

MEASURING DIGITAL ECONOMY USING UK CONSUMER  
CARD PAYMENT DATA: INSIGHTS INTO UK ONLINE  
SPENDING AND DIGITAL TRADE (2019–2025)

DIGITAL / DATA / SOFTWARE ENGINEERING  
ENGINEERING EDUCATION AND PRACTICE  
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## INTRODUCTION

- The digital economy is rapidly transforming consumer spending.
- Online platforms and services now dominate many transactions.
- Traditional surveys struggle to capture fast-changing digital activity.
- Cross-border online purchases complicate digital trade measurement.
- Card payment data offers new opportunities for economic statistics.

## OBJECTIVE

- Examine UK online consumer spending trends (2019–2025).
- Identify sectoral shifts in digital consumption patterns.
- Analyse cross-border digital spending flows.
- Assess the usefulness of card payment data for digital trade statistics.
- Explore alternative data support modernisation of economic measurement.

## METHODOLOGY

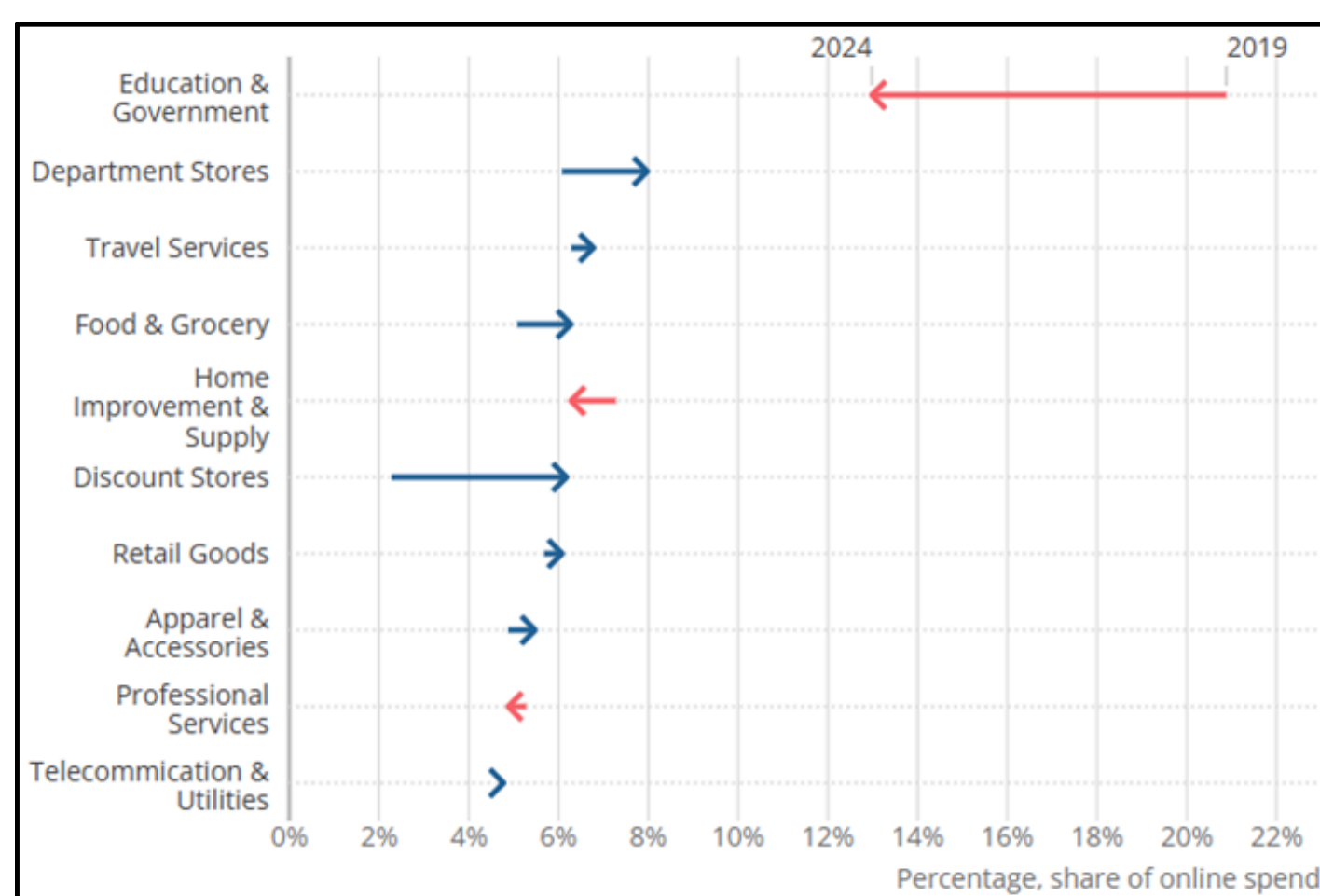
- Use aggregated and anonymised consumer card transaction data.
- Analyse online vs face-to-face spending behaviour.
- Classify transactions by merchant sector and location.
- Examine monthly spending patterns from 2019–2025.
- Apply statistical analysis to identify digital trade trends and patterns.

## KEY FINDINGS

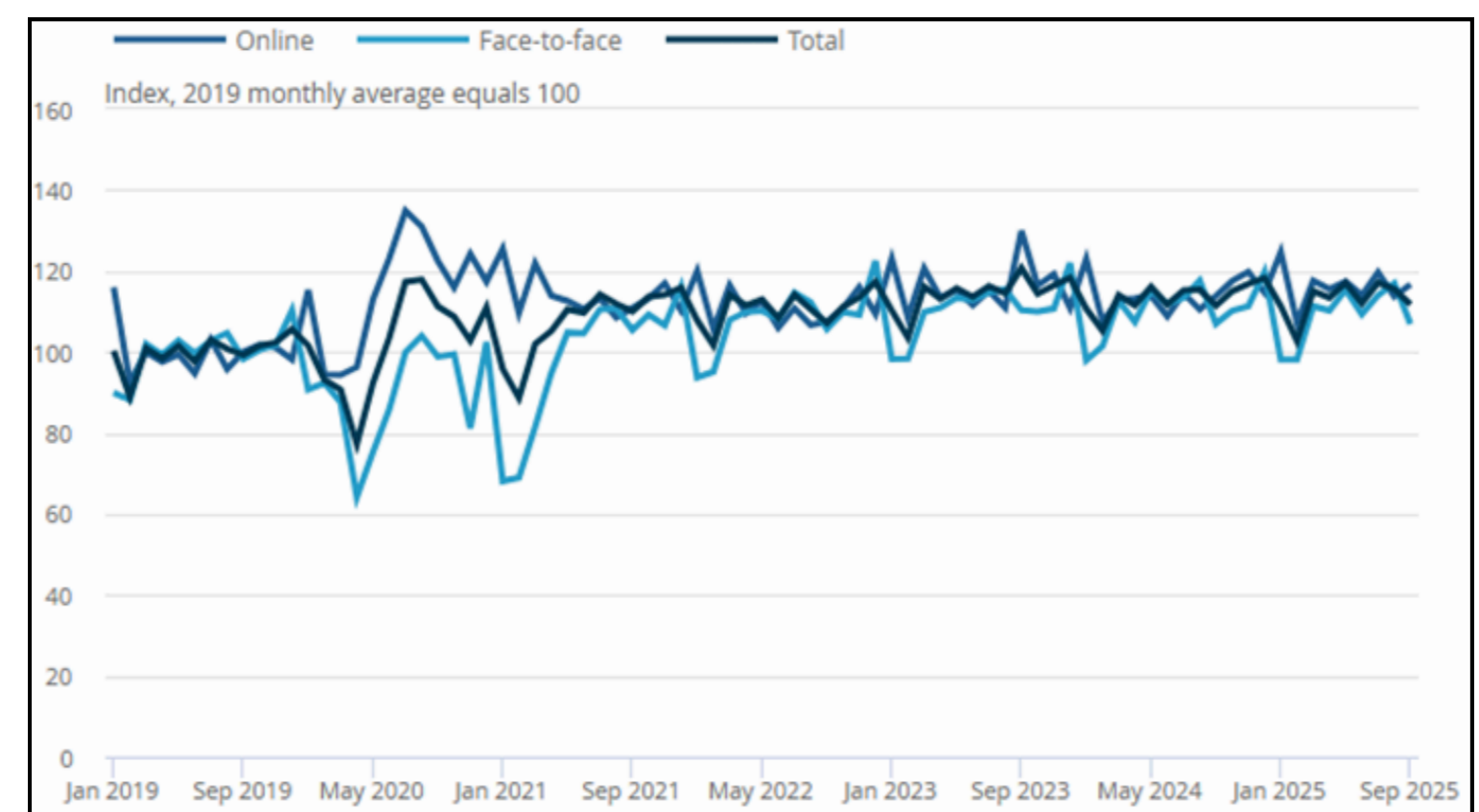
- Online card spending increased from 43.7% in 2019 to over 50.5% in 2025.
- Digital consumption has expanded across retail and service sectors.
- Online spending growth accelerated during and after the COVID-19 period.
- UK consumers increasingly purchase from international digital merchants.
- Digital platforms are reshaping consumer behaviour and retail structures.

## RESULTS

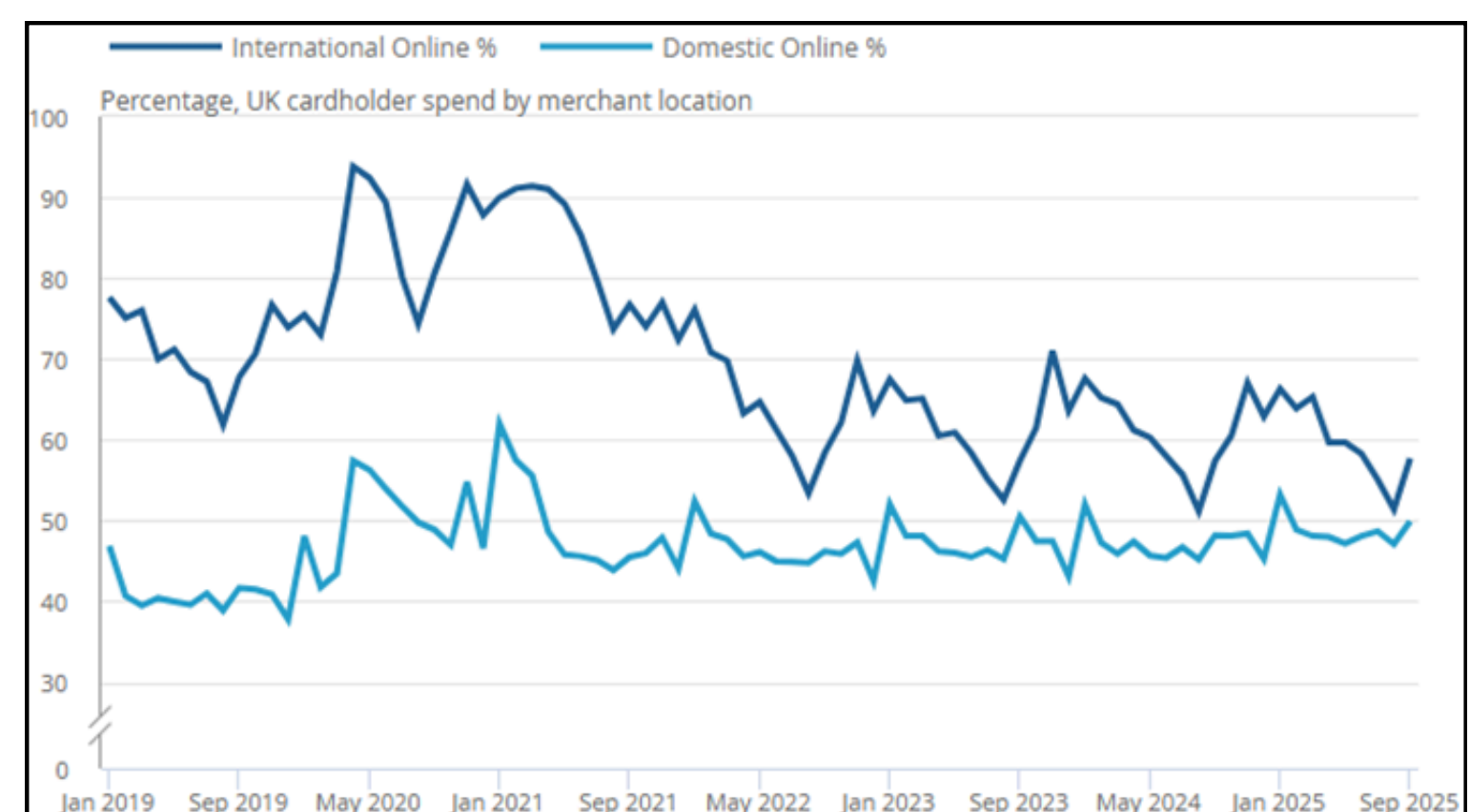
- Card payment data provides high-frequency indicators of online spending.
- The data helps identify sector-level digital commerce trends.
- Cross-border transactions reveal patterns of international digital trade.
- Alternative data improves visibility of digital economic activity.
- These insights support modernisation of official economic statistics.



Education and government spending accounts for the highest share of online spending in both 2019 and 2024  
Share of online spending in top 10 merchant category groups (MCGs) by share of spend in 2024, 2019 compared with 2024  
MCGs indicate the primary type of trade conducted by a given merchant.  
Share of online spending $_{MCG} = (\sum_{q=1}^4 \text{Online spending}_{MCG,q}) / (\sum_{q=1}^4 \text{Online spending}_{All,q})$



Average spend per UK cardholder, both online and face-to-face, have remained stable in the last four years  
Indexed average spend per UK cardholder by merchant channel, January 2019 to September 2025, 2019 monthly average equals 100



In September 2025, 58% of transactions with international merchants were made online  
Percentage of spending that is online by destination, UK compared with international, January 2019 to September 2025

## CONCLUSION

- Digital trade is an increasingly important component of the UK economy.
- Traditional surveys alone cannot fully capture rapid digital market changes.
- Card payment data provides timely and detailed insights into online spending.
- Integrating alternative data sources can improve digital trade measurement.
- This approach supports evidence-based policymaking and future statistical development.

## REFERENCES

- ONS (2026) Consumer card spending, e-commerce and digital trade insights in the UK: 2019–2025
- ONS (2024) International consumer card spending, UK and abroad
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- ONS (2022) Developing UK digital trade statistics
- Data Source: Aggregated & anonymised data on UK card payments from Visa Europe Limited (2025)

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