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Export and FDI Premia among Services Firms in the Developing World

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Abstract: There is extensive econometric evidence showing that goods exporters are larger, more productive, and pay higher wages than non-exporters (“export premia”). However, evidence for firms in the services sector is much more limited. This paper uses firm level data from a range of developing countries to show that export premia also exist for services firms in the developing world. Internationalized services firms display similar characteristics to internationalized manufacturers: they are larger, employ more workers, pay higher wages, invest more heavily, and grow faster.

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1 Introduction

Firm-level evidence on the characteristics of manufacturing firms is now abundant, in particular with regard to their internationalization through trade and investment linkages (e.g., Bernard et al., 2007). An important set of stylized facts has emerged: only a small number of firms export, and they tend to be larger, more productive, more capital intensive, and pay higher wages than non-exporters. A similar set of characteristics is present for foreign versus domestically-owned firms (e.g., Javorcik, 2004). There is thus strong empirical evidence for the existence of export and FDI premia in manufacturing industries in developing and developed countries alike.

However, very few papers deal with the characteristics of internationalized services firms. Breinlich and Criscuolo (2011) use data on UK service providers to show that they resemble manufacturing firms in many ways when it comes to export premia. Temouri et al. (Forthcoming) provide similar evidence on export premia in Germany and France, in addition to the UK. The only paper that deals with services firms in developing countries is Bhattacharya et al. (2012). Those authors use Indian data for chemicals and software to examine whether the usual productivity “pecking order”—highly productive firms use FDI, mid-range firms export, and low productivity firms serve the domestic market only (e.g., Helpman et al., 2004)—also holds for services. They find that the order for FDI and exports is reversed, but they do not include domestically oriented firms in their sample. They therefore do not calculate export or FDI premia as in the goods literature.

This paper fills this gap in the literature. It complements this existing work by examining the extent to which trade and FDI premia exist in the services sectors of a wide range of developing countries, beyond the single case of India.

The next section of the paper presents the dataset. Section 3 uses descriptive regressions to establish whether trade premia exist for services firms in developing countries, and to compare their magnitude with the premia for manufacturers. The final section concludes.

2 Data

This paper uses firm-level data from the World Bank's Enterprise Surveys (Table 1). The dataset includes firms from 119 developing (non-high income) countries sampled over the period 2006-2011. Even though some countries are surveyed more than once, it is not possible to create a true firm-level panel because unique confidential identifiers are assigned to firms each year. The dataset therefore consists of a sample of firms for each country-sector-year of a survey.

The total number of firms included is 58,875, although not all firms report data for all indicators, which means that the effective regression samples are considerably smaller. Firm activities are identified at the ISIC 2 digit level, and the data make it possible to distinguish 23 manufacturing sectors and 26 services sectors. The dataset is slightly skewed towards manufacturing (57%). Although activities are quite concentrated sectorally, there are significant numbers of firms surveyed in diverse sectors at different levels of technology and labor intensity. I use country-sector-year fixed effects to control for sectoral differences.

3 Trade and FDI Premia in Services

To provide a baseline, Table 2 presents estimated trade and FDI premia for manufacturing. As in the previous literature, the premia are estimated by running an OLS regression with a firm characteristic as the dependent variable, and dummy variables for export status and foreign ownership as the independent variables. Each model also includes a full set of fixed effects by country-sector-year. These

models are presented as descriptive regressions only, in line with the existing literature, and should not be given a causal interpretation.

Results accord well with prior expectations. Column 1 shows that exporters and foreign-owned firms tend to be larger than others, with both effects 1% statistically significant. Column 2 shows that recent sales growth is faster for exporters (10% statistically significant). There is no statistically significant effect for foreign-owned firms.

Columns 3 and 4 turn to employment. They show that exporters and foreign-owned firms tend to employ more workers, and pay them more, than other manufacturers. All effects are 1% statistically significant.

Finally, columns 5 and 6 deal with productivity and investment. They show that exporters and foreign-owned firms tend to have higher levels of labor productivity (1% statistically significant). Foreign-owned firms also have higher levels of investment per worker than other firms (also 1% statistically significant). However, there is no statistically significant export premium for investment per worker.

In Table 3, I examine whether these results carry over to services. Column 1 uses sales as the dependent variable, and shows that exporters and foreign-owned firms have higher levels of sales than other service providers (1% statistically significant). In line with the manufacturing results, column 2 shows that services exporters also experience faster sales growth (1% statistically significant), as do foreign-owned firms (10% statistically significant). Comparing columns 1 and 2 of Table 3 with Table 2 shows that for sales, the export premium is smaller for services firms, but it is slightly larger for foreign-owned firms. By contrast, the premia for recent growth in sales are much larger for services firms, and it is only in the case of services that foreign-owned firms experience significantly faster sales growth than other firms.

Columns 3 and 4 use employment. Results again support the existence of substantial trade and FDI premia in the case of services firms in the developing world: exporters and foreign-owned firms tend to employ more workers and pay higher wages than non-internationalized services firms, and all effects are statistically significant at the 1% level. Comparing the size of the premia for services with those for manufacturing shows that they are considerably smaller in both cases for employment. For wages, however, only the exporter premium is smaller. The FDI premium, by contrast, is noticeably larger than for manufacturing.

Finally, columns 5 and 6 analyze productivity and investment. In the former case, exporters and foreign-owned firms both tend to be substantially more productive than other service providers (1% statistically significant). For investment per worker, premia are again evident in both cases: the exporter premium is 1% statistically significant, and the foreign ownership premium is 5% statistically significant. Comparing the coefficients from columns 5 and 6 with the corresponding figures from Table 2 suggests that in the case of labor productivity, the exporter premium is smaller in services than in manufacturing, but the foreign ownership premium is larger. For investment per worker, the exporter premium is only statistically significant in the case of services, but the foreign ownership premium is somewhat smaller for services than for manufacturing.

4 Conclusion

The services sector is rapidly growing in importance in the developing world, and even in low income countries accounts for, on average, at least half of all economic activity. Despite this trend, however, there is very little empirical work on services firms in general, and particularly in the developing country context. This paper attempts to fill that void by providing some of the first empirical evidence on trade and FDI premia for services firms in developing countries. In a qualitative sense, results are quite similar to what has been observed in numerous papers for manufacturing: services exporters, and foreign-

owned service providers, are systematically larger, faster growing, more productive, have higher levels of investment, and pay higher wages than domestic firms. However, in line with the findings of Breinlich and Criscuolo (2011) for the UK, export premia in services are generally smaller than in manufacturing. However, the opposite is often true for FDI premia.

The results presented here are suggestive of a number of avenues for future research. In particular, it would be of research and policy interest to extend work for manufacturing which shows that liberalization generally has a positive effect on firm productivity (e.g., Pavcnik, 2002). Enterprise Surveys data on services could be combined with new measures of services trade restrictiveness (Borchert et al., 2012) to see whether the same association holds true for services firms. Preliminary indications are that it does: Miroudot et al. (2012) show that trade costs and productivity are negatively linked, but their analysis is at the sectoral, not firm, level, and it is limited to developed countries, primarily the EU.

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Table 1: Dataset description.

Variable	Definition	Source
DLog(Sales)	Logarithmic difference of total sales for the last fiscal year and total sales three fiscal years ago.	Enterprise Surveys questions d2 and n3.
Log(Employees)	Logarithm of the total number of permanent full time employees and full time seasonal/temporary workers for the last fiscal year.	Enterprise Surveys questions l1 and l6.
Exporter	Dummy variable equal to unity for establishments that recorded non-zero direct exports as a percentage of total sales for the last fiscal year.	Enterprise Surveys question d3b.
Foreign	Dummy variable equal to unity for establishments that were owned more than 50% by foreign private individuals, companies, or organizations.	Enterprise Surveys question b2b.
Log(Investment per Employee)	Logarithm of the establishment's purchases of machinery, vehicles, equipment, land, buildings, and information technology, divided by the number of employees.	Enterprise Surveys questions l1, l6, n5a, n5b, and n5c.
Log(Labor Productivity)	Logarithm of total sales divided by the number of employees.	Enterprise Surveys questions d2, l1, and l6.
Log(Sales)	Logarithm of total sales for the last fiscal year.	Enterprise Surveys question d2.
Log(Wage)	Logarithm of the total annual cost of labor divided by the number of employees.	Enterprise Surveys questions l1, l6, and n2a.

Table 2: Regressions for manufacturing firms only.

	(1)	(2)	(3)	(4)	(5)	(6)
	Log(Sales)	DLog(Sales)	Log(Employees)	Log(Wage)	Log(Labor Productivity)	Log(Investment per Employee)
Exporter	1.791*** (0.000)	0.036* (0.054)	1.267*** (0.000)	0.293*** (0.000)	0.524*** (0.000)	0.063 (0.265)
Foreign	1.238*** (0.000)	0.011 (0.674)	0.709*** (0.000)	0.315*** (0.000)	0.533*** (0.000)	0.250*** (0.000)
Observations	29973	25508	32327	29589	29952	16640
R2	0.195	0.000	0.204	0.024	0.051	0.003
Fixed Effects	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year

*Note: The dependent variable is at the top of each column. Estimation is by OLS. P-values based on robust standard errors clustered by country-sector-year are in parentheses. Statistical significance is indicated by: * (10%), ** (5%), and *** (1%).*

Table 3: Regressions for services firms only.

	(1)	(2)	(3)	(4)	(5)	(6)
	Log(Sales)	DLog(Sales)	Log(Employees)	Log(Wage)	Log(Labor Productivity)	Log(Investment per Employee)
Exporter	0.844*** (0.000)	0.123*** (0.000)	0.609*** (0.000)	0.192*** (0.000)	0.239*** (0.000)	0.215*** (0.003)
Foreign	1.260*** (0.000)	0.053* (0.098)	0.644*** (0.000)	0.422*** (0.000)	0.620*** (0.000)	0.141** (0.029)
Observations	22277	18479	24779	22421	22221	11339
R2	0.052	0.001	0.042	0.014	0.019	0.002
Fixed Effects	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year	Country-Sector-Year

*Note: The dependent variable is at the top of each column. Estimation is by OLS. P-values based on robust standard errors clustered by country-sector-year are in parentheses. Statistical significance is indicated by: * (10%), ** (5%), and *** (1%).*