

## Trade Performance in Eastern Europe and Central Asia

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**I**n the Eastern Europe and Central Asia (ECA) region, countries show great variations in their levels of openness and how intensively they trade. There is a strong and positive correlation in export and import market participation rates and a similar relationship between how intensively firms trade in each market. Using a firm-level data set, this note shows that the difference in export intensity between large and small firms is almost 30 percentage points; however, this difference is not seen among all countries. A comparison of industries shows that the garment industry is the most export and import intensive industry in the region. The note then focuses on customs efficiencies and finds that countries with inefficient customs services export and import less intensively. Finally, this note analyzes how trade has evolved since 2005. The percentage of importers and import intensities have increased among the member countries in the European Union (EU); these statistics exclude the trade of EU countries with each other. In the region overall, import intensity has increased by 10 percentage points; on the other hand, there has not been a significant change in export intensity.

International trade plays a crucial role in the development of countries (Freund and Bolaky 2008), making trade performance central to the objectives of policy makers. Researchers have analyzed detailed firm-level data sets in order to understand the micro foundations of achieving high trade performance. This research has shown that trading firms are intrinsically more productive and they grow faster than non-trading firms (see Bernard et al. 2007 and Lopez 2005 for reviews of the literature). Using detailed firm-level data from the ECA region, this note evaluates the trade performances of countries in this region. Moreover, the note relates trade performance to customs efficiencies. Productive firms that want to increase their exposure to foreign markets might be constrained by cumbersome customs clearing processes. Finally, this note explores the change in trade patterns in the region between 2005 and 2008-2009.

Firms engage with the foreign markets by exporting goods, importing materials or supplies, or by performing both activities. Most of the existing studies on trade have focused on exporting. Importing can be equally as crucial

as exporting to improving a firm's performance. In his survey on technology diffusion, Keller (2004) summarizes theoretical and empirical literature on how imports provide knowledge and technology transfer in a macro perspective. Using a firm-level data set, Seker (2010) shows how firms that import intermediate goods are more innovative and grow faster than non-trading firms. The micro nature of the data used in this analysis allows us to explore both exporting and importing patterns across different firm characteristics.

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**In the ECA region, almost 70 percent of exporting firms also import intermediate goods.**

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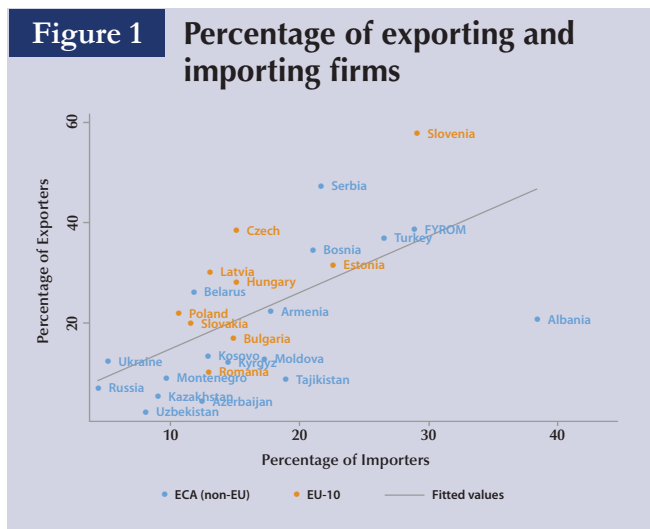
The data for the analysis are collected through the World Bank's Enterprise Surveys (ES).<sup>1</sup> A total of 11,306 firms were surveyed from 29 countries in the ECA region in 2008 and 2009.<sup>2,3</sup> In the surveys, a stratified random sample of firms were selected that were representative of a country's manufacturing and service sectors. The surveys include several questions related to international trade such as (1) what percentage of a firm's sales was due to direct or indirect exports (export intensity), (2) what percentage of material inputs or supplies were of foreign origin (import intensity) (asked only to firms in the manufacturing

sector), and (3) what was the duration of time needed to clear customs for imports and exports (time to import and time to export). The export and import data covered for the EU-10 countries is different from the other countries in the region. For the EU-10 countries, trade measures exclude trade between EU member countries.<sup>4</sup>

## Export and import activities across the ECA region

Countries in the region show great variation in their levels of openness and how intensively they trade (Table 1). The differences between the most and the least open countries measured as the percentage of exporters and importers are around 56 and 34 percentage points, respectively. The countries with the highest trade participation rates for both importing and exporting are Slovenia, Turkey, and FYR Macedonia. The percentage of exporters in Slovenia is three times more than the regional average. These three countries are also among the most export intensive countries. On the other hand, the Russian Federation, Kazakhstan, and Uzbekistan are among the least globally integrated countries for both exporting and importing.

Countries with a high percentage of exporters also have high percentage of importers (figure 1). This shows the complementarity between these two activities. In the region, almost 70 percent of exporting firms in manufacturing sectors also import intermediate goods. Given the fact that most global trade takes place among intermediate goods, this complementarity can be explained by the high integration of value chains across the globe. The graph shows that in Albania, despite of the high percentage of importers, roughly 20 percent of



Source: Enterprise Surveys.

firms export (which stands out as an outlier). Similarly, average export and import intensities across countries are also positively and significantly correlated. Comparing the EU-10 with the rest of the region shows that among EU-10 countries, the percentage of exporters is 10 percentage points higher than in the rest of the region (28 percent vs. 18 percent) and that the EU-10 countries export more intensively (12 percent vs. 7 percent). These differences in exporter and export intensity percentages would likely be higher if within-EU trade (for EU-10 countries) were included in the analysis.

Macro literature on trade and development shows that trade has a strong positive relationship with wealth (Freund and Bolaky 2008). Data from ES confirms this relationship. Countries that export more intensively have higher per capita incomes (figure 2). On average, EU-10 countries are almost

Table 1 Countries with high and low trade performance							
Percentage of exporters		Percentage of importers		Export intensity		Import intensity	
<b>High Levels</b>							
Slovenia	58	Albania	38	FYR Macedonia	21	Albania	79
Serbia	47	Slovenia	29	Slovenia	20	Estonia	63
Czech Rep.	38	FYR Macedonia	29	Turkey	17	Armenia	59
FYR Macedonia	38	Turkey	27	Estonia	15	Montenegro	52
Turkey	37	Estonia	23	Bosnia & Herz.	14	FYR Macedonia	51
<b>Low Levels</b>							
Tajikistan	9	Montenegro	10	Kazakhstan	2	Azerbaijan	21
Russian Fed.	7	Kazakhstan	9	Montenegro	2	Poland	20
Kazakhstan	5	Uzbekistan	8	Azerbaijan	2	Russian Fed.	19
Azerbaijan	4	Ukraine	5	Russian Fed.	2	Uzbekistan	17
Uzbekistan	2	Russian Fed.	4	Uzbekistan	1	Ukraine	16
<b>Average</b>	<b>22</b>		<b>16</b>		<b>9</b>		<b>38</b>

Source: Enterprise Surveys.

**Figure 2** Export intensity vs. income



Source: Enterprise Surveys.

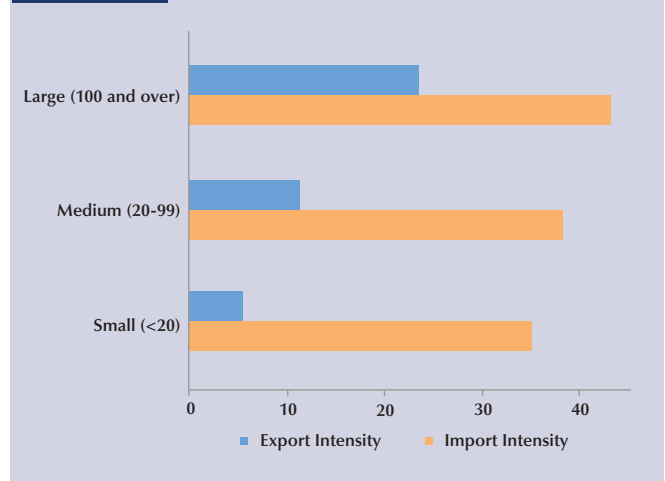
Note: The measure of income is gross national income per capita (in constant U.S. dollars) from World Bank Development Indicators (WDI).

twice as rich as the rest of the countries in the region. Slovenia is the richest and the second most export intensive country.

### Trade and firm performance

Existing studies show that exporting firms are likely to be more productive and larger than non-exporting firms (Bernard et al. 2007). The firm-level data from the ES allows us to investigate how firms of different sizes differ in trade intensity and whether this difference varies across countries. To explore this relationship, firms were divided into three size groups: small (5 to 19 workers), medium (20 to 99 workers), and large (100 workers or more). Small firms comprise 62 percent of the firms in the region. Medium and large firms comprise 29 percent and 9 percent, respectively. The data show that export intensity increases significantly with size (figure 3). The difference in export intensity between large and small firms is almost 30 percentage points. This difference is more pronounced among EU-10 countries compared to the rest of the region: 42 percentage points vs. 18 percentage points in respective order. In FYR Macedonia, large firms are 45 percentage points more export intensive than small firms, which is the largest difference in the region. Such differences are consistent with common trade theories (see Melitz 2003). Productive firms are more likely to be large and are also more likely to compensate the sunk costs of trading. However, in Armenia, Kazakhstan, Serbia, and Montenegro, there is no significant difference in export intensities between large and small firms. Another performance measure where exporters differ from non-exporters is in investment in research and development (R&D). In 14 countries there is a positive

**Figure 3** Trade intensity and firm size



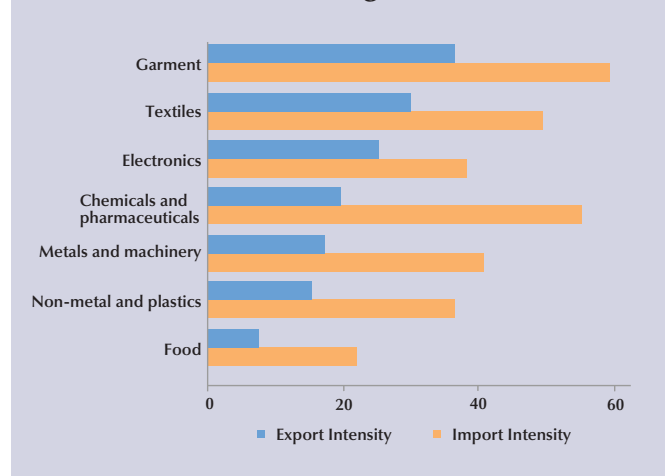
Source: Enterprise Surveys.

relationship between the probabilities of exporting and investment in R&D.

For import intensity, the results are similar. In general, large firms are almost 20 percentage points more intensive in importing than small firms. However, in Estonia, Tajikistan, and Kosovo, small firms have a significantly higher usage of foreign inputs than the large firms (76 percent vs. 43 percent for Estonia, 48 percent vs. 15 percent for Kosovo, and 62 percent vs. 30 percent for Tajikistan).

Some industries are more export oriented than the others. Hence export intensities are likely to vary across industries. Comparing trade intensities across seven major manufacturing industries shows considerable variation across industries (figure 4).<sup>5</sup> The garment industry is the

**Figure 4** Trade intensity across manufacturing industries



Source: Enterprise Surveys.

most export and import intensive industry among EU-10 countries and in the rest of the region. Textiles is the second most export intensive industry in the EU-10 group, whereas the chemicals industry is the most export intensive in the rest of the region. In both groups of countries, the food industry is the least intensive in both exporting and importing.

## Effects of customs efficiency on trade performance

Trade facilitation is essential to a country's trading success. One important aspect of trade facilitation is the efficiency of customs in handling traded goods. Firms may be discouraged from trading if they find it too costly and cumbersome to clear goods through customs. Evidence from ES supports this hypothesis. Countries with high customs clearing times export less intensively (figure 5). The average time to clear customs for export purposes is around 4 days.<sup>6</sup> The country with the lowest duration of time to clear customs is Montenegro with 1.1 days, followed by Bosnia and Herzegovina, and Albania with around 1.5 days. Times for the five countries with the highest duration of time to clear customs range from 6 to 20 days. The relationship between importing and the time it takes to clear customs is quite similar to the one for exporting. For importing, the average customs clearing time is 9 days. However, two outlier countries, Uzbekistan and Armenia, have durations of 52 and 28 days, respectively. Excluding these two countries reduces the average time to 7 days, which is

still higher than exporting time. One explanation for this difference could be congestion in the ports. In 22 out of 29 countries, the percentage of importers is higher than the percentage of exporters. Hence, customs processes are likely to last longer for importers than exporters.

The time it takes to clear customs varies across firms in different size groups. Large firms spend roughly twice as much time clearing exports through customs than do small firms. For importing, among EU-10 countries—although not the most import intensive group—medium-sized firms spend the most time clearing customs. For the rest of the region, the duration increases as the size decreases. Small firms spend twice as much time as large firms spend to clear custom.

The customs clearing times from the ES data includes only the duration between the arrival of goods to the main point of exit and the time these goods clear customs. We can compare the ES data with the Doing Business (DB) database, which measures customs clearing times and incorporates the duration of all other

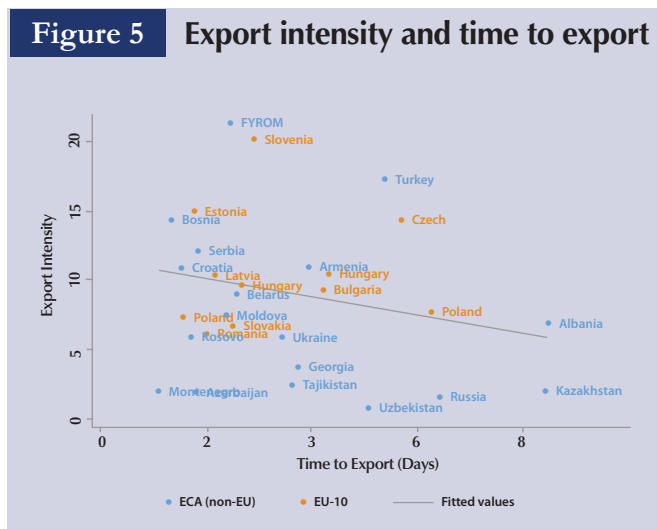
procedures from the contractual agreement between the parties to the delivery of goods.<sup>7</sup> The data in DB is collected for the transportation of a standardized cargo of goods by only ocean transport where ES data includes all means of transportation. Moreover, the DB data considers only the most populous city in the country, whereas ES data covers firms from other cities. Despite the differences in their definition and coverage, there is a strong positive correlation between the variables in ES and DB that measure the total time to trade. This relationship shows the representativeness of the data from the ES in how customs efficiency varies across countries.

## Among EU-10 countries, the proportion of importing firms increased by 10 percentage points since 2005.

## Over time comparison

Among the firms surveyed in 2008-2009, 2,342 of them were also surveyed in 2005. From 2005, importing in the ECA region increased significantly. Among EU-10 countries, the proportion of importer firms increased from 60 to 70 percent. In the region, import intensity also increased by roughly 10 percentage points from a level of 55 percent (figure 6). On the other hand, there has not been a substantial change in either the percentage of exporters or the export intensities. On customs clearance times, the duration for importing increased by 3 percentage points, which could be due to increased importing in the region, whereas the time it took for exporters to clear customs increased only slightly.

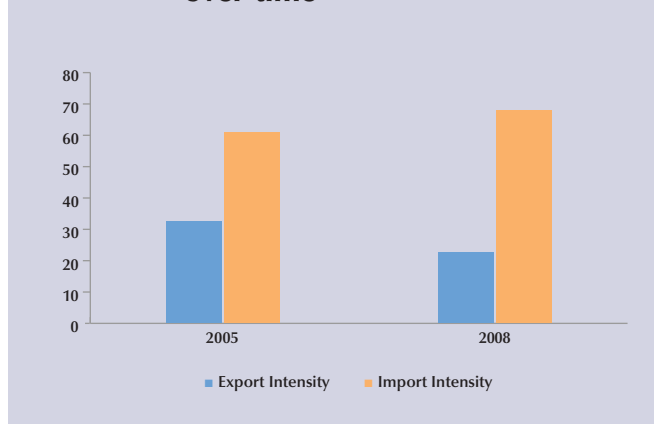
In the region, the Russian Federation was the only country that had a significant decrease in the percentage



Source: Enterprise Surveys.

Note: The graph on the left excludes Kyrgyz Republic and Tajikistan due to their especially high customs clearance times.

**Figure 6** Change in trade intensity over time



Source: Enterprise Surveys.

of exporters since 2005 (by 19 percentage points). In export intensity, the Russian Federation and Uzbekistan are the two countries that had a significant decline of 6 and 5 percentage points, respectively. On the import side, in several countries, including Armenia, Croatia, Estonia, Lithuania, Moldova, Poland, Slovenia, Tajikistan, Turkey, and Uzbekistan, the percentage of importers increased around 10 to 30 percentage points. The only country that had a decrease in the percentage of importers was Uzbekistan. The countries that had significant increases in import intensity were Albania, Armenia, Estonia, Lithuania, and Slovenia.

This note presents evidence on the import and export performance of countries in the ECA region. It shows that countries that perform one activity extensively are likely to perform similarly in the other activity. In almost all countries, exporting firms are larger and more likely to invest in R&D. This note also presents evidence on how the time to clear customs can be related to lower trade performance. Finally, this note shows that there have been significant increases in imports in the region since 2005.

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## Notes

- 1 See [www.enterprisesurveys.org](http://www.enterprisesurveys.org) for a detailed description of the data and methodology used for data collection. The Enterprise Surveys, implemented in Eastern Europe and Central Asia countries, are also known as Business Environment and Enterprise Performance Surveys (BEEPS) and are jointly conducted by the World Bank and the European Bank for Reconstruction and Development for this geographic region.
- 2 These countries are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Croatia, FYR Macedonia (FYROM), Georgia, Kazakhstan, Kyrgyz Republic, Kosovo, Moldova, Montenegro, Russian Federation, Serbia, Tajikistan, Turkey, Ukraine, and Uzbekistan and 10 recent European Union members: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia.
- 3 Although countries were surveyed in either 2008 or 2009, the survey questions refer to fiscal year 2007, and similarly, for the over time comparison, the 2005 survey presents data from fiscal year 2004.
- 4 In the graphs presented in this note, variables labeled as ECA (non-EU) excludes EU-10 countries.
- 5 These are two-digit manufacturing industries that are classified according to ISIC rev 3.1.
- 6 The exact question on customs clearing time in the survey is "When this establishment exported (imported) goods directly, how many days did it take on average from the time this establishment's goods arrived at their main point of exit (e.g., port, airport) until the time these goods cleared customs?"
- 7 See [www.doingbusiness.org](http://www.doingbusiness.org) for a detailed description of the data and methodology used.

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