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Not so different from non-traders: trade premia in the Middle East and North Africa

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Summary

This paper uses a unique, comparable firm-level dataset covering more than 100 developing economies to provide a novel set of stylised facts on firms engaging in international trade in either manufacturing or services, focusing on the Middle East and North Africa (MENA) region. We show that firms in MENA are more likely to export and/or import than their counterparts elsewhere. However, we do not find the expected positive and significant productivity premia: while MENA's larger exporters are also more productive, a large share of exporters – the comparatively low-volume ones – are no more productive than non-traders. We also confirm positive and significant productivity premia – the largest among the regions covered – for importing manufacturers. In contrast, we find no size or productivity premia for MENA firms that only sell their goods abroad. These patterns could be explained by the region's higher barriers to buying goods from abroad.

Keywords: International trade, firms, manufacturing, services, developing countries

JEL Classification Number: F14, F19, F23

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1 Introduction

It is firms – not economies – that compete in global markets (Altomonte and Békés, 2016). This seemingly straightforward observation lies at the centre of developments in both theoretical and empirical work on firms in international trade: while neoclassical theory predicts that economies with comparative advantages will engage in trade abroad, it is now widely accepted that heterogeneous firms engage internationally more selectively based on their productivity and the associated costs (Bernard et al., 2003; Melitz, 2003; Bernard et al., 2007).

This framework, in turn, fits well with widespread and longstanding evidence that exporters (see Wagner, 2007, 2012, for thorough reviews) as well as importers (Amiti and Konings, 2007; Kashara and Lapham, 2013; Vogel and Wagner, 2009, 2013, among others) tend to be more productive and larger than their non-trading counterparts (so-called size and productivity "premia").

The region of Middle East and North Africa (MENA) is often regarded as trading below its potential. Yet analysis of trade flows indicates that while trade levels are possibly below their potential, they are not particularly low. This is largely due to imports to the MENA economies, which import goods and services at an average of 57 per cent of GDP (Behar and Freund, 2011, and World Development Indicators).[1] Using gravity model estimates, Jaud and Freund (2015) found that despite the region's capacity and proximity to trading partners, exports of non-petroleum were as low as 64 per cent below expected values, while imports were as high as 22 per cent over expectations – a trend of under-exporting and over-importing.

Moreover, recent empirical work from the MENA region has shown that the profile of the region's traders is characterised by a large number of firms engaging in low-level trade, with a few solitary "superstars" facing few competitors (Behar and Freund, 2011). The work notes that, outside of these superstars, there is a lack of firms at the top end of the size distribution; Jaud and Freund succinctly characterise this situation, "…in MENA the largest exporter is alone at the top – Zidane without a team" (2015, p. 57). The lagging of the region's other exporters (the missing team) then points to additional and possibly distortive forces at play.

This paper contributes to this stream of research by exploring the factors underlying those patterns, including firm characteristics. To preview results, we confirm positive size premia for firms in the region that export as well as those that import. However, we do not find similarly consistent productivity premia: while MENA's larger exporters are also more productive, a large share of exporters – the comparatively low-volume ones – are no more productive than non-traders. That is, not all exporters are different from non-exporters. These findings emerge across manufacturing and services firms; MENA's exporting premia are low when compared with those from other regions. Lastly, we confirm positive productivity premia for importing manufacturers,[2] but we find no size or productivity premia for firms that only sell their goods abroad. MENA's high premia related to importing, when compared globally, also indicate that the region's higher barriers to buying goods from abroad may help explain these patterns.

Our contribution to the existing literature is two-fold. First, we use the Enterprise Surveys (ES) dataset – a unique, comparable firm-level dataset covering more than 100 developing economies, which contains information on both performance measures (sales, exports and

[1] Figures from WDI. Imports as a percentage of GDP. For Yemen and Djibouti the most recent year available is used: 2006 and 2007, respectively.

[2] As the data refer to imported inputs, only manufacturers are considered as importing.

imports) as well as firm characteristics, such as size, age and ownership. The latter are normally not available in customs data which are typically used in similar studies. To our knowledge, ours is the most comprehensive firm-level dataset in terms of the number of countries covered. The World Bank's Exporter Dynamics Database (EDD) covers 45 countries, of which 38 are developing ones (Fernandes et al., 2015).

Second, the data allow us to analyse trade patterns for both manufacturing and service sector firms; customs data focus on trade in goods only. Existing studies on trade and productivity in service firms typically cover only one developed country (see Wagner, 2012, for an overview). In contrast, we can do so for more than 100 developing economies. As the contribution of manufacturing to GDP continues to shrink in most economies, it is important to gain a better understanding of the service sector, including trade patterns it exhibits. Policy implications for service sector firms may differ from those for manufacturing sector firms.

The data we use do have two limitations compared with the data of the EDD. First, ours are cross-sectional in nature, and thus do not allow differentiation between first-time/one-time traders and continuous traders. Second, they are based on surveys and as a result do not necessarily capture all firms that engage in trade. However, as the Enterprise Surveys follow a uniform, strict methodology, we are confident that the data are representative and thus the findings are not specific to the particular sample we use but apply to the economy as a whole.

The remainder of the paper is organised as follows. Section 2 reviews the literature, framing the workhorse models to show that lower trading premia are suggestive of market distortions. The data show that this dynamic may be particularly prevalent in the MENA region. Section 3 describes the data and defines the concepts used in the analysis. Section 4 presents stylised facts about trade in MENA compared with other regions. Section 5 introduces the approach used in the econometric analysis and discusses the empirical results as well as robustness checks. Section 6 presents concluding remarks.

2 Literature review and generalised model

Our paper contributes to several strands in existing literature: exporter, importer and trading size and productivity premia. We review each of these below.

2.1 Exporter premia

Following early seminal works by Bernard and Jensen (1995, 1999), an extensive and diverse literature has found that firms that export tend to be larger and more productive. In fact, results reporting these so-called size and productivity premia are so pervasive that a small sub-genre of papers surveying this literature has emerged (for instance Tybout, 2003; López, 2005; Wagner, 2007, 2012; Greenaway and Kneller, 2007; Hayakawa et al., 2012). Underlying these results is a presumption that 'exporters are different' and that firms enter the export market by self-selection based on their productivity and size. Joining this mechanism has been the complementary learning-by-exporting mechanism, which argues that exporters gain knowledge and efficiency from exposure to foreign markets and practices. While some evidence of the learning-by-exporting mechanism has been found,[3] particularly using matching techniques (Wagner, 2015), the vast majority of evidence points to the role of selection of productive and large firms into exporting abroad.

The self-selection mechanism implies that firms must incur sunk costs to enter the export market, which only a select few – presumably larger and more productive firms – find advantageous to bear. The workhorse model by Melitz (2003) consequently assumes heterogeneous firms that can operate entirely domestically (*d*) or by also exporting (*x*). Firms each produce a separate good for which consumers have a constant elasticity of substitution (CES) demand, and they are presumed to be profit maximising and operating under monopolistic competition.

Importantly, the Melitz model links firm productivity and the arrangement of firms with those that trade only domestically and those that also engage in trade abroad. Specifically, firms receive a random productivity "draw" φ from a known Pareto distribution of marginal productivity.[4] This gives a cumulative distribution function that a firm's productivity is greater than a minimum value φ^* of:

$$F(\varphi) = \begin{cases} 1 - \left(\frac{\varphi}{\varphi^*}\right)^{-k}, \text{for } \varphi_i \geq \varphi^* \\ 0, \text{for } \varphi_i < \varphi^* \end{cases} \quad (1)$$

where *k* is a shape parameter, which at higher values indicates a more homogenous distribution of underlying firm productivity (Schröder and Sørensen, 2012).

Under the model, firms in a given sector face a sunk cost of entry[5] to the domestic market and will enter (or remain in operation) until expected profits equal or exceed these costs. If firms want to export, they face additional fixed cost (c_x) as well as the variable costs of trading abroad – so-called "iceberg" costs (v_x). Only firms with a sufficient level of productivity

[3] See, for instance, Van Biesebroeck (2005); De Loecker (2007); Fryges and Wagner (2008, 2010).
[4] The Melitz (2003) model is phrased in terms of marginal productivity, which is generally not measurable. For this reason, henceforth we will simply use "productivity" as is the convention.
[5] In the Melitz model, only a fixed cost of labour is used; as discussed below this has been extended to include other costs that vary with trading decisions, including specifically the cost of intermediates.

decide to start exporting, and so producing firms, *i*, are sorted into exporting and non-exporting groups by:

$$\varphi_i = \begin{cases} \varphi_{de}^* \leq \varphi_i < \varphi_x^*, \text{ non-exporter} \\ \varphi_i \geq \varphi_x^*, \text{ exporter} \end{cases} \quad (2)$$

where φ_{de}^* is the minimum level of productivity required for domestic entry, with the firms falling below this level dissuaded from entering the market or continuing operations; φ_x^* is the productivity threshold to begin exporting. In the most basic form, the exporter productivity (*LP)* and size premia can be considered as the additional expected value of each measure for exporters relative to non-exporters. That is, $\frac{E[LP_x]-E[LP_d]}{E[LP_d]}$ and $\frac{E[Size_x]-E[Size_d]}{E[Size_d]}$. As long as the expected productivity (size) of exporting firms is higher than non-exporting firms, we expect positive premia from exporting.

However, recent work has pointed out that the expectation of the exporter premia depends on both the underlying distribution and the relative costs of entry into the domestic market to the cost of entry into the export market, even within the Melitz model. That is, the cumulative function given by: $\left(\frac{\varphi_{de}^*}{\varphi_x^*}\right)^{-k} - 1$.[6]

Geishecker et al. (2016) point out that this expression yields several interesting testable implications. First, the productivity distribution matters: a particularly dispersed distribution (lower *k*) implies greater premia. The more bunched the distribution, the lower the expected premia. Similarly, relative to the threshold value of entry, lower fixed costs to start exporting also imply lower premia. Lastly, while more elastic demand yields higher size premia, the effect on productivity premia is ambiguous.

Notice as well that the circumstances of the firm matter. Schröder and Sørensen (2012) note that along the productivity distribution there are firms that operate at or very near the export threshold, such that their expected profit from exporting zeroes out. Thus, for firms at this point in the distribution, there is a discontinuous drop, and at this point, firms that are "just exporting" will have lower productivity (though not size) compared with those firms that are "only-just" not exporting. The presence of such discontinuity (and the implied clustering of firms around the threshold) then helps explain those occurrences of non-existent or even negative exporting premia (among others they cite, for example, Bernard and Wagner, 1997; Girma et al., 2004; Girma et al., 2005; and Castellani and Zanfei, 2007).

Similarly, a differentiation of firms (within a sector) in terms of their costs will affect observed premia. Such would be the case in the presence of selectively applied measures or positions that alter the cost of exporting for some (or similarly the breakout cost of entry). Selective access to cost-reducing mechanisms – including subsidies, credit lines, privileged

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[6] Geishecker et al. (2016) more formally derive expressions for productivity premia: $\frac{\left(\frac{\varphi_{de}^*}{\varphi_x^*}\right)^{-k}-1}{\left(\frac{\varphi_{de}^*}{\varphi_x^*}\right)^{-k+1}-1} - 1$ and the size premia of exporters: $(1+\tau^{1-\sigma})\frac{\left(\frac{\varphi_{de}^*}{\varphi_x^*}\right)^{-k}-1}{\left(\frac{\varphi_{de}^*}{\varphi_x^*}\right)^{-k+(\sigma-1)}-1} - 1$, where τ is the variable cost of exporting and σ is the elasticity of substitution between goods in a basket within a given market or sector. They have made their full derivations available here: http://link.springer.com/article/10.1007/s10290-016-0266-9?view=classic.

access to licensing and resources, or export promotion – can all potentially distort the relative threshold for some firms vis-à-vis others.

2.2 Importer premia

Increasingly there has been a focus on the role of imports and firms' expected premia from importing (Amiti and Konings, 2007; Kashara and Lapham, 2013; Muûls and Pisu, 2009; Vogel and Wagner, 2009, 2013; Seker, 2012; Aristei et al., 2013; Amador and di Mauro, 2015; and Feng et al., 2016). Paralleling the sunk and variable iceberg costs of exporting, firms also encounter fixed and transactional costs by choosing to import their intermediates. Moreover, the variable and fixed cost of exporting (v_x, f_x) and importing (v_m, f_m) are often complementary, with certain costs overlapping between the two activities (Kashara and Lapham, 2013).[7] Given a "complementary" parameter ζ<1, the cost for both activities in each period is $\zeta[f_m + v_m + f_x + v_x]$, where a lower parameter value indicates greater savings through complementarity (Kashara and Lapham, 2013).

This gives us four types of trading activity for firms: they can be non-traders (NT), import only (MO), export only (XO) or two-way traders (TW). With variable (v_x, v_m) as well as fixed (f_x, f_m) costs for exporting and importing – where the associated fixed cost for non-trading is simply f_{de}, the cost structure can be expressed by:

$$F + V = \begin{cases} f_{de}, \text{ non-trader} \\ f_{de} + f_x + v_x, \text{ export only} \\ f_{de} + f_m + v_m, \text{ import only} \\ f_{de} + \zeta[f_m + v_m + f_x + v_x], \text{ two-way traders} \end{cases} \quad (3)$$

The threshold of domestic operation then necessarily falls below the required productivity level to begin either importing, exporting, or both, so that $\varphi^*_{de} < \varphi^*_{xo}, \varphi^*_{mo}, \varphi^*_{tw}$. The relative cost of importing and exporting determines the inequality between threshold values for importing and exporting only; and only at exceptionally high levels of complementarity (low ζ) will the threshold value for two-way trading fall below both φ^*_{xo} and , φ^*_{mo}. Empirical analysis of ζ has found values of around 0.8, indicating a trend toward $\varphi^*_{de} < \varphi^*_{xo}, \varphi^*_{mo} < \varphi^*_{tw}$.

As in the case of exporter premia, the literature on importer premia yields certain expectations. First, similar to exporters, importers also face sunk and variable costs to bring in foreign inputs; both lend to the expectation that larger and more productive firms will be the ones that choose to import. The relative (fixed and variable) costs of importing versus those of exporting will also indicate the comparative size of the premia for firms that only import or only export. Though analysis elsewhere (see Seker 2012, for example) has found that export-only premia tend to be higher than import-only ones, this is due to the higher sunk costs often associated with the former; in economies with notably higher import costs, the relative premia of importers is expected to be higher. Lastly, firms that export often find it advantageous – through dedicating time and resources to navigate both importing and exporting – to engage in two-way trading. Omitting importing information may thus overstate

[7] Kashara and Lapham (2013), for instance, use the example of a single export-import office in a corporate structure.

export premia by overlooking this complementarity. We take both flows into account below by including importing status as a co-variate, and by considering firms by their trading type.[8]

[8] We can take both of these into account for manufacturing only; information on imports is not available for services.

3 Data

Our main data source is the EBRD-EIB-WBG Middle East and North Africa (MENA) Enterprise Survey (ES), which covered eight economies — Djibouti, Egypt, Jordan, Lebanon, Morocco, Tunisia, the West Bank and Gaza, and Yemen. We collectively refer to them in the paper as the MENA region. In all, 6,083 interviews were completed in 2013 and 2014, amid considerable social and economic upheaval, with the questions on firm performance variables using fiscal year 2012 as a reference. The sample includes 3,443 manufacturing and 2,640 service sector firms.

Additional comparable data for developing economies across five regions come from the World Bank's ES, though they were implemented at different times. They are summarised in Table A.0 and include 37 economies in Sub-Saharan Africa (AFR), 14 economies in East Asia Pacific (EAP), 20 economies in Eastern Europe and Central Asia (ECA), 24 economies in Latin America and the Caribbean (LAC), and 7 economies in South Asia (SAR).[9] This sample includes 34,109 manufacturing and 26,042 service sector firms. Including MENA ES, the complete sample thus includes 37,552 manufacturing and 28,682 service sector firms.

The ES data provide a representative sample of the formal private sector firms with at least five employees, operating in manufacturing or services sectors, and excluding firms with 100 per cent state ownership. The interviews with business owners and top managers take place face-to-face, in the local language. The ES use simple random sampling, stratified by firm size, sector of activity, and regional location within each economy. More specifically, the key features of the micro data underlying the analysis are:

Unit of observation:	Establishment
Size threshold:	ES covers formal private sector firms with at least 5 employees. The firm size strata are 5-19 (small), 20-99 (medium) and 100+ employees (large). Since the majority of firms are small and medium-sized in most economies, ES oversample large firms.
Sector coverage:	Manufacturing and services. Services include retail, wholesale, hospitality, repair, construction, transport, and information and communication technology (ICT). Not included in the survey are agriculture, fishing and extractive industries, as well as utilities and some services sectors, such as financial services, education and health care. This corresponds to firms classified with ISIC Rev 3.1 codes 15-37, 45, 50-52, 55, 60-64 and 72. In some larger economies (such as Egypt, Russia and Turkey) the survey design allows stratification by some of the sectors with the largest contribution to employment and value added.

Stratification ensures that there are enough observations for robust analysis within each stratum. The survey design, comprehensive sample frames and sampling weights used in the ES together ensure that the surveys are statistically representative of the private sector in each economy. Accordingly, all subsequent analysis makes use of this complex design information by using Stata's *svy* package. To ensure that each economy is given equal consideration in

[9] We omit high-income (OECD and non-OECD) comparators from our analysis because the ES covers mainly developing economies and has only sparse coverage in those groups. The averages of the available high-income comparators data would thus not be representative.

regional and other averages, sampling weights within each economy are re-scaled to sum to one, as is common practice.

We define exporters as firms that directly export at least 10 per cent of their sales. We further differentiate exporting firms by their export sales volume into "superstar" exporters (the top 5 per cent of firms), big player exporters (firms between the 50th and 94th percentile) and small player exporters (firms below the 50th percentile) by economy, separately for manufacturing and service sectors.[10]

For manufacturing firms, the ES also contains data on input imports, which allows us to classify firms into non-traders, exporters only, input importers only and two-way traders. Importers are defined as firms that directly import at least 10 per cent of their inputs and two-way traders are firms that are both importers and exporters (using the definitions above).

Besides sector, size and region within a country, the ES includes data on several firm-characteristics. We focus on firm age and ownership, which are covered in all ES economies. Young firms are defined as those that are five years old or younger, while foreign-owned firms are defined as those with at least 10 per cent foreign ownership.

[10] Jaud and Freund (2015) define superstars as the top 1 per cent. Since that report uses administrative data and not a sample, a more conservative definition is used here to ensure sufficient coverage. Their approach necessarily includes all firms at the frontier and so the observed effect they find is higher than presented here.

4 Basic facts about trade in the MENA region

In this section we highlight the key stylised facts emerging from our analysis using Enterprise Surveys data across regions, industries, firm size and age, with a focus on the MENA region.

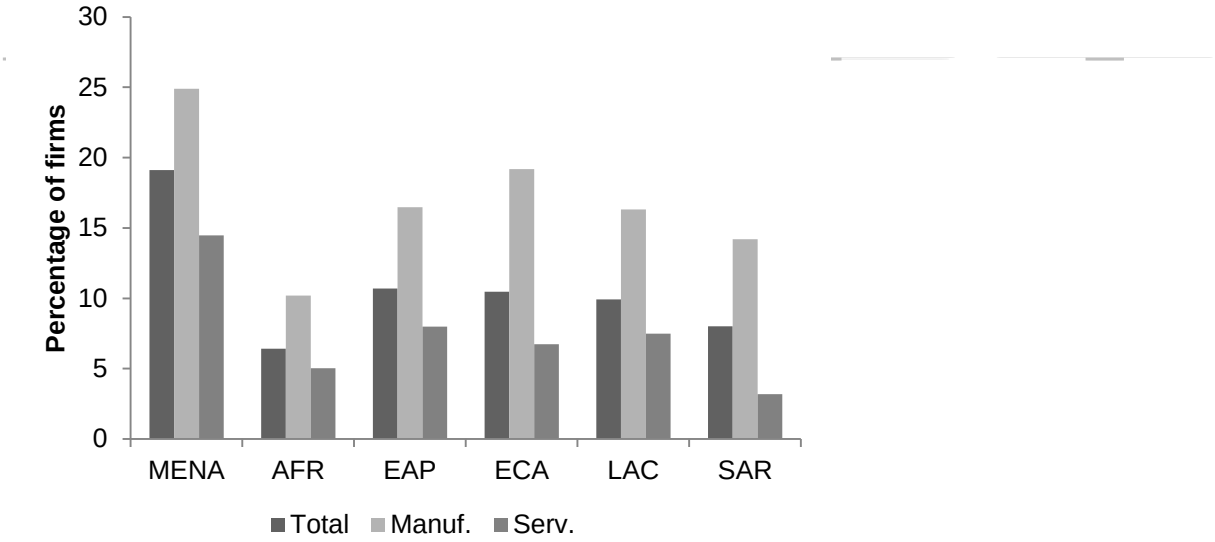
4.1 High proportion of exporting firms

The first stylised fact emerging from the ES data is the high proportion of firms that directly export at least 10 per cent of their sales in MENA compared with other regions, in both manufacturing and services (Chart 1). The proportion of MENA exporters ranges from just below 15 per cent in services to almost a quarter in manufacturing. By contrast, the proportion of exporters in other regions ranges from at most 8 per cent in services to just shy of 20 per cent in manufacturing.

A closer look at the data indicates that firms with at least 10 per cent foreign ownership are more likely to be direct exporters in all regions, in both manufacturing and service sectors. In MENA, 49 per cent of all foreign-owned firms were direct exporters, trailing only the proportion of foreign-owned direct exporters in ECA (51 per cent).

Taken at face value, the first key finding appears to contradict the standard narrative of the MENA region trading below its potential. However, it is necessary to look at additional trade variables before reaching that conclusion.

Chart 1: Proportion of exporters across regions, by industry



Source: Enterprise Surveys.

Note: Manuf. = manufacturing. Serv. = services. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia.

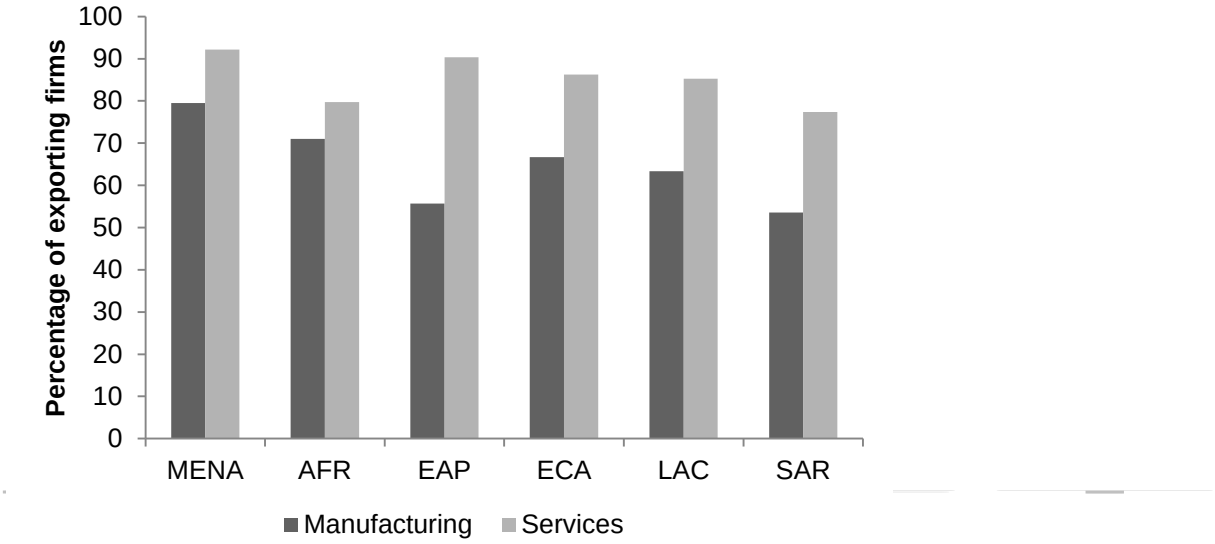
4.2 High proportion of exporting SMEs

The proportion of exporting firms is higher in MENA than elsewhere, but the macro-level finding of under-exporting could be explained by the second stylised fact. The proportion of

SMEs[11] among exporting firms is higher in MENA than in other regions: almost 80 per cent in manufacturing and more than 90 per cent in services sector, compared with about 62 and 84 per cent, respectively, elsewhere. Chart 2 also shows that differences are larger in manufacturing than in services, where the share of exporting SMEs is on average much higher across the ES regions.

The ES data do not allow us to track firms annually to check whether they export on a one-off, irregular or regular basis. However, they do allow us to classify direct exporters according to their export volume, which is what we do next.

Chart 2: Proportion of exporting firms that are SMEs across regions, by industry



Source: Enterprise Surveys.

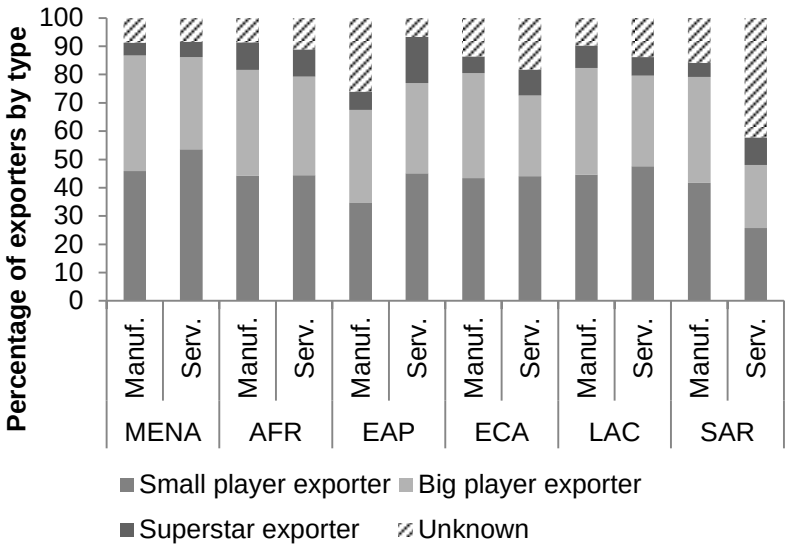
Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia.

4.3 Many small player exporters, but few superstar exporters

A striking picture emerges by differentiating exporting firms by their export sales volume into superstar, big player and small player exporters. The MENA region stands out in two ways: it contains both the highest share of small player exporters (about half), as well as the lowest share of superstar exporters (about 5 per cent), in both manufacturing and services (Chart 3).

[11] SMEs are defined as firms with 5-99 employees.

Chart 3: Proportion of exporting firms across regions, by type and industry



Source: Enterprise Surveys.

Note: Manuf. = manufacturing. Serv. = services. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. "Superstar" exporters are the top 5 per cent of firms according to export sales volume, big player exporters are firms between the 50th and 94th percentile according to their export sales volume, and small player exporters are firms below the 50th percentile according to export sales volume. They are defined at the economy level, separately for manufacturing and service sectors. Unknown indicates that the information on sales, which would allow the calculation of export volume, was not available.

Moreover, Table 1 shows that not only does MENA have the lowest share of superstar exporters among the regions covered in the ES, its superstar and small player exporters (with the exception of services) also have the lowest median export volumes. Manufacturing small player exporters in all other regions have on average at least 125 per cent higher median export volumes than their MENA counterparts. Among small player service exporters, MENA firms have on average higher median export volumes than firms in ECA and SAR.

Table 1: Median export volumes by region, industry and exporter type (in 2012 US$)

	Manufacturing			Services		
Region	Superstar	Big player	Small player	Superstar	Big player	Small player
MENA	30,980,404	3,212,753	94,175	5,722,864	941,487	192,252
AFR	36,035,964	5,539,549	1,245,687	8,662,539	2,012,608	481,074
EAP	40,890,620	3,475,189	211,959	4,737,056	1,751,510	260,723
ECA	33,204,138	1,855,087	231,351	9,116,933	610,790	164,501
LAC	50,135,320	3,691,289	314,776	7,950,880	1,853,002	568,123
SAR	40,238,984	5,391,701	269,846	6,025,807	1,690,682	160,135

Source: Enterprise Surveys.

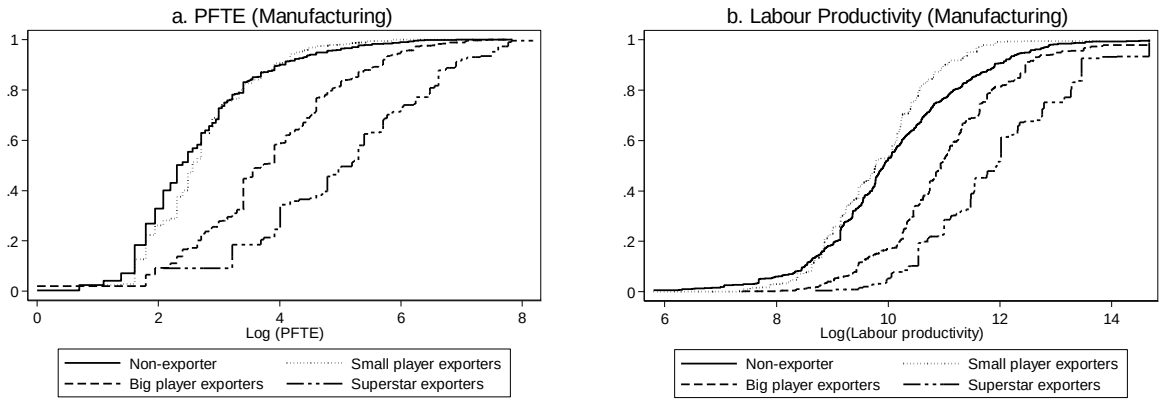
Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. Exporters only. Export volumes winsorised at 1 per cent. "Superstar" exporters are the top 5 per cent of firms by their export sales volume, big player exporters are firms between the 50th and 94th percentile by their export sales volume, and small player exporters are firms below the 50th percentile by their export sales volume. Median export volumes shown in the table are simple averages of weighted median export volumes of the countries in each region.

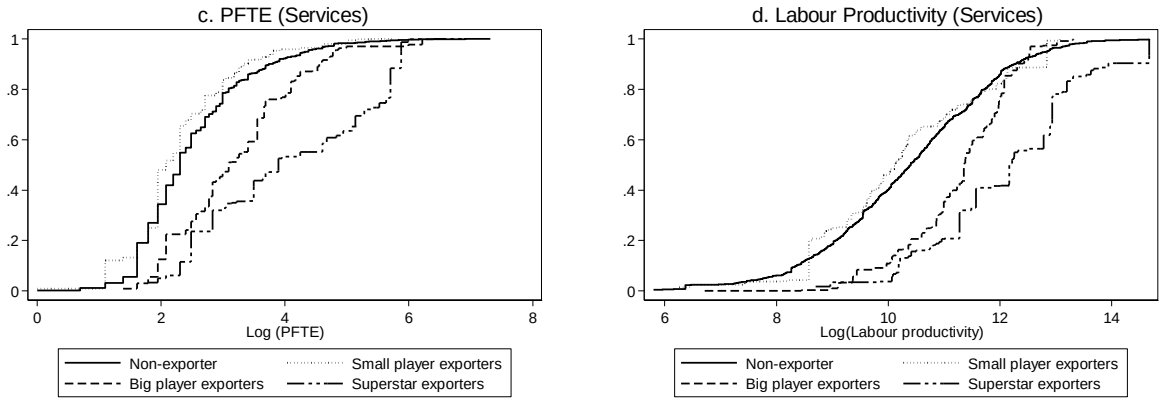
4.4 Not all exporters in MENA are different from non-exporters

Plenty of MENA firms export, but they tend to be SMEs with low median export volumes. Are these exporters, then, also larger and more productive than their non-exporting counterparts? Charts A1.a and A1.b show that manufacturing exporters stochastically dominate non-exporters over distributions of both firm size and labour productivity. This is consistent with the "exporters are different" finding, including recent work by Powell and Wagner (2014), who use quantile regressions to find that exporter premia are exhibited at all parts of the productivity (size) distribution.

But this relationship falls apart when differentiating exporting firms by their export sales volume (charts 4.a and 4.b). As expected, in both distributions, superstar exporters dominate big player exporters, which in turn dominate both small player exporters and non-exporters. However, in both distributions small player exporters are indistinguishable from non-exporters (and in fact are dominated in the right part of the labour productivity). This points to possible distortions through the presence of small, less productive exporters.

Chart 4: Cumulative distribution functions of size and labour productivity by exporter type and industry, MENA





Source: Enterprise Surveys.

Note: "Superstar" exporters (SS) are the top 5 per cent of firms according to export sales volume, big player exporters (BP) are firms between the 50th and 94th percentile and small player exporters (SP) are firms below the 50th percentile according to their export sales volume. They are defined at the country level, separately for manufacturing and service sectors. Labour productivity is measured in 2012 USD. PFTE = permanent, full-time equivalent employees (size); both PFTE and labour productivity are expressed in logs.

So why these patterns? One potential explanation is the nature of MENA's trading firms. Specifically, exporting is highly skewed towards a small number of firms. By trade volume, the region's superstar exporters account for over half of the share of manufacturing exports – and on average the single top manufacturer accounts for over 11 per cent (Freund and Pierola, 2015).[12] What is more, this small handful of firms accounts for a great amount of the product diversity and are the ones that are able to reach more and further destinations; the remaining exporters largely only export one or two products and often to very near destinations (Jaud and Freund, 2015). Yet those same "superstars" when competing abroad fail to have the market power to move much comparative advantage, as measured by firms' ability to adapt their prices to exchange rate movements (so-called pricing to market elasticity) (Jaud and Freund, 2015; Asprilla et al., 2015) . This is consistent with our finding of low median export volumes of MENA's superstar exporters, compared with export volumes of superstar exporters in other regions.

The relative abundance of SME exporters with low median export volumes in the MENA economies may be linked to the subsidisation and the selective lowering of export costs offered primarily to SMEs by export promotion agencies.[13] Such strategies that focus on SME-based exporting may draw firms into foreign markets through subsidised cost reductions, rather than the underlying efficiency of those firms.

The relative abundance of low-volume exporters is also consistent with potentially overvalued exchange rates, which may dampen exports. Pegged exchange rates, such as those in Lebanon, Jordan and Morocco, as well as "crawl-like" ones in Egypt and Tunisia may limit export volume and hurt exporters' international competitiveness if they keep tradeable goods more expensive abroad (International Monetary Fund, 2014). If some exporting firms –

[12] Averages in Freund and Pierola (2015) are for Egypt, Iran, Jordan, Lebanon, Morocco and Yemen. They define superstar exporters as the top 1 per cent of exporters by their export sales volume, in contrast to the top 5 per cent used in this paper.

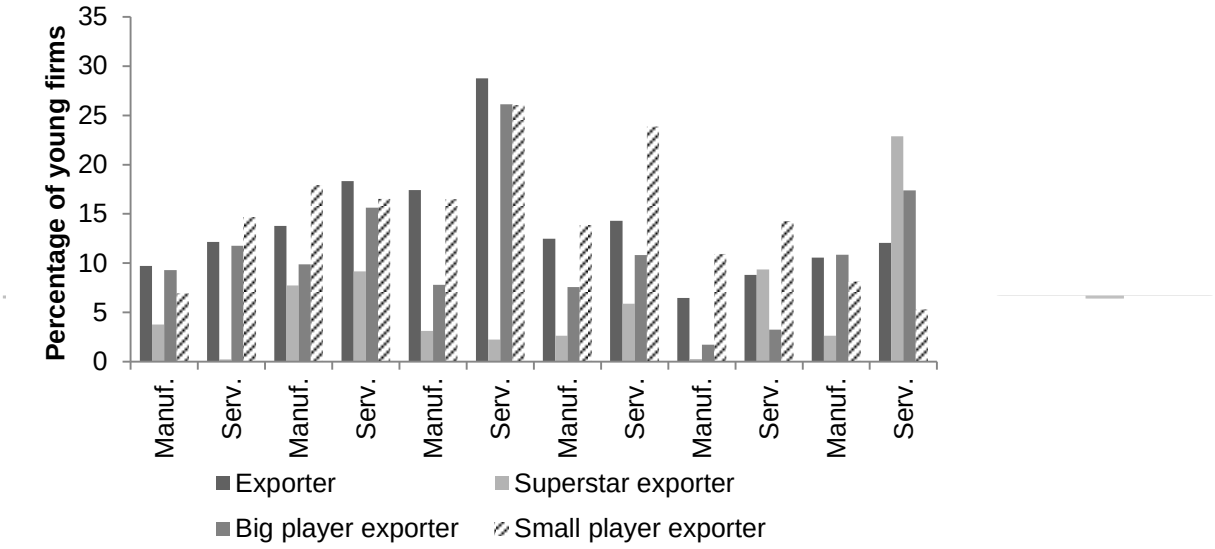
[13] Examples include the Jordan Enterprise Development Corporation and the Investment Development Authority of Lebanon (IDAL).

particularly smaller ones – are disadvantaged in international markets by overvalued exchange rates rather than their underlying productive capacity, they may similarly lack incentives to scale up their operations.

4.5 Low proportion of young exporters

In addition to being mostly SMEs, most exporters are more than five years old, in every region. However, the share of young exporting firms (those that are at most five years old) is among the lowest in the MENA region (under 10 per cent), lagging only behind LAC (just below 9 per cent) (Chart 5). Given that young firms are often also small firms, one would expect the share of young firms to be higher among the small player exporters. This is in general true, with the exception of SAR in both manufacturing and services and MENA in manufacturing. Less than 7 per cent of small player manufacturing exporters in MENA were young firms, the lowest share among the regions covered in ES.

Chart 5: Proportion of young firms among exporters by region, industry and exporter type



Source: Enterprise Surveys.

Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. "Superstar" exporters are the top 5 per cent of firms according to their export sales volume, big player exporters are firms between the 50th and 94th percentile according to export sales volume, and small player exporters are firms below the 50th percentile according to their export sales volume. They are defined at the economy level, separately for manufacturing and service sectors.

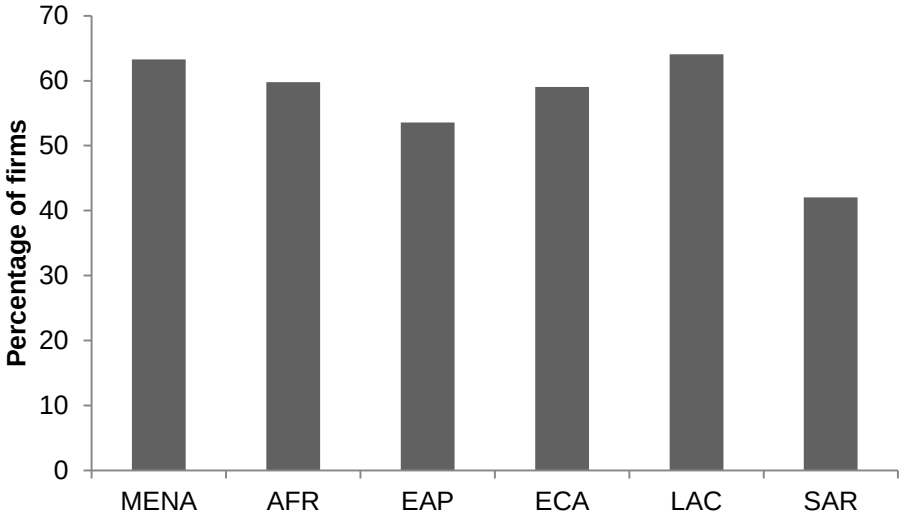
When barriers to entry to exporting are low, they allow for the efficient entry of new and productive exporters into the market, as well as the exit of less competitive firms. Greater barriers to entry would also be consistent with a low proportion of young exporters.

4.6 Manufacturers are heavily reliant on imports

After analysing the export side of trade, we now turn to importers. The sixth stylised fact is the even higher proportion of manufacturing firms that import at least 10 per cent of their inputs across the ES regions (Chart 6). Manufacturers in MENA stand out as being

particularly reliant on imports, lagging only behind LAC, with both averages exceeding 60 per cent. These proportions are somewhat above those in AFR and ECA, and are well above averages for SAR (42 per cent) and EAP (54 per cent). Analysis of trade in the MENA region has noted that while trade levels are possibly below their potential, they are not particularly low; in fact, these levels seem to be bolstered by imports to the MENA economies included in our analysis, which import goods and services at an average of 57 per cent of GDP.[14]

Chart 6: Proportion of input importers across regions, manufacturing



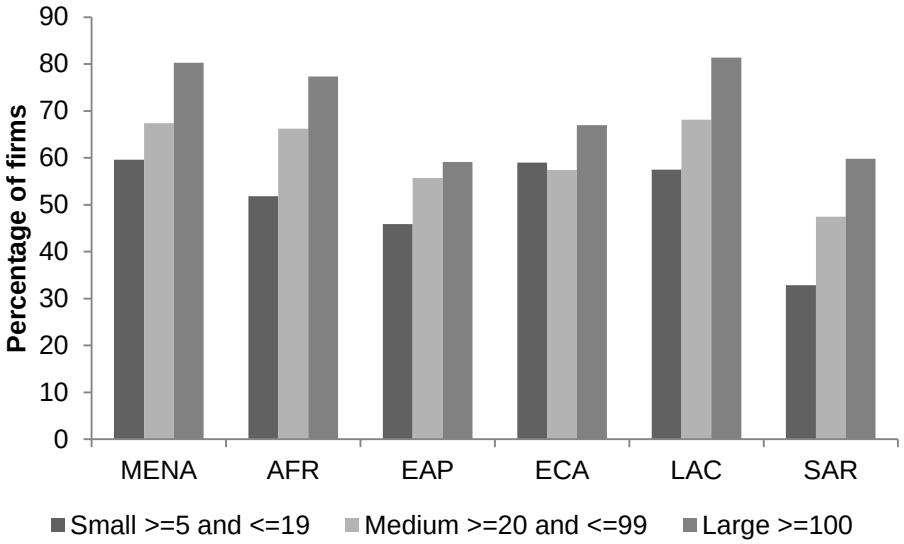
Source: Enterprise Surveys.

Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia.

A more granular analysis of the data shows that while the majority of manufacturing firms rely on imported inputs, this is particularly the case for large manufacturers (Chart 7) and manufacturers with at least a 10 per cent foreign ownership stake. With the exception of ECA, the share of input importers is higher for firms that have been in business for at least five years. Imports of foreign inputs can give firms access to economies of scale or efficiency enhancing technology (EBRD, EIB, World Bank, 2016), often associated with product upgrading and greater R&D intensity (Feng et al., 2016). However, higher costs of importing and selective access to goods from foreign markets may distort the observed premia, possibly in favour of the largest firms and those with foreign ownership.

[14] See Behar and Freund (2011). Figures from WDI. Imports as a percentage of GDP. For Yemen and Djibouti the most recent year available is used: 2006 and 2007, respectively.

Chart 7: Proportion of input importers across regions, manufacturing, by firm size



Source: Enterprise Surveys.

Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia.

4.7 High proportion of two-way traders

We also consider firms by their trading activity: noting importers generally, but also "two-way" traders – those that both import and export – as well as those that export or import only. Again, the MENA region stands out (Table 2). While similar proportions of firms in the region abstain from trade altogether (though this is notably below average in EAP, ECA and SAR) and the case is similar for firms that export or import only, MENA maintains the highest average proportion of two-way traders.

Table 2: Trading type by region

	Trader type (%)			
Region	Non-trader	Two-way trader	Export only	Import only
MENA	28.0	20.6	5.1	42.7
AFR	28.0	8.5	2.9	51.3
EAP	36.0	11.7	4.5	41.9
ECA	33.7	14.0	4.9	45.0
LAC	26.6	13.0	4.6	51.1
SAR	41.0	9.8	5.6	32.2

Source: Enterprise Surveys.

Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. Exporters are firms that directly export at least 10 per cent of their sales. Importers are firms that directly import at least 10 per cent of their inputs. Two-way traders are firms that are both exporters and importers. Non-traders are firms that are neither exporters nor exporters.

On the face of it, this requires additional explanation. While manufacturers in the MENA ES economies are comparatively intensive importers, the region maintains substantial restrictions in the form of higher tariffs and non-tariff restrictions. Jaud and Freund (2015) directly attribute unrealised growth to these policies: "Closing MENA markets to competition with high tariffs and restrictive non-tariff measures (NTMs) has not helped domestic exporters grow." (page XV). In fact, tariff rates vary substantially within the region (Table 3), as does the average use of foreign inputs and the time to clear customs. Average tariff rates are highest in Djibouti and Tunisia, economies where manufacturers use foreign inputs at comparatively high rates (63 and 55 per cent respectively), though in Tunisia the offshore sector's low-tariff access to inputs and well-documented tariff evasion have played a role.[15] Moreover, waiting times at customs for manufacturers importing inputs directly are roughly on par with peer economies.[16] In addition, while costs to import are also comparable, they are generally more expensive than those to export.[17]

Table 3: Restrictions on imports from abroad vary substantially

	Average manufacturing tariff rate (2008-12)		% of inputs that are of foreign origin	De facto days to clear imports through customs	De jure time to import (days)	Cost to import (US$ per container)
	Intermediates	Raw materials				
Djibouti	3.6	3.0	63.3	5.2	18	911
Egypt	4.5	2.4	28.8	9.2	15	755
Jordan	1.9	7.6	42.3	5.3	15	1,335
Lebanon	n.a.	n.a.	51.6	9.7	30	1,365
Morocco	11.6	19.9	47.7	7.6	15	950
Tunisia	11.5	15.4	55.3	7.4	17	858
West Bank and Gaza	n.a.	n.a.	56.6	17.0	38	1,295
Yemen	3.2	6.1	26.5	8.0	25	1,623
Lower-middle-income	4.0	5.8	37.0	13.1	33	669
Upper-middle-income	4.2	6.4	34.9	9.3	21	762

Sources: Authors' calculations based on UNCTAD Trade Analysis Information System (TRAINS); Enterprise Surveys, the World Bank's *Doing Business* 2013 report.

Note: n.a.= not available.

Given this combination of factors, it is somewhat surprising that manufacturers in MENA are so import-reliant. This reliance may translate into higher input costs for the MENA region's manufacturing, eroding the productivity gains. This can be a constraint on the growth of efficient firms, and may result in low value-added production. Jaud and Freund (2015) note: "In addition, even if individual firms are able to source high-quality inputs from abroad, transport costs and the increasing prevalence of 'just-in-time' production imply that a lack of high-quality locally available inputs is likely to hinder the ability of even the most talented firms to succeed." (page 35). While the lack of local, quality inputs may limit the expansion of efficient firms, the higher cost of importing may also then render the choice to begin importing only advantageous to those firms that also enter the export market. This choice is

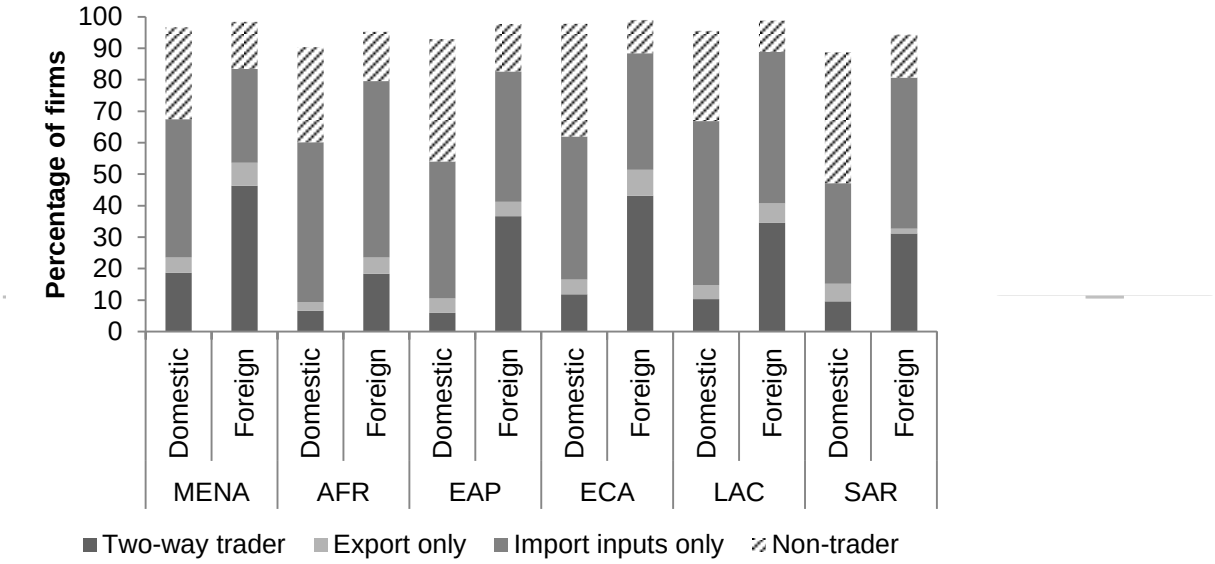
[15] World Bank (2014). According to the ES data, 96 per cent of these so-called offshore firms import inputs, compared with 70 per cent of comparators. Offshore firms use an average of 75 per cent foreign inputs, compared with 50 per cent for other Tunisian firms in the ES.
[16] Note that West Bank and Gaza do not control their borders and customs themselves.
[17] See EBRD, EIB, World Bank (2016).

particularly salient if the complementarity of being able to navigate both import and export costs is high; such "cost-saving" manoeuvering would likely be readily available to firms with selective access to those markets.

4.8 Low proportion of foreign-owned traders

Foreign ownership can give firms access to technology, product upgrading and investment, often incorporating firms into global value chains (EBRD, EIB, World Bank, 2016; Feng et al., 2016). Indeed, foreign-owned manufacturers are more likely to be two-way traders in all regions. In MENA, for example, almost half of manufacturers with at least 10 per cent foreign ownership stake engage in two-way trade, compared with less than a fifth of their domestic counterparts (Chart 8). Domestic MENA firms, however, are much more likely to import inputs only than domestic firms in other regions. This may reflect a lack of integration into such value chains, particularly the high value-added ones.

Chart 8: Trader type by ownership and region



Source: Enterprise Surveys.

Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. Foreign-owned firms are those with at least 10 per cent foreign ownership.

5 Empirical analysis

5.1 Estimation model

As we note above, we expect positive and significant trade premia for both exporting and importing. However, if trading costs are high or differ by firms, we expect to see premia also varying notably by firm type; similarly, we expect to see smaller premia if many non-trading firms are close to the threshold for entering trading markets as well as if many trading firms are just over those productivity and size thresholds. To address this, we differentiate firms by their export sales volume. Likewise, to see if import markets have similar premia, we consider firms' import status, including when firms are two-way traders.

Following most studies on trading premia, our baseline estimations for both productivity and size premia are given by:

$$lnLP_{it} = \alpha + \beta_{T,it}\, TRADE + \beta'_{it}\, CONTROLS' + \varepsilon_{it} \quad (4a)$$

$$lnSize_{it} = \alpha + \beta_{T,it} TRADE + \beta'_{it}\, CONTROLS' + \varepsilon_{it} \quad (4b)$$

where TRADE is a dummy equal to 1 if a firm exports (x) or imports (m) and 0 otherwise; the corresponding trade premia are given by $exp(\beta_x - 1) * 100$ and $exp(\beta_m - 1) * 100$, respectively. Following convention (see Wagner 2007, 2012 for instance), CONTROLS includes the number of full-time, permanent employees (when labour productivity, LP, is the outcome variable) and its square. When size is the outcome variable, we include LP as a co-variate. Alternatively, following others, we include measures of labour cost per worker, capital replacement cost per worker and, as we include material costs in the model, an estimate of material costs per worker.[18] We also include a control for foreign ownership (of at least 10 per cent) as several studies have pointed to multinational control as important (Girma et al., 2004; Girma et al., 2005; Castellani and Zanfei, 2007) and, following the basic facts in the previous section, for firm age. For manufacturing firms we include a control for importer status in the estimation of exporter premia. All estimations include economy-year and sector fixed effects. To minimise the impact of outliers, we winsorise LP at 1 per cent.

To differentiate by exporter type, we separate out dummies for small player (SP), big player (BP) and superstar (SS) exporters:

$$lnLP_{it} = \alpha + \beta_{SP,it} SP + \beta_{BP,it} BP + \beta_{SS,it} SS + \beta'_{it}\, CONTROLS' + \varepsilon_{it} \quad (5a)$$

$$lnSize_{it} = \alpha + \beta_{SP,it} SP + \beta_{BP,it} BP + \beta_{SS,it} SS + \beta'_{it}\, CONTROLS' + \varepsilon_{it} \quad (5b)$$

Similarly, as we are also concerned about the joint premia for firms that are two-way traders, we adopt a common estimation (see Seker, 2012; Aristei et al., 2015) given by:

$$lnLP_{it} = \alpha + \beta_{tw,it} TW + \beta_{xo,it}\, XO + \beta_{mo,it}\, MO + \beta'_{it}\, CONTROLS' + \varepsilon_{it} \quad (6a)$$

$$lnSIZE_{it} = \alpha + \beta_{tw,it}\, TW + \beta_{xo,it}\, XO + \beta_{mo,it}\, MO + \beta'_{it}\, CONTROLS' + \varepsilon_{it} \quad (6b)$$

where TW (two-way traders) indicates firms that both export and import, while XO and MO are firms that export and import only, respectively.

[18] Capital replacement cost and material costs per worker are available for manufacturing firms only.

5.2 Exporter size and productivity premia

As expected, manufacturing exporters in the MENA region are consistently and significantly larger than non-exporters (Table A.1). This holds across several base specifications, including controls for foreign ownership, firm age, as well as labour productivity, average total labour costs and importer status. A different pattern emerges in terms of labour productivity: while coefficients on exporting status are consistently positive, they are not significant in any of our base specifications. In services, MENA exporter size and labour productivity premia are not statistically significant (Table A.2).

Tables 4 and 5 provide an overview of the exponentiated coefficient values corresponding to each specification in tables A.1 and A.2 for MENA as well as other ES regions. Table 4 shows that in manufacturing, MENA's exporters on average employ 60-80 per cent more permanent, full-time employees than MENA's non-exporters. However, MENA's manufacturing size premia are dominated by those for all other regions. That is, while it is true that in manufacturing MENA's exporters are larger on average, these premia are smaller than elsewhere in the world. In contrast to MENA, in most other regions, manufacturing exporters have on average significantly higher labour productivity than non-exporters. However, even if MENA's labour productivity premia were statistically significant, they would still be smaller than in other regions.

This sets MENA manufacturers apart from manufacturers in other regions and may provide evidence of many "near-threshold" traders and non-traders. That is, several exporters that are operating only marginally above threshold values and those non-exporters, operating just below the same threshold. For some reason, quite a few firms that would be expected to trade are not doing so, while ones that would be expected to only operate domestically are also trading.

Exporter size and labour productivity premia are not robustly positive and significant in other regions either (Table 5). Only service exporters in SAR exhibit positive and statistically significant size and labour productivity premia (with the exception of specification in column (7)). AFR and EAP service exporters are on average larger than non-exporters, while LAC service exporters tend to have on average higher labour productivity.

Overall, exporter size premia in services are lower than in manufacturing. For labour productivity premia, there are differences across regions: in SAR, they are higher for service exporters than manufacturing exporters, while elsewhere they are either not significant or dependent on the specification used.

5.3 Exporter size and productivity premia by exporter type

A more nuanced picture comes into focus when we separate exporting firms into superstar exporters, big player exporters, and small player exporters. MENA's superstar exporters show size and productivity premia that consistently have large magnitudes and are significant and positive, both in manufacturing (Table A.3) and services (Table A.4). What is more, the magnitudes of these premia are comparable to other regions (Tables 6 and 7). In terms of size, MENA's superstar service exporters' premia are dominated only by those seen in LAC. In terms of labour productivity, superstar manufacturing exporters in EAP exhibit premia several times higher than those of their counterparts in other regions, while ECA dominates among superstar service exporters.

MENA's big player exporters also show consistently high and statistically significant size and labour productivity premia, both in manufacturing and services. However, for the most part, they are in the bottom half of the regional rankings. Big player exporters in

manufacturing are consistently dominated in terms of their size premia, when compared with other regions; in services, they fare somewhat better – they lag behind SAR's, but are better than their counterparts in ECA and LAC.

MENA's small player exporters, by contrast, are either statistically indistinguishable from non-exporters in terms of their size and labour productivity, or – in the case of manufacturing – statistically significantly *less* productive than firms that do not export. This finding is not unique to MENA's small player manufacturing exporters; it applies to their counterparts in AFR and ECA, too. However, those do benefit at least from a positive and significant size premia, while MENA's do not. This provides evidence of clustering with just-over-threshold exporters virtually the same size as non-exporters. That is, there are non-trading firms whose size is very close to what we would expect from exporters. However, there are also several trading firms whose size would not be typical of what we expect to see in firms selling abroad.

Table 4: Estimated exporter premia by region, manufacturing

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	Log (PFTE)				Log (LP)				
MENA	78.2***	67.6***	75.5***	57.3***	11.8	9.5	8.9	13.6	1.6
AFR	190.8***	133.9***	145.7***	124.7***	41.1**	17.3	16.8	22.8	43.0**
EAP	251.2***	192.0***	143.2***	149.1***	56.2***	40.2**	46.7**	29.1	43.8**
ECA	147.6***	122.2***	114.0***	127.9***	23.8**	22.6**	22.7**	14.1	18.4*
LAC	168.4***	110.8***	101.5***	112.8***	72.3***	31.5***	31.5***	21***	48.4***
SAR	507.1***	414.8***	403.5***	427.5***	57.4***	44.0***	50.7***	37.1***	37.9**

Source: Enterprise Surveys.

Note: PFTE = permanent full-time employees. LP = Labour productivity. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively. Labour productivity winsorised at 1 per cent. Premia are estimated by transforming the coefficients from each region using premia = $exp(\beta_x - 1) * 100$, where β_x is the coefficient on the export dummy. Coefficients are taken from regressions corresponding to the specifications in columns in Table A.1.

Table 5: Estimated exporter premia by region, services

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	25.3*	13.9	20.7	12.8	15.3	15.3	-5.6
AFR	56.5**	35.5**	25.9**	66.8**	41.8	43.3	36.9*
EAP	40.2*	33.8*	36.7*	-15.4	-24.7	-25.1	-23.2
ECA	10.9	9.8	-2.6	50.4*	39.1	38.6	21.6
LAC	20.0	21.6	17.1	48.2**	32.1**	32.6**	5.2
SAR	98.7***	101.7***	108.9***	85.6**	74.7*	73.9*	38.1

Source: Enterprise Surveys.

Note: PFTE = permanent full-time employees. LP = Labour productivity. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively. Labour productivity winsorised at 1 per cent. Premia are estimated by transforming the coefficients from each region using premia = $exp(\beta_x - 1) * 100$, where β_x is the coefficient on the export dummy. Coefficients are taken from regressions corresponding to the specifications in columns in Table A.2.

Table 6: Estimated premia by region and exporter type, manufacturing

	Superstars								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	Log (PFTE)				Log (LP)				
MENA	917.7***	835.1***	778.0***	693.8***	354.8***	489.0***	492.9***	258.8***	298.4***
AFR	920.1***	603.9***	527.1***	611.3***	500.7***	373.6***	394.7***	185.0**	496.3***
EAP	1243***	1017***	722.1***	772.6***	2556***	2723***	3838***	3258***	2709***
ECA	1234***	1123***	971.6***	1008.0***	326.1***	401.3***	467.9***	255.5**	292.2***
LAC	1237***	625.2***	521.7***	681.7***	365.5***	152.9***	168.8***	107.8***	219.0***
SAR	3912***	3317***	2532***	2648***	501.2***	484.9***	986.4***	305.8***	416.7***
	Big players								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	Log (PFTE)				Log (LP)				
MENA	196.7***	182.9***	203.4***	153.8***	93***	113.9***	114.1***	59.3***	71.1***
AFR	379.0***	240.2***	276.0***	216.9***	222.3***	173.2***	175.9***	76.1***	178.9***
EAP	483.9***	402.6***	311.5***	352.0***	118.1***	120.1***	143.7***	45.5***	87.3***
ECA	319.7***	278.9***	279.1***	280.8***	72.1***	89.2***	92.6***	48.4***	64.4***
LAC	412.4***	262.8***	268.0***	275.2***	137.5***	62.5***	63.8***	45.3***	96.2***
SAR	788.3***	657.4***	692.4***	675.6***	181.7***	187.1***	230.7***	104***	142.4***
	Small players								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	Log (PFTE)				Log (LP)				
MENA	0.4	-6.1	-2.9	-6.2	-39.3***	-40.2***	-40.2***	-23.8**	-41.6***
AFR	56.2***	43.4***	44.6***	34.9**	-47.1***	-48.9***	-49.1***	-22.4	-37.6**
EAP	97.6***	74.9***	39**	37.9**	-20.9	-24.5	-23	-21.7	-24
ECA	29.4***	16.5*	13.8	23.9**	-21.6**	-19.8**	-20.7**	-19.7**	-22**
LAC	27.4***	19.7**	9.2	18.6**	13.5	6.2	5.12	-2.3	7.2
SAR	239.1***	210.2***	213.6***	214.3***	-17.6	-18.1	-18.3	-9.7	-24.5

Source: Enterprise Surveys.

Note: PFTE = permanent full-time employees. LP = Labour productivity. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. ***, ** and * denote statistical significance (vis-à-vis non-exporting firms) at the 1, 5 and 10 per cent levels respectively. Labour productivity winsorised at 1 per cent. Premia are estimated by transforming the coefficients from each region using premia = $exp(\beta_x - 1) * 100$, where β_x is the coefficient on the export dummy. Coefficients are taken from regressions corresponding to the specifications in columns in Table A.3. Superstar exporters are the top 5 per cent of firms by export volume; big players are those between the 50th and 94th percentiles; small players are those below the 50th percentile.

Table 7: Estimated premia by region and exporter type, services

	Superstars						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	392.1***	344.0***	358.1***	330.0***	321.7***	315.6***	226.8***
AFR	298.0***	212.8***	275.8***	845.7***	617.1***	628.9***	435.3**
EAP	173.2**	144.5*	131*	228.1**	202.7**	207.7**	210.7***
ECA	235.4**	207.4**	47.1	1050***	928.5***	994.1***	627.3***
LAC	479.1***	367.2***	268.7***	105.4***	77.1**	86.7***	6.9
SAR	263.9**	217.3**	289.1**	374.1***	341.4***	334.6***	207.3***
	Big players						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	101.1***	70.1***	79.9***	70.9***	65.3**	65.7**	24.6
AFR	118.5***	80.4***	81.0***	347.2***	262.7***	264.6***	150.3***
EAP	91.6**	87.4**	86.4**	21.1	3.8	2.6	1.1
ECA	20.2	8.9	6.4	154.0***	131.0***	129.8***	97.8**
LAC	53.8**	52.8**	53.6**	56.5***	50.5***	49.3***	20.1
SAR	186.4**	175.8**	182.4**	206.2**	187.0**	185.0**	61.8
	Small players						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	-14.9	-21.6**	-17.8	-23.4	-17.8	-17.8	-30.6
AFR	17.4	7.5	-7.2	-44.7***	-48.0***	-47.5***	-31.3**
EAP	-7.3	-6.2	-0.5	-49.6**	-54.1***	-54.4***	-52.4**
ECA	-12.8	-13.0	-13.2	-30.8*	-34.2**	-35.3**	-24.7*
LAC	-10.5	-13.6	-11.4	36.7	15.9	16.6	-4.3
SAR	49.2*	43.2	37.3	-5.5	-8.9	-8.6	-4.6

Source: Enterprise Surveys.

Note: PFTE = permanent full-time employees. LP = Labour productivity. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. ***, ** and * denote statistical significance (vis-à-vis non-exporting firms) at the 1, 5 and 10 per cent levels respectively. Labour productivity winsorised at 1 per cent. Premia are estimated by transforming the coefficients from each region using premia = $exp(\beta_x - 1) * 100$, where β_x is the coefficient on the export dummy. Coefficients are taken from regressions corresponding to the specifications in columns in Table A.4. Superstar exporters are the top 5 per cent of firms by export volume; big players are those between the 50th and 94th percentiles; small players are those below the 50th percentile.

5.4 Two-way traders size and productivity premia

Stylised facts in section 4 showed that manufacturers in MENA rely heavily on imports, and that a significantly higher share of them engage in both exporting and importing than in other regions. We next look at whether this translates into positive and significant size and productivity premia for importers and two-way traders.

Table A.5 shows that input importers exhibit positive and significant size and labour productivity premia across our various specifications. MENA firms that import inputs are generally roughly 50 per cent larger, squarely in the midst of average size premia elsewhere (Table 8). They also exhibit higher labour productivity than non-importers. In fact, the importers in the MENA region show the highest labour productivity premia in all specifications, indicating possible evidence of either (or both) an iterative effect where firms that import are able to increase their productivity and a selection effect where only the most productive firms are able to overcome substantial costs of importing, as noted above.

Table 8: Estimated importer premia by region

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	51.0***	48.2***	46.3***	68.5***	72.6***	73.4***	45.1***
AFR	74.5***	52***	49.7***	32.2**	18.7	17.6	9.0
EAP	97.6***	67.5***	74.6***	15.1	8.4	7.6	6.1
ECA	9.8	-0.3	-4.7	37.6***	36.0***	36.0***	26.8***
LAC	71.8***	46.2***	49.9***	49.5***	31.2***	31.1***	17.6***
SAR	146.8***	135.2***	136.6***	45.0***	33.1***	32.8***	22.9**

Source: Enterprise Surveys. Note: PFTE = permanent full-time employees. LP = Labour productivity. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. ***, ** and * denote statistical significance (vis-à-vis non-exporting firms) at the 1, 5 and 10 per cent levels respectively. Labour productivity winsorised at 1 per cent. Premia are estimated by transforming the coefficients from each region using premia = $exp(\beta_x - 1) * 100$, where β_x is the coefficient on the export dummy. Coefficients are taken from regressions corresponding to the specifications in columns in Table A.5.

Since we know that many firms engage in two-way trade, we next look at size and labour productivity premia for two-way traders, exporters only, and importers only (compared with non-traders). The results in Table A.6 show that MENA's two-way traders exhibit consistently significant and positive size and labour productivity premia, as do firms that import inputs only. Firms that export only, however, are indistinguishable from non-traders in all but two specifications.

Comparison with other regions in Table 9 shows that across each of the three trading types, the size premia in MENA are dominated by virtually all other regions (with exceptions with the ECA region for two-way trading firms and for importers only). However, labour productivity premia for importers only in MENA dominate all other regions, by a factor of more than 1.5 in all specifications, while MENA's two-way traders' labour productivity premia are comparable to those in other regions (with the exception of EAP, where two-way traders are indistinguishable from non-traders). With the exception of MENA and ECA, firms that export only also exhibit positive and statistically significant labour productivity premia. This confirms that both size and labour productivity premia in MENA are all but driven by importing inputs.

Table 9: Estimated two-way premia by region

	Two-way trader						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	141.4***	122.7***	137.7***	69.2***	73***	71.9***	49.1***
AFR	342.8***	230.3***	236.8***	92.7***	54.5**	54.8**	38.4*
EAP	442.8***	334.4***	285.0***	27.4	7.8	14.2	11.2
ECA	154.0***	122.6***	100.2***	63.9***	60.5***	60.6***	41.1***
LAC	297.0***	193.3***	185.7***	128.3***	60.8***	60.8***	39.2***
SAR	1048***	917.4***	864.4***	68.6***	50.6**	60.5**	43.7**
	Direct exporter only (at least 10 per cent of sales)						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	42.9*	30.0	19.6	28.9	18.5	19.9	58.9**
AFR	143.7***	78.7***	91.8***	94.7**	64.4*	64.2*	42.7
EAP	137.1***	124.6***	121.6***	157.6***	141.8***	138.7***	94.2***
ECA	149.2***	110.1***	117.4***	21.1	18.9	18.9	10.6
LAC	131.9***	74.9***	82.8***	108.2***	70.3***	69.7***	27.2**
SAR	469.8***	340.5***	388.8***	91.0***	87.8***	84.6***	55.3***
	Import inputs only (at least 10 per cent foreign origin)						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Log (PFTE)			Log (LP)			
MENA	38.5***	36.0**	29.7**	76.8***	77.7***	79.5***	56.5***
AFR	61.2***	41.1***	39.9***	31.4**	20.5	19.0	8.4
EAP	66.3***	51.5***	60.9***	28.3*	25.8	23.2	15.5
ECA	1.0	-6.8	-9.1	35.6***	34.5***	34.5***	25.7**
LAC	58.7***	38.8***	45.2***	52.3***	38.7***	38.5***	18.4**
SAR	99.3***	88.9***	100.7***	52.3***	45.9***	43.3***	25.9**

Source: Enterprise Surveys.
Note: PFTE = permanent full-time employees. LP = Labour productivity. MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia. ***, ** and * denote statistical significance (vis-à-vis non-exporting firms) at the 1, 5 and 10 per cent levels respectively. Labour productivity winsorised at 1 per cent. Premia are estimated by transforming the coefficients from each region using premia = $exp(\beta_x - 1) * 100$, where β_x is the coefficient on the export dummy. Coefficients are taken from regressions corresponding to the specifications in columns in Table A.6.

5.5 Sensitivity analysis

In the empirical analysis we control for economy and sector fixed effects. We include controls for foreign ownership of at least 10 per cent and, uniquely, for firm age, both of which are important for size and productivity of firms. Our findings are robust to alternative specifications where we control for average labour, capital and input costs per worker.[19] Moreover, we use survey-weighted observations, which eliminates the possibility that our findings are driven by the fact that the number of observations differs across countries.

However, given that there are significant differences among the countries in the region we focus on (MENA) in terms of the level of development and other characteristics, we re-estimated our baseline specification with controls – taken from columns 2, size (6, productivity) for manufacturing and 2, size (5, productivity) for services – removing one country at a time from the sample for exporting firms. The same is done for importers and by trade type, using specifications from columns 2 for size and 5 for labour productivity. This estimation by exclusion allows us to see if the observed trends are driven by any one country or are not particularly stable.

[19] Capital and material input costs are available only for manufacturing firms. Results are available on request.

As seen in tables A.7-A.12, the results show a remarkable stability of the estimated coefficient on changes in the sample. This can be seen both in the stability of coefficients and in the estimated standard errors and confidence intervals. What is more, this stability lends credence to a common pattern, rather than results being driven by one specific country. This holds up particularly well when considering that our exclusion restriction includes the small (port-driven) economy of Djibouti, the West Bank and Gaza (with particularly entwined trading relationships with Israel), and such a large economy as Egypt.

6 Conclusion

This paper exploits a unique firm-level database with comparable data on several dimensions across more than 100 economies, for both manufacturing and services sectors. It focuses primarily on the MENA region, comparing it with Sub-Saharan Africa, East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, and South Asia. We find that firms in the MENA region are more likely to export, import, or both, than their counterparts elsewhere; but those firms are also more likely to be relatively small and have lower export values.

While we observe positive and significant size premia for the region's exporters, there are no corresponding significant productivity premia when comparing exporters with non-exporters. However, when we separate firms by their export sales volume we find differences in the productivity premium: superstar exporters have similar productivity margins as elsewhere, but the bulk of other exporters lag behind. In fact, small player exporters are even less productive than non-exporters, though we also see evidence of a similar pattern elsewhere. In contrast to MENA's small player exporters, small player exporters elsewhere are bigger than non-exporters. Not all of the region's exporters are different from non-exporters – this is evidence of several firms near the exporting threshold and possible distortions differentially affecting export incentives. Such findings are also consistent with clustering in the productivity distribution of firms (possibly a lagging middle) and high entry costs.

In other words, many exporters may find themselves constrained or unwilling to expand, or they have an incentive to continue exporting despite being inefficient. Other non-exporting firms, particularly those near the expected size and productivity entry thresholds, may face incentives, uncertainty, or distortions discouraging them from engaging in foreign markets.

Those with consistently higher premia, however, are importers. The particular prevalence of these premia for importers is as expected, particularly in the face of barriers in the form of higher tariffs, non-tariff restrictions on trade from abroad, and the time it takes for imports to clear customs. Such premia would also be consistent with gains from better access to foreign technology and participation in supply chains. Both the comparatively higher proportion of two-way traders in the region and the premia shown by these firms point to complementarity between navigating both import and export markets. Such complementarity would be in line with difficult-to-manage trading environments.

Taken together, these findings suggest that not all of MENA's exporters are different. We observe patterns where size and productivity premia are driven by top exporters. Yet many small player exporters persist in the export market, despite non-existent or even negative premia; still, other near-threshold non-exporters do not engage in international trade. Both findings point to distortions in the market, including barriers to entering export markets, and would also be consistent with privileged or subsidised access to those markets (EBRD, EIB, World Bank, 2016). Likewise, the lack of such premia without importing inputs may be consistent with better learning-by-doing and using foreign technology and supply chains; it may also belie costly and difficult procedures to trade goods in either direction across borders. Previous evidence and narratives on the region's trade, provided elsewhere, suggest that the latter explanation may be at play. Such patterns would suggest that further reductions in barriers to firm entry to trade, including distortions from privileged firm access and subsidisation, may be beneficial and an area of continued research.

On the policy side, these findings suggest a few measures that policy-makers in MENA should implement to reduce the differences in productivity gains. First, firms would benefit from greater openness to international trade and, in particular, more effective customs and

trade regulations, both when exporting and importing. The aim should be to reduce entry costs for all firms; giving preference to certain groups of firms – including SMEs – may result in less efficient and dynamic firms entering the export market. Moreover, while trade costs in MENA economies seem to be comparable with trade costs elsewhere, additional factors, such as internal transport costs, are important for well-functioning export sectors.

Second, importing should not be viewed solely through the lens of trade deficits and foreign exchange reserves. Despite the obstacles that importers face in terms of higher tariffs, non-tariff restrictions on trade from abroad and time to clear customs, firms in the MENA region are import-reliant. Imports allow companies to source component parts of a better quality or at a lower cost than those available in the domestic market, as well as to acquire knowledge about new products and processes. Time- and cost-efficient access to high-quality inputs, either domestic or foreign, can thus be a means to encourage more high value-added production.

Appendix A

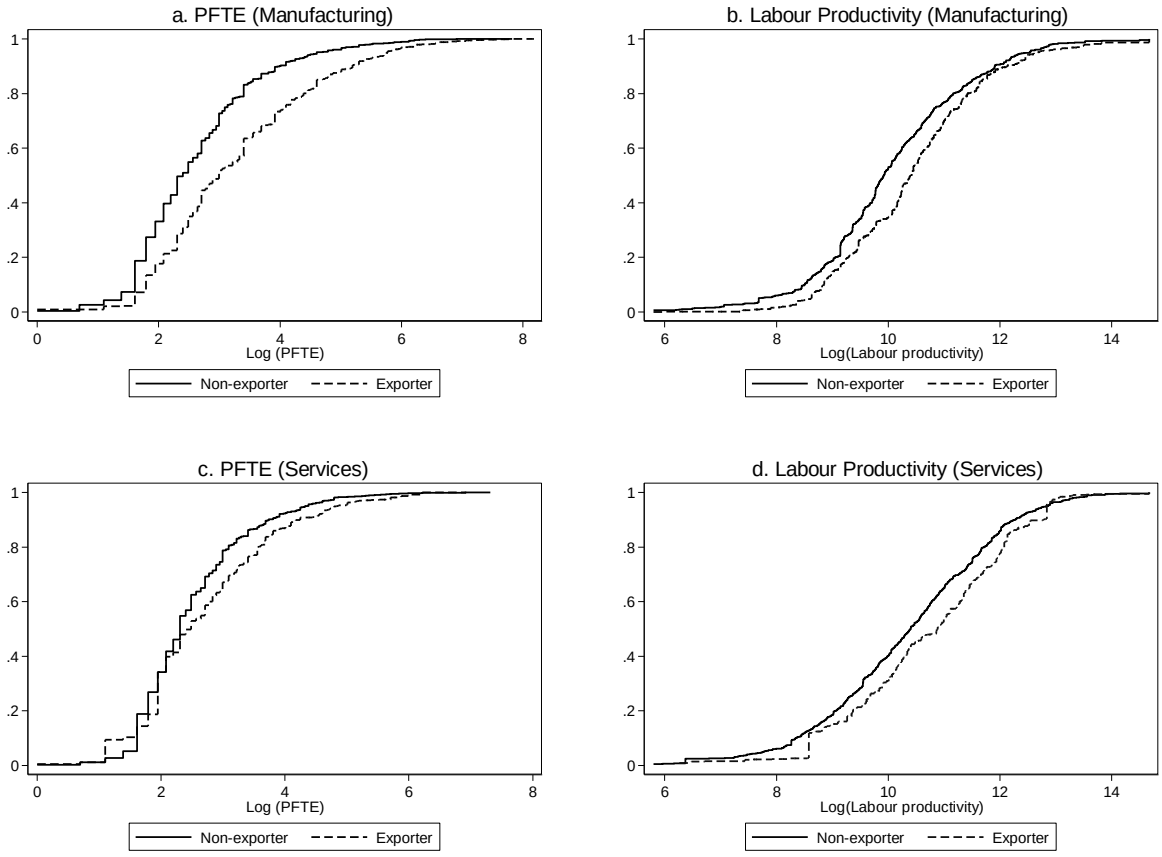
Table A0: All Enterprise Survey economies

Country name	Survey year	Fiscal year	Income level	Region
Afghanistan	2014	2012/2013	Low income	SAR
Albania	2013	2011	Upper middle income	ECA
Angola	2010	2009	Upper middle income	AFR
Argentina	2010	2009	Upper middle income	LAC
Armenia	2013	2011	Lower middle income	ECA
Azerbaijan	2013	2011	Upper middle income	ECA
Bangladesh	2013	2012	Low income	SAR
Belarus	2013	2011	Upper middle income	ECA
Belize	2010	2009	Upper middle income	LAC
Benin	2009	2008	Low income	AFR
Bhutan	2009	2008	Lower middle income	SAR
Bolivia	2010	2009	Lower middle income	LAC
Bosnia and Herzegovina	2013	2011	Upper middle income	ECA
Botswana	2010	2009	Upper middle income	AFR
Brazil	2009	2007	Upper middle income	LAC
Bulgaria	2013	2011	Upper middle income	ECA
Burkina Faso	2009	2008	Low income	AFR
Burundi	2014	2013	Low income	AFR
Cambodia	2013	2012	Low income	EAP
Cameroon	2009	2008	Lower middle income	AFR
Cape Verde	2009	2008	Lower middle income	AFR
Central African Republic	2011	2010	Low income	AFR
Chad	2009	2008	Low income	AFR
China	2012	2011	Upper middle income	EAP
Colombia	2010	2009	Upper middle income	LAC
Congo	2009	2007	Lower middle income	AFR
Costa Rica	2010	2009	Upper middle income	LAC
Cote d' Ivoire	2009	2007	Lower middle income	AFR
Democratic Republic of the Congo	2013	2012	Low income	AFR
Djibouti	2013	2012	Lower middle income	MENA
Dominica	2010	2009	Upper middle income	LAC
Dominican Republic	2010	2009	Upper middle income	LAC
Ecuador	2010	2009	Upper middle income	LAC
Egypt	2013	2012	Lower middle income	MENA
El Salvador	2010	2009	Lower middle income	LAC
Eritrea	2009	2008	Low income	AFR
Ethiopia	2011	2011	Low income	AFR
Fiji	2009	2008	Upper middle income	EAP
FYR Macedonia	2013	2011	Upper middle income	ECA
Gabon	2009	2007	Upper middle income	AFR
Georgia	2013	2011	Lower middle income	ECA
Ghana	2013	2012	Lower middle income	AFR
Grenada	2010	2009	Upper middle income	LAC
Guatemala	2010	2009	Lower middle income	LAC
Guyana	2010	2009	Lower middle income	LAC
Honduras	2010	2009	Lower middle income	LAC
Hungary	2013	2011	Upper middle income	ECA
India	2014	2012/2013	Lower middle income	SAR
Indonesia	2009	2008	Lower middle income	EAP
Jamaica	2010	2009	Upper middle income	LAC
Jordan	2013	2012	Upper middle income	MENA
Kazakhstan	2013	2011	Upper middle income	ECA
Kenya	2013	2012	Low income	AFR
Kosovo	2013	2011	Lower middle income	ECA
Kyrgyz Republic	2013	2011	Lower middle income	ECA
Laos	2012	2011	Lower middle income	EAP
Lebanon	2013	2012	Upper middle income	MENA
Lesotho	2009	2007	Lower middle income	AFR

Liberia	2009	2007	Low income	AFR
Madagascar	2013	2012	Low income	AFR
Malawi	2014	2013	Low income	AFR
Mali	2010	2009	Low income	AFR
Mauritania	2014	2013	Lower middle income	AFR
Mauritius	2009	2007	Upper middle income	AFR
Mexico	2010	2009	Upper middle income	LAC
Micronesia, Fed. Sts.	2009	2008	Lower middle income	EAP
Moldova	2013	2011	Lower middle income	ECA
Mongolia	2013	2011	Lower middle income	EAP
Montenegro	2013	2011	Upper middle income	ECA
Morocco	2013	2012	Lower middle income	MENA
Myanmar	2014	2012	Low income	EAP
Namibia	2014	2013	Upper middle income	AFR
Nepal	2013	2012	Low income	SAR
Nicaragua	2010	2009	Lower middle income	LAC
Niger	2009	2008	Low income	AFR
Nigeria	2014	2013	Lower middle income	AFR
Pakistan	2013	2011/2012	Lower middle income	SAR
Panama	2010	2009	Upper middle income	LAC
Paraguay	2010	2009	Lower middle income	LAC
Peru	2010	2009	Upper middle income	LAC
Philippines	2009	2008	Lower middle income	EAP
Romania	2013	2011	Upper middle income	ECA
Rwanda	2011	2010	Low income	AFR
Samoa	2009	2008	Lower middle income	EAP
Senegal	2014	2013	Lower middle income	AFR
Serbia	2013	2011	Upper middle income	ECA
Sierra Leone	2009	2007	Low income	AFR
South Sudan	2014	2013	Lower middle income	AFR
Sri Lanka	2011	2010	Lower middle income	SAR
St Lucia	2010	2009	Upper middle income	LAC
St Vincent and the Grenadines	2010	2009	Upper middle income	LAC
Sudan	2014	2013	Lower middle income	AFR
Suriname	2010	2009	Upper middle income	LAC
Tajikistan	2013	2011	Low income	ECA
Tanzania	2013	2011/2012	Low income	AFR
Timor-Leste	2009	2008	Lower middle income	EAP
Togo	2009	2008	Low income	AFR
Tonga	2009	2008	Upper middle income	EAP
Tunisia	2013	2012	Upper middle income	MENA
Turkey	2013	2011	Upper middle income	ECA
Uganda	2013	2012	Low income	AFR
Ukraine	2013	2011	Lower middle income	ECA
Uzbekistan	2013	2011	Lower middle income	ECA
Vanuatu	2009	2008	Lower middle income	EAP
Venezuela	2010	2009	Upper middle income	LAC
Vietnam	2009	2008	Lower middle income	EAP
West Bank and Gaza	2013	2012	Lower middle income	MENA
Yemen	2013	2012	Lower middle income	MENA
Zambia	2013	2012	Lower middle income	AFR
Zimbabwe	2011	2010	Low income	AFR

Note: MENA = Middle East and North Africa. AFR = Sub-Saharan Africa. EAP = East Asia and Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. SAR = South Asia.

Chart A.1: Cumulative distribution functions of size and labour productivity by exporter status and industry, MENA



Source: Enterprise Surveys.

Note: Labour productivity is measured in 2012 USD. PFTE = permanent, full-time equivalent employees (size); both PFTE and labour productivity are expressed in logs.

Table A.1: Exporter premia in MENA, manufacturing

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Dependent variable	Log (PFTE)				Log (LP)				
Direct exporter (at least 10% of sales) (Y/N)	0.578*** (0.096)	0.516*** (0.105)	0.562*** (0.105)	0.453*** (0.102)	0.111 (0.133)	0.090 (0.140)	0.085 (0.138)	0.127 (0.105)	0.016 (0.133)
At least 10% foreign ownership (Y/N)		0.489*** (0.176)	0.443** (0.178)	0.478*** (0.172)		0.111 (0.165)	0.087 (0.168)	0.024 (0.116)	0.004 (0.151)
Age, years (log)		0.229*** (0.051)	0.231*** (0.049)	0.183*** (0.048)		-0.009 (0.068)	-0.013 (0.067)	-0.034 (0.052)	-0.009 (0.067)
Labour productivity, (2012 US$) (log)		0.003 (0.033)							
Log (PFTE)						0.004 (0.051)	-0.183 (0.247)		
Log (PFTE)^2							0.028 (0.032)		
Total labour cost/PFTE (2012 US$) (log)			-0.081** (0.038)					0.594*** (0.074)	
Imports foreign inputs (at least 10% of inputs) (Y/N)				0.327*** (0.110)					0.539*** (0.129)
Constant	2.881*** (0.099)	2.323*** (0.385)	2.928*** (0.345)	2.357*** (0.151)	9.658*** (0.145)	9.655*** (0.222)	9.932*** (0.421)	5.245*** (0.570)	9.500*** (0.208)
Observations	3,350	2,996	3,003	3,121	3,036	2,996	2,996	2,852	2,839
R-squared	0.245	0.287	0.294	0.294	0.228	0.226	0.228	0.411	0.275

Source: Enterprise Surveys.

Note: Simple OLS using survey-weighted observations (using Stata's svy prefix). Linearized Taylor standard errors clustered on strata are indicated in parentheses. PFTE = permanent full-time employees. LP = labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.2: Exporter premia in MENA, services

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Dependent variable	Log (PFTE)			Log (LP)			
Direct exporter (at least 10% of sales) (Y/N)	0.226* (0.129)	0.131 (0.123)	0.188 (0.130)	0.120 (0.179)	0.142 (0.180)	0.142 (0.180)	-0.058 (0.197)
At least 10% foreign ownership (Y/N)		0.526*** (0.166)	0.422** (0.184)		0.268 (0.243)	0.261 (0.247)	0.162 (0.183)
Age, years (log)		0.276*** (0.041)	0.270*** (0.045)		0.128* (0.070)	0.128* (0.070)	0.131** (0.064)
Labour productivity, (2012 US$) (log)		0.018 (0.031)					
Log (PFTE)					0.042 (0.071)	-0.058 (0.248)	
Log (PFTE)^2						0.016 (0.042)	
Total labour cost/PFTE (2012 US$) (log)			-0.037 (0.037)				0.653*** (0.071)
Constant	2.680*** (0.123)	1.938*** (0.335)	2.375*** (0.348)	9.590*** (0.204)	9.203*** (0.319)	9.339*** (0.435)	4.222*** (0.585)
Observations	2,507	2,152	2,158	2,225	2,152	2,152	1,994
R-squared	0.080	0.168	0.161	0.263	0.287	0.287	0.474

Source: Enterprise Surveys.

Note: Simple OLS using survey-weighted observations (using Stata's svy prefix). Linearized Taylor standard errors clustered on strata are indicated in parentheses. PFTE = permanent full-time employees. LP = labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.3: Premia by exporter type in MENA, manufacturing

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Dependent variable	Log (PFTE)				Log (LP)				
Superstar exporters (top 5th percentile by export value) (Y/N)	2.320*** (0.349)	2.235*** (0.359)	2.173*** (0.344)	2.072*** (0.357)	1.515*** (0.346)	1.773*** (0.343)	1.780*** (0.340)	1.278*** (0.430)	1.382*** (0.371)
Big player exporters (50th to 94th percentile by export value) (Y/N)	1.088*** (0.135)	1.040*** (0.142)	1.110*** (0.127)	0.931*** (0.153)	0.658*** (0.138)	0.760*** (0.149)	0.761*** (0.144)	0.466*** (0.116)	0.537*** (0.146)
Small player exporters (below 50th percentile by export value) (Y/N)	0.003 (0.110)	-0.063 (0.113)	-0.030 (0.117)	-0.064 (0.115)	-0.500*** (0.136)	-0.514*** (0.137)	-0.515*** (0.137)	-0.272** (0.125)	-0.538*** (0.138)
At least 10% foreign ownership (Y/N)		0.376** (0.151)	0.334** (0.150)	0.383** (0.154)		0.035 (0.139)	0.036 (0.141)	-0.050 (0.106)	-0.091 (0.137)
Age, years (log)		0.204*** (0.045)	0.215*** (0.043)	0.173*** (0.046)		-0.011 (0.066)	-0.011 (0.066)	-0.050 (0.051)	-0.030 (0.067)
Labour productivity, (2012 USD) (log)		-0.066** (0.032)							
Log (PFTE)						-0.104** (0.052)	-0.091 (0.237)		
Log (PFTE)^2							-0.002 (0.030)		
Total labour cost/PFTE (2012 US$) (log)			-0.134*** (0.034)					0.560*** (0.076)	
Imports inputs (at least 10% of foreign inputs) (Y/N)				0.276** (0.109)					0.484*** (0.129)
Constant	2.869*** (0.101)	3.050*** (0.378)	3.362*** (0.309)	2.388*** (0.148)	9.650*** (0.140)	9.971*** (0.222)	9.953*** (0.410)	5.546*** (0.584)	9.557*** (0.205)
Observations	3,297	2,996	2,987	3,071	3,036	2,996	2,996	2,852	2,839
R-squared	0.317	0.358	0.371	0.358	0.281	0.285	0.285	0.439	0.322

Source: Enterprise Surveys.
Note: Simple OLS using survey-weighted observations (using Stata's svy prefix). Linearized Taylor standard errors clustered on strata are indicated in parentheses. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.4: Premia by exporter type in MENA, services

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Dependent variable	Log (PFTE)			Log (LP)			
Superstar exporters (top 5th percentile by export value) (Y/N)	1.594*** (0.390)	1.491*** (0.362)	1.522*** (0.359)	1.459*** (0.244)	1.439*** (0.299)	1.425*** (0.312)	1.184*** (0.254)
Big player exporters (50th to 94th percentile by export value) (Y/N)	0.699*** (0.180)	0.531*** (0.174)	0.587*** (0.178)	0.536*** (0.192)	0.503** (0.207)	0.505** (0.209)	0.220 (0.189)
Small player exporters (below 50th percentile by export value) (Y/N)	-0.161 (0.116)	-0.243** (0.115)	-0.197 (0.125)	-0.266 (0.210)	-0.196 (0.214)	-0.196 (0.214)	-0.365 (0.249)
At least 10 % foreign ownership (Y/N)		0.499*** (0.161)	0.430** (0.178)		0.264 (0.243)	0.260 (0.247)	0.132 (0.189)
Age, years (log)		0.273*** (0.041)	0.268*** (0.046)		0.136* (0.070)	0.136* (0.070)	0.126** (0.064)
Labour productivity, (2012 US$) (log)		-0.002 (0.032)					
Log (PFTE)					-0.005 (0.076)	-0.060 (0.255)	
Log (PFTE)^2						0.009 (0.044)	
Total labour cost/PFTE (2012 USD) (log)			-0.044 (0.037)				0.650*** (0.071)
Constant	2.680*** (0.118)	2.121*** (0.347)	2.431*** (0.338)	9.573*** (0.204)	9.299*** (0.327)	9.375*** (0.441)	4.252*** (0.583)
Observations	2,464	2,152	2,140	2,225	2,152	2,152	1,994
R-squared	0.126	0.209	0.209	0.279	0.299	0.299	0.486

Source: Enterprise Surveys.

Note: PFTE = permanent full-time employees. LP = Labour productivity. ***, ** and * denote statistical significance (vis-à-vis non-exporting firms) at the 1, 5 and 10 per cent levels respectively. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Premia are estimated by transforming the coefficients from each region using premia = $exp(\beta_x - 1) * 100$, where β_x is the coefficient on the export dummy. Coefficients are taken from regressions corresponding to the columns in Table 9. Superstar exporters are the top 5 per cent of firms by export volume; big players are those between the 50th and 94th percentiles; small players are those below the 50th percentile.

Table A.5: Importer premia in MENA, manufacturing

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Dependent variable	Log (PFTE)			Log (LP)			
Import inputs (at least 10 % foreign origin) (Y/N)	0.412***	0.393***	0.381***	0.522***	0.546***	0.550***	0.373***
	(0.107)	(0.124)	(0.119)	(0.126)	(0.131)	(0.133)	(0.138)
At least 10 % foreign ownership (Y/N)		0.565***	0.522***		0.015	-0.016	0.008
		(0.173)	(0.177)		(0.151)	(0.153)	(0.127)
Age, years (log)		0.224***	0.231***		-0.006	-0.011	-0.045
		(0.059)	(0.057)		(0.070)	(0.069)	(0.053)
Labour productivity, (2012 USD) (log)		-0.008					
		(0.037)					
Log (PFTE)					-0.012	-0.238	
					(0.053)	(0.248)	
Log (PFTE)^2						0.034	
						(0.032)	
Total labour cost/PFTE (2012 USD) (log)			-0.121***				0.563***
			(0.036)				(0.079)
Constant	2.782***	2.370***	3.143***	9.494***	9.526***	9.859***	5.368***
	(0.109)	(0.401)	(0.347)	(0.145)	(0.221)	(0.414)	(0.592)
Observations	3,157	2,828	2,853	2,863	2,828	2,828	2,704
R-squared	0.239	0.287	0.29	0.275	0.275	0.277	0.427

Source: Enterprise Surveys.
Note: Simple OLS using survey-weighted observations (using Stata's svy prefix). Linearized Taylor standard errors clustered on strata are indicated in parentheses. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.6: Premia by trader type in MENA, manufacturing

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Dependent variable	Log (PFTE)			Log (LP)			
Two-way trading firm (Y/N)	0.881***	0.801***	0.866***	0.526***	0.548***	0.542***	0.399***
	(0.134)	(0.149)	(0.145)	(0.150)	(0.168)	(0.166)	(0.143)
Direct exporter only (at least 10% of sales) (Y/N)	0.357*	0.262	0.179	0.254	0.170	0.182	0.463**
	(0.194)	(0.219)	(0.204)	(0.284)	(0.266)	(0.268)	(0.216)
Import inputs only (at least 10% foreign origin) (Y/N)	0.326***	0.307**	0.260**	0.570***	0.575***	0.585***	0.448***
	(0.121)	(0.141)	(0.132)	(0.146)	(0.150)	(0.153)	(0.163)
At least 10% foreign ownership (Y/N)		0.464***	0.398**		0.015	-0.015	0.002
		(0.176)	(0.177)		(0.153)	(0.155)	(0.123)
Age, years (log)		0.215***	0.226***		-0.007	-0.011	-0.047
		(0.056)	(0.052)		(0.070)	(0.069)	(0.052)
Labour productivity, (2012 US$) (log)		-0.008					
		(0.037)					
Log (PFTE)					-0.012	-0.247	
					(0.055)	(0.249)	
Log (PFTE)^2						0.035	
						(0.032)	
Total labour cost/PFTE (2012 USD) (log)			-0.122***				0.573***
			(0.036)				(0.078)
Constant	2.825***	2.436***	3.245***	9.456***	9.502***	9.842***	5.226***
	(0.118)	(0.399)	(0.351)	(0.157)	(0.232)	(0.417)	(0.596)
Observations	3,157	2,828	2,853	2,863	2,828	2,828	2,704
R-squared	0.269	0.309	0.322	0.277	0.275	0.278	0.432

Source: Enterprise Surveys.
Note: Simple OLS using survey-weighted observations (using Stata's svy prefix). Linearized Taylor standard errors clustered on strata are indicated in parentheses. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.7: Exporter premia in MENA, manufacturing, excluding one economy at a time

	Log(PFTE)				Log(LP)			
			95 C.I.				95 C.I.	
Excluded	Beta	SE	Min	Max	Beta	SE	Min	Max
Djibouti	0.56	(0.103)***	0.36	0.77	0.04	(0.129)	-0.21	0.30
Egypt	0.45	(0.103)***	0.25	0.66	0.09	(0.138)	-0.18	0.37
Jordan	0.57	(0.110)***	0.36	0.79	0.08	(0.162)	-0.24	0.40
Lebanon	0.49	(0.115)***	0.26	0.71	0.07	(0.155)	-0.24	0.37
Morocco	0.56	(0.111)***	0.34	0.78	0.06	(0.152)	-0.24	0.36
Tunisia	0.47	(0.119)***	0.23	0.70	0.09	(0.163)	-0.24	0.41
West Bank and Gaza	0.53	(0.118)***	0.30	0.76	0.22	(0.139)	-0.05	0.50
Yemen	0.51	(0.104)***	0.30	0.71	0.1	(0.143)	-0.18	0.38

Source: Enterprise Surveys.

Note: Coefficients/beta, standard errors (SE), and 95 per cent confidence intervals (95 C. I.), corresponding to column 2 for PFTE and column 6 in Table A.1. Each row corresponds to the results from a separate regression run by excluding the indicated country from the regression. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.8: Exporter premia in MENA, services, excluding one economy at a time

	Log(PFTE)				Log(LP)			
			95 C.I.				95 C.I.	
Excluded	Beta	SE	Min	Max	Beta	SE	Min	Max
Djibouti	0.14	(0.135)	-0.13	0.40	0.18	(0.193)	-0.20	0.56
Egypt	0.11	(0.119)	-0.13	0.35	0.11	(0.177)	-0.23	0.46
Jordan	0.13	(0.128)	-0.12	0.38	0.13	(0.190)	-0.24	0.51
Lebanon	0.22	(0.151)	-0.08	0.52	0.01	(0.213)	-0.41	0.43
Morocco	0.08	(0.123)	-0.16	0.33	0.10	(0.186)	-0.26	0.47
Tunisia	0.07	(0.129)	-0.19	0.32	0.23	(0.219)	-0.20	0.66
West Bank and Gaza	0.13	(0.133)	-0.14	0.39	0.15	(0.190)	-0.22	0.52
Yemen	0.2	(0.109)*	-0.01	0.42	0.26	(0.132)*	0.00	0.52

Source: Enterprise Surveys.

Note: Coefficients/beta, standard errors (SE), and 95 per cent confidence intervals (95 C. I.), corresponding to column 2 for PFTE and column 5 in Table A.2. Each row corresponds to the results from a separate regression run by excluding the indicated country from the regression. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.9: Premia by exporter type, manufacturing, excluding one economy at a time

		Log(PFTE)				Log(LP)			
				95 C.I.				95 C.I.	
	Excluded	Beta	SE	Min	Max	Beta	SE	Min	Max
Superstar exporters	Djibouti	2.41	(0.266)***	1.89	2.93	1.55	(0.365)***	0.84	2.27
	Egypt	2.2	(0.334)***	1.55	2.86	1.89	(0.329)***	1.24	2.54
	Jordan	2.13	(0.380)***	1.38	2.87	1.85	(0.395)***	1.07	2.62
	Lebanon	2.24	(0.394)***	1.47	3.01	1.78	(0.380)***	1.04	2.53
	Morocco	2.24	(0.401)***	1.45	3.02	1.67	(0.368)***	0.95	2.40
	Tunisia	2.02	(0.412)***	1.21	2.82	1.69	(0.281)***	1.14	2.24
	West Bank and Gaza	2.42	(0.452)***	1.53	3.31	2.01	(0.401)***	1.22	2.80
	Yemen	2.21	(0.362)***	1.50	2.92	1.78	(0.351)***	1.09	2.47
Big players	Djibouti	1.1	(0.134)***	0.84	1.37	0.62	(0.131)***	0.37	0.88
	Egypt	1.0	(0.139)***	0.72	1.27	0.8	(0.142)***	0.52	1.08
	Jordan	1.1	(0.155)***	0.79	1.40	0.79	(0.171)***	0.45	1.13
	Lebanon	0.98	(0.158)***	0.67	1.29	0.76	(0.163)***	0.44	1.08
	Morocco	1.05	(0.150)***	0.75	1.34	0.73	(0.159)***	0.41	1.04
	Tunisia	0.95	(0.174)***	0.60	1.29	0.77	(0.177)***	0.42	1.12
	West Bank and Gaza	1.15	(0.145)***	0.86	1.44	0.88	(0.170)***	0.55	1.21
	Yemen	1.01	(0.139)***	0.74	1.29	0.76	(0.151)***	0.46	1.06
Small players	Djibouti	-0.04	(0.115)	-0.26	0.19	-0.46	(0.133)***	-0.73	-0.20
	Egypt	-0.14	(0.110)	-0.36	0.07	-0.54	(0.136)***	-0.81	-0.27
	Jordan	-0.01	(0.117)	-0.24	0.22	-0.57	(0.152)***	-0.86	-0.27
	Lebanon	-0.07	(0.125)	-0.32	0.18	-0.57	(0.151)***	-0.86	-0.27
	Morocco	0.01	(0.123)	-0.24	0.25	-0.53	(0.151)***	-0.83	-0.24
	Tunisia	-0.06	(0.125)	-0.31	0.18	-0.55	(0.161)***	-0.87	-0.24
	West Bank and Gaza	-0.11	(0.123)	-0.35	0.13	-0.37	(0.133)***	-0.63	-0.11
	Yemen	-0.07	(0.117)	-0.30	0.16	-0.51	(0.142)***	-0.79	-0.23

Source: Enterprise Surveys.

Note: Coefficients/beta, standard errors (SE), and 95 per cent confidence intervals (95 C. I.), corresponding to column 2 for PFTE and column 6 in Table A.3. Each row corresponds to the results from a separate regression run by excluding the indicated country from the regression. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.10: Premia by exporter type, services, excluding one economy at a time

		Log(PFTE)				Log(LP)			
				95 C.I.				95 C.I.	
	Excluded	Beta	SE	Min	Max	Beta	SE	Min	Max
Superstar exporters	Djibouti	1.67	(0.393)***	0.90	2.45	1.45	(0.355)***	0.76	2.15
	Egypt	1.44	(0.355)***	0.74	2.14	1.44	(0.300)***	0.86	2.03
	Jordan	1.44	(0.398)***	0.66	2.22	1.32	(0.271)***	0.79	1.85
	Lebanon	1.68	(0.407)***	0.89	2.48	1.37	(0.394)***	0.59	2.14
	Morocco	1.5	(0.388)***	0.74	2.26	1.46	(0.318)***	0.83	2.08
	Tunisia	1.29	(0.300)***	0.70	1.88	1.53	(0.337)***	0.87	2.19
	West Bank and Gaza	1.55	(0.385)***	0.79	2.30	1.47	(0.328)***	0.83	2.12
	Yemen	1.39	(0.398)***	0.61	2.17	1.39	(0.238)***	0.92	1.86
Big players	Djibouti	0.7	(0.198)***	0.31	1.09	0.38	(0.248)	-0.11	0.87
	Egypt	0.52	(0.170)***	0.18	0.86	0.46	(0.209)**	0.05	0.87
	Jordan	0.55	(0.185)***	0.18	0.91	0.37	(0.215)*	-0.05	0.80
	Lebanon	0.47	(0.203)**	0.07	0.87	0.55	(0.223)**	0.11	0.99
	Morocco	0.46	(0.185)**	0.10	0.83	0.51	(0.214)**	0.09	0.93
	Tunisia	0.43	(0.178)**	0.08	0.78	0.63	(0.242)***	0.15	1.10
	West Bank and Gaza	0.54	(0.185)***	0.18	0.91	0.5	(0.216)**	0.08	0.93
	Yemen	0.59	(0.171)***	0.25	0.92	0.63	(0.192)***	0.25	1.01
Small players	Djibouti	-0.31	(0.114)***	-0.53	-0.08	-0.03	(0.225)	-0.48	0.41
	Egypt	-0.26	(0.111)**	-0.48	-0.04	-0.21	(0.210)	-0.63	0.20
	Jordan	-0.25	(0.121)**	-0.49	-0.01	-0.12	(0.239)	-0.59	0.35
	Lebanon	-0.11	(0.144)	-0.39	0.17	-0.49	(0.250)**	-0.98	0.00
	Morocco	-0.27	(0.114)**	-0.50	-0.05	-0.26	(0.217)	-0.69	0.17
	Tunisia	-0.24	(0.130)*	-0.50	0.01	-0.11	(0.261)	-0.63	0.40
	West Bank and Gaza	-0.26	(0.126)**	-0.51	-0.01	-0.19	(0.232)	-0.64	0.27
	Yemen	-0.19	(0.114)	-0.41	0.04	-0.11	(0.155)	-0.42	0.19

Source: Enterprise Surveys.

Note: Coefficients/beta, standard errors (SE), and 95 per cent confidence intervals (95 C. I.), corresponding to column 2 for PFTE and column 5 in Table A.4. Each row corresponds to the results from a separate regression run by excluding the indicated country from the regression. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.11: Importer premia, manufacturing, excluding one economy at a time

	Log(PFTE)				Log(LP)			
			95 C.I.				95 C.I.	
Excluded	Beta	SE	Min	Max	Beta	SE	Min	Max
Djibouti	0.4	(0.130)***	0.14	0.66	0.56	(0.130)***	0.30	0.82
Egypt	0.45	(0.146)***	0.16	0.73	0.66	(0.151)***	0.36	0.96
Jordan	0.26	(0.131)**	0.00	0.52	0.46	(0.146)***	0.17	0.75
Lebanon	0.39	(0.131)***	0.13	0.64	0.56	(0.141)***	0.28	0.83
Morocco	0.44	(0.130)***	0.18	0.69	0.55	(0.141)***	0.27	0.83
Tunisia	0.36	(0.138)**	0.08	0.63	0.6	(0.140)***	0.32	0.87
West Bank and Gaza	0.4	(0.138)***	0.13	0.67	0.4	(0.136)***	0.14	0.67
Yemen	0.45	(0.096)***	0.27	0.64	0.58	(0.122)***	0.34	0.82

Source: Enterprise Surveys.
Note: Coefficients/beta, standard errors (SE), and 95 per cent confidence intervals (95 C. I.), corresponding to column 2 for PFTE and column 5 in Table A.5. Each row corresponds to the results from a separate regression run by excluding the indicated country from the regression. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

Table A.12: Premia by trader type, manufacturing, excluding one economy at a time

		Log(PFTE)				Log(LP)			
				95 C.I.				95 C.I.	
	Excluded	Beta	SE	Min	Max	Beta	SE	Min	Max
Two-way traders	Djibouti	0.86	(0.153)***	0.55	1.16	0.51	(0.159)***	0.19	0.82
	Egypt	0.78	(0.161)***	0.46	1.09	0.64	(0.174)***	0.30	0.99
	Jordan	0.75	(0.164)***	0.42	1.07	0.44	(0.197)**	0.06	0.83
	Lebanon	0.78	(0.161)***	0.46	1.10	0.53	(0.183)***	0.17	0.89
	Morocco	0.88	(0.155)***	0.58	1.19	0.56	(0.183)***	0.20	0.92
	Tunisia	0.73	(0.167)***	0.40	1.06	0.62	(0.186)***	0.25	0.99
	West Bank and Gaza	0.81	(0.159)***	0.49	1.12	0.53	(0.175)***	0.18	0.87
	Yemen	0.82	(0.135)***	0.56	1.09	0.58	(0.165)***	0.26	0.91
Import only	Djibouti	0.29	(0.146)**	0.00	0.58	0.61	(0.149)***	0.31	0.90
	Egypt	0.34	(0.170)**	0.00	0.67	0.71	(0.174)***	0.37	1.05
	Jordan	0.17	(0.146)	-0.11	0.46	0.5	(0.165)***	0.18	0.82
	Lebanon	0.31	(0.147)**	0.02	0.60	0.59	(0.160)***	0.27	0.90
	Morocco	0.35	(0.148)**	0.06	0.64	0.57	(0.162)***	0.25	0.89
	Tunisia	0.28	(0.154)*	-0.02	0.58	0.56	(0.159)***	0.25	0.87
	West Bank and Gaza	0.34	(0.155)**	0.03	0.65	0.43	(0.157)***	0.13	0.74
	Yemen	0.38	(0.108)***	0.16	0.59	0.63	(0.138)***	0.35	0.90
Export only	Djibouti	0.27	(0.218)	-0.16	0.70	0.15	(0.263)	-0.37	0.67
	Egypt	0.11	(0.218)	-0.32	0.54	0.22	(0.275)	-0.32	0.76
	Jordan	0.31	(0.225)	-0.14	0.75	0.24	(0.284)	-0.32	0.79
	Lebanon	0.27	(0.233)	-0.19	0.73	0.14	(0.281)	-0.41	0.69
	Morocco	0.30	(0.228)	-0.15	0.75	0.15	(0.272)	-0.38	0.68
	Tunisia	0.22	(0.244)	-0.26	0.70	-0.2	(0.268)	-0.73	0.33
	West Bank and Gaza	0.35	(0.257)	-0.16	0.85	0.4	(0.292)	-0.17	0.98
	Yemen	0.31	(0.226)	-0.13	0.75	0.24	(0.277)	-0.30	0.79

Source: Enterprise Surveys.

Note: Coefficients/beta, standard errors (SE), and 95 per cent confidence intervals (95 C. I.), corresponding to column 2 for PFTE and column 5 in Table A.6. Each row corresponds to the results from a separate regression run by excluding the indicated country from the regression. PFTE = permanent full-time employees. LP = Labour productivity. Labour productivity is measured as total revenue per permanent full-time employee, in 2012 US dollars, and is winsorised at 1 per cent. Variables omitted from the table: economy and sector fixed effects. ***, ** and * denote statistical significance at the 1, 5 and 10 per cent levels respectively.

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