

Tracking Financial Vulnerability in the UK: A Data Tool for Policymakers

Technical Appendix

Updated March 21, 2022

Data Sources and Methodology

Here we describe the construction of the Financial Vulnerability Index (FVI) and provide additional detail on the index components, data sources, and analytic methods.

Index Components

The components used in the FVI are selected to capture different aspects of financial vulnerability, with a focus on two financial well-being concepts: people's ability to manage their daily finances and their resilience to economic shocks. The selection of specific financial or economic measures corresponding to those concepts depended, in part, on data quality and availability (see discussion of Data Sources below). Starting with a list of 12 consumer financial indicators, the resulting index components are (1) carrying defaulted debt, (2) using alternative financial products, (3) claiming social benefits, (4) lacking emergency savings, (5) holding a high-cost loan, and (6) relying heavily on credit (table A.1).

The first three components capture an individual's ability to manage daily finances. Having debt in default indicates that people could not (or would not) pay certain bills. Using alternative financial products, such as payday loans, suggests that people's needs are not met by their current income sources or the traditional financial sector; it can also signal that people are having trouble managing their daily finances and have less access to safe, affordable loan products to help them weather unexpected financial needs. Applying for government assistance through Universal Credit or Jobseeker's Allowance is often triggered by job loss or a negative income shock. It also indicates that a household cannot sustain itself without government help.

The remaining three components principally capture people's resilience to economic shocks. People without emergency savings are less likely able to weather negative economic shocks. Having a high-cost loan signals low economic resilience and the need to use high-cost credit, while high average credit use reflects borrowing approaching, or at, the limit of the credit available to the consumer (indicating a lack of credit buffer).

TABLE A.1

Components of the Financial Distress Index

Component	Definition	Type
Share of adults who are Lowell consumers in default	Number of Lowell consumers with defaulted debt divided by the adult population of the area	Ability to manage daily finances
Share of adults using alternative financial products	Share of adults with one or more of the following products: hire purchase, rent-to-own (other than for a motor vehicle), payday loans, short-term installment loans, home collected loans, pawnbroking, or logbook loans	Ability to manage daily finances and resilience
Share of adults claiming social benefits	Number of Universal Credit claimants who are required to seek work plus the number of Jobseeker's Allowance claimants divided by the adult population of the area	Ability to manage daily finances
Share of adults without emergency savings	Share of adults who have less than £5,000 in savings	Resilience
Share of Lowell consumers with high-cost loans	Number of Lowell consumers with a subprime loan divided by the number of Lowell consumers in the area	Resilience
Average credit use among Lowell consumers	Average ratio of credit usage to credit limit for Lowell consumers in the area	Ability to manage daily finances and resilience

Data Sources

Data and measures for index components are from several sources, including Lowell's research and operational data as well as publicly available data (table A.2). Lowell is one of the UK's largest firms engaged in the purchase and collection of defaulted consumer debt. The FVI relies principally on Lowell data for our measures of credit health, including the number of consumers in default, share of Lowell consumers with high-cost loans (loans with interest rates higher than the prime rate), and average credit use. These data include information on about 9.5 million consumers (approximately 17 percent of all UK adults) with an active account during the period and/or an account closed up to two years before the period. These data also include residential postcodes, which we use to construct index values for different geographic regions. Lowell consumers are typically in financial distress, having defaulted on at least one unsecured credit account (and often more than one). Lowell has detailed credit records for each consumer from two major credit reference agencies, including data on the balances of all debt types, credit use, and default indicators from Q3 2017 to Q3 2021.

One potential concern with Lowell's data is whether they are representative of the overall UK population. Although Lowell does not search for a specific consumer type, its consumers are typically in financial distress. As a result, Lowell's consumer-level data are less likely to reflect the financial well-

being of financially secure people. However, for the purposes of the index, the geographic distribution of Lowell consumers may well reflect the distribution of financially vulnerable consumers in the UK. To test this hypothesis, we compare the locations of Lowell consumers with other consumers in default using May 2020 credit record data grouped up to the NUTS3-level¹ from one of the UK's major credit reference agencies.² We find that Lowell consumers are located in the same local areas as other consumers in default and calculate a very strong (0.97) correlation between the share of adults who are Lowell consumers in default in a NUTS3 area and the share of consumers whose credit file contains a defaulted debt in the same area.

We complement the Lowell data with publicly available data. The Office for National Statistics (ONS) releases national and subnational midyear adult population estimates for the UK.³ Estimates are produced using the cohort component method, which updates the population base from census estimates based on population change. We linearly interpolate midyear population estimates to obtain a quarterly measure of the adult population at the parliamentary constituency level. These population estimates provide the denominator for our index components that are measured as adult population shares.

For data on alternative financial products and emergency savings, we draw on the 2017 and 2020 Financial Lives Survey conducted by the Financial Conduct Authority.⁴ The 2017 survey was administered between December 2016 and April 2017 and asked approximately 13,000 UK adults about their financial situation and experiences with financial products. The 2020 survey took place between August 30, 2019, and February 18, 2020, and interviewed more than 16,000 UK adults. Both surveys used a random probability sample design based on respondents' addresses. Using both surveys, we create the share of adults who report using alternative financial products and the share without emergency savings at the NUTS2 level.⁵ For the 2017 survey, we obtained statistics on these two components from the data tables available on the survey website.⁶ To generate the components for the 2020 survey, we used statistics that were created based on raw survey microdata.⁷

Note two complicating features of Financial Lives Survey data for the purpose of building our index: first, because these data are not available at the parliamentary constituency level, we assign values from the NUTS2 level to all parliamentary constituencies within that area.⁸ Second, because we only observe the data in two periods (April 2017 and February 2020), to create a FVI for all periods between Q3 2017 and Q3 2021, we had to linearly interpolate the values of these two components for each parliamentary constituency for the missing periods. Despite these limitations, we include these two components because they measure important aspects of people's financial well-being from a nationally

representative sample of adults that includes adults who are *underbanked* or *credit invisible*, which are missing from the Lowell data.

Finally, we use data from the Department of Workforce and Pensions (accessed via Nomis)⁹ on the number of people who have submitted a claim for Universal Credit who are required to seek work and the number of Jobseeker’s Allowance claimants, both at the parliamentary constituency level. We combine these figures, expressed as a share of adults, to calculate our component measure: share claiming social benefits. This statistic seeks to measure the number of people claiming social benefits principally for unemployment, although those claiming unemployment-related benefits (either Universal Credit or the Jobseeker’s Allowance) may be fully unemployed and seeking work or may be employed but eligible for unemployment-related benefit support because of low income or low work hours.¹⁰ Consequently, while most movement in the claimant count reflects changes in the number of people who are out of work, to a lesser extent it also reflects workers who were furloughed or had their hours reduced.¹¹

TABLE A.2

Data Sources

Data source	Component	Geographic unit	Time coverage	Frequency
Lowell research and operational data	Lowell consumers in default, Lowell consumers with high-cost loans, average credit use	Parliament constituencies	Q3 2017 to Q3 2021	Quarterly
ONS population estimates	Adult population	Parliament constituencies	2017–19	Annually
Financial Lives Survey	Share using alternative financial products and share without emergency savings	NUTS2	April 2017 and February 2020	Two observations
Nomis/ Department for Work and Pensions	Universal credit claimants who are required to seek work plus Jobseeker’s Allowance claimants	Parliament constituencies	2017–21	Quarterly

Index Methodology

To create the FVI using observations for all parliamentary constituencies from Q3 2017 to Q3 2021, we first standardize each component of the index to create z-scores. This standardization process assures that we can aggregate components measured in different units.

Next, we select a suitable weighting and aggregation method. We use factor analysis¹² to derive the weights for each component. The idea behind factor analysis is to account for the highest possible variation in the set of indicators using the smallest possible number of factors, which we define below.

This statistical procedure identifies the common variance among a set of observed variables (i.e., the index components) and creates a factor composed of that common variance. The factor scores are calculated with a linear equation that incorporates a weighted contribution of each variable included in the analysis. The weight of each variable is relative to the amount of variance it shares in common with the other variables. To perform the factor analysis, we use parliamentary constituency level observations from Q3 2017 to Q1 2021.¹³

Finally, we normalize the index to range from zero to 100. To do that, we implement the following steps:

1. Identify the lowest and highest values of *each index component* observed across all parliamentary constituencies during the period of analysis.
2. Set the value of the index when each component is 1.1 times its highest observed value as equal to 100.
3. Set the value of the index when each component is 0.4 times its lowest observed value as equal to zero.
4. Normalize the index to all parliamentary constituencies during the period of analysis as the distance between these lowest and highest reference points.

By making these adjustments, we ensure that index values calculated during the analysis are between zero and 100 and allow room for future index values, calculated during planned periodic updates, to be within the same range.

Using the weights from the factor analysis and the normalization described above, the index was created at the lowest geographical level (parliamentary constituency) for each quarter between Q3 2017 and Q1 2021. To obtain indices consistent across geographic levels, we constructed the index at broader geographic areas using a simple weighted average of smaller geographies' indices. For example, the FVI for Region and Nation R in period t is

$$Index_{Rt} = \sum_{p \in R} \omega_p Index_{pt}$$

where $Index_{pt}$ is the FVI of parliamentary constituency p in region R in period t , and ω_p is the share of the adult population of region R residing in constituency p . In the same way, the FVI for the United Kingdom is a population-weighted average of the index for all parliamentary constituencies:

$$Index_{UKt} = \sum_{p \in UK} w_p Index_{pt}$$

w_p is the share of United Kingdom adult population in constituency p .

Citation for Using Data

Braga, Breno, Signe-Mary McKernan, William J. Congdon, Cassandra Martinchek, Alexander Carther, Caleb Quakenbush, Elizabeth Mandiville, Mark Hayward, and Christopher Trepel. March 2022. *Tracking Financial Vulnerability in the UK: A Data Tool for Policymakers*. Washington, DC; Leeds, UK: Urban Institute and Lowell.

Notes

- ¹ “Your Key to European Statistics,” Eurostat, accessed February 19, 2021, <https://ec.europa.eu/eurostat/web/nuts/background>.
- ² The lowest level of geography available in the credit bureau data was NUTS3.
- ³ “Estimates of the Population for the UK, England and Wales, Scotland and Northern Ireland,” Office for National Statistics, accessed February 19, 2021, <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>.
- ⁴ “Overview of the Financial Lives Survey,” Financial Conduct Authority, updated February 11, 2021, <https://www.fca.org.uk/publications/research/understanding-financial-lives-uk-adults>.
- ⁵ “Your Key to European Statistics,” Eurostat, accessed February 19, 2021, <https://ec.europa.eu/eurostat/web/nuts/background>.
- ⁶ Our emergency savings component is based on the answers to the savings question available in table 321 of the Financial Lives 2017 data tables. Our alternative financial products use is based on high-cost lender products available in table 277. See “Financial Lives survey Resources Library,” Financial Conduct Authority, accessed on July 15, 2021, <https://www.fca.org.uk/financial-lives-survey/resources-library>.
- ⁷ Breno Braga, “2020 Financial Lives Survey—Statistics on Emergency Savings and Alternative Financial Products for the United Kingdom,” 2021, accessible from <https://datacatalog.urban.org/dataset/2020-financial-lives-survey-%E2%80%93statistics-emergency-savings-and-alternative-financial-products>. Data originally sourced from 2020 Financial Lives Survey, developed at the Urban Institute, and made available under project ID CDRC 787-01, ES/L011840/1; ES/L011891/1.
- ⁸ In the few cases where the parliamentary constituency borders overlapped with NUTS borders, we assigned the values from the NUTS2 containing the highest share of the parliamentary constituency population.
- ⁹ “Dataset Selection,” Nomis, accessed February 19, 2021, <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=35>.
- ¹⁰ Under Universal Credit, a broader span of claimants became eligible for unemployment-related benefits than under the previous benefit regime. During the rollout of the Universal Credit program, movements in the claimant counts might have been significantly affected by this expanded eligibility. This impact has led to the claimant count being reclassified as an Experimental Statistic: “Guide to Experimental Statistics,” Office for National Statistics, accessed February 19, 2021, <https://www.ons.gov.uk/methodology/methodologytopicsandstatisticalconcepts/guidetoexperimentalstatistics>.
- ¹¹ “Employment in the UK: February 2021,” Office for National Statistics, accessed February 19, 2021, <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/employmentintheuk/latest>.
- ¹² “Concept: Factor Analysis,” University of Manitoba, October 19, 2016, <http://mchp-appserv.cpe.umanitoba.ca/viewConcept.php?printer=Y&conceptID=1485>.

¹³ We used data from Q3 2017 to Q1 2021 to generate weights for each component and normalize the index in our November 2021 data release. We decided to keep these same weights and normalization process for the March 2022 data update. As a result, the FVI did not have to be updated for the periods between Q3 2017 and Q1 2021 in our March 2022 release.