

HOW TO MEASURE CROSS-BORDER E-COMMERCE THE PERSPECTIVE OF DEBIT AND CREDIT CARD DATA*

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E-commerce: total and cross-border

What it is (and what it is not)

- **e-commerce** refers to the purchase and sale of goods and services performed on computer networks/platforms through methods designed to receive and send orders (for example, web, extranet, or electronic data interchange (EDI)).
 - ▶ It does not include purchases made through phone calls or manually typed e-mails.
 - ▶ It consists of transactions that can be carried out between individual consumers (C2C), businesses and consumers (B2C), businesses (B2B) and businesses and governments (B2G).
 - An increasing proportion of such transactions take place on **digital platforms** such as *Alibaba* (B2B), *Tmall* (B2C), *Taobao* (C2C) of the *Alibaba Group*; *Amazon* (B2C and C2C); *eBay* (C2C and B2C) and *Mercado Libre* (C2C and B2C).
 - ▶ It is **cross-border** when the transaction involves the delivery of goods or services in a country other than the country of origin.

Cross-border e-commerce

What is its level and what is its growth rate

- Not known exactly.
- There are no comprehensive official statistics on the global value of cross-border trade.
 - ▶ The existing figures are projections based on data reported by a very limited number of countries and are based on very strong assumptions.
 - ▶ **The vision available is, at best, partial and fragmentary:** it is based on datasets that capture some of the dimensions of this mode of trade such as **payment methods** and **shipping methods** or **company samples**.
 - ▶ Governments lack a crucial input for decision-making in this relevant policy area.

Cross-border e-commerce

How it can be measured

| Customs, post and couriers | | Statistics agencies |
|--|--|--|
| Universe | Card purchases | Surveys |
| <p>WCO GUIDELINES</p> <p>WORKING GROUPS</p> <p>WTO</p> <p>OECD</p> | <p>Data on online purchases of goods abroad with debit and credit cards.</p> <p>Goods are shipped to the country and shipments are processed by customs.</p> | <p>E-commerce modules in the surveys of (samples of) companies and families.</p> <p>In general, the questions are dichotomous (yes/no).</p> <p>Questions about the value of transactions could be included.</p> |

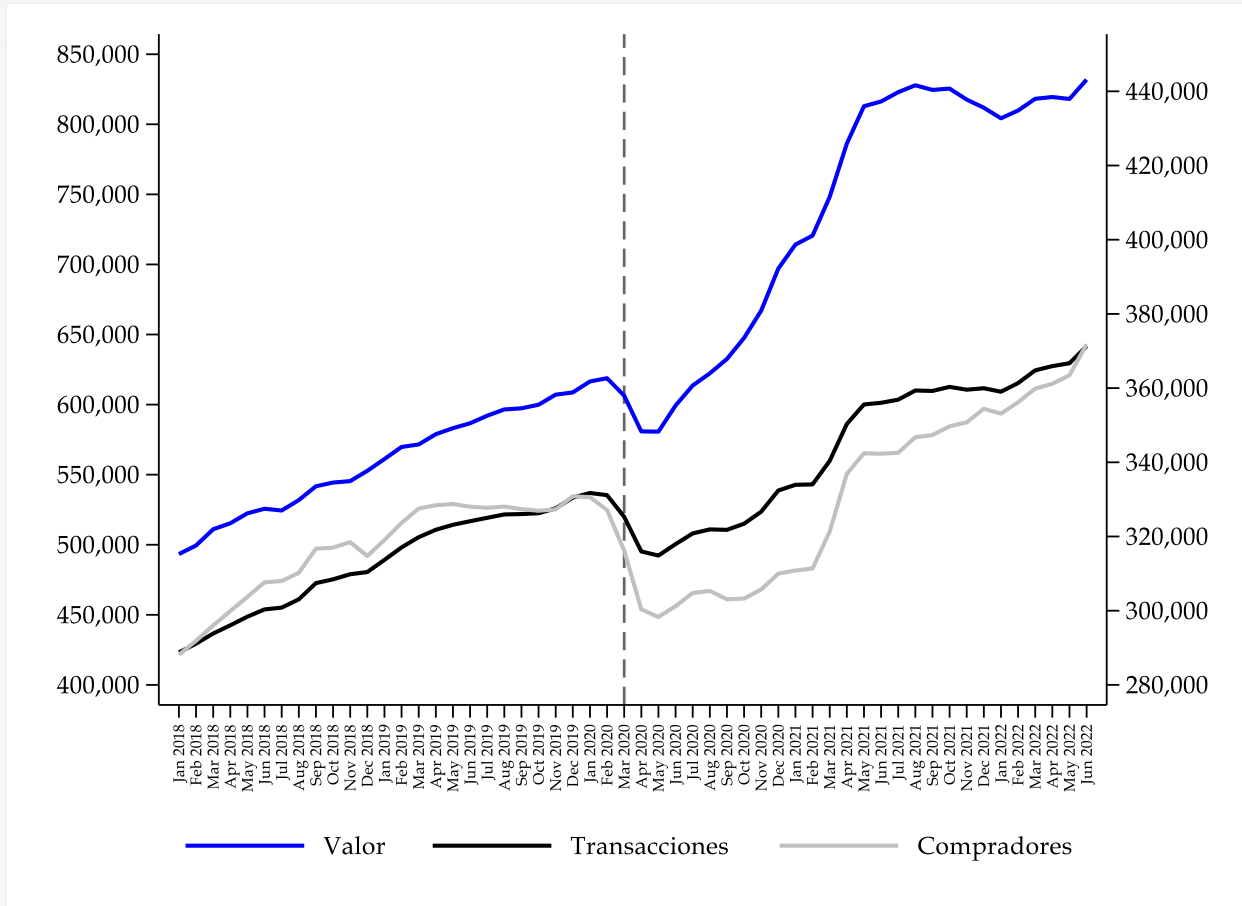
Cross-border e-commerce

Evidence based on the Uruguay case

- In 2012 Uruguay established a [franchise regime](#).
 - ▶ All **adult Uruguayans** (over 18 years old) can buy non-commercial goods abroad, a maximum of three times a year, for up to US\$ 200 (and 20 kilograms) each, without paying duties or taxes.
- This presentation uses a database of the National Customs Directorate (DNA by its acronym in Spanish) that includes **all purchases with credit and debit cards made abroad from Uruguay within the framework of this regime between January 2018 and June 2022**.
 - ▶ The data allows to characterize the evolution over time and the patterns of the **total and average value of purchases**, the number of **transactions** and the number of **buyers**, in general, and by *country of origin and product*, in particular, **before, during and after the pandemic**.

Cross-border e-commerce in Uruguay

Values, transactions and number of buyers



Source: Own elaboration based on DNA data.

Cross-border e-commerce:

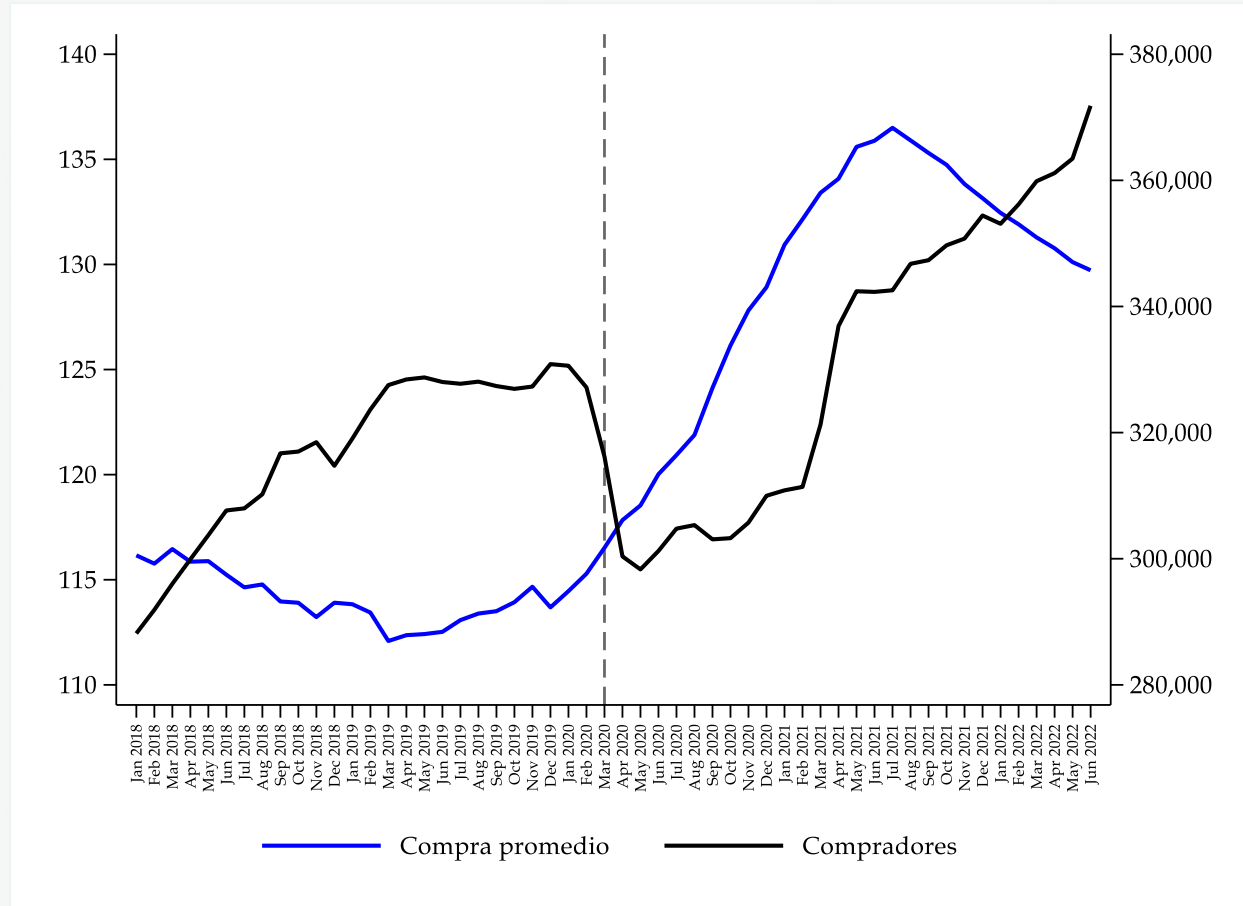
- ▶ It **expanded** significantly **before the pandemic**. Annual online purchases grew by 25% between **01/2018** and **01/2020** to exceed US\$ 60 million.
- ▶ It initially **shrank** with the arrival of the **pandemic**: it dropped by 5.9% between **01/2020** and **05/2020** – a drop equivalent to undoing a 13-month growth.
- ▶ **Grew substantially** between **06/2020** and **09/2021**: annual purchases abroad increased by 42% (more than 200% since 2014) to reach **US\$ 82 million**.

That behavior can be attributed in part to the evolution of the **number of buyers**, exceeding 370,000 (**16% of the adult population**), and the number of transactions, which exceeds 640,000.



Cross-border e-commerce en Uruguay

Number of buyers and average purchases



Source: Own elaboration based on DNA data.

The number of buyers:

- ▶ increased by nearly 18% before the pandemic (01/2018-01/2020)
- ▶ was reduced by almost 10% with the arrival of the pandemic (01/2020-05-2020)
- ▶ has grown steadily – almost 25% – since the most acute stage of the pandemic.

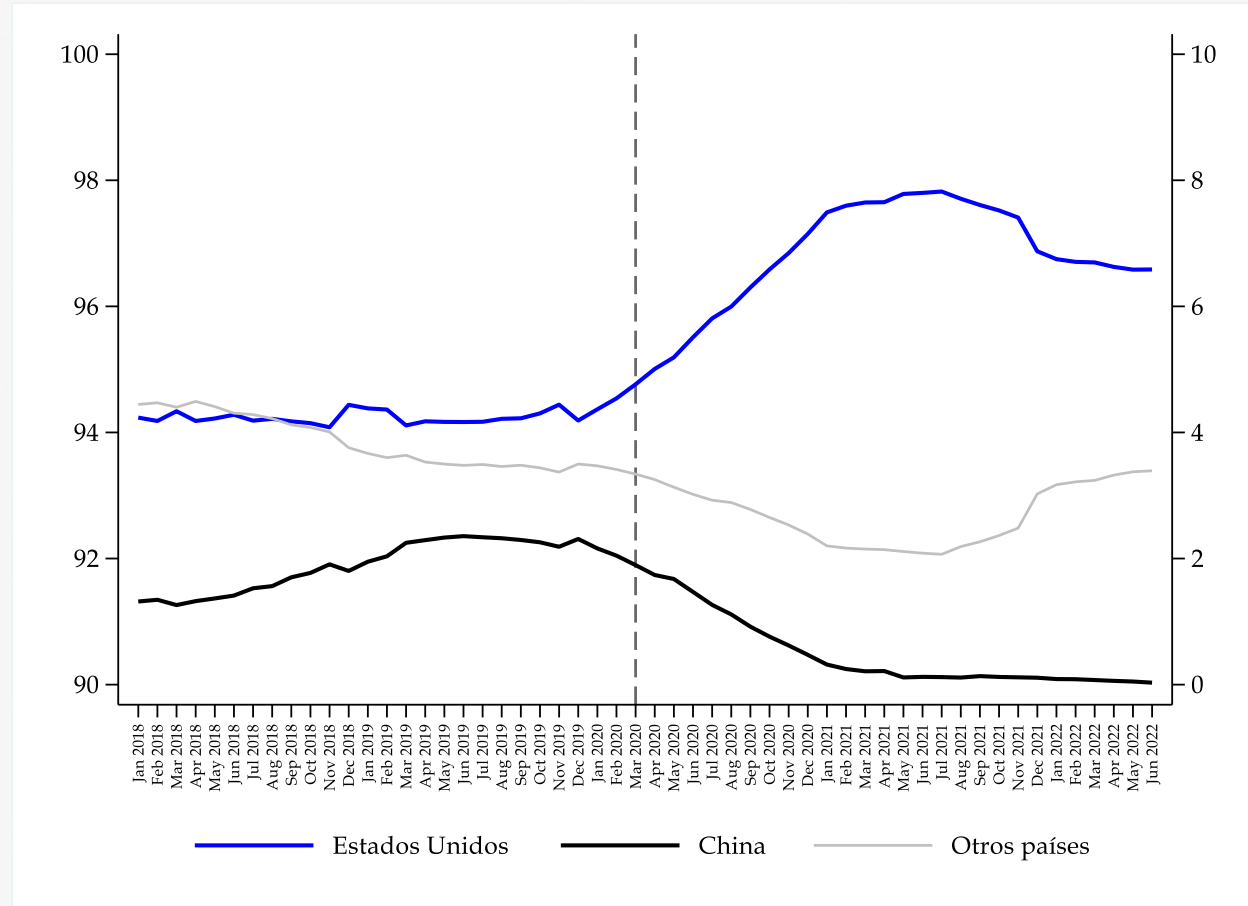
The average size of purchases:

- ▶ dropped by 7.5% before the pandemic (01/2018-01/2020) → **New smaller digital importers**
- ▶ grew by more than 11% with the arrival of the pandemic (01/2020-05-2020) and an additional 13% until mid-2021 → **Active consumers bought more**
- ▶ has decreased by 5.5% since then → **The income of smaller buyers has regained strength.**



Cross-border e-commerce en Uruguay

Origins of purchases: Values



Source: Own elaboration based on DNA data.

The increase in average purchase value was accompanied by changes in spatial patterns.

United States

- ▶ The participation of the **United States** as a country of origin increased by about 2 percentage points in value terms **since the beginning of the pandemic** to provide a **96.5% of the total** in June 2022.

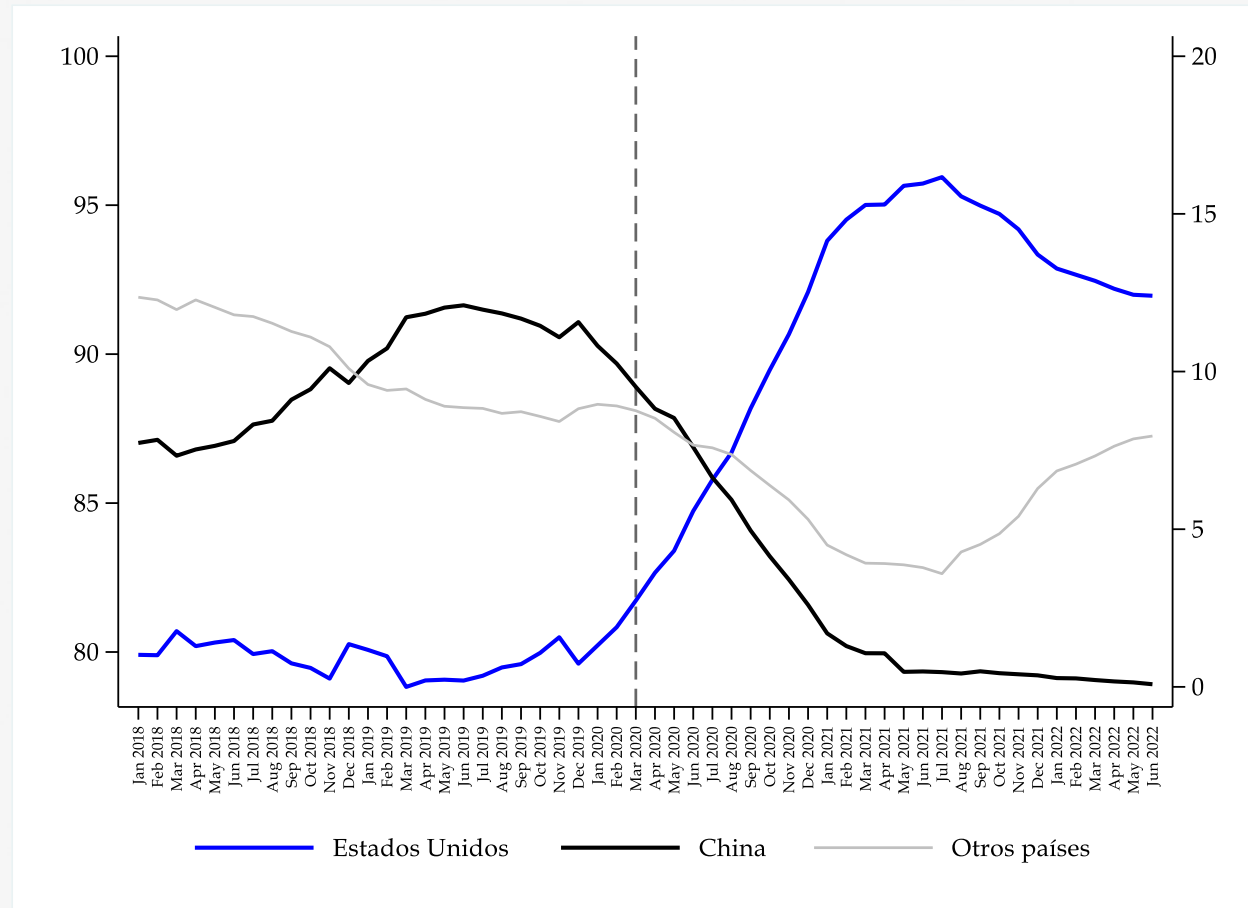
China

- ▶ The participation of **China** as a country of origin decreased by approximately 1.7 percentage points in value terms **since the beginning of the pandemic** until **0.1% of the total** in June 2022.



Cross-border e-commerce en Uruguay

Purchase Sources: Transactions



Source: Own elaboration based on DNA data.

The increase in average purchase value was accompanied by changes in spatial patterns.

United States

- ▶ The participation of the **United States** as a country of origin increased by about 10 percentage points in terms of transaction volume **since the beginning of the pandemic** to provide a **91% of total** in June 2022.

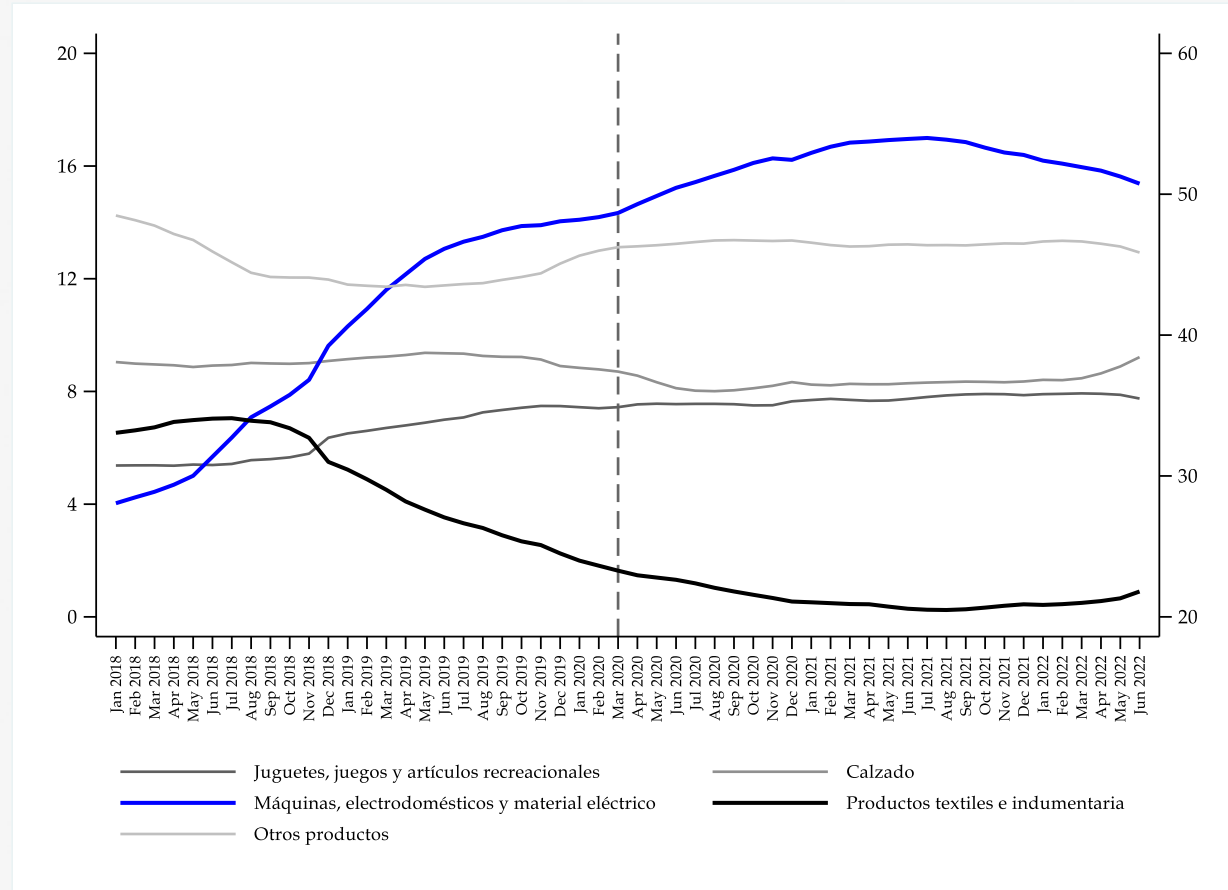
China

- ▶ The participation of **China** as a country of origin decreased by approximately 9 percentage points in terms of transaction volume **since the beginning of the pandemic** until **0.1% of total** in June 2022.



Cross-border e-commerce en Uruguay

Products purchased: Values



Consistently, ongoing changes in sectoral patterns became more pronounced.

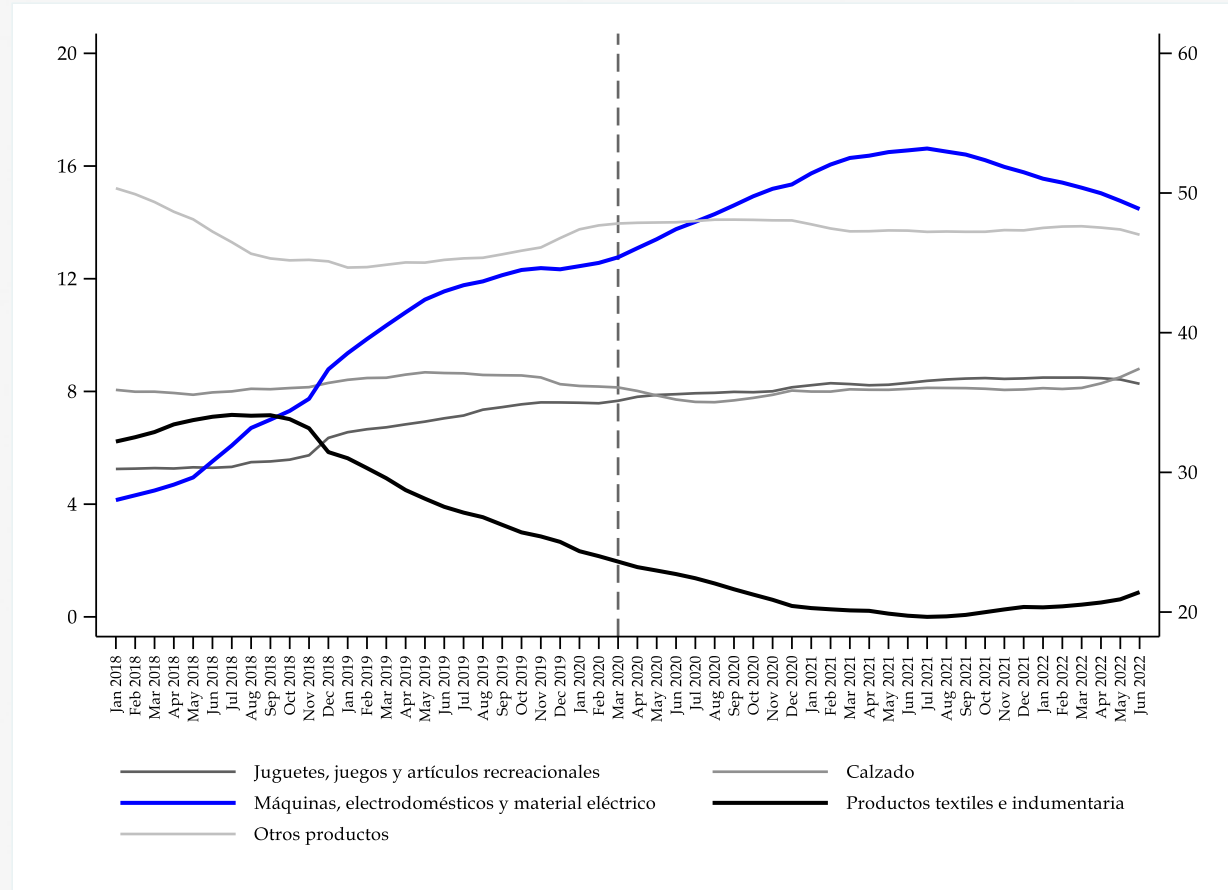
- ▶ **Machinery, appliances and electrical equipment acquired greater relative importance.** The share of this product group in value terms increased by 2 percentage points (from 14% to 16%) between the beginning of 2020 and June 2022.
- ▶ **The opposite happened with textiles and clothing.** The share of this product group in value terms decreased by 2 percentage points (from 23% to 21%) between the beginning of 2020 and June 2022.

Source: Own elaboration based on DNA data.



Cross-border e-commerce en Uruguay

Products purchased: Transactions



Source: Own elaboration based on DNA data.

Consistently, ongoing changes in sectoral patterns became more pronounced.

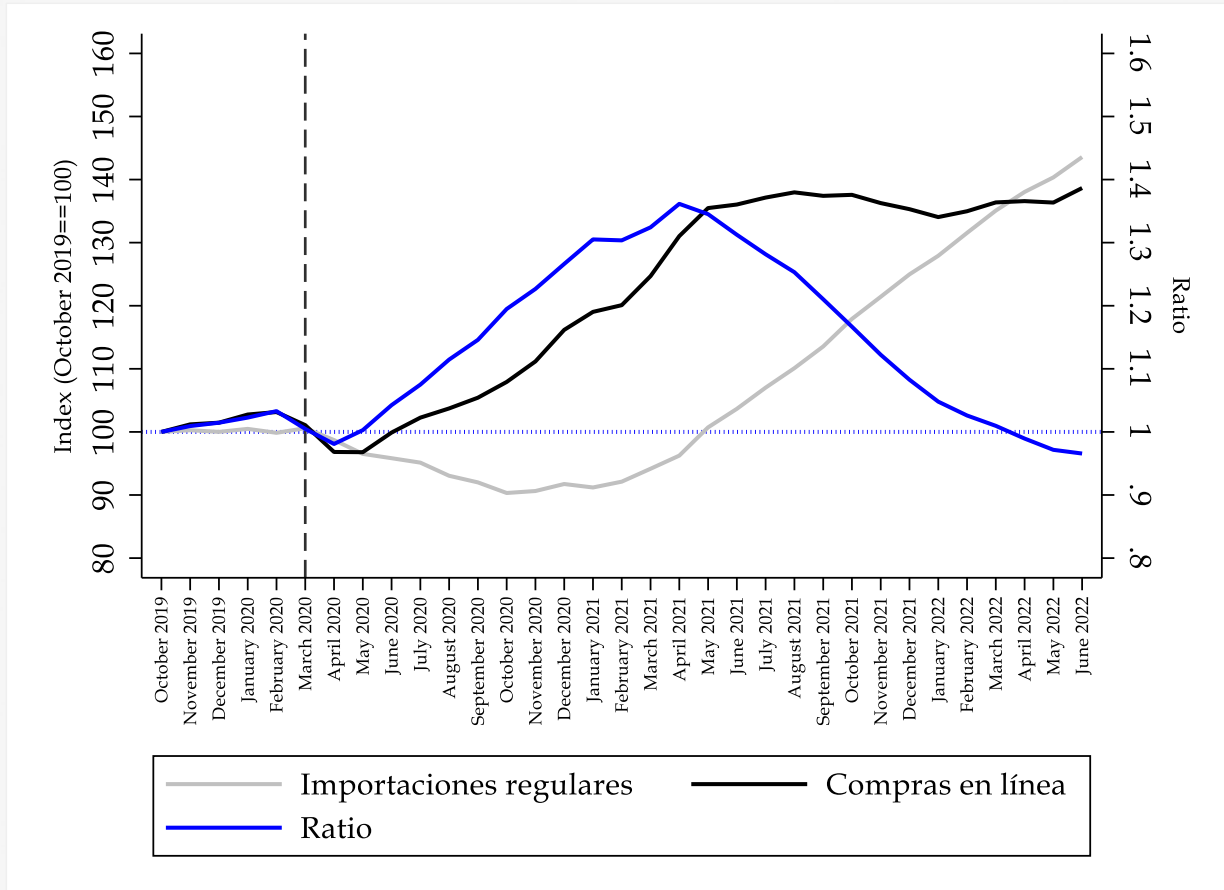
- ▶ **Machinery, appliances and electrical equipment acquired greater relative importance.** The share of this product group in total transactions increased 1.5 percentage points (from 12.5% to 14%) between the beginning of 2020 and June 2022.
- ▶ **The opposite happened with textiles and clothing.** The share of this product group in total transactions decreased 3 percentage points (from 24% to 21%) between the beginning of 2020 and June 2022.

The replacement of clothing with electronic products reflects supply and demand factors related to production and distribution constraints and changes in the consumer compartment.



Cross-border e-commerce en Uruguay

Traditional imports and online shopping



Source: Own elaboration based on DNA data.

Cross-border e-commerce recovered faster than total traditional imports.

However, as of May 2021, online shopping began to slow down and standard imports continued to grow strongly.

Can cross-border e-commerce react to shocks in a more agile way than traditional commerce?

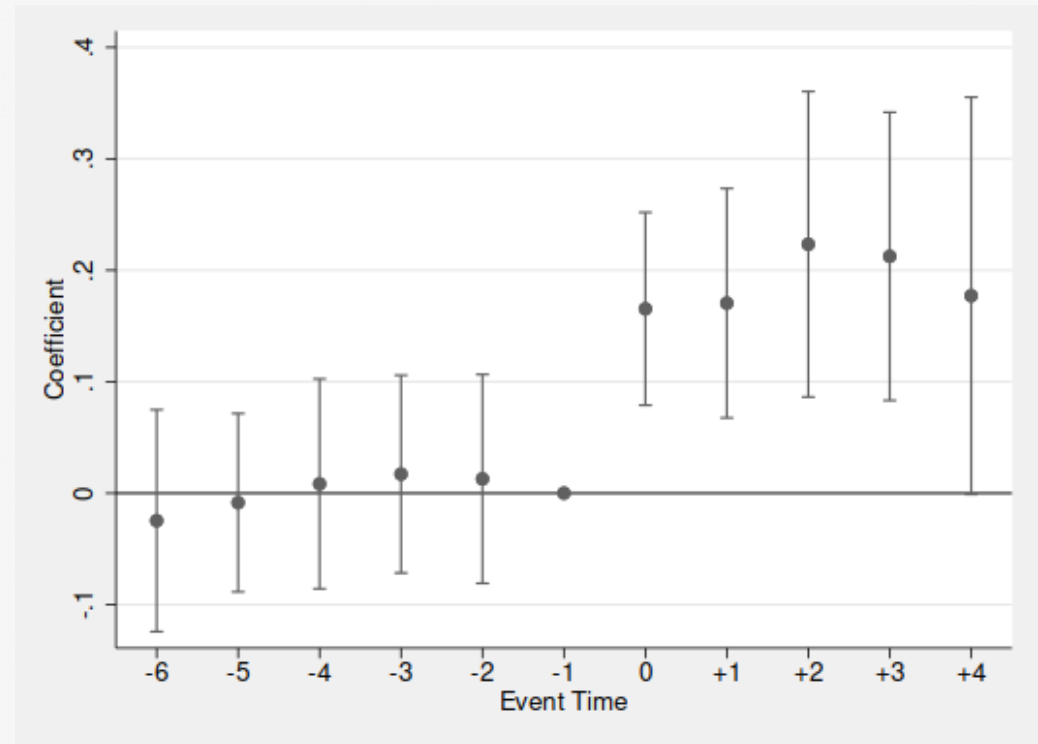
Can it be a leading indicator of this latest trade?



Cross-border e-commerce

Opportunities and challenges

- **E-commerce is becoming increasingly important and has significant potential.**
 - ▶ Online platforms can help reduce the costs companies face when seeking to reach and engage with more clients and specifically penetrate new markets.
 - ▶ Evidence based on the enterprise social network [ConnectAmericas.com](https://connectamericas.com) indicates that this is the case: companies without prior digital presence experience a significant increase in their external sales when using the platform.



Fuente: [Carballo, Rodriguez Chatruc, Salas Santa y Volpe Martincus \(2022\)](#).

Cross-border e-commerce

Opportunities and challenges

- In order to take full advantage of e-commerce, **countries need to overcome several public policy obstacles and challenges.**
 - ▶ In addition to limited and poor connectivity and inadequate technological infrastructure, these include underdeveloped financial systems, underperforming postal services, and legal and regulatory frameworks that restrict the degree to which people trust and conduct online transactions.
- Crucially:
 - ▶ **There is a clear need to design and implement internationally accurate and consistent measurement strategies.**
 - ▶ It is imperative to address explicit barriers to digital trade (e.g., restrictive data policies, establishment barriers).

Cross-border e-commerce

Opportunities and challenges

- And:

- ▶ It is essential to ensure the safe and expeditious processing of the growing number of small-value international parcels. This can be achieved through:
 - standardization of procedures,
 - electronic interconnection between customs and postal and logistics operators to enable advanced cargo information and
 - the introduction of new technologies such as machine learning for risk management for the shipments in question.

Thank you

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