

# *Online Supplement to*

## **Preparing to Export**

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This Online Supplement collects evidence to complement the paper “*Preparing to Export*” (Labanca, Molina and Muendler 2022). In Section S1 we present supplemental empirical evidence, and in Section S3 we report the mapping of countries into six relevant export destination groups for Brazil (outside Latin America and the Caribbean) in the period 1994-2007.

### **S1 Supplemental Empirical Evidence**

Table S.1 reports the first-stage regressions underlying the IV regressions in Table 6 (columns 2 and 4) in the text. The according IV specifications under equation (2) alter the second-stage dependent variable and measure the hiring of workers grouped by occupation at the previous employer in five main occupation categories (under the internationally common ISCO-88 classification, to which we map the RAIS reported Brazilian occupation classification CBO for the period 1994-2007). The Anderson-Rubin Wald test statistic exceeds a  $p$ -value of 5 percent in all occupations except skilled blue-collar (SBC) occupations. In other words, we fail to reject the absence of a second-stage effect in the specifications except those for skilled-blue collar occupations. On the first stage, the  $F$  statistic for the entire sample (column 1 in Table S.1) exceeds 15, but in the restricted sample with only firms that hire at least one exporter worker from the respective occupation group the  $F$  statistic falls short of a critical value of 10—except in the case of skilled blue-collar workers.

In Table 7 in the text, we investigate the relation between poaching of skilled blue-collar (SBC) workers and the presence of managers with exporting experience. Table S.2 reports the associated first-stage regressions. In Panel A, we use APD imports as the single instrument to predict export status. In Panel B, we need two instruments: one to predict export status and one additional instrument to predict the interaction of previously hired exporter managers with predicted export status. We use

Table S.1: HIRING BY OCCUPATION: FIRST-STAGE REGRESSIONS

Dependent Variable ( $t$ ):	Entire Sample Indic. Exp. ( $t$ ) (1)	Firms with hires > 0 Indic. Exp. ( $t$ ) (2)
<b>Panel A: Hiring of exporter workers from professional or managerial occupations</b>		
Non-Brazil Imports in APD	0.014*** (0.004)	0.054 (0.029)
$F$ -stat. excluded instrument	15.182	3.501
Observations	1,722,626	44,133
<b>Panel B: Hiring of exporter workers from technical or supervisory occupations</b>		
Non-Brazil Imports in APD	0.014*** (0.004)	0.060* (0.024)
$F$ -stat. excluded instrument	15.182	6.156
Observations	1,722,626	59,480
<b>Panel C: Hiring of exporter workers from other white collar occupations</b>		
Non-Brazil Imports in APD	0.014*** (0.004)	0.053* (0.021)
$F$ -stat. excluded instrument	15.182	6.410
Observations	1,722,626	36,480
<b>Panel D: Hiring of exporter workers from skilled blue collar occupations</b>		
Non-Brazil Imports in APD	0.014*** (0.004)	0.043*** (0.009)
$F$ -stat. excluded instrument	15.182	20.905
Observations	1,722,626	205,985
<b>Panel E: Hiring of exporter workers from unskilled blue collar occupations</b>		
Non-Brazil Imports in APD	0.014*** (0.004)	0.037* (0.015)
$F$ -stat. excluded instrument	15.182	6.574
Observations	1,722,626	67,669

*Notes:* Each cell shows the coefficient from a separate regression. APD stands for Asia-Pacific Developing countries. All regressions include the following controls: firm and year effects, sectoral linear trends, employment changes between  $t-1$  and  $t$  net of hires from exporters, contemporaneous and one-period lagged firm size, shares of worker by education (primary, secondary and tertiary) and occupation (unskilled blue collar, skilled blue collar and white collar) categories, an indicator of a firm's high-skill intensity, an indicator of foreign ownership, one- and two-period lagged export status, and absorption. Standard errors in parentheses, clustered at the 3-digit ISIC sector level. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . *Sources:* SECEX and RAIS 1994-2007, manufacturing firms (ISIC rev. 2 300-400).

Table S.2: HIRES OF SKILLED BLUE COLLARS AND MANAGERS: FIRST STAGE REGRESSIONS

Dependent Variable ( $t$ ):	Ind. Exp. ( $t$ )	Ind. Exp. ( $t$ ) $\times$ Ind. Hire Exp. Man. ( $t-1$ )	Ind. Exp. ( $t$ )	Ind. Exp. ( $t$ ) $\times$ Ind. Hire Exp. Man. ( $t-1$ )
	Entire Sample (1)	Entire Sample (2)	Firms with hires $>0$ (3)	Firms with hires $>0$ (4)
<b>Panel A: Hiring workers from skilled blue-collar (SBC) occupations</b>				
Non-Brazil Imports in APD	0.014*** (0.004)		0.043*** (0.010)	
$F$ -stat. Export ( $t$ ) inst.	15.010		20.797	
Observations	1,722,626		205,985	
<b>Panel B: Hiring workers from skilled blue-collar (SBC) occupations, manager-exporter interaction</b>				
Non-Brazil Imports in APD	0.014*** (0.004)	0.001 (0.001)	0.043*** (0.009)	0.005 (0.004)
Non-Brazil Imports in APD $\times$ Ind. Hire Exp. Man. ( $t-1$ )	0.004* (0.001)	0.035** (0.011)	-0.000 (0.001)	0.024* (0.011)
$F$ -stat. Export ( $t$ ) inst.	11.246		10.700	
$F$ -stat. interaction instr.		9.996		4.621
Observations	1,722,626	1,722,626	205,985	205,985
Firm and year fixed effects	yes	yes	yes	yes
Sectoral linear trends	yes	yes	yes	yes

*Notes:* APD stands for Asia-Pacific Developing countries. All regressions include the following controls: firm and year effects, sectoral linear trends, employment changes between  $t-1$  and  $t$  net of hires from exporters, contemporaneous and one-period lagged firm size, shares of worker by education (primary, secondary and tertiary) and occupation (unskilled blue collar, skilled blue collar and white collar) categories, an indicator of a firm's high-skill intensity, an indicator of foreign ownership, one- and two-period lagged export status, and absorption. Standard errors in parentheses, clustered at the 3-digit ISIC sector level. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

*Sources:* SECEX and RAIS 1994-2007, manufacturing firms (ISIC rev. 2 300-400).

the interaction between APD imports and an indicator for hired exporter managers as the second instrument. Except for the interaction-term instrument for the intensive margin of hiring (column 4), all instruments pass the  $F$  test with a conventional critical value.

## S2 Brazilian export industries to APD countries

To identify Brazil's dominant export industries (to APD and worldwide), we use the same WTF data as for the instruments and isolate the top-5 export industries to APD (and the rest of the world for comparison) in the years 1992, 1997, 2002 and 2007. We use five-year intervals close to our 1994-2007 sample period for comparable reporting of top industries over time. We also perform a comparison to trade flow data from the U.S. ITC, which include services, so we can assess the relevance of merchandise exports (agriculture, mining and manufacturing trade), on which our approach in this paper is based, as compared to services trade.

At the ISIC Rev. 2 level and using the WTF data, *Metal ore mining*, *Iron and steel basic industries* and *Food manufacturing* are among Brazil's top-5 industries shipping to APD in all four years 1992, 1997, 2002 and 2007. *Agriculture and livestock production* is among the top-5 industries in three out of the four years.

Most of these top export industries are not just Brazil's leading exports to APD but *Agriculture and livestock production* and *Food manufacturing* are also among Brazil's top-5 export industries worldwide in all four years, and *Metal ore mining* and *Iron and steel basic industries* each in three out of four years. In other words, several of Brazil's dominant export industries also control most shipments to APD. However, some dominant Brazilian export industries do not succeed among the top-5 in ADP while among the strongest otherwise. Concretely, *Manufacture of transport equipment* (including aircraft) is among Brazil's top-5 export industries worldwide in all four years and *Manufacture of machinery except electrical* is among the top 5 in two out of four years, but neither of those two more advanced manufacturing industries ranks among the top-5 from Brazil to APD in any of the four years.

WTF data do not include services trade. We use the ITPD-E data from the U.S. ITC for the years 2002 and 2007 to assess the relevance of services exports from Brazil to APD. We map the ITPD-E industries to ISIC Revision 3 codes for comparability to our main industry classification in this paper (ISIC Revision 2). We find that *Mining of iron ores*, *Growing of cereals and other crops*, *Manufacture of basic iron and steel*, and *Production, processing and preserving of meat and meat products* are four of the five top-5 industries shipping from Brazil to APD in 2002 and 2007 also according to ITPD-E data and that no services export industry places among the top exporters from Brazil to APD.

## S3 Country Groups

**Asia-Pacific Developing countries (APD):** Bhutan, Bouvet Island, British Indian Ocean Territory, Burma, Cambodia, Canton and Enderbury Islands, China, Christmas Island, Cocos (Keeling) Islands, Cook Islands, East Timor, Fiji, French Polynesia, Heard Island and McDonald Islands, Hong Kong, Indonesia, Kiribati, People's Democratic Republic of Korea, Republic of Korea, People's Democratic Republic of Laos, Macao, Malaysia, Maldives, Marshall Islands, Mayotte, Micronesia, Federated States of Mongolia, Myanmar, Nauru, New Caledonia, New Hebrides, Niue, Norfolk Island, Pacific Islands (trust territory), Palau, Papua New Guinea, Philippines, Pitcairn, Samoa, Singapore, Solomon Islands, Taiwan, Thailand, Timor-Leste, Tokelau, Tonga, Tuvalu, Vanuatu, Viet Nam, Wallis and Futuna.

**Central and Eastern European countries (CEE):** Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Former Yugoslav Republic of Macedonia, Republic of Moldova, Poland, Romania, Serbia and Montenegro, Slovakia, Slovenia, Ukraine, Yugoslavia.

**North American countries (NAM, excluding Mexico):** American Samoa, Bermuda, Canada, Greenland, Guam, Johnston Island, Midway Islands, Northern Mariana Islands, Saint Pierre and Miquelon, Puerto Rico, U.S. Miscellaneous Pacific Islands, U.S. Minor Outlying Islands, Wake Island.

**Other Developing countries (ODV)** Afghanistan, Algeria, Angola, Antarctica, Armenia, Azerbaijan, Bahrain, Bangladesh, Benin, Botswana, British Antarctic Territory, Brunei Darussalam, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Côte D'Ivoire, Dahomey, Djibouti, Dronning Maud Land, Egypt, Equatorial Guinea, Eritrea, Ethiopia, French Southern and Antarctic Territories, Gabon, Gambia, Georgia, Ghana, Guinea, Guinea-Bissau, India, Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lebanon, Lesotho, Liberia, Libyan Arab Jamahiriya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nepal, Neutral Zone, Niger, Nigeria, Oman, Pakistan, Occupied Palestinian Territory, Qatar, Russian Federation, Rwanda, Réunion, Saint Helena, Sao Tome and Principe, Saudi Ara-

bia, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sri Lanka, Sudan, Swaziland, Syrian Arab Republic, Tajikistan, United Republic of Tanzania, Togo, Tunisia, Turkey, Turkmenistan, Uganda, United Arab Emirates, Uzbekistan, Western Sahara, People's Democratic Republic of Yemen, Zaire, Zambia, Zimbabwe.

**Other Industrialized countries (OIN):** Australia, Japan, New Zealand.

**Western European countries (WEU):** Andorra, Austria, Belgium, Canary Islands, Ceuta, Melilla, Cyprus, Denmark, Faroe Islands, Finland, France (including Metropolitan France), Germany, Gibraltar, Greece, Holy See (Vatican City State), Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Svalbard and Jan Mayen, Sweden, Switzerland, United Kingdom, Åland Islands.

**Latin American and Caribbean countries (LAC):**<sup>26</sup> Anguilla, Antigua and Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bolivia, Brazil, British Virgin Islands, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and The Grenadines, South Georgia and The South Sandwich Islands, Suriname, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, U.S. Virgin Islands, Venezuela.

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<sup>26</sup>Latin American and Caribbean countries are excluded from the set of instrumental variables in this paper.