12 months, did any of the following happen to you because of a shortage of money?</u>				
-- Could not pay electricity, gas or telephone bills on time	Bray	x		
-- Could not pay mortgage or rent on time	Bray	x		
-- Pawned or sold something	Bray	x		
-- Went without meals	Bray	x		
-- Asked for financial help from friends or family	Bray	x		
-- Asked for help from welfare/community organisations	Bray	x		

Question	Source	Everyday finances	Rainy day finances	One day finances
I can enjoy life because of the way I'm managing my money	CFPB	x		
I have money left over at the end of the month	CFPB	x		
I am comfortable with my current levels of spending relative to the funds I have coming in	FF5	x		
I am comfortable with my current levels of debt and my ability to repay it	FF5	x		
Which of the below statements best describes you/ your family's rent/mortgage payments? {from 'I am behind on my payments' to 'I don't have any payments'}	Original	x		
I feel like I will never pay off all my debt	FF5	x		x
When was the last time you bought something special for yourself - something that you wouldn't normally buy?	Muir et al.	x		
Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month	CFPB	x	x	
I could handle a major unexpected expense	CFPB		x	
I feel that I have enough set aside that I could manage financially if I was to lose my source of income for a period of time	FF5		x	
Suppose you faced an emergency expense tomorrow that is equal to one month of your income. What statement best describes your ability to meet this expense? {from 'I could easily raise the money' to 'I don't think I could raise the money'}	Kempson et al.*		x	
What is your current level of savings (including cash, bank deposits and other formal savings like bonds and term deposits)?	Muir et al.		x	x
I am concerned that the money I have or will save won't last	CFPB		x	x
I am securing my financial future	CFPB			x
Because of my money situation, I feel like I will never have the things I want in life	CFPB			x
I feel optimistic and upbeat about financial future	FF5*			x
I am confident about meeting my expenses later in retirement	Original			x
I am making progress towards my financial goals	FF5			x

Question	Source	Everyday finances	Rainy day finances	One day finances
I am on track to have enough money to provide for my financial needs in the future.	Original			x

* Indicates question or responses were reworded from original.

The first empirical task was to calculate histogram distributions of the responses to each question and examine whether any response patterns appeared to come from multiple answering processes or had problematic features. Based on this analysis we dropped the question about general financial satisfaction because it was multimodal with large modes at the central response (5) and at response (7) and smaller modes at the endpoints (0 and 10).

We also conducted exploratory factor analyses on the three yes/no financial management and the three yes/no financial hardship indicators from Bray (2001) and Bray et al. (2011). These factor analyses and all our subsequent analyses accounted for the outcome measures being categorical variables. We determined that the three financial management indicators could be combined into a single measure of the count of financial management problems and that the three financial hardship indicators could be combined into a single measure of the count of financial hardship problems.

We next conducted an exploratory factor analysis with the remaining/resulting 29 self-reported items. We dropped the CFPB (2015) question on whether someone was just getting by financially and the Muir et al. (2017) question about whether someone had recently bought something special for herself or himself because they had very poor fits.

There were several other sets of questions that addressed very similar outcomes but that had minor variations in conditions or wording. From these sets of questions, we used the question that had the strongest associations with the other self-reported items and low complexity. We dropped the other related questions. Specifically,

- Two questions explicitly addressed financial control; we kept the question from the CFPB (2017), 'My finances control my life', and dropped the question from Muir et al. (2017), 'My financial situation is largely outside of my control'.
- Four measures/questions asked about necessary expenses; we kept the question from Muir et al. (2017) about difficulty meeting necessary expenses and dropped a question we had constructed about meeting rent/mortgage payments and the two count measures based on Bray (2001) and Bray et al. (2011).
- Three questions asked about the ability to meet unexpected expenses. We kept the question from Kempson et al. (2017) about facing an emergency expense and dropped the question from the CFPB (2017) about the ability to handle a major unexpected expense and a question from FiftyFive5 (2016) about having enough set aside to manage a loss of income.
- Two questions asked about ability to repay debt. We kept the FiftyFive5 (2016) question about never paying off debt and dropped the FiftyFive5 question about being comfortable with current levels of debt.
- Two questions asked about retirement and future needs. We kept a question that we developed about being on track to have enough money to provide for financial needs in the future and dropped a question about being confident about meeting expenses later in retirement.
- Two questions asked about people's financial futures. We kept the CFPB question about people securing their financial future and dropped the FiftyFive5 question about people being optimistic and upbeat about their financial future.

- Additionally, we dropped a question from HILDA about whether people felt poor or prosperous because it appeared to be a general profiler.

This left us with 17 self-reported measures that were considered in subsequent analyses.

D.3 Financial-Record Measures

The project developed 18 candidate measures of financial wellbeing from the customer-record data. Table 4.1 lists and describes these measures. All 18 measures were considered in subsequent analyses.

Table D.2. Candidate customer financial record measures

Measure	Description
<u>Every day measures:</u>	
Net spend	Monthly measure (12 months) of all inflows into CBA accounts divided by all outflows; specified as categorical age-normed average ^A
Total interest payments relative to inflows	Ratio of total annual interest payments to total annual inflows into CBA accounts; specified as categorical, age-normed ratios ^A
Total loan payments relative to inflows	Ratio of total annual loan payments (interest plus principal) to total annual inflows into CBA accounts; specified as categorical, age-normed ratios ^A
Income volatility HL	Difference between highest monthly inflows over last 12 months and lowest monthly inflows divided by mean over the last 12 months
Income volatility IQ	The inter-quartile range of monthly inflows over the last 12 months, divided by the mean monthly inflows over the last 12 months
Dishonour fees	Count of months in which customer incurred fee for a rejected payment over last 12 months; specified categorically as no such fees, fees in one month, fees in 2-3 months, fees in 4-6 months, and fees in 7 or more months
Late payments	Count of months in which customer incurred late payment fees and overlimit fees for all credit card customers over last 12 months; specified categorically as no such fees, fees in one month, and fees in multiple months
Unpaid credit card balances carried forward	Measure based on credit card statements, repayments, and balances; tentatively categorise as 1) never carried a balance forward or did not have a credit card; 2) sometimes (less than half a year) carried an aggregate balance forward for less than half a year; 3) persistently (more than half a year) carried forward an aggregate balance below 50% of average monthly inflows; 4) persistently carried forward a balance of 50% to 100% of average monthly inflows and 5) persistently carried a larger balance forward.

Measure	Description
Payday loans	Binary indicator for debits that go to a payday loan company based on direct debit Australian Payments and Clearing Association (APCA) number ¹ and the biller name.
Frequency of near-zero balances	Proportion of days on which liquid balances are less than one week's average (total outflow) expenditures; categorised as never, 1-25%, 25-50%, 50-75%, 75% or more
<u>Rainy day measures:</u>	
Ability to cover one month expenses	Proportion of days in last year customer's net position, including available credit and redraws, was more than monthly (outflows) expenditures.
Ability to raise \$2000	Proportion of days in last year customer's net position, including available credit and redraws, was more than \$2000; specified as a categorical age-normed measure ^A
Insurance products	Binary indicator of whether customer has CBA insurance products or made any payments to insurance organisations in the last 12 months
Standard insurance products	Binary indicator of whether customer has CBA insurance products, except credit card and loan insurance, or makes payments to insurance organisations in the last 12 months
<u>One day measures:</u>	
Savings rate and growth categorical measure	Categorical measure of savings growth and regularity; negative growth more than 50% of time, negative growth less than 50% of time; other growth; positive growth less than 50% of time; positive growth more than 50% of time (including interest-only growth)
Median daily savings balance	Median of the daily balances over the past 12 months calculated using the ending balance for each day; form categorical age-normed measure of median ^A
Proportion of savings balance increases	Proportion of savings balance changes over a year that are positive; form categorical age-normed measure of proportions ^A
Symmetrically-based savings growth rate	Median savings balance for the preceding 30 days, S_t , minus the median savings balance for the corresponding 30 days a year earlier, S_{t-1} , divided by their average ($= \frac{S_t - S_{t-1}}{0.5 * (S_t + S_{t-1})}$).

^A For age-normed, categorical variables, we first calculate the percentile position of the value of the customer's measure in the rank ordering from lowest to highest of all the values for the same measure from people of the same age and customer type (e.g. compare sole-MFIs to sole-MFIs) in a million-customer sample of CBA financial records. We next construct an ordered categorical measure for age percentile measures that are in the bottom 10th percentiles, the next 25 percentiles (10 to 35), the next 30 percentiles (>35 to <65), the next 25 percentiles, and the top 10th percentile.

¹ An APCA number is a unique six-digit identification number which identifies individuals and companies approved by financial institutions to use in the Direct Entry system

D.4 Exploratory Factor Analyses of Linked Self-Reported and Financial-Record Data

We next conducted exploratory factor analyses with the combined set of 17 self-reported and 18 financial-record financial outcome measures. Ten financial-record measures (the net spending measure, the loan and interest repayment measures, the two income volatility measures, the two insurance measures, the categorical savings measure, the proportion of savings balance increases, and the savings growth rate measure) were immediately dropped because they were not associated with the other self-reported and financial-record measures. The measure of the ability to raise \$2000 was dropped because it was highly correlated with proportion of time that a customer could raise a month's expenses but had a slightly weaker fit with the other measures.

We conducted another exploratory factor analysis with the 17 self-reported outcome measures and the remaining seven financial-record measures. Parallel analyses indicated that the 24 measures were explained by two factors. Factor loadings, unexplained variance results, and communality measures from the two-factor solution are shown in Table D.3. Factor loadings can be interpreted as the contribution of each question to each of the factors. Unexplained variances are a measure of how much of the variation in each question is *not* captured by the two factors considered. Communality measures the amount of information each question shares with all other questions in the analysis.

Table D.3. Exploratory factor analysis results—two-factor solution

Question/measure	Loading 1 st factor	Loading 2 nd factor	Unexplained variance	Comm.
<u>Self-reported outcomes:</u>				
What is your current level of debt?	0.44	0.24	0.65	1.5
I am behind with my finances	0.61		0.51	1.1
My finances control my life	0.65		0.61	1.0
How difficult was it for you to meet your necessary cost of living expenses?	0.75		0.35	1.0
I feel on top of my day to day finances	0.81		0.34	1.0
I can enjoy life because of the way I'm managing my money	0.75		0.39	1.0
I have money left over at the end of the month	0.68		0.40	1.1
I am comfortable with my current levels of spending ...	0.72		0.50	1.0
I feel like I will never pay off all my debt	0.64		0.59	1.0
Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month	0.75		0.43	1.0
Suppose you faced an emergency expense ... equal to one month of your income. What statement best describes your ability to meet this expense?	0.62	0.31	0.34	1.5
What is your current level of savings?	0.39	0.55	0.34	1.8
I am concerned that the money I have or will save won't last	0.64		0.66	1.1
I am securing my financial future	0.75		0.43	1.0

Question/measure	Loading 1 st factor	Loading 2 nd factor	Unexplained variance	Comm.
Because of my money situation, I feel like I will never have the things I want in life	0.68		0.59	1.0
I am making progress towards my financial goals	0.78		0.45	1.0
I am on track to have enough money to provide for my financial needs in the future	0.86		0.33	1.0
<u>Financial-record measures:</u>				
Dishonour fees		0.52	0.66	1.1
Late payments		0.44	0.75	1.2
Unpaid credit card balances carried forward	0.21	0.57	0.52	1.3
Payday loans		0.48	0.70	1.1
Frequency of near-zero balances		0.90	0.26	1.0
Ability to cover one month expenses		0.83	0.30	1.0
Median daily savings balance		0.71	0.54	1.0
Proportion of variance explained	0.35	0.16		

Note: Factor loadings with absolute values below 0.2 are suppressed.

The results reveal a striking pattern. All but one of the self-reported measures align strongly on the first factor, and all the financial-record measures align on the second factor. The self-reported measure that aligns on the second factor is the self-report of an observable condition involving savings levels.

From this set, we

- dropped the questions about debt levels, savings levels, and ability to meet one month's expenses because they covered observable conditions or were similar to financial-record measures and had high communality;
- reintroduced the question about handling an unexpected expense to add a rainy day measure;
- dropped the question about being behind in finances because of its modest factor loadings and overlap with meeting necessary expenses;
- dropped the question about never paying off debt because of its overlap with meeting necessary expenses and high unexplained variance, and
- dropped the questions about money not lasting, never having the things wanted in life, and making progress towards financial goals because they overlapped with several other one day questions and had high unexplained variances.

D.5 Item Response Theory Analyses

IRT models fit the response patterns of a series of indicators to an underlying latent measure. In our case, they relate the responses to the candidate financial-record and self-reported measures to an underlying score of financial wellbeing. An IRT modelling approach has several advantages over more traditional scale construction approaches. IRT models allow measures to:

- Differ in the level of financial wellbeing that they indicate (for example, an indicator for frequently paying bills late likely indicates a very low level of financial wellbeing, while an indicator for having sufficient savings to cover a major unexpected expense likely indicates a higher level of financial wellbeing);
- Differ in the strength of their association with financial wellbeing—some measures might be noisier and less discriminating than others;
- Be missing or incomplete

Using the revised candidate measure set of 10 self-reported measures and seven financial-record measures, we fit two-parameter IRT graded response models separately for latent variables corresponding to the first and second factors. Let θ be a latent variable that represents someone’s financial wellbeing. Let Y_i be the ordered categorical measure of a person’s response to item i , where Y_i can take on the values 1, ..., J . Let δ_{ij} the ‘severity level’, or differentiation parameter, of response category j from item i , and let α_i be the discrimination parameter for item i . The two-parameter graded response model assumes that the probability that someone gives a categorical response of j or higher to item i is

$$\text{Prob}(Y_i \geq j) = \frac{\exp[\alpha_i(\theta - \delta_{ij})]}{1 + \exp[\alpha_i(\theta - \delta_{ij})]}$$

where $\exp[]$ is an exponential operator.

Table D.4 reports the estimated severity and discrimination parameters for the model for the first latent variable, using the 10 self-reported measures.

Table D.4. IRT severity and discrimination parameter estimates—first latent variable

Item	δ_{i1}	δ_{i2}	δ_{i3}	δ_{i4}	α_i
1. How difficult was it for you to meet your necessary cost of living expenses?	-1.907	-0.914	0.458	1.404	2.473
2. I can enjoy life because of the way I’m managing my money	-1.821	-0.873	0.630	2.117	2.365
3. I could handle a major unexpected expense	-1.093	-0.386	0.885	1.997	2.364
4. I am securing my financial future	-1.479	-0.559	0.900	2.197	2.112
5. My finances control my life *	-2.016	-0.845	0.558	2.025	1.438
6. I have money left over at the end of the month	-1.639	-0.694	0.313	1.212	2.237
7. Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month *	-1.973	-1.157	-0.141	0.979	2.101
8. I feel on top of my day to day finances	-2.226	-1.117	-0.171	1.588	2.464
9. I am comfortable with my current levels of spending relative to the funds I have coming in	-2.569	-0.979	-0.030	2.126	1.759
10. I am on track to have enough money to provide for my financial needs in the future	-1.666	-0.576	0.365	2.045	2.275

* Responses reverse coded.

The estimates for the severity parameters, which all increase with response levels for every item, indicate that higher responses are associated with higher values of the underlying latent variable for every item and possible response category. The differences across items in the estimated discrimination parameters are relatively modest. The question about meeting necessary cost of living expenses has the strongest discrimination (least noise) regarding the underlying latent variable, while the question about finances controlling the respondent’s life has the weakest discrimination. Analyses of Item Characteristic Curves (ICCs) from the model revealed that every response from every included item contributed information to identifying the underlying latent variable. Based on the estimation and ICC results, we created a 0-100 scale, called the CBA-MI Reported Financial Wellbeing Scale, that consisted of the sum of the response values from the 10 questions, multiplied by 2.5. The scale has a correlation of 99.2 per cent with the predicted latent variable from the IRT model. It has a reliability coefficient (Cronbach’s alpha) of 0.92.

We initially fit a similar IRT specification of the second latent variable, using the seven financial-record measures with two categorical outcomes for the payday loans measure, three categorical outcomes for the dishonours and late payments measures, and five outcomes for the other measures. Analyses of ICCs revealed that late payment and unpaid credit card balance measures did not contribute in a consistent way to the underlying latent variable. The ICCs further revealed that the middle response categories for the five-category low-balance, ability to raise money, and savings measures did not consistently contribute to the underlying latent variable. Based on these results, we dropped the late payment and unpaid credit card balance measures from our analyses and respecified the low-balance, ability to raise money, and savings measures as three-category measures as indicated in Table 4.2.

Table D.5 reports the estimated severity and discrimination parameters for the revised model for the second latent variable, using the final five financial-record measures and a restricted set of categorical outcomes.

Table D.5. IRT severity and discrimination parameter estimates—second latent variable

Item	δ_{i1}	δ_{i2}	α_i
11.Number of months in last year with payment dishonours	-2.718	-0.564	1.153
12.Any payday loans in last year	-2.455		1.444
13.Days in last year with liquid balances below one month’s average expenses	-1.291	0.373	3.352
14.Days in last year during which customer had the ability to raise one month’s expenses from savings or available credit	-0.599	0.321	3.182
15.Age-normed percentile of customer’s median savings balance over last year	-0.802	2.060	1.345

The estimates for the severity parameters increase with response levels for the four three-category items and indicate that higher responses are associated with higher values of the underlying latent variable. The differences across items in the estimated discrimination parameters are larger than for the first latent variable. The low-balance measure has the strongest discrimination (least noise) regarding the underlying factor, while dishonours measure has the weakest discrimination. Analyses of ICCs from the model revealed that every response from every included item contributed

information to identifying the underlying latent factor. Based on the estimation and ICC results, we created a 0-100 scale, called the CBA-MI Observed Financial Wellbeing Scale, that consisted of the sum of the response values from the five measures, multiplied by $100/9$. The scale has a correlation of 98.0 per cent with the predicted factor from the IRT model. It has a reliability coefficient of 0.71.

D.6 Specification and Sensitivity Tests

Customers for the analysis sample

We initially conducted our quantitative analyses using the customers in our survey who indicated that they held all their financial products and conducted all their financial transactions with CBA. We compared the results from these analyses to results from analyses that used customers who indicated that CBA was their main financial institution but not their only financial institution. There were no substantial differences in the results between the two sets of customers. Accordingly, we pooled the data for both sets of customers; the detailed results contained in this report come from the pooled set of customers.

Other potential measures for our scales

Prior to conducting our formal IRT analyses, we used informal methods including inspection, exploratory factor analyses, and logic rules to reduce the set of items. We also estimated separate IRT models for the reported and observed wellbeing scales. To examine the sensitivity of our results to these specification choices, we iteratively re-estimated both of our IRT models adding each of the excluded measures one at a time. For the reported financial wellbeing model, we added the 23 excluded self-reported measures from the original set in Table D.1 and the 17 financial-record measures from Table D.2 one at a time. For the observed financial wellbeing model, we added the 33 self-reported measures from Table D.1 and the 12 excluded financial-record measures from Table D.2. None of the added measures changed our results regarding our principal specifications, indicating that the measurement relationships for the 10 self-reported measures in the reported financial wellbeing scale and the five financial-record measures in the observed financial wellbeing scale do not change when additional measures are included. Moreover, ICC analyses of the resulting models confirm that most of the added measures fail to contribute consistently to the underlying scales, which formally indicates that these measures should not be included.

Confirmatory analyses

The construction of our two scales are based on results from formal statistical models and tests that indicate that the included items can differentiate between different levels of underlying latent factors, have good discrimination properties, and have high reliability. However, prior to conducting our final formal analyses, we conducted many informal, exploratory, and preliminary formal analyses using the same analysis sample. These earlier analyses with the same sample undoubtedly led to stronger formal results, and some of our formal results might be artefacts of the sample. To test whether this was an issue, we undertook confirmation analyses in which we re-estimated each of our IRT models and examined the results using alternative samples that had not been used in our primary analyses.

Our model of reported financial wellbeing was estimated using the MFI customers from the on-line survey. However, the survey also included many CBA customers who held most of their financial products or conducted most of their financial transactions with other institutions (non-MFI customers). We re-estimated our IRT model for reported financial wellbeing using these other customers who had not been included in our initial analyses and confirmed that the scale

measurement relationships for these customers were similar to those who were included in our analysis sample.

Our model of observed financial wellbeing was estimated using MFI customers who participated in the on-line survey. We constructed a sample of CBA MFI customers who were not survey participants, using a random sample of identical size to the initial analysis, and re-estimated the IRT model of observed financial wellbeing for this alternative sample. These analyses also confirmed that the scale measurement relationships for our survey and non-survey samples were similar.

Differential item functioning

To be universal, the measurement relationships for our two scales—that is, the ways in which our items/measures function in the scales—should be the same for anyone with the same underlying values of reported or observed wellbeing, regardless of the person’s other circumstances. Following the method of Kim and Cohen (1998), we conducted differential item functioning tests for customers in our analysis sample who differed in their:

- Housing tenure (owned home outright, owned home but paid a mortgage, did not own home),
- Household composition (lived alone, lived with a partner, lived in someone else’s home, lived with roommates), and
- Work status (working or looking for work, student, retired, carer).

There were no substantial differences in item functioning across the different subgroups.

External validity

We examined how each of our scales was associated with measures that are related to but distinct from financial wellbeing. We were especially interested in measures of characteristics from our conceptual model of how financial wellbeing is determined. These analyses revealed that both financial wellbeing scales were positively correlated with customers’ financial satisfaction, income, education, home ownership, and financial improvements and negatively associated with health problems and financial setbacks. Many of these relationships are shown and discussed in Section 5.3 of the report.

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