



Businesses on Facebook and Propensity to Export: The United States

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We examine recent data from a survey of 336,000 small and medium-sized businesses (SMBs) on Facebook and find that US firms on Facebook are more likely to export than US firms in general. The higher propensity to export exists for every firm size category (except the largest firms), for every industry category, and regardless of the gender of the business owner. The survey is a joint effort by Facebook, the Organisation for Economic Co-operation and Development (OECD), and the World Bank, and it includes data from the United States and 41 other countries. These findings support an emerging pattern in the data showing that digital platforms and online social networks can facilitate cross-border trade, especially for smaller firms. In this brief, we highlight three key observations:

1. *US businesses on Facebook have a higher propensity to export.* The share of US businesses on Facebook that export is 6.75 percent, compared to 4.33 percent for US firms in the general population. We find that the propensity to export is higher on Facebook in every firm size category (except the largest firms) and every industry category, and it is higher regardless of the gender of the business owner.
2. *Research consistently shows exporting firms outperform nonexporting firms, yet few small businesses engage in trade.* In the United States, exporters outperform nonexporters on employment, training, innovation, wages, and introducing new products. Yet less than 5 percent of US firms export.¹ These patterns are similar to those in other OECD countries.
3. *Policies involving digital platforms and online social networks should not overlook their potential role in trade facilitation.* An emerging body of evidence shows that businesses, particularly small businesses, on online digital platforms exhibit a higher propensity to

engage in trade than businesses in general. Any policies and regulations on digital data flows should consider the trade-facilitating potential of these digital platforms.

DIGITAL PLATFORMS ARE CHANGING THE TRADE LANDSCAPE

An emerging body of research, as discussed in this brief, shows that e-commerce can facilitate international trade, particularly for SMBs.

We analyze new data regarding businesses on Facebook from the Future of Business Survey. The survey is a collaborative effort of Facebook, the OECD, and the World Bank. The survey, launched in February 2016, has responses from 336,000 businesses on Facebook across 42 countries and includes information on business characteristics and whether businesses sell to foreign markets. Across all 42 countries, we examine the share of firms on the digital platform that engage in international trade.

We would expect that having a Facebook page would enable a firm to strengthen its local relationships and expand its reach outside its local community. That is, a social networking platform can connect the firm not only with those in its own circle, but with those in its mutual friends' circles as well. Facebook can facilitate trust across individuals and then use that trust mechanism by connecting a firm to expanding circles of friends. In this way, a social network can help to create bridges between individuals and other existing networks.

For the United States, we analyze the relationship between the propensity to export and certain business characteristics, such as firm size and industry. While the standard definition of an SMB is a firm with fewer than 500 employees, the highly disaggregated nature of the survey allows for a closer look at SMBs in terms of firm size (e.g., single person, 2–10, 11–49, and 50 or more). We find that US SMBs on Facebook nearly always export more than SMBs in general, regardless of firm size, industry, and the gender of the business owner.

In the United States, SMBs represent 99 percent of all businesses, and 48 percent of employment, and they produce approximately 46 percent of private nonfarm GDP.² SMBs comprise the majority of firms worldwide. According to the World Bank, formal SMBs contribute up to 60 percent of total employment and 40 percent of national income in emerging economies.³

FIRM PERFORMANCE AND PROPENSITY TO EXPORT

A body of cross-country evidence demonstrates that exporters typically outperform their counterparts that focus solely on the domestic market, in terms of total revenues, revenue growth, and labor productivity.⁴ The US International Trade Commission reports that US exporting SMBs have more than twice the total revenue, greater revenue growth, and 70 percent greater labor productivity compared to their nonexporting counterparts.⁵

While the data clearly demonstrate that exporters outperform nonexporters, that finding alone does not indicate a causal relationship (i.e., whether well-performing firms become exporters or exporting improves a firm's performance). There seems to be empirical evidence for both possibilities.

Andrew Bernard and J. Bradford Jensen provide compelling plant-level evidence that good firms become exporters: plant success is the best plant-level indicator of future exporting.⁶ The evidence for the other direction (that exporting improves firm performance) is not absent but is less clear. Once a firm begins to export, its productivity and wage growth are not necessarily superior, although these firms do exhibit higher employment growth and higher probability of survival over three to five years.

Recent work by David Atkin, Amit Khandelwal, and Adam Osman presents evidence of “learning by exporting,” whereby exporting improves technical efficiency.⁷ The authors conduct a novel randomized experiment and attempt to identify a causal effect of exporting on firm performance using firm-level data of rug producers in Egypt. Exporters exhibited higher productivity and quality after controlling for confounding factors. One explanation is that exporting helps to connect producers with sophisticated foreign buyers, who in turn induce producers to improve performance.

Yet the share of firms that export remains stubbornly low. For instance, fewer than 5 percent of US SMBs export.⁸ Studies have examined reasons behind the low propensity of SMBs to engage in trade and point to access to financing, information barriers, and challenges with cross-border issues, such as regulatory differences and trade barriers.⁹ Larger firms tend to have larger social networks and advertising budgets, and they maintain relevant in-house expertise on customs administration, foreign regulatory issues, and trade finance, all of which are determining factors in their propensity to trade.

TRADE AND THE INTERNET: PIECES OF EVIDENCE STARTING TO ADD UP

In principle, digital platforms and financial technologies should facilitate information and trust and hence reduce the economic distance between parties. Large-scale datasets on cross-border e-commerce are not publicly available; however, researchers are finding ways to access data to study digital platforms and trade. For instance, Andreas Lendle and coauthors find that 97 percent of US-based eBay sellers export.¹⁰ In another paper, Lendle and coauthors examine how the digital marketplace platform eBay can reduce trade costs, and they find the economic effect of distance to be 65 percent smaller on eBay.¹¹ The authors also compare the effect of geographic distance on eBay and total international trade flows. Using bilateral trade data on 61 countries and a comparable basket of goods, they find eBay can facilitate a distance-reducing effect on cross-border transactions.

PayPal Government Relations reports that 79 percent of US small businesses on PayPal sell to foreign markets. The PayPal merchants that engage in exporting experienced higher growth rates:

small business exporters on PayPal grew 32.8 percent from 2015 to 2016 compared to 22.9 percent growth for small businesses in general.¹² These findings tend to be similar for coastal and noncoastal firms. Eighty percent of coastal merchants and 78 percent of noncoastal merchants exported in both 2015 and 2016, and coastal exporters grew by 32.1 percent while noncoastal exporters grew by 33.6 percent. Additionally, PayPal merchants in rural areas were just as likely to export and exhibited growth rates similar to those of businesses in urban areas. In contrast, national statistics show that a higher proportion of urban firms export than rural firms and that more exporting firms are located in urban regions than rural.¹³

To our knowledge, we are the first to look at the propensity of businesses on Facebook to engage in international trade compared to their counterparts in the general population. Facebook is somewhat different from other digital platforms, such as eBay, because it also functions as an online social network. The structure of Facebook facilitates connections across potential customers and the networks of those customers. The potential marketing reach is not trivial—there are two billion Facebook users.¹⁴ No fees are required to start or maintain a Facebook Business Page, and while a business may choose to buy ads on Facebook, fewer than 10 percent actively advertise.¹⁵

Governments around the world recognize the need to dismantle barriers to foreign market access and facilitate trade, and this increasingly includes attention to digital trade issues. The Trans-Pacific Partnership (TPP), the United States Mexico Canada Agreement (USMCA), Canada-European Union Comprehensive Economic and Trade Agreement, and the EU-Japan Economic Partnership Agreement all include provisions relating to e-commerce, digital trade, and digital data flows. For instance, the USMCA chapter on digital trade largely mirrors the TPP chapter on electronic commerce. In the digital trade chapter in USMCA (chapter 19), article 19.2 states, “The Parties recognize the economic growth and opportunities provided by digital trade, and the importance of frameworks that promote consumer confidence in digital trade and of avoiding unnecessary barriers to its use and development.” Article 14.2 of the electronic commerce chapter of the TPP (chapter 14) reads exactly the same, except it substitutes the words “electronic commerce” for “digital trade.”

SOCIAL CONNECTEDNESS AND THE COSTS OF ECONOMIC DISTANCE

The cost of economic distance has been well documented in international trade—information frictions were first highlighted by James Rauch and have been found to account for over 90 percent of the distance effect in international trade.¹⁶ Studies have shown the internet and online social connectedness can reduce the costs of economic distance through reduced search costs and easier business and customer networking.

US firm participation in exporting has been found to be positively related to internet usage in the exporting country. William Lincoln and Andrew McCallum find that a 1 percent increase in

internet users in a country increases the probability of US firms exporting there by about 1.1 percentage points, all else equal.¹⁷

Social connectedness can also facilitate trade. Recent work by Michael Bailey and coauthors introduces a new measure of social connectedness between US county pairs and between US counties and foreign countries. The researchers use the number of friendship links on Facebook to construct a “Social Connectedness Index” and examine the role of social networks in facilitating economic and social interactions. They find that the social networks on Facebook are relatively geographically concentrated. For the population of the average US county, 62.8 percent of friends live within 100 miles. Notwithstanding, Bailey and his coauthors still find that trade with foreign countries is strongly related to social connectedness. In addition, higher social connectedness is associated with greater cross-country migration and more patent citations.¹⁸

Search costs and network access are hurdles to international commerce for both importers and exporters.¹⁹ Mary Egan and Ashoka Mody have examined this from an importer’s point of view, and Bernard and Jensen from an exporter’s point of view.²⁰

Local networking can facilitate international trade. Kamal and Sundaram examine the role of network effects in international trade and transaction costs. Their results indicate that a 10 percent increase in the number of exporters in a city results in a 5.1 percent increase in the likelihood of a first-time match between said sellers and buyer(s).²¹ In other words, the more exporters a firm is geographically close to, the more likely it is that the firm will network and receive information about buyers abroad; inversely, the fewer exporters a firm is around, the less likely it is that the firm will network and share buyer information.

FUTURE OF BUSINESS SURVEY DATA

The Future of Business Survey is a collaboration between Facebook, the OECD, and the World Bank to identify how SMBs utilize Facebook Business Pages to promote and facilitate business operations.

The survey project was first launched in February 2016 and included 28,000 businesses from 17 countries. As of April 2018, the survey represents over 336,000 businesses with a Facebook presence across 42 countries and 31 different languages.²²

Randomly selected firms receive the survey from Facebook and can respond to the survey once per year. The survey includes 15 to 20 questions and takes on average 5 to 7 minutes to complete. Over time, the questions have changed slightly, as noted in the analysis later. The surveyed businesses encompass a broad range of sectors, including manufacturing; construction; wholesale and retail trade; automotive repair and maintenance services; transport, storage, and communications; and other sectors.

Table 1 reports the percentage of SMBs on Facebook that engage in international trade, by country, and the number of observations for each country.²³ The share of firms engaged in trade varies across countries (e.g., 8.1 percent in Argentina, 17.6 percent in Australia, and 30.9 percent in Bangladesh).

Table 1. Percentage of Small and Medium-Sized Businesses on Facebook That Trade, by Country					
COUNTRY	EXPORT ONLY	IMPORT ONLY	IMPORT AND EXPORT	ENGAGED IN TRADE	NUMBER OF OBSERVATIONS
Argentina	2.4	3.4	2.4	8.1	14,075
Australia	4.8	7.6	5.2	17.6	13,793
Bangladesh	9.1	11.2	10.6	30.9	5,768
Belgium	6.0	10.4	8.2	24.5	3,989
Brazil	2.1	4.5	2.0	8.6	14,401
Canada	4.4	6.4	5.3	16.1	13,936
Chile	2.9	13.4	3.4	19.7	5,163
Colombia	4.2	8.2	3.8	16.2	14,793
Czech Republic	7.6	10.4	8.7	26.6	3,032
Ecuador	3.4	11.5	4.4	19.4	2,898
Egypt	5.7	13.3	7.9	26.9	7,821
France	6.3	5.8	5.8	17.9	14,102
Germany	5.1	5.0	7.8	17.9	14,237
Greece	5.0	11.4	7.3	23.7	4,342
Hungary	4.9	7.4	6.5	18.8	3,404
India	8.2	3.6	6.4	18.2	12,289
Indonesia	4.3	5.5	4.7	14.5	12,780
Ireland	6.0	9.5	6.8	22.3	8,372
Israel	4.0	6.3	3.5	13.9	5,841
Italy	6.4	4.4	4.9	15.7	14,344
Japan	3.5	5.8	2.9	12.2	11,205
Malaysia	4.2	7.8	6.1	18.1	6,988
Mexico	3.5	7.8	3.5	14.9	14,095
Netherlands	4.9	7.4	7.8	20.0	7,703
Nigeria	5.1	14.7	10.4	30.1	2,950
Pakistan	10.3	7.5	8.0	25.7	5,664
Peru	3.9	11.2	3.9	19.0	7,551
Philippines	4.6	6.7	6.5	17.8	7,342
Poland	6.9	6.0	7.2	20.1	12,971
Portugal	8.1	7.8	9.2	25.1	4,800
Romania	5.2	12.7	6.4	24.3	4,500
Russia	6.9	9.3	7.4	23.6	3,159

Table 1 (continued)

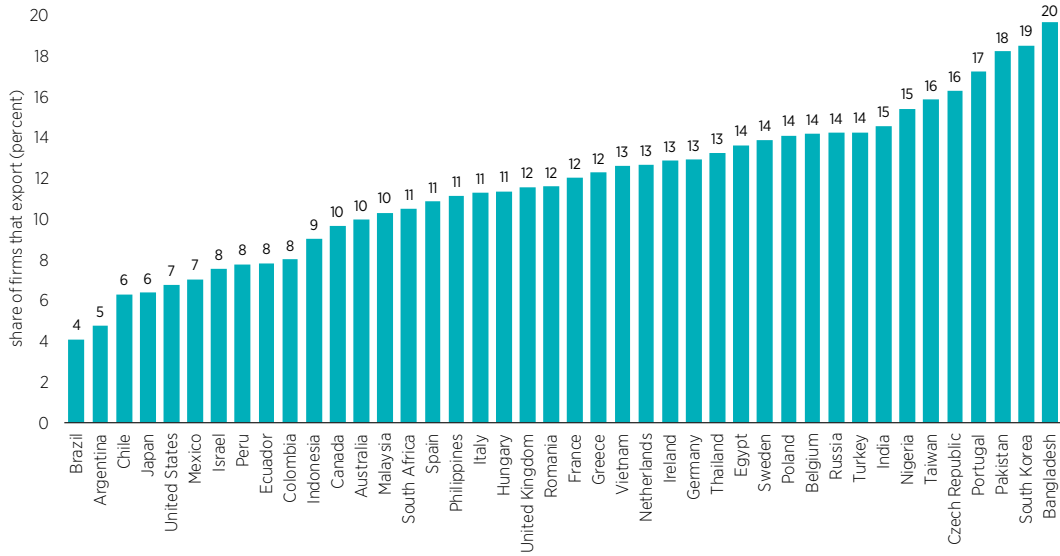
COUNTRY	EXPORT ONLY	IMPORT ONLY	IMPORT AND EXPORT	ENGAGED IN TRADE	NUMBER OF OBSERVATIONS
South Africa	4.9	6.7	5.7	17.2	8,508
South Korea	9.5	7.6	9.1	26.2	4,232
Spain	5.2	8.4	5.6	19.3	15,379
Sweden	5.9	12.6	7.9	26.5	3,802
Taiwan	5.4	7.7	10.4	23.6	4,509
Thailand	6.1	9.0	7.2	22.2	13,422
Turkey	7.6	4.4	6.6	18.7	7,232
United Kingdom	6.7	4.5	4.9	16.0	13,562
United States	3.5	3.1	3.3	9.9	13,518
Vietnam	4.6	10.0	8.0	22.6	12,365

Source: Authors' calculations based on Facebook, the Organisation for Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset), accessed November 12, 2018, <https://eu.futureofbusinesssurvey.org/>.

Figure 1a plots the share of businesses on Facebook that export, by country, in ascending order. Figure 1b shows the share of Facebook businesses with 10 or fewer employees. Small businesses represent a large share of firms not only in general, but also on Facebook (on average 81 percent). In the United States, the share of firms on Facebook that export is 7 percent, and the share of firms on Facebook with 10 or fewer employees is 82 percent.

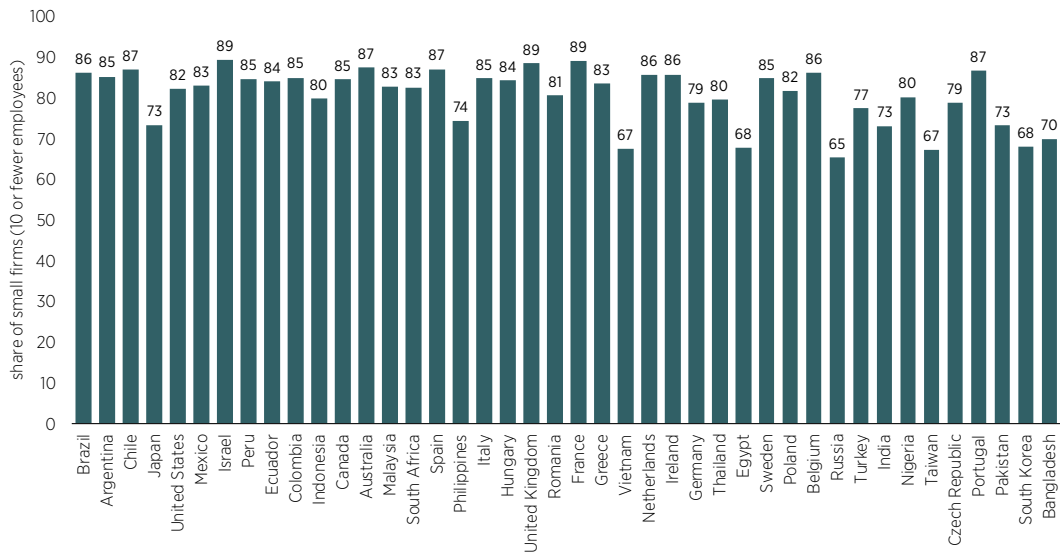
The top two key business challenges cited were “attracting customers” (75 percent of respondents) and “increasing revenues” (59 percent of respondents).²⁴ Starting in October 2016, firms were also given the option to select “selling to foreign markets” as a major business challenge.

Figure 1a. Share of Businesses on Facebook That Export (Percent)



Source: Authors' calculations based on Facebook, the Organisation for Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset).

Figure 1b. Share of Businesses on Facebook with 10 or Fewer Employees (Percent)



Source: Authors' calculations based on Facebook, the Organisation for Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset).

Overall, 18 percent of businesses on Facebook across all countries (48,675 of 271,205 firms) stated that “selling to foreign markets” was their most important business challenge, followed by “market access limitations.” “Language and/or cultural gap” was the third-most-cited challenge for US firms, and “customs regulations” was the third-most-cited challenge for businesses overall. Table 2 reports the share of firms that finds exporting a key business challenge and the share of those firms that does not export. Of the 8,266 US firms that were asked this question, 475 firms (5.75 percent) indicated that selling to foreign markets was a major challenge, and of those firms, 69.68 percent do not export.

Table 2. Share of SMBs on Facebook That Find “Selling to Foreign Markets” a Key Business Challenge (Percent)

COUNTRY	TOTAL NUMBER OF OBSERVATIONS	FIND EXPORTING A CHALLENGE	DON'T EXPORT
Argentina	7,917	11.67	82.47
Australia	8,286	9.09	60.03
Bangladesh	5,768	35.04	68.88
Belgium	3,989	9.55	47.77
Brazil	8,953	8.34	82.20
Canada	8,073	8.68	63.77
Chile	5,163	16.97	80.25
Colombia	7,992	28.52	83.37
Czech Republic	3,032	11.11	48.96
Ecuador	2,898	27.54	84.09
Egypt	6,361	25.88	73.82
France	8,368	9.63	57.07
Germany	8,305	9.22	48.69
Greece	4,342	24.83	68.92
Hungary	3,404	20.45	69.54
India	7,964	22.69	71.50
Indonesia	8,216	35.50	85.91
Ireland	6,225	11.20	56.53
Israel	4,565	16.43	74.40
Italy	8,440	13.97	69.64
Japan	8,669	9.07	68.19
Malaysia	6,988	27.95	82.59
Mexico	7,872	19.99	82.02
Netherlands	7,703	8.91	44.75
Nigeria	2,950	34.20	75.72
Pakistan	5,664	32.10	70.46
Peru	7,551	27.90	82.63

Table 2 (continued)			
COUNTRY	TOTAL NUMBER OF OBSERVATIONS	FIND EXPORTING A CHALLENGE	DON'T EXPORT
Philippines	7,342	27.19	79.46
Poland	8,565	16.44	55.97
Portugal	4,800	18.00	58.22
Romania	4,500	18.42	71.77
Russia	3,159	12.57	59.95
South Africa	6,164	18.93	76.18
South Korea	4,232	20.18	51.87
Spain	8,297	13.98	63.71
Sweden	3,802	10.15	49.48
Taiwan	4,509	20.85	63.94
Thailand	8,553	25.00	69.55
Turkey	7,232	21.75	70.82
United Kingdom	8,274	8.32	55.09
United States	8,266	5.75	69.68
Vietnam	7,852	21.75	72.95

Source: Authors' calculations based on Facebook, the Organisation for Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset).

The firms that indicated exporting was a major challenge were also asked to select the potential reason(s) as to why it was a challenge (see table 3).²⁵ “Finding a business partner” was the top challenge for all countries overall and for the United States. The second-most-common challenge was “market access limitations.” For US firms on Facebook, the third- and fourth-most-cited challenges were “language and/or cultural gap” and “customs regulations,” respectively.

Table 3. Export Challenges for Businesses on Facebook for All Countries and the United States (in Descending Order for the United States)

EXPORT CHALLENGES	OVERALL (PERCENT)	US (PERCENT)
Finding business partners	61.05	45.05
Market access limitations	44.89	39.37
Language and/or cultural gap	35.33	33.89
Customs regulations	35.94	32.42
Different regulations in other countries	36.03	32.21
Large geographical distance from home country	28.84	28.21
Poor online payment alternatives to sell online	30.66	26.74
Securing export finance	33.37	21.26
Poor internet connection to sell online	20.53	16.21
Other; specify	5.66	13.89
Tax regulations in other countries	15.81	10.74

Source: Authors' calculations based on Facebook, the Organisation for Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset).

US FIRMS ON FACEBOOK COMPARED TO US FIRMS IN GENERAL

The 2012 Economic Census reports data on propensity to export by industry and firm size, and the 2012 Survey of Business Owners reports propensity to export by gender of owner. Table 4 shows the distribution of firms using data from the Future of Business Survey and the Economic Census.

The proportion of single-person firms on Facebook is greater than the proportion of single-person firms in the general population (39.04 percent compared to 10.41 percent, respectively). The share of firms with 50 to 500 employees is 3.39 percent in the Future of Business Survey and 4.92 percent in the Economic Census; additionally, firms with fewer than 49 employees are the vast majority of firms in both surveys. Refer to appendix A for changes in Future of Business Survey firm size categories and the full overlap of firm size categories for the two surveys.

With regard to industry categories, there was approximately double the share of manufacturing and construction firms among firms in general as firms on Facebook. The other industries had more equal distributions between firms on Facebook and firms in general, with the service industry the largest in each, representing 31.54 percent (4,264) of the SMBs on Facebook and 44.33 percent (1,646,811) of all firms in the Census. The “other” category represented 30.30 percent of Facebook firms and 2.62 percent of the general population, which includes arts and entertainment, mining, electricity, and agriculture (see appendix A).

A direct comparison allows us to examine four firm sizes: single person, 2 to 10, 11 to 49, and 50 or more. Standard analysis of SMBs groups all firms with fewer than 500 employees, but these data allow for greater disaggregation, which is important because the vast majority of

Table 4. Distribution of Firms from the Future of Business Survey and the US Economic Census by Size and Industry (Percent)

		FUTURE OF BUSINESS SURVEY	US ECONOMIC CENSUS
Size of the firm	Single-person firm	39.04	10.41
	2 to 10	43.25	68.96
	11 to 49	9.64	17.23
	50 or more	4.92	3.39
	Don't know/prefer not to say	3.15	N/A
	Total number of observations	13,518	3,665,876
Industry	Manufacturing	2.51	4.95
	Construction	4.90	12.26
	Wholesale and retail trade	15.32	23.90
	Hotels and restaurants	7.27	7.69
	Transport, storage, and communications	6.09	4.25
	Services	31.54	44.33
	Nonprofit or charity organization	2.07	N/A
	Other	30.30	2.62
	Total number of observations	13,518	3,714,621

Note: The Economic Census includes firms with over 500 employees. These firms are excluded when categorizing the firms by size; as such, 0.25 percent of the data was eliminated. These firms could not be excluded when categorizing the firms by industry; therefore, the number of observations increases slightly from the number of observations in the firm size categories.

Source: Authors' calculations based on Facebook, the Organisation for Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees by Percent of Total Sales of Goods/Services Exported outside the United States by Employment Size of Firm, Gender, Ethnicity, Race, and Veteran Status for the U.S.: 2012," February 23, 2016, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=SBO_2012_00CSCB36&prodType=table.

firms have fewer than 50 employees—92 percent of Facebook firms and 97 percent of firms in the Census data.

In the Future of Business Survey, firms were also asked about the gender of those in top management (a firm is considered male owned if more than 60 percent of top management positions are held by men, and vice versa). Firms are considered equally owned firms if 40 to 60 percent of top management positions are held by either gender. These data are compared to the findings from the 2012 Survey of Business Owners.

The share of single-person firms is higher on Facebook for both female- and male-owned firms than for firms in the general population (see table 5). Two-thirds of female-owned firms on Facebook are single-person firms, compared to 11.89 percent among firms in general. One-third of male-owned firms on Facebook are single-person firms, compared to 10.31 percent among firms in general.

Table 5. Distribution of Firms from the Future of Business Survey and the Survey of Business Owners, by Firm Size and Gender of Firm Ownership (Percent)

	SINGLE- PERSON FIRM	2 TO 10	11 TO 49	50 OR MORE	DON'T KNOW/ PREFER NOT TO SAY	TOTAL NUMBER OF OBSERVATIONS
FEMALE OWNED						
Future of Business Survey	67.17	25.42	4.86	1.74	0.80	4,481
Survey of Business Owners	11.89	72.17	13.94	1.99	N/A	716,817
MALE OWNED						
Future of Business Survey	34.52	41.25	11.38	7.52	5.33	6,567
Survey of Business Owners	10.31	68.50	17.71	3.48	N/A	2,318,221
EQUALLY OWNED						
Future of Business Survey	N/A	80.93	13.68	3.77	1.62	2,470
Survey of Business Owners	9.47	71.16	17.45	1.92	N/A	519,717

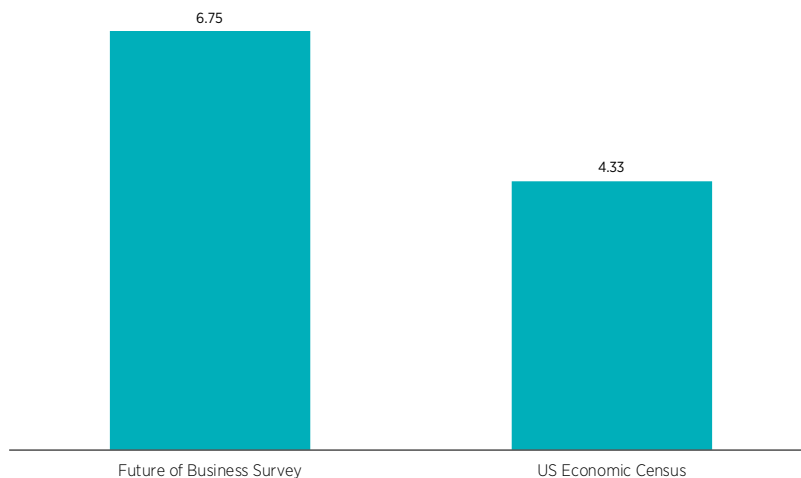
Source: Authors' calculations based on Facebook, the Organisation for Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees."

ANALYZING US EXPORTERS

Overall, 6.75 percent of all US SMBs on Facebook export, compared to 4.33 percent of US SMBs in general (figure 2).²⁶

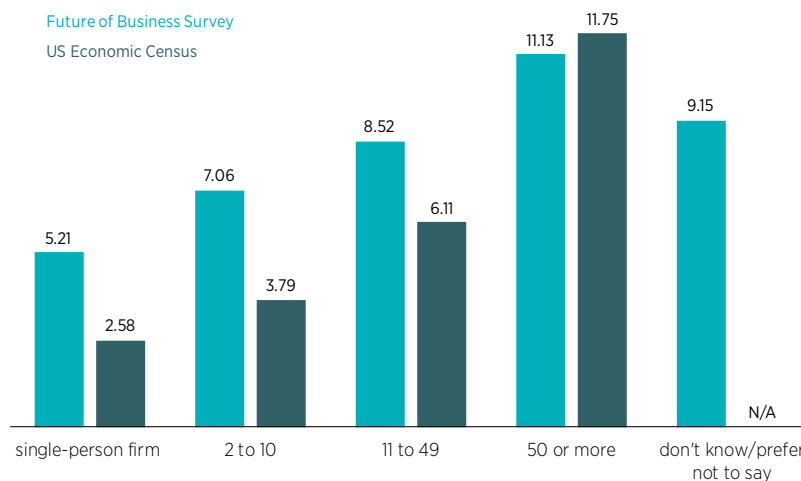
By firm size, the propensity to export is higher for firms on Facebook than for firms in the general population among every firm size category except larger firms, among which the propensities to export are similar (11.13 and 11.75 percent, respectively) (see figure 3). Single-person firms on Facebook are more likely to export than are firms in general—approximately 5.21 percent, compared to 2.58 percent. Similarly, on Facebook, 7.06 percent of firms with 2 to 10 employees export and 8.52 percent of firms with 11 to 49 employees export, compared to 3.79 percent and 6.11 percent of firms in general, respectively.

Figure 2. Share of Firms That Export, in the Future of Business Survey and in the US Economic Census (Percent)



Source: Authors' calculations based on Facebook, the Organisation of Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees."

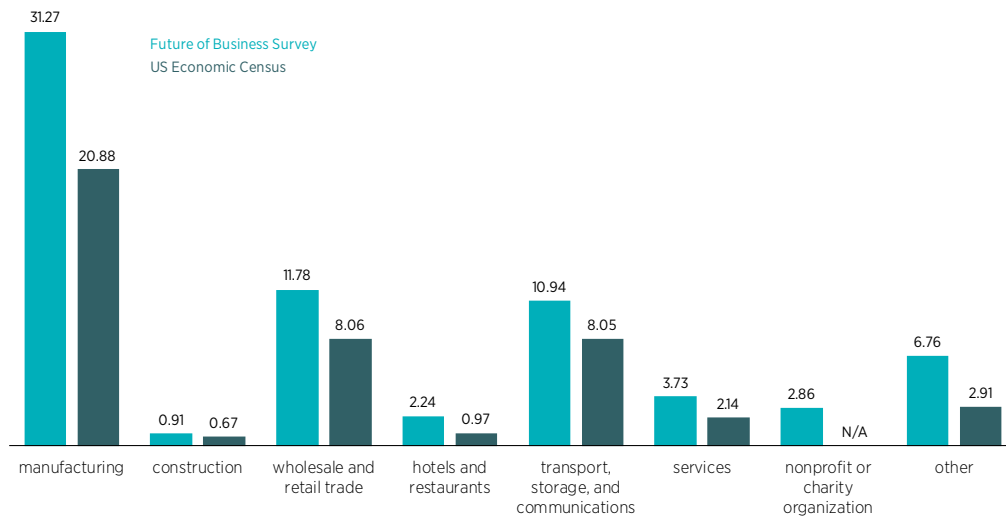
Figure 3. Share of Firms That Export, by Firm Size (Percent)



Source: Authors' calculations based on Facebook, the Organisation of Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees."

Figure 4 shows that the share of exporting firms is greater on Facebook than in the general population for every industry category. Manufacturing firms are the most likely to export both in general (20.88 percent) and on Facebook (31.27 percent). For wholesale and retail, 11.78 percent of firms on Facebook export, compared to 8.06 percent for firms in general. For the services category, which was the largest industry category for firms on Facebook as well as firms in general, 3.73 percent of firms on Facebook export and 2.14 percent of firms in general export.

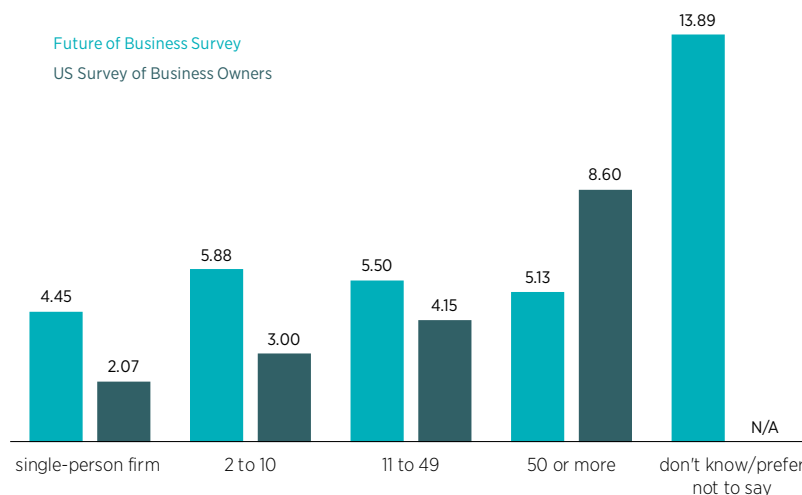
Figure 4. Share of Firms That Export, by Industry (Percent)



Source: Authors' calculations based on Facebook, the Organisation of Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees."

Figures 5, 6, and 7 show the propensity to export across each gender ownership category. For both female- and male-owned firms, the share of firms on Facebook that export is higher than among firms in general for the three firm size categories under 50 employees (single person, 2 to 10, and 11 to 49 employees). The propensity to export for male-owned SBMs is higher on Facebook for each firm size category.

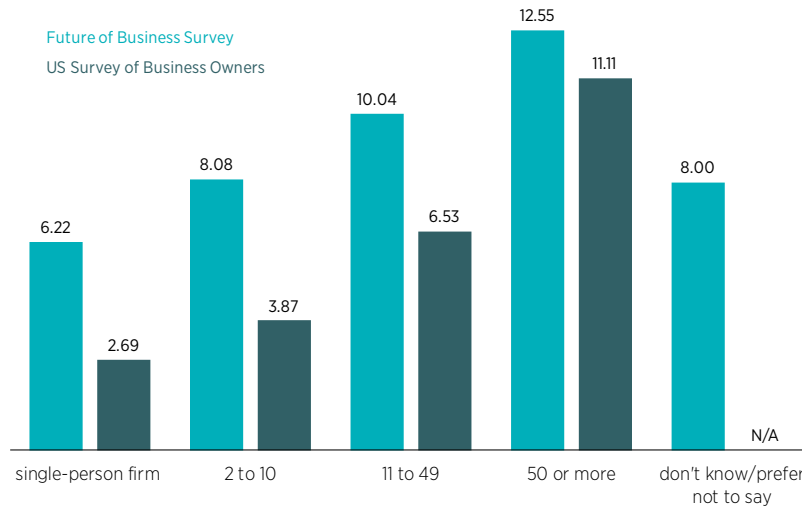
Figure 5. Share of Female-Owned Firms That Export, by Firm Size (Percent)



Source: Authors' calculations based on Facebook, the Organisation of Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees."

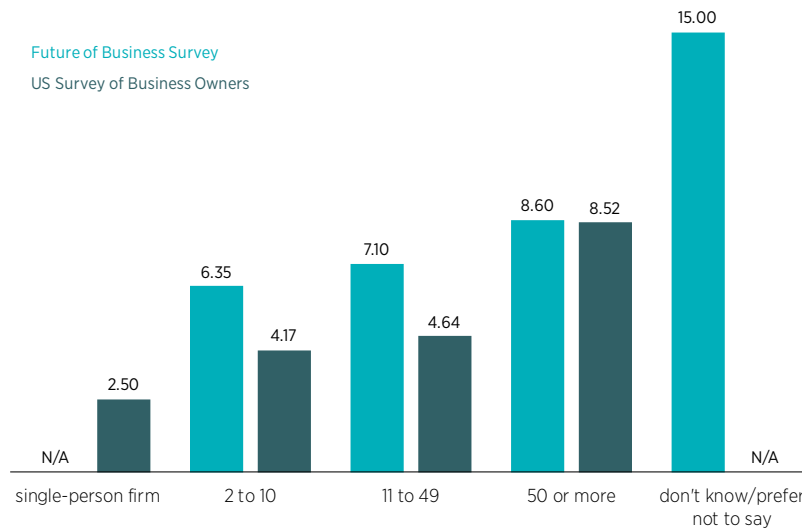
Lastly, for equally owned firms (firms with equal male and female ownership), businesses on Facebook exhibited a higher propensity to export than the national average in every firm size category.

Figure 6. Share of Male-Owned Firms That Export, by Firm Size (Percent)



Source: Authors' calculations based on Facebook, the Organisation of Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees."

Figure 7. Share of Equally Owned Firms That Export, by Firm Size (Percent)



Source: Authors' calculations based on Facebook, the Organisation of Economic Co-operation and Development, and the World Bank, Future of Business Survey (dataset); US Census Bureau, "Statistics for All U.S. Firms with Paid Employees."

CONCLUSION

Using new survey data of SMBs on Facebook, we present detailed statistics for the United States and examine the propensity of firms on Facebook to export compared with firms in the general population. We found that US firms on Facebook have a higher propensity to export than firms in general for every firm size category (except the largest), every industry category, and for both female-owned and male-owned firms.

While the Future of Business Survey includes many countries, it is limited to countries that maintain the necessary national statistics. In a recent piece, we found similar patterns for Australia: the propensity to export is higher for Australian businesses on Facebook than for businesses in general for every firm size category (except the largest) and for every industry category.

Our findings are consistent with the emerging body of literature on digital platforms and international trade, which generally shows that businesses, particularly small businesses, on online digital platforms exhibit a higher propensity to engage in trade than businesses in general. Whether export-prone firms are more likely to be on digital platforms or the other way around, any policies and regulations on digital data flows should consider the trade-facilitating potential of these digital platforms.

APPENDIX A: FACEBOOK, THE ECONOMIC CENSUS, AND THE SURVEY OF BUSINESS OWNERS AND SELF-EMPLOYED PERSONS CONCORDANCE

The 2012 Economic Census reports data on propensity to export by industry and firm size, and the 2012 Survey of Business Owners (SBO) reports propensity to export by gender of owner. All of these data are reported by the Census and released about every five years (the most recently published data are for 2012).

The Census data reflect firms with receipts of at least \$1,000 and with paid employees. Firms were randomly selected and mailed a single-page letter asking them to participate in the online survey, in either English or Spanish.

In all, the Census Bureau collected survey responses from 5,424,458 firms for the 2012 Economic Census; of these firms, 17,724 (or 0.33 percent) had over 500 employees.

We are interested in the percentage of each firm's export sales as a proportion of its total sales. Of the 5,424,458 million firms surveyed, 3,674,900 firms (67.7 percent) responded to this question. To focus on SMBs, we exclude the firms with 500 or more employees (these firms represented less than 1 percent of the sample). A firm's export sales are classified as either none (i.e., they do not export), 1 to 4 percent, 5 to 9 percent, 10 to 19 percent, 20 to 49 percent, 50 to 99 percent, 100 percent, or unknown. We consider a firm an exporter if its export sales are above zero.

The Census Bureau classifies firms according to the 2012 North American Industry Classification System (NAICS). The data are analyzed at the two-digit NAICS level in order to be comparable to the Future of Business Survey data. We note that the Economic Census excludes a small number of NAICS categories.²⁷ In the next section we list our industry concordance and the corresponding details.

The Economic Census contains industry-level data and firm-size-level data, but not together. Therefore, the firms with 500 employees or more are included in the industry-level data. These firms represent just 0.33 percent of the data, although larger firms do have a higher propensity to export.

The 2012 Survey of Business Owners and Self-Employed Persons (SBO) provides information on the gender of the owner. An owner is defined as someone having 51 percent or more of the stock or equity in the firm. The SBO data include 3,559,160 firms in total, and for comparability with the Future of Business Survey, we excluded the 4,405 firms that had more than 500 employees.

Firm Size Comparisons

Single-Person Firm

- Future of Business (shown February 2016–June 2016): just me
- Future of Business (shown since July 2016): just me
- Economic Census: firms with no employees
- Survey of Business Owners: firms with no employees

2 to 10 Employees

- Future of Business (shown February 2016–June 2016): 2–3; 4–10
- Future of Business (shown since July 2016): 2–4; 5–9
- Economic Census: 1–4; 5–9; 10–19
- Survey of Business Owners: 1–4; 5–9; 10–19

11 to 49 Employees

- Future of Business (shown February 2016–June 2016): 11–50
- Future of Business (shown since July 2016): 10–19; 20–49
- Economic Census: 20–49
- Survey of Business Owners: 20–49

Over 50 Employees

- Future of Business (shown February 2016–June 2016): over 50
- Future of Business (shown since July 2016): 50–249; over 250
- Economic Census: 50–99; 100–500
- Survey of Business Owners: 50–99; 100–500

Don't Know/Prefer Not to Say

- Future of Business (shown February 2016–June 2016): don't know or prefer not to say
- Future of Business (shown since July 2016): don't know or prefer not to say
- Economic Census: not an option
- Survey of Business Owners: not an option

Industry Classifications

Manufacturing

- Future of Business (shown February 2016–July 2016): manufacturing
- Future of Business (only shown in July 2016): manufacturing
- Future of Business (shown since July 2016): manufacturing
- Economic Census: manufacturing NAICS 31–33

Construction

- Future of Business (shown February 2016–July 2016): construction
- Future of Business (only shown in July 2016): construction
- Future of Business (shown since July 2016): construction or home repair
- Economic Census: construction NAICS 23

Wholesale and Retail Trade

- Future of Business (shown February 2016–July 2016): retail or wholesale
- Future of Business (only shown in July 2016): wholesale and retail trade; repair of motor vehicles and motorcycles
- Future of Business (shown since July 2016): retail or wholesale (including online shops); automotive repair or services
- Economic Census: wholesale trade NAICS 42; retail trade NAICS 44–45; other services (except public administration) NAICS 81

Hotels and Restaurants

- Future of Business (shown February 2016–July 2016): hotel or restaurant
- Future of Business (only shown in July 2016): accommodation and food service activities
- Future of Business (shown since July 2016): accommodation (e.g., hotels, camping grounds); Restaurant or café or other food services
- Economic Census: accommodation and food services NAICS 72

Transport, Storage, and Communications

- Future of Business (shown February 2016–July 2016): not an option
- Future of Business (only shown in July 2016): transportation and storage; information and communication

- Future of Business (shown since July 2016): media, communication or information (e.g., broadcasting, telecoms, computer programming); transportation or storage (e.g., taxi, warehousing)
- Economic Census: transportation and warehousing (607) NAICS 48–49(607); information NAICS 51

Services

- Future of Business (shown February 2016–July 2016): services
- Future of Business (only shown in July 2016): financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities; education; human health and social work activities; public administration and defense; compulsory social security
- Future of Business (shown since July 2016): professional services (e.g., financial services, consulting, travel agents, business services); real estate (e.g., brokerage, leasing, management); education (e.g., schools, tutoring, driving school); healthcare (e.g., dentist, senior care); personal services (e.g., beauty and wellness, repair of household goods)
- Economic Census: finance and insurance NAICS 52; real estate and rental and leasing NAICS 53; professional, scientific, and technical services NAICS 54; management of companies and enterprises NAICS 55; administrative and support and waste management and remediation services NAICS 56; educational services NAICS 61; health care and social assistance NAICS 62

Nonprofit or Charity Organization

- Future of Business (shown February 2016–July 2016): nonprofit or charity organization
- Future of Business (only shown in July 2016): not an option
- Future of Business (shown since July 2016): nonprofit or charity organization
- Economic Census: not an option

Other

- Future of Business (shown February 2016–July 2016): other
- Future of Business (only shown in July 2016): arts, entertainment and recreation; agriculture, forestry and fishing; mining and quarrying; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities; other
- Future of Business (shown since July 2016): arts, entertainment or recreation (e.g., museum, creative arts, sports club); other

- Economic Census: agriculture, forestry, fishing and hunting NAICS 11; mining, quarrying, and oil and gas extraction NAICS 21; utilities NAICS 22; arts, entertainment, and recreation NAICS 71; industries not classified NAICS 99

ABOUT THE AUTHORS

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NOTES

- † This policy brief is the second in a series on digital platforms and the propensity to trade using the Future of Business Survey data. In this brief, we have reproduced text previously used in the introductory and background sections of our brief entitled “Businesses on Facebook and Propensity to Export: Australia” for the benefit of our readers. The authors are thankful for helpful comments from Daniel Griswold, Andrea O’Sullivan, and Walter Valdivia. Any remaining errors are our own.
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13. William A. Ward, "Globalization and Its Implications: The Size and Location of Manufacturing Sector Export Firms in SC" (CUCIT Working Paper No. 0001115, Clemson University, Clemson, SC, November 2000).
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16. James Anderson, "A Theoretical Foundation of the Gravity Model," *American Economic Review* 69, no. 1 (1979): 106–11; James E. Rauch, "Networks versus Markets in International Trade," *Journal of International Economics* 48, no. 1 (1999), 7–35; Treb Allen, "Information Frictions in Trade," *Econometrica* 82, no. 6 (2014): 2041–83. Using meta-analysis of 103 empirical papers, Anne-Célia Disdier and Keith Head reported that the average elasticity of trade with respect to distance was -0.9 . See Anne-Célia Disdier and Keith Head, "The Puzzling Persistence of the Distance Effect on Bilateral Trade," *Review of Economics and Statistics* 90, no. 1 (2008): 37–48.
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19. "Fostering Greater SME Participation in a Globally Integrated Economy" in *SME Ministerial Conference* (Mexico City, Organisation for Economic Co-operation and Development, February 22–23, 2018); *Trade Obstacles to SME Participation in Trade* (Geneva, Switzerland: World Trade Organization, 2016).
20. Mary Lou Egan and Ashoka Mody find that buyers undergo a costly search process for potential suppliers from within a product-specific network for both final and intermediate goods. Importers gather information about suppliers at trade fairs and conferences or direct visits to factories (once a buyer knows about the company). See Mary Lou Egan and Ashoka Mody, "Buyer-Seller Links in Export Development," *World Development* 20, no. 3 (1992): 321–34. Bernard and Jensen explore entry costs from an exporter's point of view and find that exporting today increases the probability of exporting tomorrow by 36 percent. In other words, they also find past exporters are apt to reenter. (They also find state export promotion expenditures have no significant effect on the probability of exporting.) See Andrew B. Bernard and J. Bradford Jensen, "Why Some Firms Export," *Review of Economics and Statistics* 86, no. 2 (2004): 561–69.

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22. First Quarter 2018 Results Conference Call (Menlo Park, CA: Facebook, April 25, 2018), https://s21.q4cdn.com/399680738/files/doc_financials/2018/Q1/Q1-18-earnings-call-prepared-remarks.pdf; *Financing and Women-Owned Small Businesses: The Role of Size, Age, and Industry* (Menlo Park, CA: Facebook, March 2018).
23. Respondents were asked whether they were an exporter, importer, both, or neither. The share of exporters combines those that only export as well as those that export and import. These data represent the aggregate responses over the three years.
24. Facebook asks, "What are the most important challenges your business currently faces?" Firms may select however many challenges are applicable. Over the three years, the list of challenges included 13 options, as well as an "other" option (in which firms must expand upon this response).
25. Facebook asks, "You said that 'selling to foreign markets' is a challenge for your business. What particular challenges does this include?" Firms may select however many challenges are applicable. Over the three years, the options did not change, remaining 10 choices, as well as an "other" option (in which firms must expand upon this response).
26. A study for SBA Advocacy shows that fewer than 2 percent of all US firms export. See Brian Headd and Radwan Saade, "Do Business Definition Decisions Impact Small Business Research Results?" (Office of Advocacy Working Paper No. 330, US Small Business Administration, Office of Advocacy, Washington, DC, August 2008). Another study found that 3.1 percent of US firms export. See Andrew B. Bernard, J. Bradford Jensen, and Peter K. Schott, "Importers, Exporters and Multinationals: A Portrait of Firms in the U.S. That Trade Goods," in *Producer Dynamics: New Evidence from Micro Data*, ed. Timothy Dunn, J. Bradford Jensen, and Mark J. Roberts (Chicago, IL: University of Chicago Press), 513–52.
27. Of the 99 three-digit NAICS industry categories, the Economic Census excludes Crop and Animal Production (NAICS 111 and 112); Rail Transportation (NAICS 482); Postal Service (NAICS 491); Monetary Authorities-Central Bank (NAICS 521); Funds, Trusts, and Other Financial Vehicles (NAICS 525); Religious, Grantmaking, Civic, Professional, and Similar Organizations (NAICS 813); Private Households (NAICS 814); and Public Administration (NAICS 92). See US Office of Management and Budget, *North American Industry Classification System: United States, 2017*, 2017.