

Measuring digital intermediation services

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What are digital intermediation services?

Digital intermediation services are often defined by two characteristics:

1. An online interface that **facilitates, for a fee, the direct interaction between multiple buyers and multiple sellers**
2. The **platform does not take economic ownership** of the goods, nor does it provide the services that are being sold



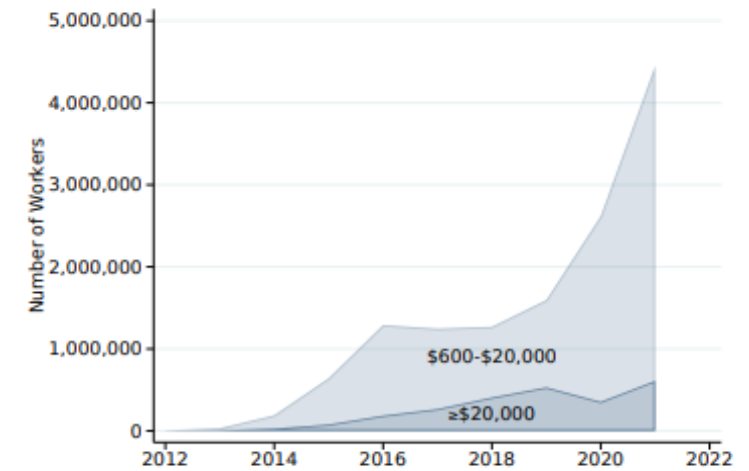
OECD nomenclature: financial digital intermediation services are included in the category “financial services predominately operating digitally” and are inherently separate from all other digital intermediation services

Why measure digital intermediation services?

- Identify areas where digital transformation is occurring and impacting production and consumption
- Understand the contribution of these services to GDP, productivity

Gross Earnings in Platform Gig Work

(a) Transportation & Delivery Platforms



Source: The Evolution of Platform Gig Work, 2012-2021 (Garin, et al., 2023)

➔ Measurement challenge: identifying and quantifying these services across multiple industries

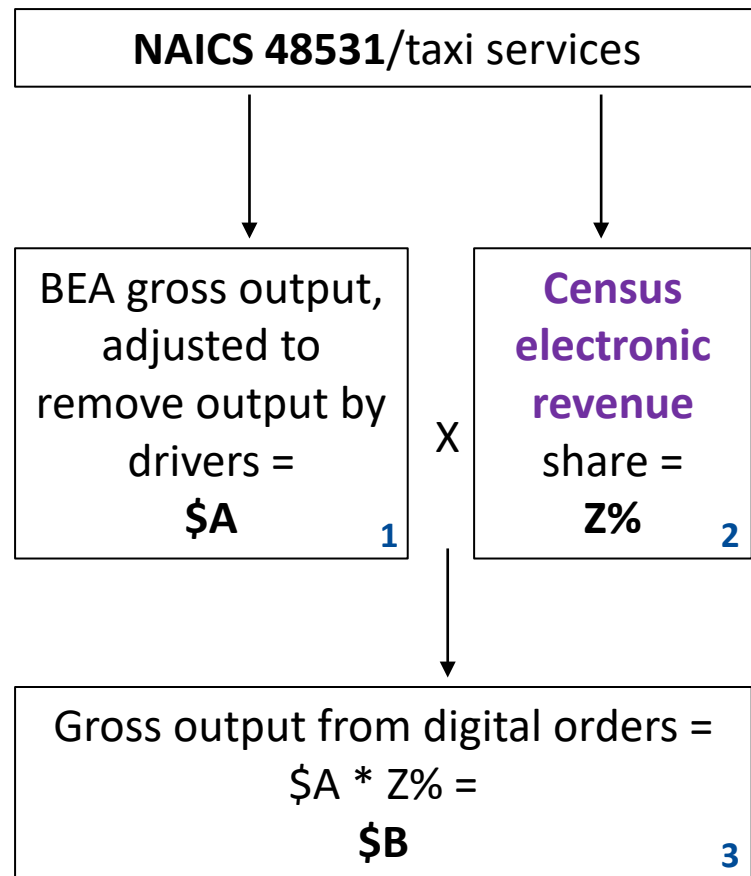
Industries related to digital intermediation services as identified by Statistics Canada

NAICS description	NAICS code
Taxi service	48531
Local messengers and local delivery	49221
Data processing, hosting, and related services	518210
Web search portals and all other information services	51929
Other financial transactions processing and clearing house activities	52232
Passenger car rental	532111
Truck, utility trailer and recreational vehicle (RV) rental and leasing	532120
Employment placement agencies and executive search services	561310
Other travel arrangement and reservation services	561590

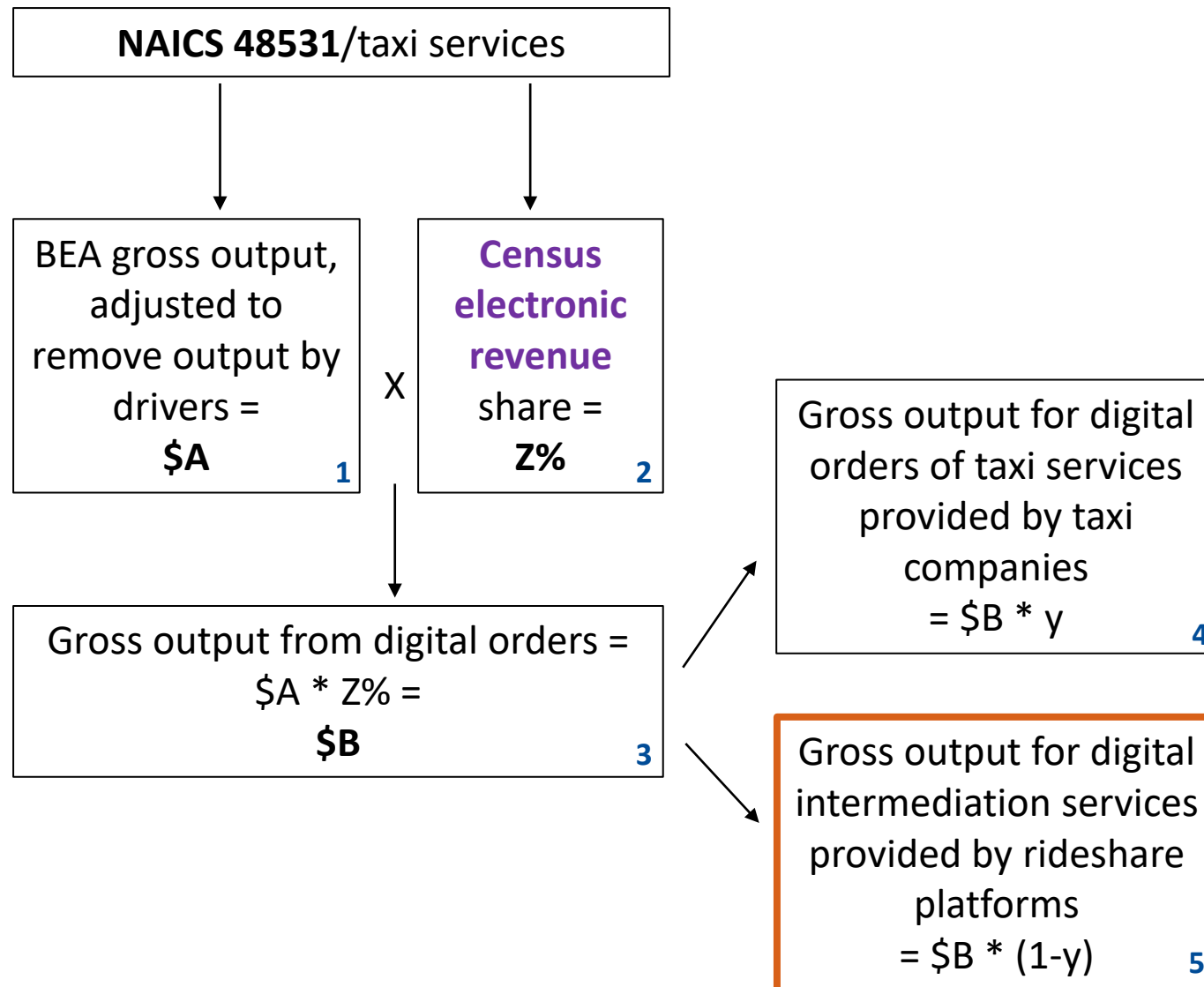
Industries related to digital intermediation services as identified by BEA multinational enterprises survey

NAICS description	NAICS code
Utilities	22
Manufacturing	31-33
Wholesale trade	42
Retail trade	44-45
Transportation	48
Information	51
Finance and insurance	52
Real estate, rental, and leasing	53
Professional, scientific, and technical services	54
Management of companies and enterprises	55
Administrative and waste services	56
Health care and social assistance	61
Arts, entertainment, and recreation	71
Accommodation and food services	72
Other services	81

Top-down approach to measuring rideshare digital intermediation services: rideshare example



Top-down approach to measuring rideshare digital intermediation services: rideshare example



y = Share of taxi services' gross output paid to taxi companies from digital orders originating from the taxi company's own website or app

Bottom-up approach to measuring rideshare digital intermediation services: rideshare example

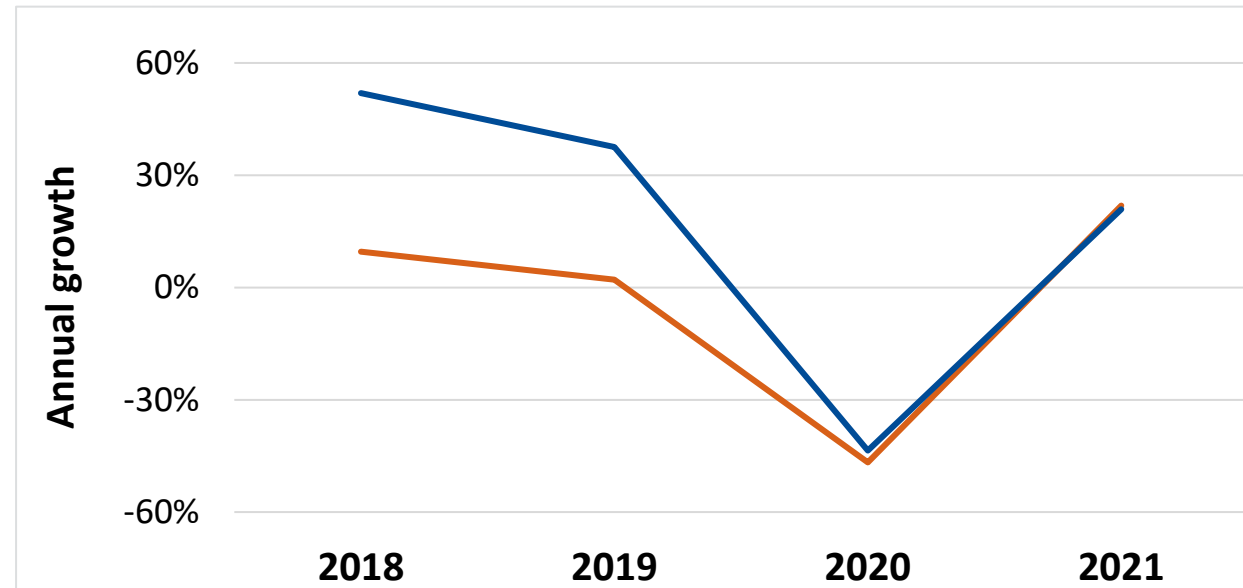
Company	Public Financial Filings Information (SEC 10-K)	2017	2018	2019	2020	2021
Lyft	U.S. revenue	\$1,060	\$2,157	\$3,616	\$2,365	\$3,208
Uber	“Mobility” revenue	\$7,278	\$9,288	\$10,707	\$6,089	\$6,953
	U.S. share of total revenue	55%	60%	65%	59%	58%
	U.S. mobility estimate	\$4,007	\$5,543	\$6,972	\$3,614	\$4,021

Note: dollars in millions (U.S.)

Estimating digital intermediation services for **rideshare**: experimental results from two approaches

Gross output	2017	2018	2019	2020	2021
Using financial reports for rideshare companies (bottom-up)	\$5,067	\$7,699	\$10,588	\$5,979	\$7,229
Using electronic revenue for taxi services industry (top-down)	\$6,333	\$6,942	\$7,089	\$3,777	\$4,605

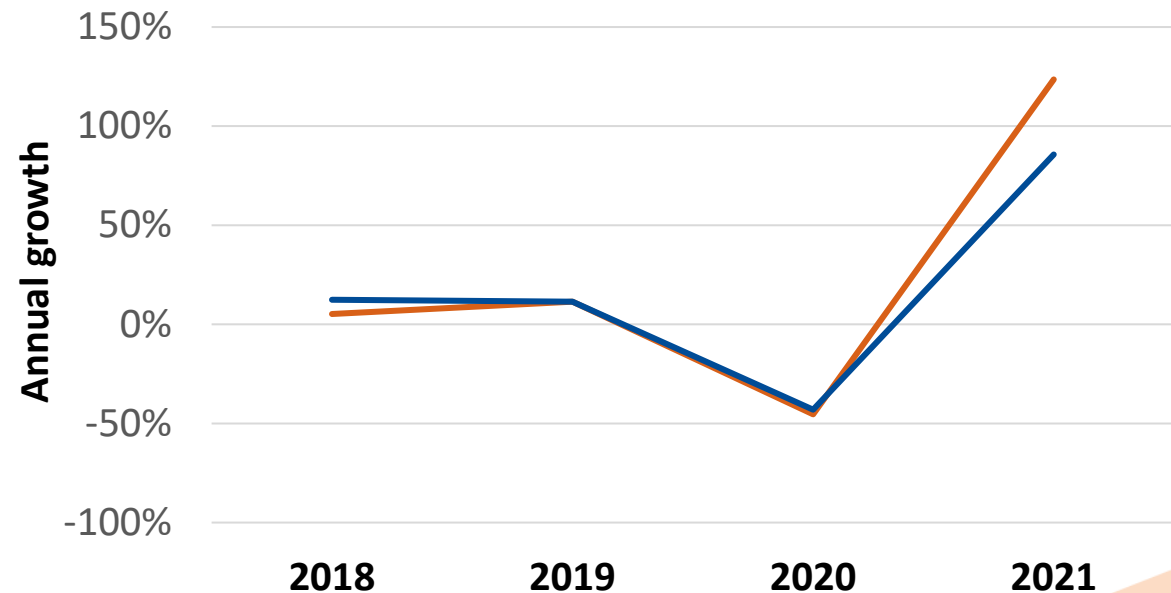
Millions of U.S. dollars



Estimating digital intermediation services for **travel services**: experimental results from two approaches

Gross output	2017	2018	2019	2020	2021
Using financial reports for travel services companies (bottom-up)	\$7,613	\$8,566	\$9,694	\$5,605	\$10,624
Using electronic revenue for travel agencies industry (top-down)	\$15,685	\$16,498	\$18,378	\$10,044	\$22,451

Millions of U.S. dollars



Takeaways

- Estimated digital intermediation services for rideshare, travel services, and food/grocery delivery services represented about **\$31b** in 2021 U.S. gross output (~1% of Digital Economy)
- Both approaches had similar growth rates for many years, though levels were sometimes not very close
- Both approaches have weaknesses

BEA Working Paper: [Measuring Digital Intermediation Services: Experimental Estimates of Gross Output for Rideshare, Travel Services, and Food/Grocery Delivery Service Platforms](#)

Next steps

- Some version of these estimates may be included in our Digital Economy Satellite Account statistics
- Continue research and collaboration with other statistical agencies and OECD to identify and quantify these services