

Measuring Digital Trade – ONS (UK)

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Measuring Digital Trade

		Exports			Imports		
		Businesses	Gov	Households	Businesses	Gov	Households
Digitally ordered (A)							Card Transactions
	Goods	DES			DES		Vague breakdown of goods/ services
	Services*, not digitally delivered	DES		Short-term lets bookings	DES		from Card Transactions data
Digitally delivered services (B)		MoS Data, Digital Services Tax			MoS Data, Digital Services Tax		VATMOSS + Digital Services Tax
	Digitally ordered (C)	DES			DES		Short-term lets fees, Audio Streaming, Visual Streaming, etc.
	Not digitally ordered	DES			DES		
Total Digital Trade		A + B - C					

* DES = Digital Economy Survey

Upcoming publications

Articles due to be published in Feb 2026:

Consumer card spending, e-commerce and digital trade insights in the UK

- Average spend, online ratio, by location, by product (MCC)

Measuring digital trade in the UK

- Limited digital trade estimates (statistics in development)
- How we are planning to cover the BPM7 and SNA recommendations on digitalisation

Digital Economy Survey

A hopeful approach

DES Redesign – Overall Structure

Section 1: Digital Sales (14 Questions)

- DO sales consistent with Eurostat survey definitions for sales via ‘own website, app, or extranet’, ‘EDI-type sales’, and other...
- Total split by domestic and **international sales**
- Follow-up questions splitting international DO sales by top partner countries, goods/ services, product, and customer type
- Negative approach to capturing overlap between DO and DD (more on next slide)
- Sales of DD services, consistent with guidance from UNCTAD
- Total split by domestic and **international sales**
- International sales then split by top by partner countries

Section 2: Digital Purchases (11 Questions)

- Mirrors digital sales section

Section 3: Digital Intermediation Platforms (3 Questions)

- Confirmation if they are/ aren't a DIP
- Turnover from fees charged to users, both domestic and international users
- Value of goods and services sold through the platform, again sales by both domestic and international users

* DO = Digitally ordered. DD = Digitally delivered

DES Redesign – Capturing the Overlap

- 1.5.1 During 20YY, how much of your business' turnover from sales of services to customers located outside of the UK that were digitally ordered comes from services that were delivered in person?

Examples of this include:

- *A foreign business books someone corporate training via your company's website and someone from your company travels abroad to deliver this training in person.*
- *A foreign business purchases transportation services from your business via its EDI*
- *A foreign national books a hotel via your website and travels to the UK for their stay.*
 - **Note – For example,** *if the hotel was listed on your website, but the accommodation service was not delivered by your company (e.g. because your company doesn't run the hotel, just the listing) this wouldn't fall under this category as the only revenue your company earned from this transaction would be associated with the fee charged to the company/ foreign national for the online listing and **not** the in-person delivery of the accommodation service.*

£_____

Thought process is to focus on capturing the 'edge cases' when the service is also delivered in person

Follow-up question if the respondent indicated they made sales of services that were digitally ordered by international customers

Subtracting this value from value of digitally ordered services gives digitally ordered **and** digitally delivered services

ClassifAI (and the use of NLP for Surveys)

- Developed by ONS Data Science Campus
- Recommends a specific classification based on text input
- Functioning web app for survey operations teams
 - About to do large-scale testing with ASHE
- Reduces burden on respondents by allowing open-text responses
- Can gather additional qualitative information at the same time e.g. tech adoption

Digital Trade by Households

Our investigations – Non-survey Sources

Main source of household spending data is the Living Cost and Food survey

- Mapped to outdated COICOP categories
- Inconsistent and sometimes weak response rate
 - Common with household surveys
- No data on spending online

Debit and Credit Card Transactions

- Data agreement with Visa Europe, aggregated and anonymised but offers high level of granularity
- Offers key insights into UK households spending

Ad-hoc Investigations

- Analysis of specific direct-to-household services
- Helps gain better understanding of the internet in specific cases that may be missed by surveys

Admin Data - Card Transactions

Highly granular source of household spending data

- Visa operate one of the major card schemes in the UK
- Monthly spend data, transactions are grouped by a variety of novel breakdowns

Key variables

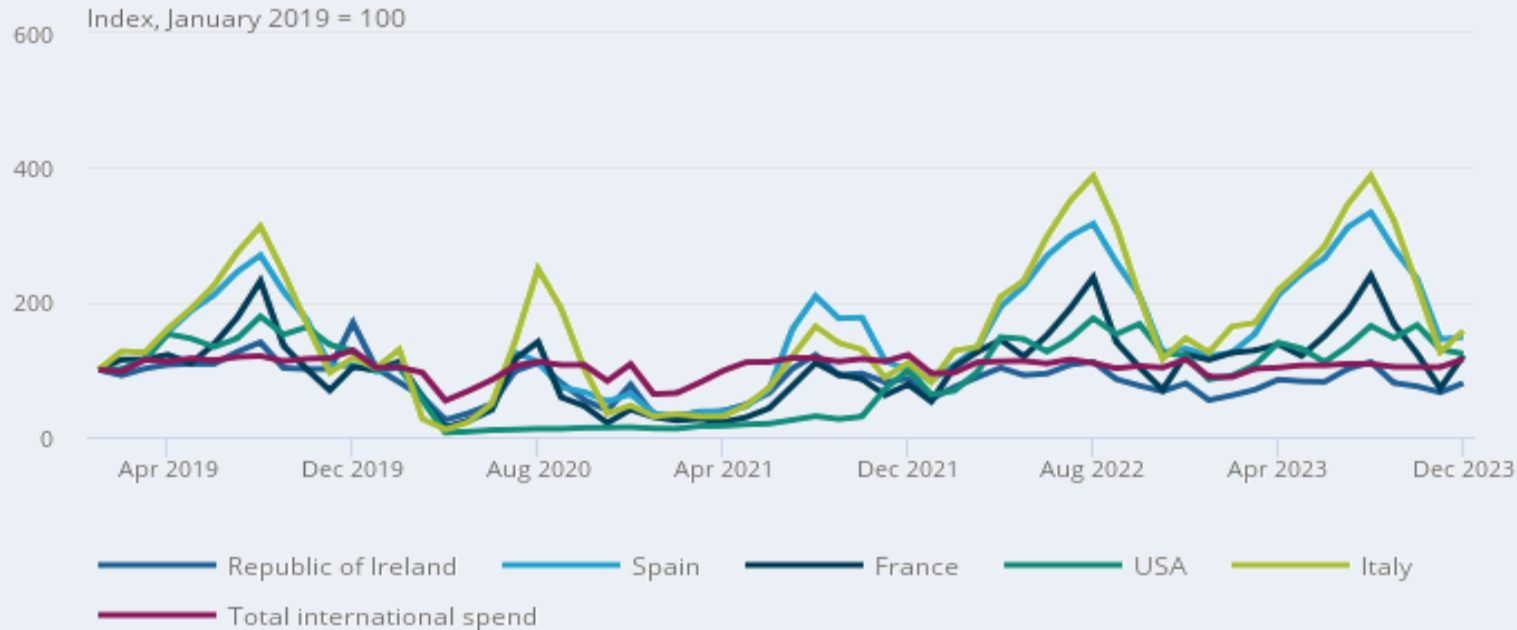
- Cardholder location – Origin of the card user (region within the UK, and nation of origin for international cardholders)
- Destination country – Location the merchant is registered to (Both UK-based merchants, and international merchants split by country)
- Merchant category (MCC) – 4-digit code that describes the merchant's primary business (e.g. Grocery Stores and Supermarkets)
- Merchant channel – *How* the payment was made, either face-to-face or online

etc...

Card Transactions

Figure 5: Spending in continental European countries peaked strongly between 2019 and 2023 in the summer months, while spending in the USA was at a more consistent level across the year

Indexed spend, January 2019 = 100, January 2019 to December 2023



Indexed spend decreased during the coronavirus (COVID-19) pandemic for all highlighted countries, but particularly for spend in the USA

Spending in the Republic of Ireland remained more consistent.

The indexed total international spend in December 2023 was 115.9

*All data are non-seasonally adjusted and not adjusted for inflation

[International consumer card spending, UK and abroad - Office for National Statistics](#)

[Regional consumer card spending trends QMI - Office for National Statistics](#)

Source: Aggregated and anonymised data on UK card payments from Visa Europe Limited (2023)

Card Transactions

A Proxy for Digitally Ordered Imports by Households

Assumption that online spending = digital ordering

- Isn't 1:1 and definition states that the payment doesn't need to be online, *but* this gives a solid estimate

Looking at online spending made at international merchants gives:

Online spending at international merchants

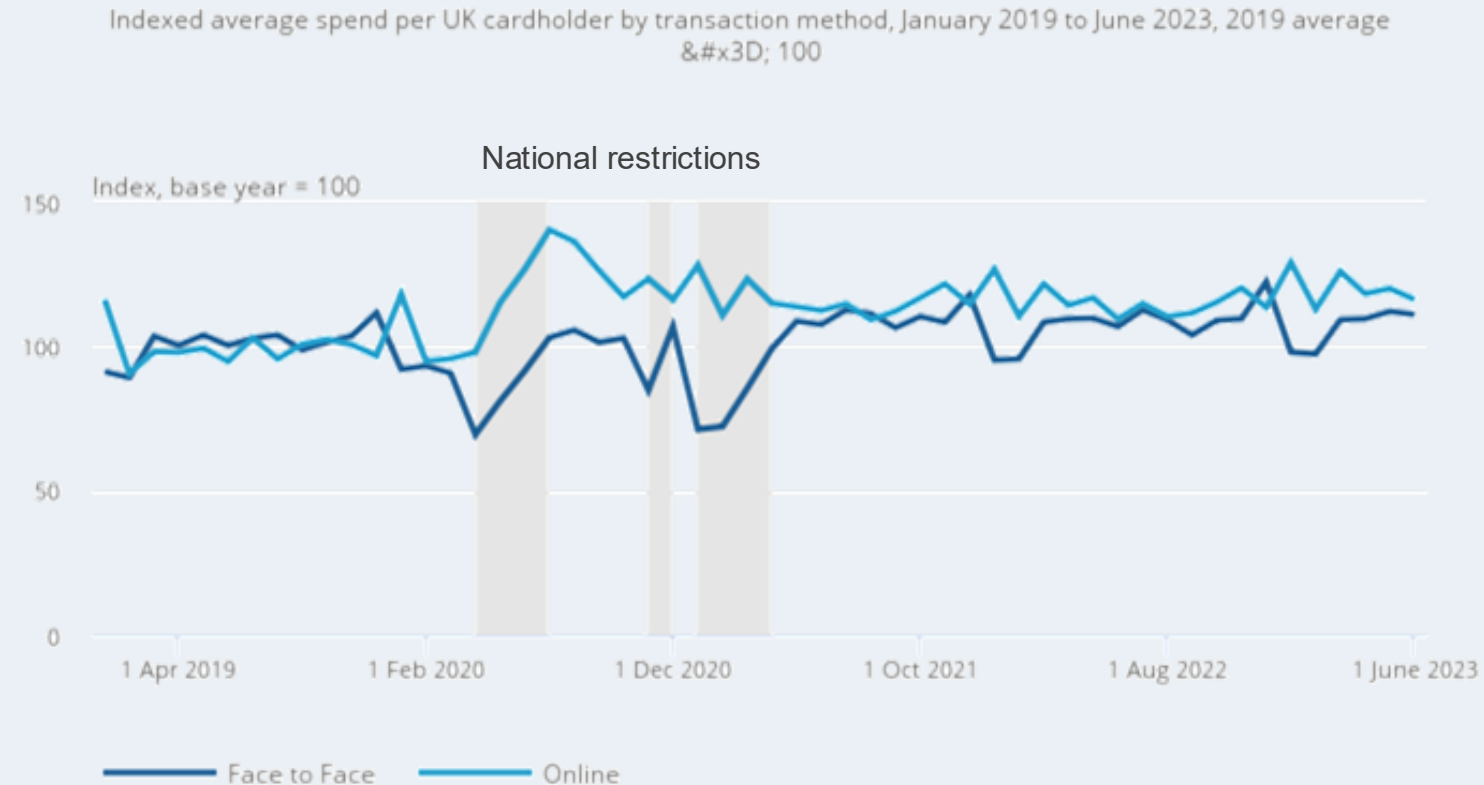
OR

Digitally ordered imports (by households)

Due to publish the % of all card spend that was digitally ordered imports in January

- Multiplying this by total card spend gives **total digitally ordered imports by households**

Figure 2: Online and face-to-face spending has remained stable over the last two years (June 2021 to June 2023)



Source: Aggregated and anonymised data on UK card payments from Visa Europe Limited (2023)

Card Transactions - Summary

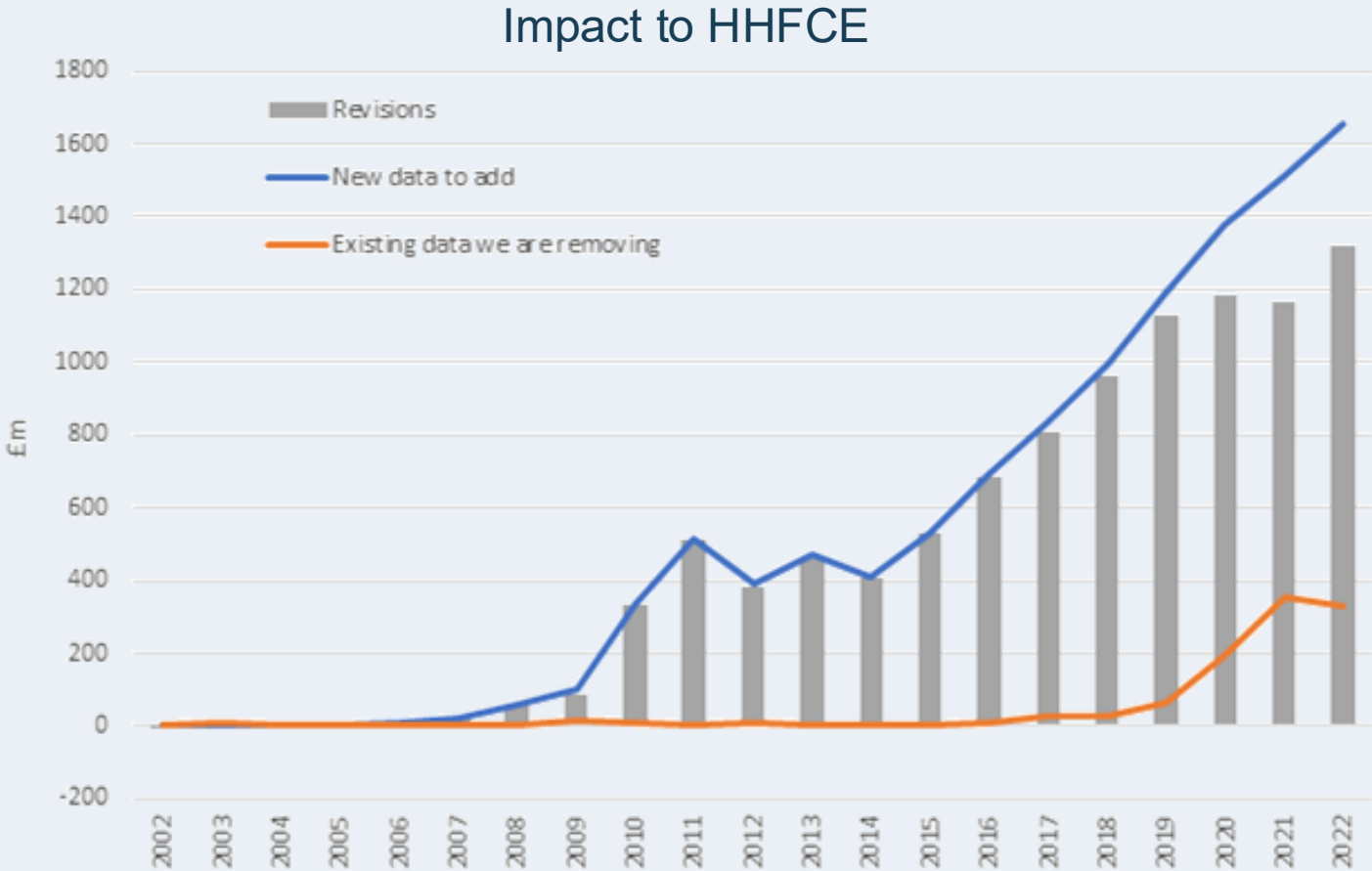
Benefits

- Great coverage
- Timeliness and accuracy (mostly)
- Can directly identify which transactions are digital in nature
- Variety of novel breakdowns can be investigated

Drawbacks

- Location of merchant outlet when the payment is online
- Limitations of the data agreements
- Only covers one source, not the whole UK card market or other methods of payment
- 'Online' transactions include those made in-person i.e. online ordering at a restaurant
 - Online payments != Digital ordering, but close proxy measure

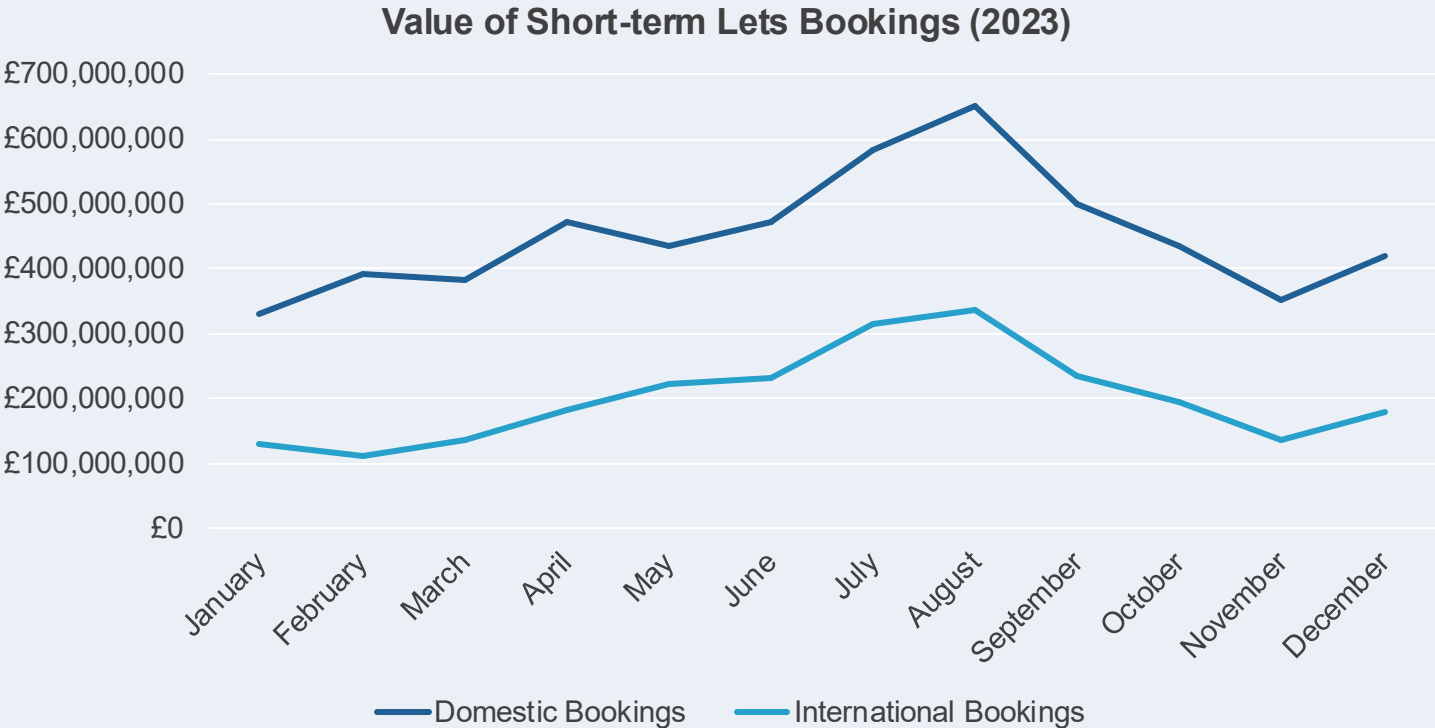
Ad-hoc Investigations – Audio streaming



*HHFCE = Household
Final Consumption
Expenditure

$$\frac{\text{Largest platform subscriber revenue}}{\text{Largest platform market share}} \times \text{Other platforms market share}$$

Ad-hoc Investigations – Short-term lets



We have estimated £5.4bn of domestic bookings and £2.4bn of international bookings at short-term lets in the UK

Since the largest companies that operate these platforms are foreign-owned e.g. Airbnb is based in Ireland, fees paid to the platform are also international trade - DIP fees

Estimated £1.2bn of fees paid by UK guests staying with UK hosts.

VisitBritain	Q1	Q2	Q3	Q4	Total (2023)
Host fees	£45,800,000	£62,300,000	£81,000,000	£53,300,000	£242,400,000
Guest fees	£201,400,000	£250,400,000	£315,300,000	£220,000,000	£987,100,000
Total	£247,200,000	£312,700,000	£396,300,000	£273,300,000	£1,229,500,000

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