Using Revolut cardholder data to derive real-time indicators of consumer spending QMI

Quality and methodology information for debit card spending indices derived from aggregated and anonymised Revolut cardholder data. Includes how the data are created and strengths and limitations.

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1 . Overview of Revolut card spending data

Since the beginning of the coronavirus (COVID-19) pandemic, we have been providing timely indicators on the UK economy and society in our [Economic activity and social change in the UK, real-time indicators article](#) as part of ONS' response to the coronavirus pandemic. In collaboration with the financial technology company Revolut, we have developed an experimental high-frequency indicator of consumer spending within the UK. This article sets out the methodology used to derive this data, and outlines strengths and limitations that users should consider.

The resulting data are a set of experimental indices, which allow us to analyse consumer spending across merchant categories for both in-store and online transactions, and by some consumer characteristics including cardholder age group. Data are presented on a daily 7-day rolling average basis, indexed to February 2020 average spending levels as a pre-coronavirus pandemic baseline. In this way, the dataset provides supplementary insights to the CHAPS-based indicator of credit and debit card spending.

As [Experimental Statistics](#), these data are subject to revisions as our methodology and systems are refined.

2 . Revolut

Revolut is a financial technology company and also a card issuer within the financial payment ecosystem. They provide debit cards on behalf of card schemes to a fast-growing customer base in the United Kingdom and several other international markets. Revolut customers can use both physical and virtual Revolut debit cards for purchases and transactions both in store and online, with the physical cards being contactless capable.

3 . How we process Revolut card spending data

The Office for National Statistics (ONS) receives data from Revolut at the start of each week, covering the previous week's card spending transactions alongside additional days to capture any minor revisions from pending transactions. Data supplied by Revolut is aggregated and anonymised to ensure data are not disclosive and that no cardholders can be individually identified. The spending figures received by the ONS are grouped by a range of variables such as merchant category code (granular primary business sectoral identifier), whether the transaction took place in store or online, and cardholder age band. These breakdowns are then aggregated upwards to derive higher level indices.

To deal with volatility in data trends caused by Revolut's greater representation towards a younger demographic, the ONS groups customers into discrete brackets to allow analysis of spending by age cohort. The following age brackets are used: aged 18 to 34 years, aged 35 to 54 years, and aged 55 and over. These groupings are selected to avoid volatility in transaction value over time.

Revolut is a relatively new and fast-growing financial technology company. To remove the impact that user growth has on overall spending, indices values are adjusted using total user count figures that are shared with the ONS. This adjustment is naïve to age grouping, so users should note all age bands are deflated by total user count equally. This means rate of growth for age bands may differ slightly. The user count excludes accounts that have been closed by customers, but not dormant ones. The purpose of adjusting values to reflect a "per-account" basis in this way is to give a more accurate reflection of changes in consumer spending, rather than simply reflecting Revolut's commercial growth.

After aggregation and adjustment, these data are indexed to the average February 2020 spending level as a pre-coronavirus (COVID-19) pandemic baseline. For daily indices, mean spending is defined over the period 1 February 2020 to 29 February 2020. A 7-day rolling average is applied to all daily indices to adjust for fluctuations around the trend, owing to consumer intra-week spending cyclicality.

4 . Strengths and limitations

Timeliness

Revolut spending data are extremely timely, providing real-time insights into UK consumer spending behaviour. Figures are made available on the Thursday of each week and cover data up to and including the previous Sunday. These are published as part of our [How our spending has changed since the end of coronavirus (COVID-19) restrictions article](#) and our [Economic activity and social change in the UK, real-time indicators article](#). For example, data published on Thursday 21 July 2022 cover daily indices up to and including Sunday 17 July 2022.

Coverage

Revolut are a relatively new financial technology company, and although their user base has grown substantially over the past few years, their debit card users tend to be younger and more urban based than the typical UK consumer. Therefore, the resulting estimates generated using their data are not necessarily representative of the overall UK economy or of typical consumers. Users should interpret these experimental indicators with caution.

Cardholder location

Cardholders are assigned to a UK area according to their registered address with Revolut. This processing is done by Revolut before we receive these data. Transactions are attributed to these areas, rather than where the physical transaction took place (for in-store transactions rather than online).

Online and in-store transactions

Revolut classifies transactions as taking place online if it was carried out via the internet, even if the customer went to a physical location to buy a good or service. For example, if a customer in a restaurant or pub ordered and paid for their transaction via a company's smartphone app, this would be recorded as taking place online rather than in store. Users should note this when interpreting indices on in-store verses online transactions by value and sectoral weight.

Seasonal adjustment

Users should note that these data are not seasonally adjusted. This means daily, weekly and monthly patterns in spending have not been accounted for, such as the impact of paydays, retailer discounting, and bank holidays. Changes in the resulting indices may therefore be because of seasonal effects, so users should interpret these with caution.

Inflation and cash to card conversion

These indices are presented on a nominal basis and are not adjusted for price increases over time. As inflation is not accounted for, a natural uplift is to be expected across indices, so users should interpret trends with caution. Users should note that rates of inflation are likely uneven across merchant sectors.

Within the UK financial transaction ecosystem there has been a shift away from cash as a payment medium in favour of card spending, as [detailed by the Bank of England, using UK Finance data](#). This results in indices being uplifted over time in areas where consumers replace typically low value cash transactions with low value card transactions instead. Users should interpret long-term trends with this in mind.

5 . Comparison with the CHAPS-based indicator of credit and debit card spending

Revolut spending indices are published alongside CHAPS data, provided by the Bank of England, within our [Economic activity and social change in the UK, real-time indicators bulletin](). Both indicators are proxies for consumer spending within the UK, but capture similar transactions at different points of the cardholder payments ecosystem.

The CHAPS-based indicator captures spending on credit and debit card payment processors (often known as merchant acquirers) at a sample of around 100 of the UK's largest retail corporates. By definition, it therefore captures card spending at larger than average businesses who are more likely to operate in urban areas than rural ones. The CHAPS-based data series also only covers the subset of retailers whose merchant acquirers use a different payment service provider (PSP) to themselves. The resulting indices are therefore not perfectly representative of overall UK consumer spending.

In contrast, Revolut's data captures all debit card spending by its customers (and its customers only). Being a relatively young financial technology company, its users tend to be younger and more urban based than the UK average. This means the resulting indicator should also not be interpreted as a representative sample of overall UK consumer spending.

The CHAPS-based indicator is slightly less timely than the Revolut data, providing information on consumer spending with a 7-day lag from the date of publication of our Economic activity and social change in the UK, real-time indicators bulletin. For example, the CHAPS data published on Thursday 7 July within the release includes data up to and including Thursday 30 June. Revolut data has a 4-day lag from the day of the bulletin's publication, so the publication on Thursday 21 July will include indices up to and including Sunday 17 July.

More detailed information about the CHAPS-based indicator can be found on the [Bank of England's methodology page]().

6 . Related links

[Economic activity and social change in the UK, real-time indicators]()
Bulletin | Published weekly
Early data and analysis for UK economy and society. Includes activity and change in business, spending, travel and jobs using rapid response surveys, novel data sources and experimental methods.

[Guide to the Bank of England's 'UK spending on credit and debit cards experimental data series]()
Methodology article | 21 January 2021
Overview of the UK spending on credit and debit cards experimental data series.