Linking Information on Multinational Enterprises to Gain New Insights on International Services Traders

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Roadmap



- Background and motivation
- Data and methods
- Key findings about all service traders
- The role of multinational enterprises (MNEs) in services trade
- Future plans

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Background on BEA Surveys

- BEA surveys U.S. companies on their international transactions in financial services; insurance services; and charges for the use of intellectual property, telecommunications, computer, and information services, and other business services
  - Lots of detail on transactions
    e.g., by service type, affiliation, and partner country
  - Very little detail on the U.S. transactors
    e.g., only NAICS industry, no firm operating information
- BEA also surveys the activities of multinational enterprises (AMNEs), covering many aspects of the firm's finances and operations
  - U.S. parents
  - Foreign-owned U.S. affiliates
- Each of BEA's trade in services and AMNE surveys is conducted as a distinct collection system
- The AMNE surveys can provide more information about services traders than is available from the services surveys alone, but a bridge is needed to match respondents across surveys

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Why link BEA's international services and MNE surveys?

- To better understand trade in services, which plays an important role in the U.S. economy
- To facilitate international comparisons and align with emerging guidelines for the production of *Services Trade by Enterprise Characteristic (STEC)* statistics
- To enable new research and insights based on linked firm-level data, including research on how services firms serve foreign markets, digital trade, business dynamics of service traders, and patterns in the creation and location of intellectual property in MNEs
- To improve the quality of BEA's trade in services and AMNE statistics by facilitating additional internal checks

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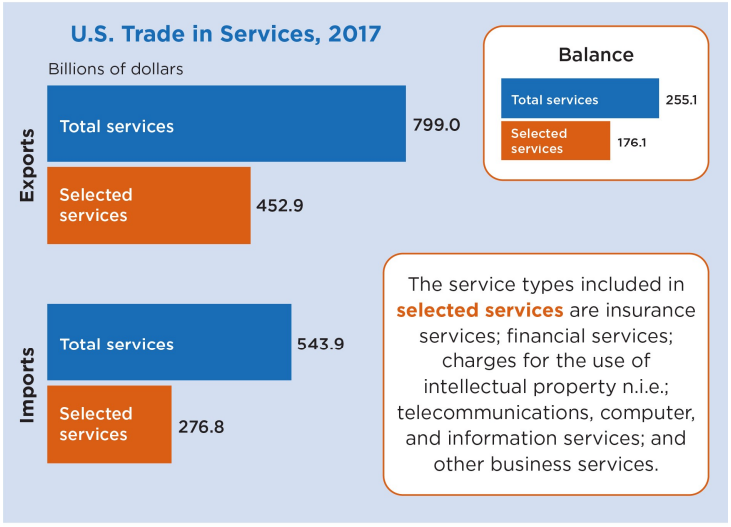
Data: Defining Selected Services

In-Scope Services for Statistics on Firm Characteristics



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Note.
Services types excluded from selected services are maintenance and repair, transport, travel, and government goods and services n.i.e.

Throughout the remainder of this presentation, "services" is used as shorthand to refer to "selected services"

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Methods: Linking BEA Surveys

- 2012: first-ever project to link data from three major BEA services surveys to AMNE surveys
  - U.S. parent companies and foreign-owned U.S. affiliates
  - Covered data for 2006–2009
  - Based on EINs, standardized names, and manual review
- 2019: link update
  - In addition to linking to MNEs, also linked between non-MNE service traders that file on multiple services surveys
  - Covered data for 2008-2017
  - Based on EINs and names, plus:
    - Application of text mining techniques to establish and verify matches
    - Incorporation of email addresses, mailing addresses, and location to establish and verify matches
  - New automation reduced the time required to validate a set of links and reject false matches while producing a more complete set of links

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Key Findings: All Service Traders, 2017

- Top three industries for both exports and imports:
  - Finance and insurance- 28% of exports, 32% of imports
  - Manufacturing- 22% of exports, 25% of imports
  - Information- 21% of exports, 15% of imports
- There was a $176.1 billion surplus on trade in selected services
  - U.S. parents had a $164.9 billion surplus
  - U.S. affiliates had a $3.4 billion deficit
  - Non-MNEs had a $12.4 billion surplus

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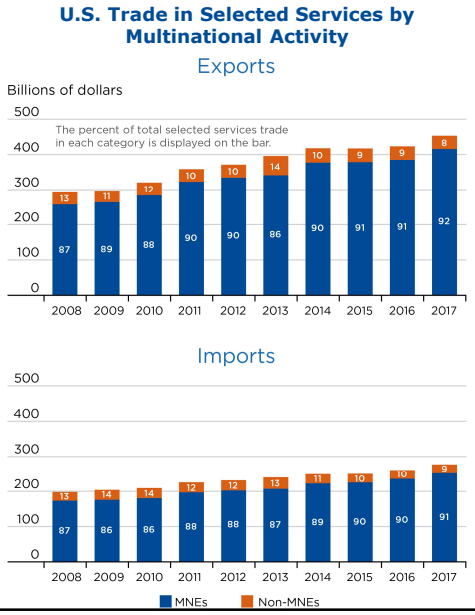
The Role of MNEs in Services Trade, 2008-2017

- Exports and imports of selected services by MNEs grew at a faster rate than those of non-MNEs
  - Average annual growth rate of MNE exports was 5.5 percent
  - Average annual growth rate of MNE imports was 4.3 percent
  - Non-MNE exports and imports were nearly flat
- MNEs accounted for:
  - 87 percent of both exports and imports in 2008
  - 92 percent of exports and 91 percent of imports in 2017



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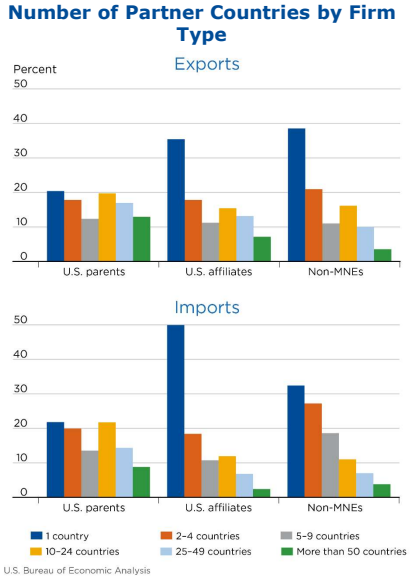
Comparing Patterns in MNE and Non-MNE Trade: Number of Partner Countries, 2017



- U.S. parents traded with more countries than either U.S. affiliates or non-MNEs
- Among U.S. affiliates that traded with a single country, the overwhelming majority traded only with the country of their foreign parent (more than 80%)

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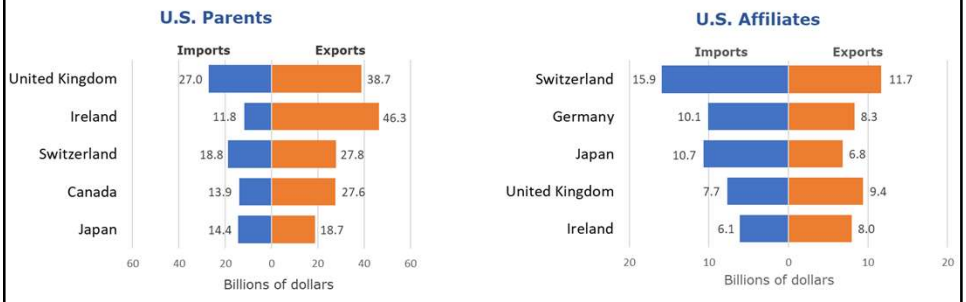
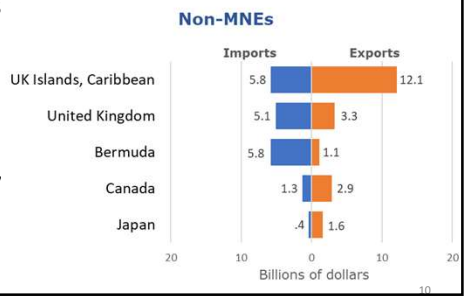
Comparing Top Trade Partners by Firm Type, 2017



- U.S. parents trade heavily with countries that host their foreign affiliates
- Trade with the country of their foreign parent accounted for less than half of U.S. affiliates' total trade
- 56 percent of non-MNEs' exports and 57 percent of imports were attributable to the top 5 trade partners



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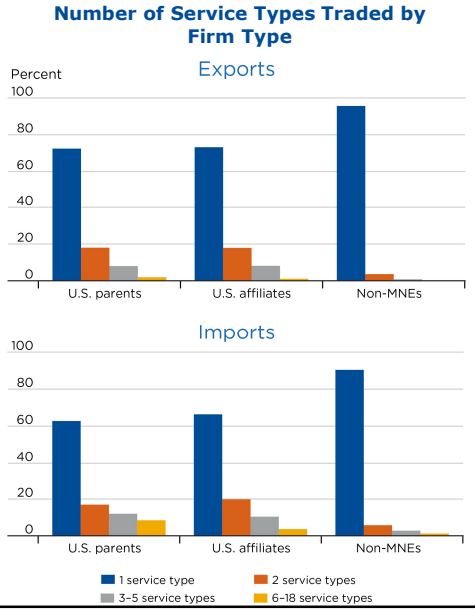
Comparing Patterns in MNE and Non-MNE Trade: Number of Service Types Traded, 2017

- The majority of service traders exported just one service type, though this was most common among non-MNEs
  - 96% of non-MNEs exported just one type of service
- As with exports, most non-MNEs (90 percent) imported just one type of service in 2017
  - Among MNEs, 66 percent of U.S. affiliates and 63 percent of U.S. parents imported just one type of service



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Comparing MNE and Non-MNE Exports: Top Service Categories, 2017

- The largest category of selected services exports differed between MNEs and non-MNEs
  - Both U.S. parents and U.S. affiliates: transactions related to the development and use of intellectual property
  - Non-MNEs: financial services
- Similarly, the largest category of selected services imports varied among MNEs and non-MNEs
  - U.S. parents: professional and management consulting services
  - Non-MNEs: insurance
  - U.S. affiliates: insurance, charges for the use of intellectual property, and professional and management consulting services

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U.S. Parents' Trade in Selected Services, 2017

- In contrast to goods, U.S. parents had a surplus on services
- Services trade intensity:
  - Exports intensity $= \frac{Services\ Exports}{Total\ Sales} = 0.045$
  - Import intensity $= \frac{Services\ Imports}{Purchased\ inputs} = 0.033$
- By industry,
  - Largest exports by firms in finance and insurance, followed by manufacturing
  - Largest imports by firms in manufacturing, followed by finance and insurance
- By firm size, very large firms (those with more than 10,000 employees) accounted for the largest share of parent trade and they were the most diversified (by country and service type) service traders while small firms (those with less than 500 employees) were more intensive service traders that tended to trade fewer service types

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U.S. Affiliates' Trade in Selected Services, 2017

- U.S. affiliates were net importers of services, with a $3.4 billion deficit
- Services trade intensity:
  - Exports intensity $= \frac{Services\ Exports}{Total\ Sales} = 0.046$
  - Import intensity $= \frac{Services\ Imports}{Purchased\ inputs} = 0.061$
- By industry, U.S. affiliates in finance and insurance and in manufacturing were the biggest traders of selected services
- By firm size, large firms (those with 1,001 -10,000 employees) accounted for the largest share of both exports and imports, but small affiliates (those with less than 500 employees) were more intensive service traders
- Small and medium firms (501 – 1,001 employees) had surpluses on services trade, in contrast to large and very large firms that had deficits

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Future plans

- Extend the link so that the statistics cover 2006 - 2019
- Evaluate potential use of external data for firm information for non-MNEs
- Explore various methods of serving foreign markets via trade in services, affiliates located in the markets that they serve, or a combination of both methods
- Consider potential use of machine learning techniques to link surveys
  - Possible now that we have a set of links that can be used in a training model
- Continue to improve data quality via comparisons of AMNE and trade in services data

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More Information

- Full report available:

  Bruner, Jennifer and Grimm, Alexis, "A Profile of U.S. Exporters and Importers of Services, 2017", *Survey of Current Business 99:12, December 2019.*

- Selected statistics from the report are available for download on BEA's website. See tables 6.1 and 6.2

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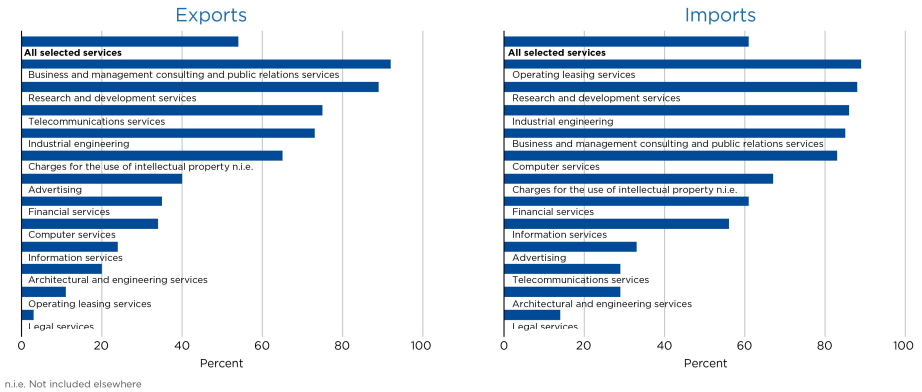
Additional Information: U.S. Parents' Trade in Selected Services by Affiliation Type, 2017

	Exports	Imports	Balance
Trade in selected services	381,381	216,514	164,867
Unaffiliated	173,887	84,744	89,143
Affiliated	207,495	131,770	75,724
With their foreign affiliates	179,045	98,728	80,317
With their foreign parent groups	28,450	33,042	−4,592

Affiliated Share by Service Type



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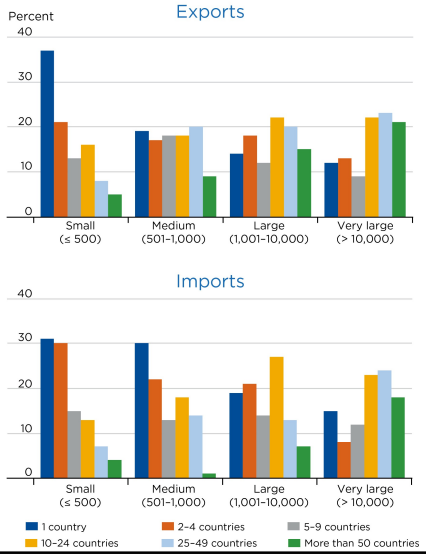
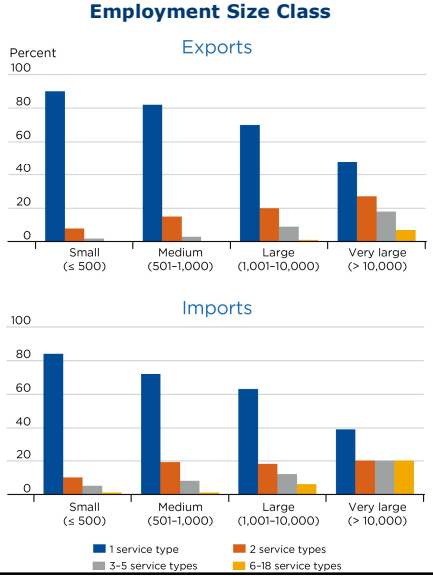
Additional Information: U.S. Parents' Trade in Services: By Firm Size, 2017

Number of Partner Countries by Employment Size Class



Number of Service Types Traded by Employment Size Class



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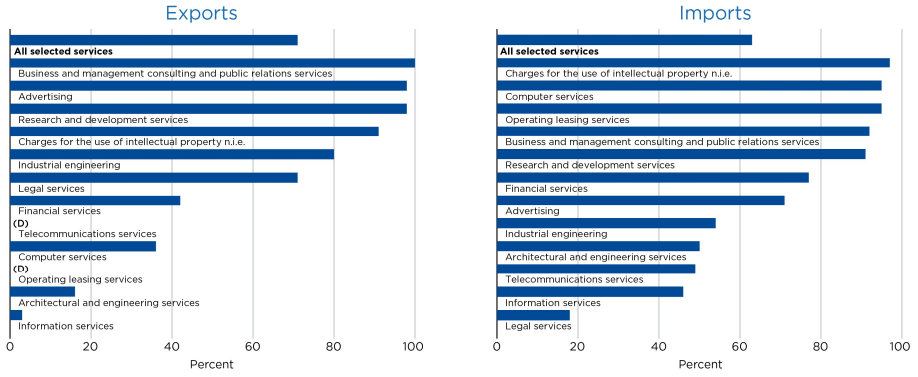
Additional Information: U.S. Affiliates' Trade in Selected Services by Affiliation Type, 2017

	Exports	Imports	Balance
Trade in selected services	96,989	100,434	−3,446
Unaffiliated	28,549	36,671	−8,122
Affiliated	68,440	63,764	4,676
With their foreign affiliates	23,106	10,291	12,815
With their foreign parent groups	45,333	53,473	−8,140

Affiliated Share by Service Type



(D) Suppressed to avoid the disclosure of data of individual companies.
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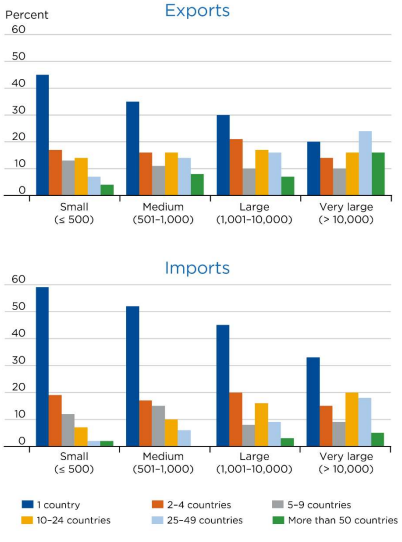

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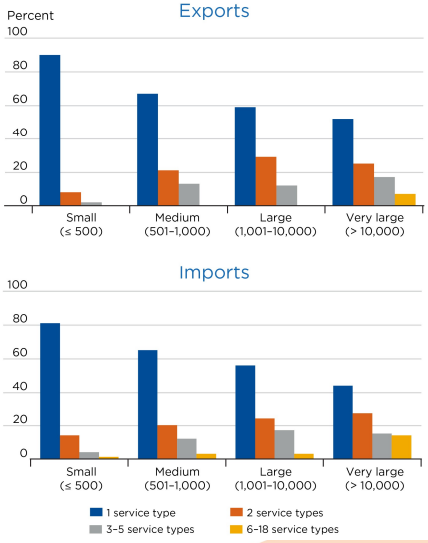

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