

Can Online Platforms Promote Women-Led Exporting Firms?

Jennifer P. Poole
American University

Christian Volpe Martincus
Inter-American Development Bank

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Question

- Several government agencies promote export market engagement, in part, because of the exporter wage premium offered in exporting firms.
 - Workers employed by export-oriented firms earn higher wages on average.
- In one report, the U.S. Department of Commerce noted that this exporter wage premium in women-owned exporter plants was larger than the exporter premium in men-owned exporting businesses.
 - Therefore, promoting exports from businesses led by women could raise middle class incomes and enhance gender equality, a key sustainable development goal.
- *How can policy promote women-led exporting firms?*

Question

- There are well-documented benefits of international trade and foreign investment for women relative to men.
 - Relative improvements in female wages and employment, as new firms enter the export market and upgrade technology in Mexico (Juhn, et al. 2014), as Brazilian industries face increased Chinese import penetration (Paz and Ssozi 2021), and reductions in gender earnings gaps in Brazil with increased foreign investment (Davis and Poole 2022).
- In addition to these benefits by market mechanisms, we investigate best-practice business environment policies to promote access to foreign markets.
 - Especially for women entrepreneurs
 - Specifically, we examine *the effects of an online business platform to reduce informational barriers associated with accessing new markets and matching buyers and suppliers*

Motivation

- Despite significantly lower policy barriers to trade between countries, substantial informal, informational barriers still exist
 - Limiting the extent to which countries can capitalize on the gains from globalization—efficiency improvements, income growth, and consumer choice around the globe.
- Business networks have been shown to reduce the search frictions associated with informal border barriers to trade.
 - Efficient matches between buyers and suppliers; transfer information about local culture, customs, and consumer market, and provide informal contract enforcement (Rauch 1999)
- Tools that help networks communicate are powerful drivers of bilateral trade flows.
 - Telephone traffic (Portes and Rey 2005); the internet (Freund and Weinhold 2004); international travel flows (Cristea 2011; Poole 2016).

Motivation

- We are interested in a very specific kind of business network in this research: an *online business platform* to facilitate trade relationships.
- Women may face specific informal barriers to foreign market access
 - McClelland, *et al.* (2005) remark on women's underrepresentation due to cultural norms and stereotypes.
 - McClelland, *et al.* (2005) also report a greater desire for a flexible work schedule to accommodate home life among women entrepreneurs.
 - Ughetto, *et al.* (2020) note a lower propensity for risk than men entrepreneurs.

Hypothesis

- We hypothesize that the costs associated with a digital platform may be more symmetric across gender than typical trade costs.
 - Sicat, *et al.* (2020) note the role of digital technologies more generally to provide training, enhance access to information, and necessary financing.
 - In these ways, digital technologies can help women to “level the playing field” (Pergelova, *et al.* 2019).
 - More importantly, technology can help women to reduce the burdens associated with mobility constraints, discrimination, and even violence (Sicat, *et al.* 2020).
 - Jome, *et al.* (2006): e-commerce and ICT technologies provide women entrepreneurs with greater flexibility (to account for children and other demands outside of work).
- Online business platforms can play an important role in making trade more gender equal.

Previous Research

- Carballo, *et al.* (2022): participation in an online business platform increased exports by 17 percent on average across exporters.
 - Not because of increased transactions, since the online platform was non-transactional.
 - Allows firms to freely engage in business communities—writing posts, making announcements, and asking questions—the digital trade platform reduced informational frictions associated with entering new markets and expanding existing trade relationships.

Data Sources

- ConnectAmericas.com
 - Business media platform, developed by the Inter-American Development Bank, Google, DHL, Sealand (Maersk), Mastercard, and Facebook
 - Purpose: to facilitate the internationalization of small firms in Latin America (and around the globe)
 - Provides access to relevant information, but does not allow for direct transactions
 - *Learn* function: online courses, webinars, training; access to trade databases; business evaluation tools; lists of support organizations.
 - *Connect* function: search for potential partners, interact via a messaging system; business communities where firms can make announcements about goods and services they want to buy or sell.
 - To register, firms create a profile with a description of the company, contact information, year established, country of origin, sector and main product lines, whether they have a commercial presence in any other country, number of workers employed
 - Gender composition of the management team



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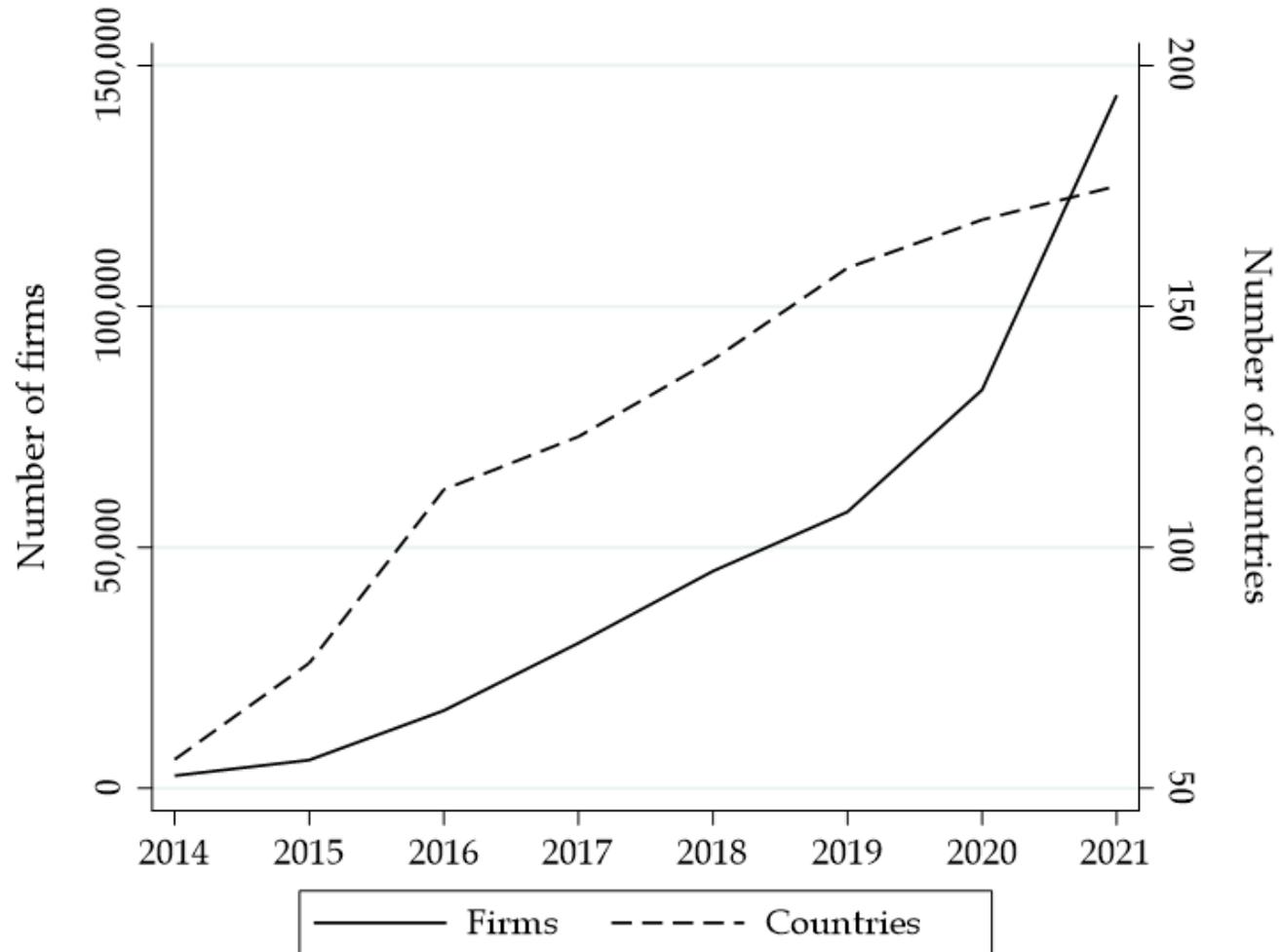
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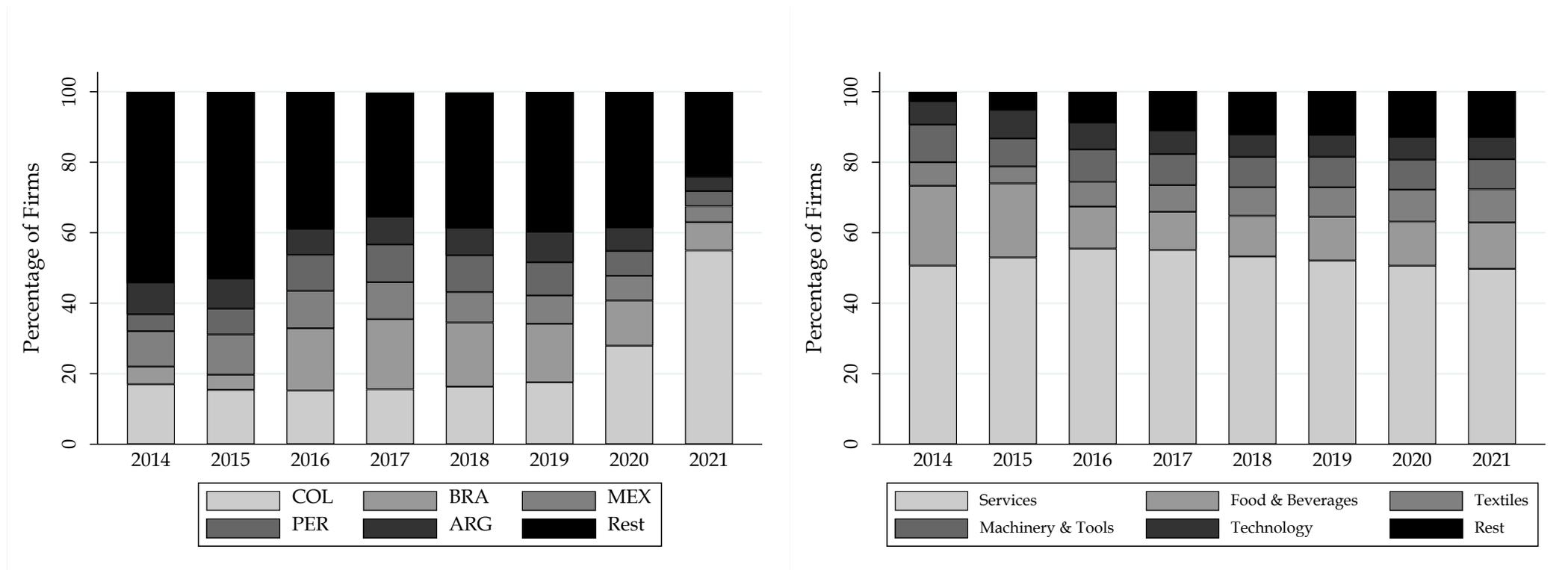
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Descriptive Background



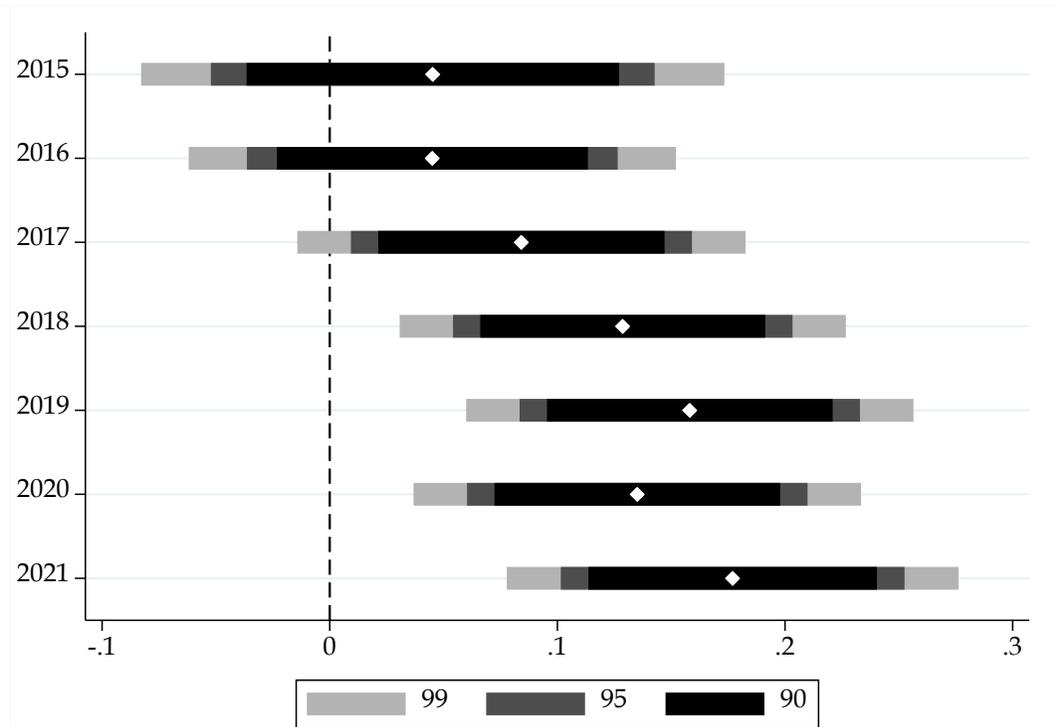
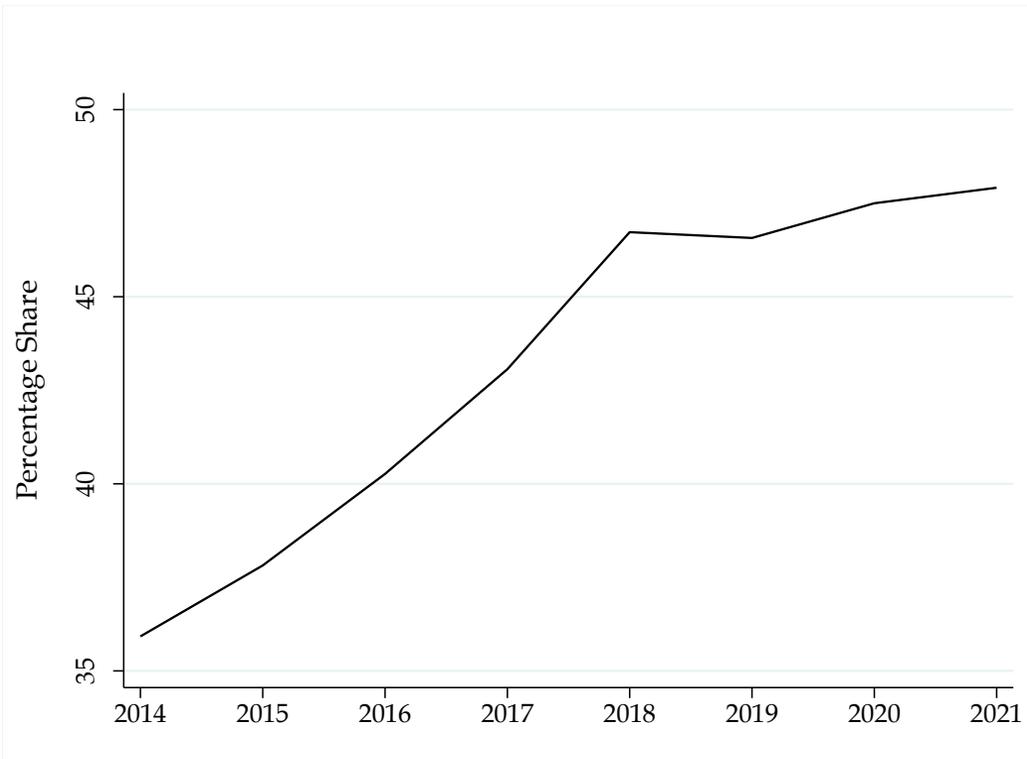
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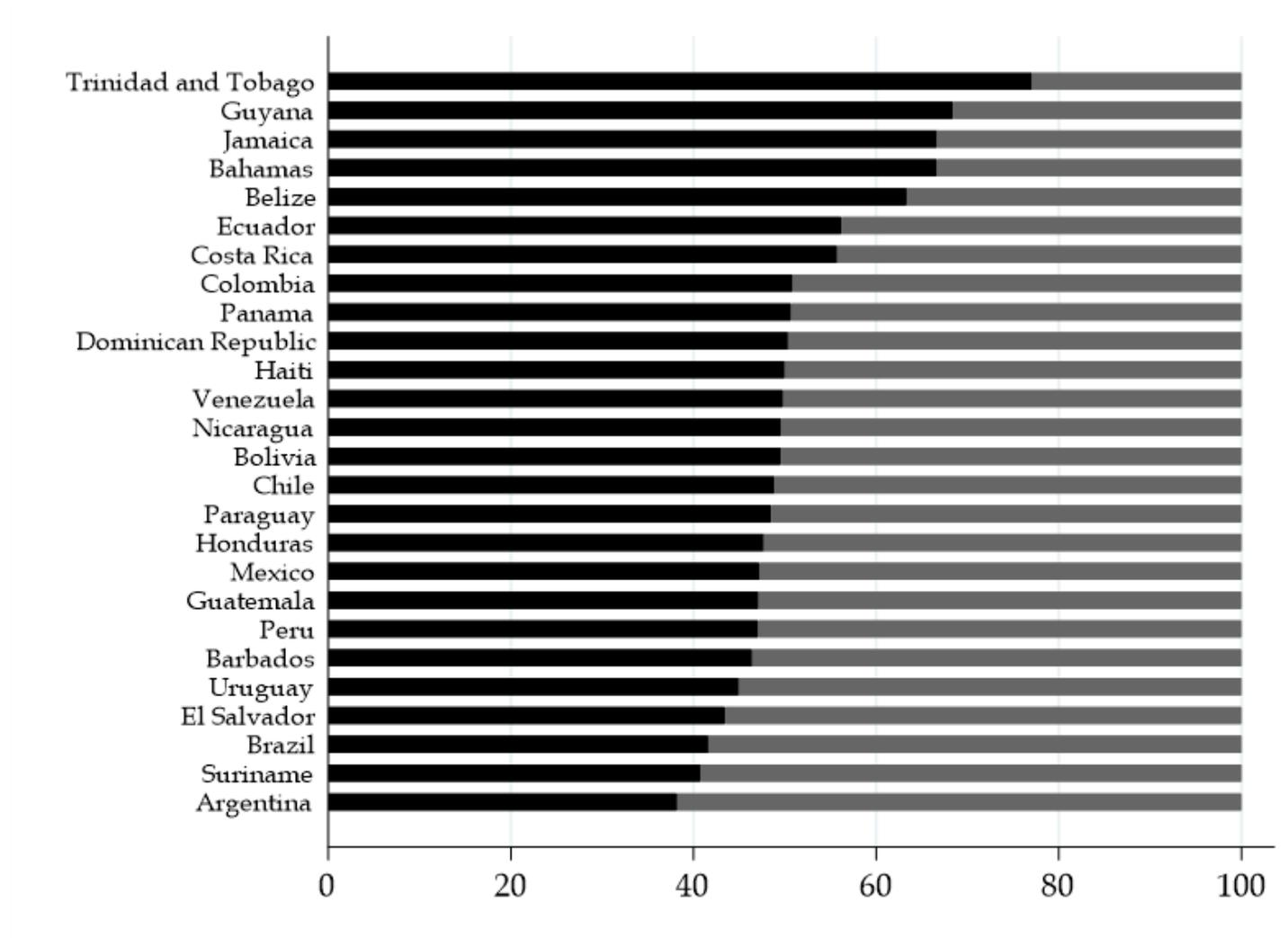
Descriptive Background

- *ConnectAmericas* has favored the participation of women
 - The share of female-led firms increased from 30 percent in 2014 (when the platform was launched) to nearly 45 percent in 2021.
 - This is far greater than expected based on the overall share of women-owned or managed firms based on the World Bank *Enterprise Surveys*
- Even accounting for the across sector and country differences, participation by women entrepreneurs increased by almost 20 percentage points.

Descriptive Background

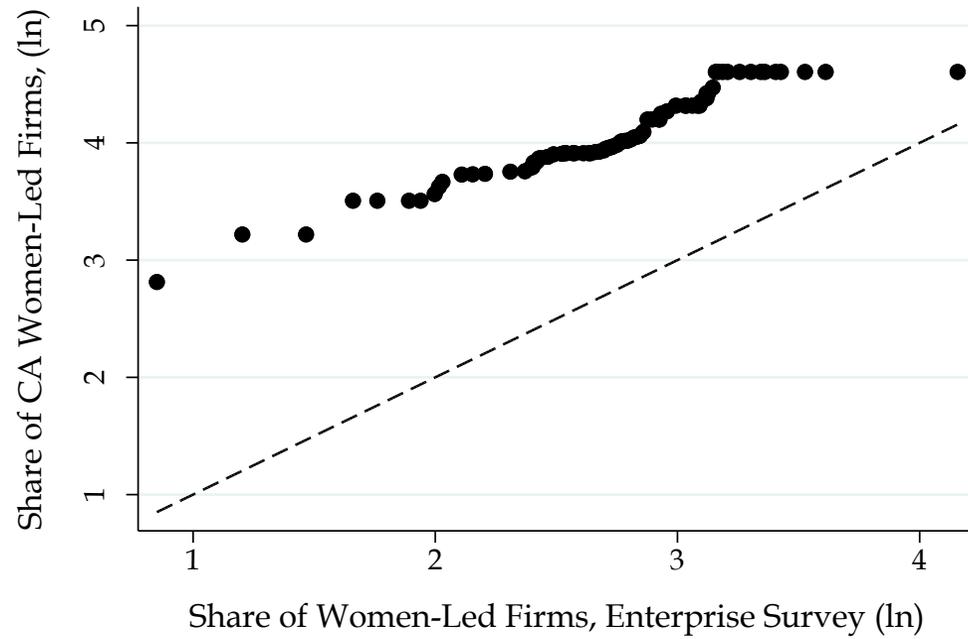


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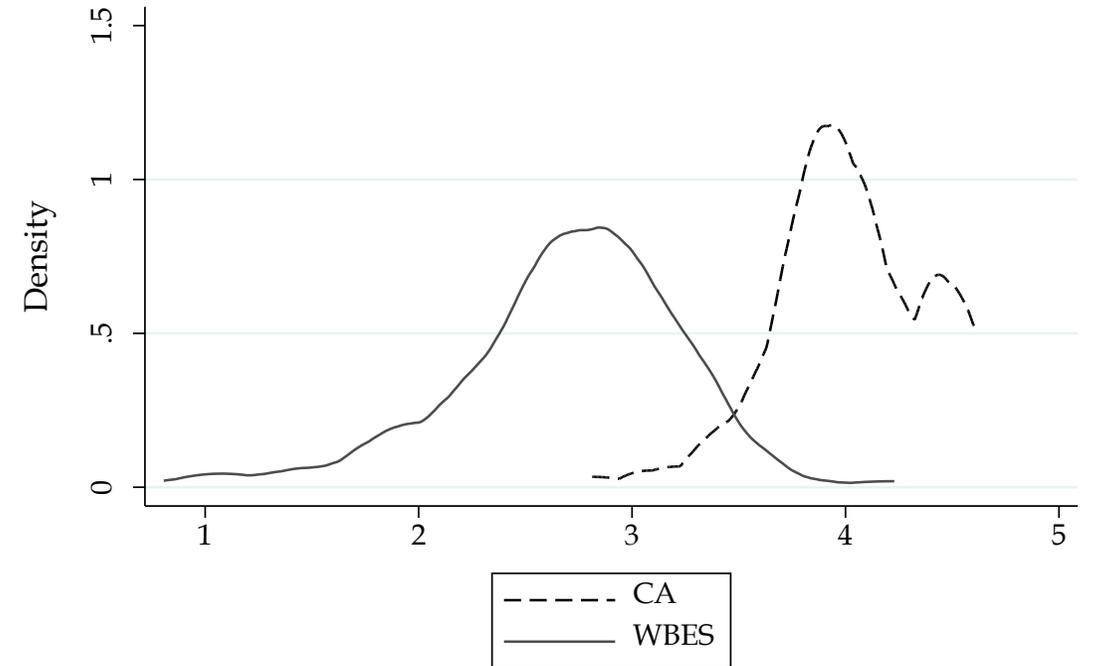


Descriptive Background

Q-Q Plot

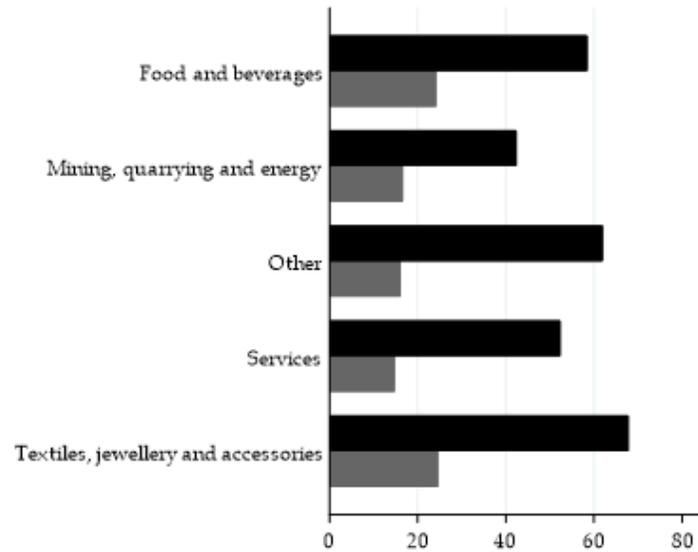


Kernel density

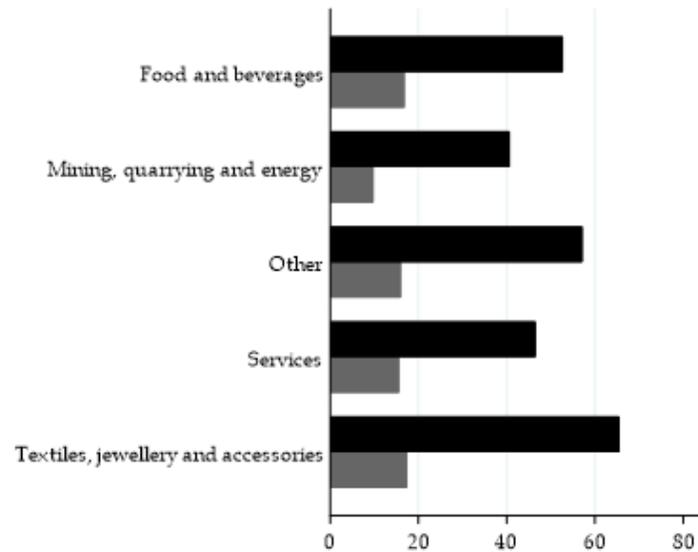


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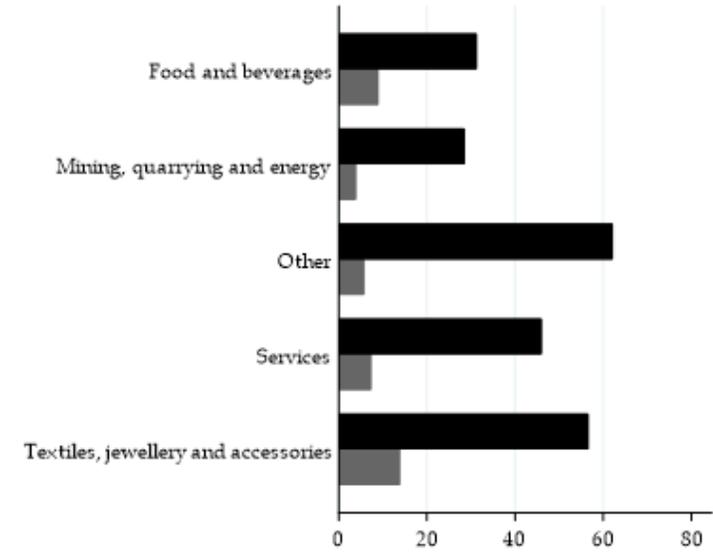
Colombia



Peru



Argentina



Empirical Strategy

- The outsized presence of women entrepreneurs in the *ConnectAmericas* platform suggest women may view the access as valuable.
- By favoring the participation of women, reducing the search and matching frictions in international markets, such online business platforms have the potential to increase export possibilities and enhance gender equality.
- We test this idea by extending the work of Carballo, *et al.* (2022).

Data Sources

- Firm-level Export Transactions (SUNAT)
 - Peruvian tax and customs authority
 - Each record includes firm's tax ID and name, 10-digit Harmonized System product code, destination country, and export value in USD and export quantity in kilograms.
- We restrict the sample to only those firms who have a positive export value.
- Auxiliary firm-level data (PROMPERU)
 - National trade promotion agency
 - Matched by common firm identifier
 - Information on location of the firm, 4-digit ISIC industry, year established, number of employees, and whether the firm received any other trade promotion support from PROMPERU.

Data Sources

- We utilize the matched data from Carballo, *et al.* (2022).
 - *ConnectAmericas* does not include any common firm identifiers.
 - Carballo, et al. (2022) used standard record-matching techniques to match firm names from *ConnectAmericas* with firm names from the SUNAT export transactions.

Data Sources

Table 1. Descriptive Statistics on *ConnectAmericas* and Exports

Year	Semester	Number of Peruvian Firms in <i>ConnectAmericas</i>	Of which: Exporting Firms			
			Total		Of which: Women-Led	
			<u>Number</u>	<u>Share</u>	<u>Number</u>	<u>Share</u>
2014	1	22	1	0.045	1	1.000
2014	2	127	4	0.031	2	0.500
2015	1	257	10	0.039	6	0.600
2015	2	432	21	0.049	11	0.524
2016	1	773	29	0.038	16	0.552
2016	2	1,646	56	0.034	31	0.554
2017	1	2,420	83	0.034	46	0.554
2017	2	3,224	250	0.078	124	0.496
2018	1	4,268	376	0.088	183	0.487
2018	2	4,697	475	0.101	225	0.474

Sources: *ConnectAmericas* and SUNAT, 2014-2018.

Empirical Strategy

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$$\ln X_{fpdt} = \gamma CA_{ft} + \varphi_{fpd} + \theta_{ft} + \delta_{pdt} + \varepsilon_{fpdt}$$

- Main outcome is log of exports for firm f , product p , destination-country d , and year t .
- CA_{ft} is binary indicator if firm participates in *ConnectAmericas*

Empirical Strategy

- The estimation also includes several high-dimension fixed effects to partially address these concerns.

$$\ln X_{fpdt} = \gamma CA_{ft} + \varphi_{fpd} + \theta_{ft} + \delta_{pdt} + \varepsilon_{fpdt}$$

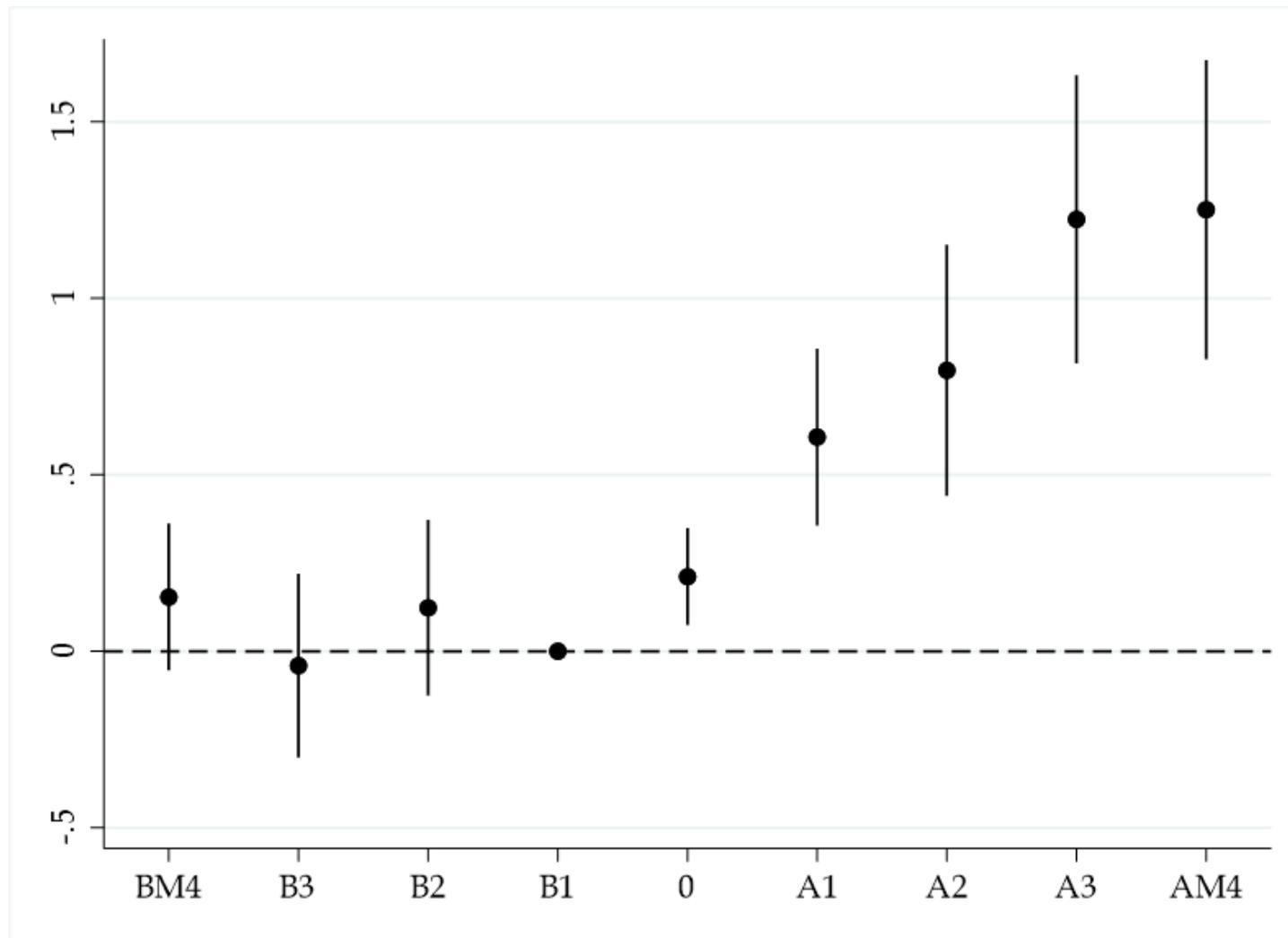
- Firm-product-destination fixed effects
 - Firm-year fixed effects
 - Product-destination-year fixed effects
- Firms self-select into the platform. Voluntary participation in the online platform could be correlated with export outcomes.

Results

Table 2. The Impact of *ConnectAmericas* on Firm Exports

	Export Value		
<i>ConnectAmericas</i>	0.172*** (0.0502)	0.164*** (0.0474)	0.205*** (0.0633)
	Export Weight		
<i>ConnectAmericas</i>	0.154*** (0.0558)	0.162*** (0.0496)	0.205*** (0.0630)
	Unit Value		
<i>ConnectAmericas</i>	0.0176 (0.0214)	0.00197 (0.0263)	-0.00005 (0.0322)
Firm-Product-Destination Fixed Effects	Yes	Yes	Yes
Time-Varying Firm-Level Control Variables	Yes	Yes	No
Firm-Time Trend	No	Yes	No
Firm-Year Fixed Effects	No	No	Yes
Region-Sector-Year Fixed Effects	Yes	Yes	No
Product-Destination-Semester-Year Fixed Effects	Yes	Yes	Yes
Observations	627,530	627,530	627,530

Results



Empirical Strategy

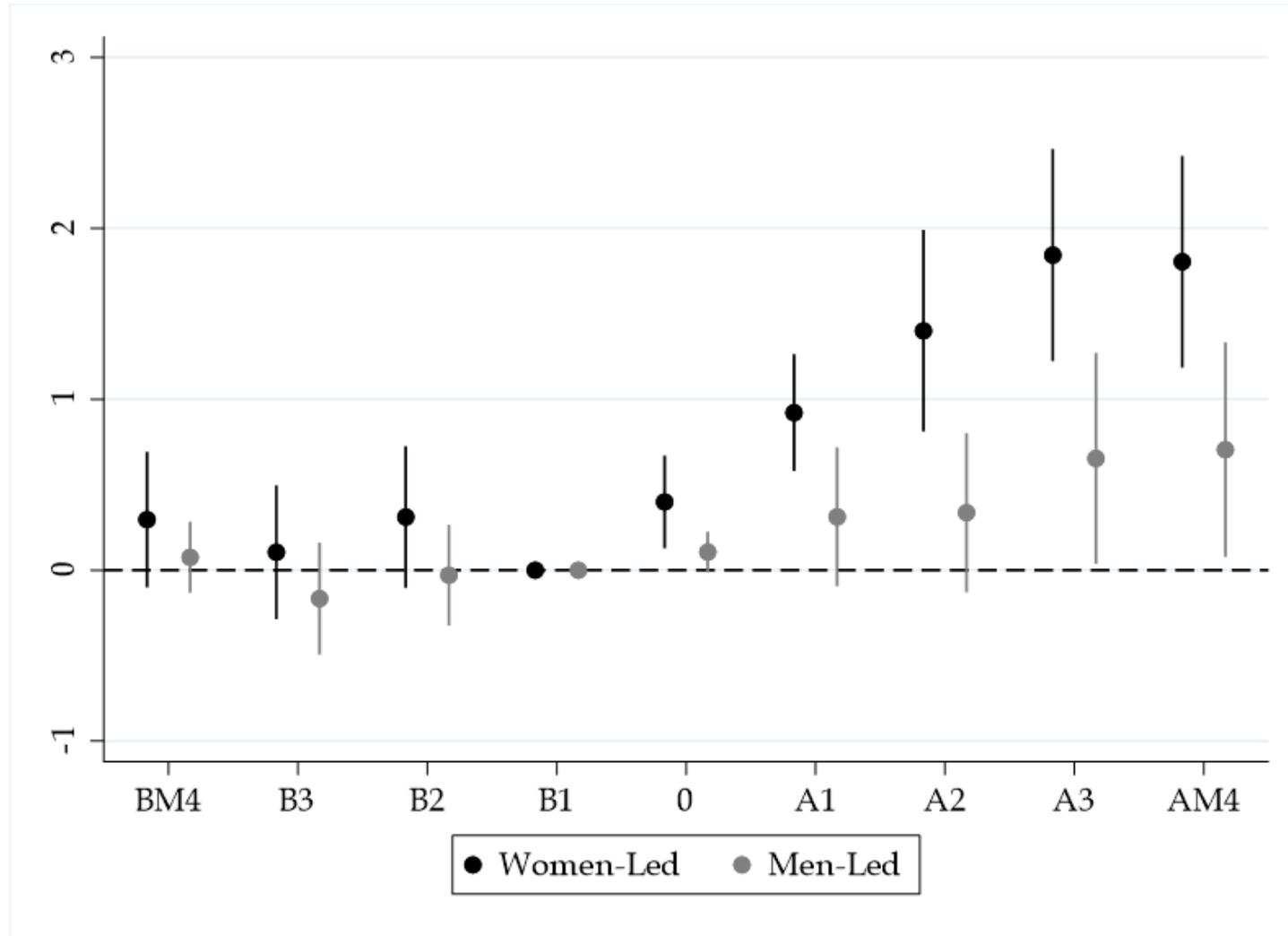
- Our main innovation extends this analysis by interacting the firm's participation in *ConnectAmericas* with information on the gender of the firm's management.

$$\ln X_{fpdt} = \gamma CA_{ft} + \lambda CA_{ft} \times 1(\text{Female}_f) + \varphi_{fpd} + \theta_{ft} + \delta_{pdt} + \varepsilon_{fpdt}$$

Table 3. The Impact of *ConnectAmericas* on Firm Exports, by Management Gender

		Export Value		
<i>ConnectAmericas</i> *	Women-Led Firms	0.214*** (0.062)	0.270*** (0.082)	0.389*** (0.130)
<i>ConnectAmericas</i> *	Men-Led Firms	0.133* (0.077)	0.086* (0.052)	0.101* (0.055)
Difference (Women-Led - Men-Led)		0.081	0.184*	0.288**
<i>p-value</i>		<i>0.412</i>	<i>0.059</i>	<i>0.042</i>
		Export Weight		
<i>ConnectAmericas</i> *	Women-Led Firms	0.150** (0.074)	0.214** (0.084)	0.320*** (0.119)
<i>ConnectAmericas</i> *	Men-Led Firms	0.159* (0.082)	0.124** (0.061)	0.140** (0.069)
Difference (Women-Led - Men-Led)		-0.009	0.090	0.180
<i>p-value</i>		<i>0.892</i>	<i>0.426</i>	<i>0.188</i>
		Unit Value		
<i>ConnectAmericas</i> *	Women-Led Firms	0.064*** (0.024)	0.056** (0.025)	0.069*** (0.024)
<i>ConnectAmericas</i> *	Men-Led Firms	-0.025 (0.029)	-0.038 (0.038)	-0.039 (0.046)
Difference (Women-Led - Men-Led)		0.089**	0.094**	0.108**
<i>p-value</i>		<i>0.019</i>	<i>0.039</i>	<i>0.034</i>
Firm-Product-Destination Fixed Effects		Yes	Yes	Yes
Time-Varying Firm-Level Control Variables		Yes	Yes	No
Firm-Time Trend		No	Yes	No
Firm-Year Fixed Effects		No	No	Yes
Region-Sector-Year Fixed Effects		Yes	Yes	No
Product-Destination-Semester-Year Fixed Effects		Yes	Yes	Yes
Observations		627,530	627,530	627,530

Results



Final Remarks

- Digital platforms can play an important role in making trade more gender equal.
- Policies that encourage women participation in e-commerce and online environments can promote gender equality.
- Equal access to digital technologies and the internet can help close the gender gap.

Future Work

- Heterogeneous effects
 - Different kinds of trade have different degrees of information incompleteness
 - across product lines (homogeneous v. differentiated)
 - near versus distant destinations
- Gender-equality of export destinations
- Export extensive margin