# DSC-52 Novel and faster indicators, bias and anomalies in HMRC value added tax (VAT) data

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The Data Science Campus project to explore novel economic indicators, bias and anomalies in HMRC value added tax (VAT) data (expenditure and turnover)

#### Team members

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#### The need

The Independent Review of UK Economic Statistics (Bean, 2016) stated that "the longer a decision maker has to wait for the statistics, the less useful are they likely to be". Faster UK economic statistics enables policymakers such as HM Treasury and the Monetary Policy Committee of the Bank of England to set appropriate policy more quickly in response to economic changes.

This project explores the use of VAT returns as potential early economic indicators (e.g. turnover, expenditure, number of new reporters, various measures around how and when firms report).

It also builds knowledge and experience around the potential and challenges of using administrative data sources, considering issues such as bias, anomaly detection and data quality. This learning will be useful for other administrative data sources.

#### Impact

This project has the potential to deliver new and faster insights into the economic health of the UK for policymakers.

# Data science

- Manipulation and interrogation of large administrative data sources
- Development and comparison of time series
- Machine learning to address bias issues and detect anomalies

# Stakeholders

- ONS national accounts and economic statistics
- Bank of England, HM Treasury, Office for Budget Responsibility (OBR), Department for Business, Energy and Industrial Strategy (BEIS), National Institute of Economics and Social Research (NIESR) and others

# Code and outputs

- Methodological paper
- Seminars
- Regular publication

#### Delivery

- [x] December 2018: Project started
- [x] December 2018: Background work
- [x] December 2018 February 2019: Develop early indicators
- [x] February/March 2019: Refine and test early indicators
- [x] March/April 2019: Initial publication of early indicators

# Further information

Please contact datasciencecampus@ons.gov.uk for more information.

# Updates

 ${\bf 2018\text{-}11\text{-}19T16\text{-}52\text{-}54Z}$  Project is resourced jointly with Data scientists and Economists.