The Role of SMEs in extra-EU Exports: Key performance indicators

Lucian Cernat, Malgorzata Jakubiak, Nicolas Preillon

Abstract

This paper examines the growing importance of EU exporting small and medium enterprises (SMEs) for EU exports in recent years in terms of standard metrics (the number of exporting SMEs, their share in total EU exports) but also in respect to several key performance indicators, such as export competitiveness, digital intensity of their exports, greenhouse gas (GHG) emissions and jobs supported by EU exporting SMEs. The empirical evidence suggests that the number of EU exporting SMEs has grown steadily over time. EU exporting SMEs seem to perform better than the OECD average in sectors of medium digital intensity. In particular, SMEs are competitive in digitally intensive goods, where EU large firms do not seem to be equally successful. SME exports have also lower GHG emissions than average levels, with 70% of SME exports belonging to low and medium-low emission intensity. Finally, yet importantly, EU SME exports are a major driver for export-led job creation: over 13 million jobs in Europe depend on EU SME exports.
Executive Summary

This Note examines the growing importance of EU small and medium enterprises (SMEs) for EU exports in recent years. It tries to offer a number of key performance indicators that can help guide EU trade policy, as well as various other policy domains. The empirical evidence suggests that the number of EU exporting SMEs has grown steadily over time. In 2017 (the latest available year from Eurostat), more than 700,000 EU27 enterprises sold goods outside of the EU. Out of all these enterprises, around 615,000 were small and medium-sized. These SMEs exported goods worth 476 billion euro, which represented 28% of the total value of extra-EU exports in that year. In many economic sectors, EU SMEs account for more than 50% of the total value of EU exports (textiles, furniture, printing and media, agricultural products, wood products).

Over half of the EU27 SMEs exports was accounted for by SMEs from the four Member States: Italy, France, Spain and Germany. While this is somewhat expected, given the size of large Member States, for several smaller EU Member States (e.g., Estonia, Cyprus, Latvia, Hungary, Portugal), exporting SMEs generate a sizeable share of their total exports, well above the 28% EU average. For several economic sectors, EU SMEs generate a higher value of exports than the average across total EU exports. EU SMEs exporting goods seem to be more competitive than the OECD average in sectors of medium digital intensity. When compared to the large EU firms, it is striking that SMEs are competitive in sectors characterised by medium-high digital intensity, where the EU large firms seem to have a comparative disadvantage in extra-EU export.

EU exporting SMEs are contributing less to the total EU export-related GHG emissions than non-SME exporters. By 2017, 70% of the goods sold by EU SMEs outside of the European Union belonged to the industries characterised by low or medium-low emission intensity. In comparison, the same share of extra-EU exports of non-SMEs was 53%.

Little is known about the EU SMEs exporting services. However, the limited data we have at our disposal suggests that the share of SMEs in extra-EU export of services is around 40% and, as such, its significance cannot be overlooked. It becomes more important than ever for EU policy makers to have a better picture of services trade by SMEs.

Finally, yet importantly, the Note puts together all the information on SME export of goods and services outside of the EU and attempts to estimate their role in job creation. Summing up all the sectoral jobs figures and building on the earlier work on ‘trade and jobs’, we estimate that EU exporting SMEs support over 13 million jobs in Europe (37% of total EU jobs supported by exports), with goods and services exports having a similar contribution.

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2 STEC database provides information on SME trade, yet for 13 Member States only and for certain years going back to 2013-2016.
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1. Introduction: the role of EU exporting SMEs is more important than ever

The economic importance of EU small and medium enterprises (SMEs) for the EU export performance has been amply documented for several years (see for instance Cernat et al (2014), OECD (2018)). Since then it became clear that SMEs are more important than previously thought for EU external trade performance. In response to this realisation, EU trade policy has integrated in its panoply of instruments a number of SME-specific features (e.g. the inclusion of SME chapters in recent FTAs, the creation of SME Contact points, an Intellectual Property Rights (IPR) SME Helpdesk, a Trade Defence Helpdesk for SMEs, etc.).

EU exporting SMEs also benefit from other policy instruments put forward in other areas by the EU and national authorities. A recent example is the recent “EU SME Strategy” adopted by the European Commission on 10 March 2020. This is one element of a bigger policy package including several initiatives in the areas of industrial policies, digital agenda and the circular economy.

In the meantime, however, the coronavirus pandemic has become a major economic shock for the global economy affecting all firms, small and large, exporters or domestic producers. Both global and intra-EU supply chains were severely disrupted by the coronavirus pandemic. SMEs engaged in global trade are particularly vulnerable in the current context. Several business surveys document this critical situation faced by EU exporting SMEs. For instance, a survey by the Association of German Chambers of Industry and Commerce (DIHK) of over 10 000 German companies (over 85% of which are SMEs) expect a negative impact on their business in 2020, with over a third expecting a turnover decline greater than 10%. Another survey of Italian SMEs indicated a higher decline: a third of the respondents expect a 15% decline in their turnover. Evidence from the early stages of the coronavirus pandemic in China also indicated that exporting SMEs suffered more than non-exporting SMEs (Zhang, 2020). A similar UK business survey of over 300 manufacturing SMEs indicated that export orders fell at quicker rate than domestic orders. Around two-thirds of SMEs have seen a negative impact on their international activities (CBI, 2020).

Therefore, in the post-corona crisis recovery process, ensuring that EU exporting SMEs rebound quickly and remain as competitive as before the coronavirus in global markets is more important than ever. This Note tries to offer a number of key performance indicators that will guide the reflection process in the post-covid19 crisis in EU trade policy and across various policy domains. The Note provides an update to the 2014 Chief Economist analysis in terms of general trends characterising EU SME participation in extra-EU trade. At the same time, it takes a closer look at the nature of SME exports and at the external competitiveness of the EU small and medium-sized firms, using a number of key performance indicators related to their global comparative advantage vis-a-vis other competitors, their digital intensity, the impact on greenhouse emissions and the jobs supported by EU exporting SMEs.

The remainder of this note is organised as follows. Section 2 offers a series of standard statistical indicators on SME participation in extra-EU exports for 2017, the latest available year from Eurostat. Section 3 develops a new analytical approach to assess the competitiveness of EU
exporting SMEs, based on the well-known revealed comparative advantage indicators. We compare the competitiveness of EU SMEs with (i) SMEs located elsewhere in OECD countries, and (ii) with OECD firms of all sizes. Section 4 looks at another novel key performance indicator for EU SME export performance, linking comparative advantage and digital intensity of their exports. Section 5 maps EU SME exports based on a sectoral breakdown and their greenhouse emissions intensity. Finally, section 6 estimates the number of jobs supported by direct EU SME exports outside EU 27.

The analysis was made possible thanks to two Eurostat databases that contain various indicators related to the participation of SMEs in international trade goods and services: the Trade by Enterprise Characteristics (TEC) database (Box 1) and, to a lesser extent, the Services Trade by Enterprise Characteristics (STEC) which contains various information about enterprises engaged in foreign trade like the enterprise size, the concentration of trade, the activity sector etc.

**Box 1. The Trade by Enterprise Characteristics database**

Compared to traditional datasets focusing on trade flows, the Eurostat TEC database (Trade by Enterprise Characteristics) contains various firm-level information about the EU enterprises involved in the foreign trade, like the enterprise size, the activity sector, the number of trade partners, the type of ownership, etc. Data is expressed in terms of number of enterprises and in terms of traded value (in euros). For the purpose of this note on SMEs we mainly focus on the size class. The TEC database distinguishes six possible values:

- Fewer than 10 employees (micro firms)
- From 10 to 49 employees (small firms)
- From 50 to 249 employees (medium-size firms)
- 250 employees or more (large firms)
- Unknown (firms with no size reported)
- Total (all firms)

SMEs are commonly defined as enterprises employing less than 250 employees, so comprising the three first above-mentioned subclasses.

*Source: Based on Eurostat (2020a)*

These databases link two major statistical domains, which have traditionally been compiled and used separately, i.e. business statistics and international trade in goods and services statistics. It is important to note from the outset that the richness and comprehensiveness of the TEC database is superior to the services trade contained in the STEC data, for a number of reasons, not least due to the fact that not all Member States report data under the STEC framework. Therefore, the majority of the analysis in the remainder of this Note is primarily based on trade
in goods contained in the TEC data. Even though the actual trade flows observed are in goods, the TEC data also cover partly certain SMEs whose main sector of economic activity belongs to services, in so far as they also export goods. As this paper is aimed to update the previous 2014 Chief Economist Note, we cover the 2014-2017 period. All results at EU level are constructed on the basis of a EU27 aggregate, i.e. without the UK.

2. EU exporting SMEs: general trends

In 2017, more than 700,000 EU enterprises exported goods outside of the EU for a total value of 1,673 billion EUR. Out of all these enterprises, around 615,000 were SMEs. The largest share – more than half – were micro enterprises (1-9 employees). Around one quarter were small firms (10-49 employees) and one tenth were medium companies (49-250 employees). Only 3% of the EU exporters are large companies (see Figure 1).

Figure 1. EU27 exporters of goods by size class, in number of enterprises and value of exports, 2017

Source: Authors’ calculations based on the Eurostat TEC database.

3 EU27, without the UK. Most likely, the number of enterprises is underestimated, as the firms located in EU27 and exporting only to the UK are not counted.
However, based on the value of direct exports, SMEs account only for 28% of extra-EU exports, i.e. for 476 billion EUR (5% by micro, 7% by small and 16% for medium enterprises). Large EU exporters account for 57% of total EU exports (960 billion EUR).

Data on extra-EU exports contain also a non-negligible number of enterprises of "unknown” size (Figure 1). This statistical category is responsible for 9% of missing information in terms of number of firms and 14% in terms of export values. It may well be that the "unknown” category of firms comprises mostly SMEs, notably micro-firms, for which statistical reporting requirements is less demanding. Under this hypothesis, if the “unknown size” category was taken into account, the share of EU exporting SMEs in EU exports would be 43%. However, to avoid overestimation, we will ignore the “unknown” category in the remainder of this paper.

The Eurostat STEC database also allows us to assess the contribution of EU SMEs to services exports (Figure 2). The share varies across Member States for which there is available data. The average share of SMEs in EU services exports for the Member States with available data was 41%, which is higher than the share of SME exporting goods (both EU and in the sample). .

Figure 2. Share of EU SMEs in services exports, various years

![Graph showing the share of EU SMEs in services exports for various years, with labels for each country and percentage values for SMEs, large enterprises, and unknown size.]

Source: Authors’ calculations based on the Eurostat STEC database (Eurostat, 2020b).

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4 In particular, 46% of the exporters in Estonia are classified as of “unknown size”. This share reaches 31% for Belgium and 19% for Germany.
2.1. Overall trends in the 2014-2017 period

Since 2014, the overall number of exporting enterprises went down by 8%, but the number of exporting SMEs went up by 6%. The share of SMEs to total enterprises has increased progressively each year from 76% in 2014 to 87% in 2017. During the same time, the value of extra-EU export increased by 12% for all enterprises and by 10% for SMEs. The share of SMEs in terms of export value remained stable, between 28% and 30%.

Figure 3. Number of EU27 exporting SMEs and enterprises (in thousands), 2014-2017

Source: Authors’ calculations based on the Eurostat TEC database.

Figure 4. Value of exports of EU27 SMEs and enterprises (billion €), 2014-2017

Source: Authors’ calculations based on the Eurostat TEC database.

The increase in the share of SMEs in the total number of EU exporters is the result of two opposite developments: the absolute number of exporting SMEs has grown over time, whereas the total number of EU exporters declined slightly since 2014.
This led to a decline in the number of non-SME EU exporters (large and “unknown” status), whose combined share of the total number of exporting firms dropped from 24% in 2014 to only 13% in 2017. However, in terms of export values, the share of EU exporting SMEs remained relatively constant during the 2014–2017 period (Figure 4). EU SME exports grew roughly at the same pace as the overall EU exports during that period.

The largest increase in the value of EU SME exports took place between 2014 and 2015, whereas in the last two years with available data, they grew at less than 1% per year.

### 2.2. SME exports: breakdown by Member States

The Eurostat TEC data highlights large heterogeneity between Member States in terms of the importance of EU SMEs in the total value of exports outside the EU. Italy, France, Spain and Germany accounted together for 60% of total EU exporting SMEs and 53% of total SMEs export value (Figure 5). From this chart, we notice that a few EU Member States are outliers in terms of the ratio between the value of SME exports and the number of exporting SMEs. Ireland, Belgium, the Netherlands (and to a lesser extent Finland, Cyprus and Hungary) have a higher value of average export values per SME.

The rankings look slightly different when relative shares of exports by SMEs are compared to the exports of large firms at the level of each country. In order to do this, we plotted SME relative export performance by Member States along two dimensions: the share of SMEs to total number of exporting enterprises from a given country (x-axis) and the share of SMEs to total value of exports (y-axis) (see Figure 6). The EU averages by number and value (respectively 87% and 28%) are indicated at the intersection of the axes in Figure 6. The EU27 Member States are distributed into four types of SME export patterns, based on the shares of SMEs in export values and number of exporters (high vs low).

An interesting comparison can be made when looking at Germany and Italy, two leading countries in the export of goods outside of the EU by value and number of exporting SMEs. Germany belongs to the “low value – low number” quadrant, being below EU average both in the share of the number of exporting SMEs (77%), as compared to the total number of German firms, and the share of SME export value in total German exports (16%). In contrast, Italian SMEs are positioned in the “high value – high number”, above the EU average both in terms of the share of SMEs in the total number of firms (89%) and in terms of their share in total Italian exports (47%).

At the same time, in absolute trade values, the performance of German SMEs remains truly impressive: German SMEs account for 18% of total value of EU SME exports. Apart from Italy, eleven Member States (Latvia, Hungary, Spain, Greece, Austria, Finland, Bulgaria, Slovenia, Lithuania, Sweden, Romania) are in the top quadrant of “high values – high number” of exporting SMEs. In addition, 20 Member States have higher shares of exports generated by exporting SMEs than the EU average.
Figure 5. Value of exports of EU SMEs (billion €) and number of firms, in thousands, by Member States, 2017

Source: Authors’ calculations based on the Eurostat TEC database.
Figure 6. Share of exporting SMEs to total exporting firms, in number and trade value, 2017

Source: Authors’ calculations based on the Eurostat TEC database. The EU averages by number and value (respectively 87% and 28%) are indicated at the intersection of the axes.

2.3. EU SME exports: breakdown by sectors of activity

As the TEC database captures trade in goods, it does not come as a surprise that the vast majority of exports accounted for by SMEs comes from the manufacturing sectors. However, in some cases, SMEs whose main sector of economic activity are defined as various services sectors are also important exporters of goods, e.g. SMEs that are mainly active in wholesale trade, but also transportation and professional services. Looking at the type of goods traded by enterprises active in the service sectors, the data suggests that they export goods which are related to their main areas of activity. For example firms belonging to professional and scientific and technical activities exported mainly chemicals and pharmaceuticals, machinery and equipment, computers, electronic and optical products. Firms dealing with transportation and storage exported transport equipment and machinery plus other industrial products.

For several economic sectors, EU SMEs generate a higher value of exports than the average across total EU exports. These sectors are plotted in Figure 7, based on the number of exporting
SMEs (x-axis), their share in sectoral exports (y-axis) and the value of SME exports (bubble size). The sectors dominating across all these three dimensions are machinery, metal products, followed by rubber and plastics. It is also noteworthy that for a number of economic sectors, EU SMEs account for more than 50% of the total value of EU exports in these sectors (textiles, furniture, printing and media, agricultural products, wood products) despite a relatively small number of exporting SMEs.

Figure 7. Economic sectors with higher than average shares of EU SME exports, 2017

Source: Authors’ calculations based on Eurostat and OECD TEC databases. The size of the bubbles are in billion euros.

2.4. EU SME exports: breakdown by trading partners

The Eurostat TEC database contains also a table matching enterprise sizes and key partner countries. However, this table is optional, meaning that Member States are not obliged to provide this data. For 2017, the Eurostat TEC database includes data from between 13 and 16 Member States, depending on the partner country. Overall, using this data, we can specify destinations of EU SMEs to 37 trading partners. Below, we present an indicative share of SMEs for each of these trade partners (see Figure 8).

In terms of number of enterprises, the share of SMEs to all enterprises ranges from 75% to 91%, depending on the partner. Switzerland is the partner for which the share of EU SMEs in total number of exporting firms is the most important (91%), followed by USA (88%),
Norway (87%) and Ukraine (87%). Three of those top trading partners are geographically close.

**Figure 8. Share of EU SMEs to total exporting enterprises (%), by partner country, in number and value, 2017**

Source: Authors’ calculations based on the Eurostat TEC database.
In terms of export value, the results are much more diverse. The partner showing the highest share of SMEs export is Iceland, with 50%. Three other countries have high shares of SMEs in total EU bilateral exports (40% or above): Norway (45%), Ukraine (41%) and Morocco (40%). At the other end of the spectrum for other trading partners (India, Qatar, South Korea and Taiwan) the share of EU SMEs in total exports are below 20%.

3. Revealed comparative advantages of EU SME exporters

3.1. EU SME competitiveness relative to SMEs in other OECD countries

This section takes a closer look at the external competitiveness of EU SME exporters across economic sectors. In order to do this, we take the subgroup of SME exporters out of the whole population of exporting firms and calculate their revealed comparative advantages (RCAs) vis-à-vis firms of similar size located elsewhere. In this way, we compare how EU SMEs differ from SMEs exporting from other countries. Moreover, we also check whether the SMEs differ in terms of their specialisation in extra-EU exports from the patterns recorded for all firms, i.e. from the RCA indicators that we usually see in the literature.

Ideally, the revealed comparative advantage (RCA) indicator would relate the structure of exports of EU SMEs to the structure of SME exports worldwide. However, the data on global trade by SMEs is not available. Therefore, the RCAs presented in this Note are calculated as the ratios of the country-sector export shares over the same sector shares in the export of a reference group of countries. In other words:

\[
RCA_{j,i} = \frac{x_{j,i}/\sum_i x_{j,i}}{x_{OECD,i}/\sum_i x_{OECD,i}} \tag{1}
\]

where \(X_{j,i}\) represents the value of (extra-EU) exports of a member state \(j\) and sector \(i\). Taking data on exports by SMEs, exports of EU SMEs were compared with the exports of firms from the broader set of countries, in this case the OECD SMEs. Values higher than 1 mean that EU SME exports in a given sector perform better than the reference group of SMEs from the OECD countries and therefore enjoy a comparative advantage\(^5\).

Due to the limited availability of data, we were able to calculate the indicators for 2014 only, which places this part of the analysis a few years back in reference to the preceding section.

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\(^5\) The OECD provided the broadest possible reference group of countries with comparable data. On average, EU27 exports amounted to around 43% of OECD export for both SMEs and all firms. The weight of the EU information in the denominator was substantial, yet less than half.
Moreover, the reference group did not cover all OECD members\(^6\). Even though the analysis covers the year 2014, the results refer to EU27.

For several sectors, EU SMEs are more competitive than other SMEs from various other non-EU countries in the OECD region (Table 1).

### Table 1. EU exporting SMEs with top RCA values compared to other SMEs from the OECD region, 2014

<table>
<thead>
<tr>
<th>Top sectors with high RCAs for EU exporting SMEs</th>
<th>EU27 average RCA score</th>
<th>EU Member States of that score or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacture of leather and related products</td>
<td>2.0</td>
<td>Italy, Portugal, Greece</td>
</tr>
<tr>
<td>Manufacture of coke and refined petroleum products</td>
<td>1.7</td>
<td>Greece, Italy, Poland</td>
</tr>
<tr>
<td>Manufacture of machinery and equipment n.e.c.</td>
<td>1.5</td>
<td>Italy, Germany, Finland, Denmark, Czechia, Sweden</td>
</tr>
<tr>
<td>Manufacture of furniture</td>
<td>1.5</td>
<td>Italy, Lithuania, Sweden, Portugal, Croatia, Slovenia, Poland</td>
</tr>
<tr>
<td>Water supply; sewerage, waste management and remediation activities</td>
<td>1.5</td>
<td>Romania, Croatia, Belgium, Estonia, Lithuania, Cyprus, Germany, Poland, France</td>
</tr>
<tr>
<td>Manufacture of paper and paper products</td>
<td>1.4</td>
<td>Finland, Slovenia, Croatia, Portugal, Estonia, Czechia, Greece, Austria</td>
</tr>
<tr>
<td>Manufacture of textiles</td>
<td>1.4</td>
<td>Portugal, Slovenia, Italy, Slovakia, France, Spain, Greece,</td>
</tr>
<tr>
<td>Manufacture of basic pharmaceutical products and pharmaceutical preparations</td>
<td>1.3</td>
<td>Ireland, Austria, Spain, Malta</td>
</tr>
<tr>
<td>Manufacture of other non-metallic mineral products</td>
<td>1.3</td>
<td>Croatia, Spain, Portugal, Czechia, Slovenia, Italy, Greece, Slovakia</td>
</tr>
<tr>
<td>Manufacture of beverages</td>
<td>1.3</td>
<td>Portugal, Greece, France, Spain, Lithuania, Greece, Ireland, Belgium, Bulgaria</td>
</tr>
</tbody>
</table>

*Source: Authors’ calculations based on Eurostat and OECD TEC databases.*

### 3.2. EU SME export competitiveness against all OECD exporters (large and small)

In order to show how the EU SME exports compare to the distribution of exports by all exporters from the OECD countries, we use another measure of SMEs RCA. It compares the

\(^6\) It consists of all EU27 countries, the US, Canada, Mexico, Turkey, UK and Israel. For simplicity we call the full sample ‘OECD countries’.
share of a given sector in EU SME exports to the share of this sector in total OECD exports (all firm sizes). In other words, it compares the structure of the extra-EU export within the SMEs sector to the structure of exports by all OECD firms. The underlying idea is that in the real world EU SMEs compete in global markets with products produced by firms of all sizes, especially at the level of aggregation of economic activity used here.

Figure 9. Economic sectors with highly competitive EU exporting SMEs, 2014

Source: Authors’ calculations based on Eurostat and OECD TEC database. The size of the bubbles indicates the value of sectoral SME exports, in billion euros.

This is to say that an RCA indicator similar to the one calculated in equation (1) was used, with the data on OECD exports by all firms in the denominator. The values of the RCA indicator higher than 1 mean that a given sector plays a more prominent place in the EU SME export than in the total export of the OECD countries of all firm sizes. For simplicity, these sectors are called here as ‘highly competitive’ EU SMEs and are depicted in Figure 9, using three important metrics: the number of EU exporting SMEs (x-axis), their revealed comparative advantage (y-axis) and the size of their exports (bubble size). In terms of number of exporting SMEs and the export values generated, “wholesale trade” is one SME exporting sector that stands out. Other sectors (both in terms of number of SME exporters and export values) also benefit from very high levels of export competitiveness (e.g. manufacturing of leather products, water treatment and waste management, manufacturing of furniture).

Another important finding in terms of the nature of the “highly competitive” EU exporting SMEs is their distribution across the three major economic activities: agrifood, manufacturing, and services (Figure 10). Although the Eurostat TEC database (the source for all these key performance indicators) include only trade in goods, the largest number of EU exporting SMEs are classified as services enterprises, based on their main line of business. In other words, the vast majority of “highly competitive” EU SMEs goods exporters are actually services
firms (especially wholesalers, distributors, etc.). This is an important finding, since it shows once again the growing interplay between goods and services, in terms of export competitiveness. A competitive services sector leads to overall competitiveness in goods exports (both agrifood and manufacturing).

Figure 10. Sectoral distribution of highly competitive EU exporting SMEs, 2014

Source: Authors’ calculations based on Eurostat and OECD TEC databases.

In the next sections, we come back to comparing EU SMEs to the SMEs outside of the EU. RCA indicators are interpreted in the context of other important EU policy objectives. We explore the links between export competitiveness and SME digitalisation, as well as the greenhouse gas emissions intensity of EU SME exports, with reference to the climate and economic objectives of the European Green Deal. This is done firstly by showing how EU SMEs perform in clusters of sectors of different digital intensity. Secondly, the information on average greenhouse gases emission intensity of the sectors is also included, in order to have an idea of whether any sectoral specialisation in extra-EU exports by SMEs can be linked to lower or higher emission intensity. The following section presents comparative advantages for the EU27, calculated using export flows by SMEs, at the level of the whole EU.

4. EU SMEs: export competitiveness and digital intensity

European SMEs seem to perform better than the OECD SMEs in sectors of medium digital intensity (Figure 11). When compared to the large EU firms, it is striking that the SMEs are competitive in sectors characterised by medium-high digital intensity, where the EU large firms seem to have comparative disadvantage in extra-EU export.
Figure 11. RCAs by digital intensive sectors and emissions intensity: SMEs vs. all firms, 2014

For a number of sectors activity, the EU SME exporters are more competitive than the firms of similar size from other OECD countries:

- among the **high digitally intensive group of sectors**: manufacture of motor vehicles, trailers and semitrailers and other transport equipment;
- among the **medium digital intensive**: leather, coke and refined petroleum products, machinery, furniture, paper, wood, electrical equipment, textiles, pharmaceuticals, chemicals, mineral products, fabricated metal products, rubber, printing and reproduction of recorded media and other manufacturing;
- among the **low digital intensive**: water supply and waste management, as well as manufacture of food and beverages.

When compared with other non-EU SME exporters, the data indicates that EU SMEs exporting machinery, furniture, paper, wood, electrical equipment and printing products perform better than the SMEs from the OECD and at the same time, they come from the ‘digitally intensive’ sectors (Figure 12). Furthermore, SMEs producing furniture, wood, as well as those active in printing and reproduction of recorded media industry, dominate extra-EU export.

Compared to the overall OECD sample (i.e. comparing the competitiveness of EU exporting SMEs not only against other non-EU exporting SMEs but against all small and large OECD exporting firms), it appears that **the vast majority of “highly competitive” EU exporting SMEs are grouped in the medium-high digital intensive sectors** (66% of the total number of highly competitive EU SMEs). Eight percent of these EU SMEs are characterised by high digital intensity.

**Figure 13. Digital intensity of highly competitive EU exporting SMEs, 2014**

![Diagram showing digital intensity of highly competitive EU exporting SMEs, 2014](image)

*Source: Authors’ calculations based on Eurostat and OECD TEC database.*

Given the growing importance of digital technologies and those sectors that are highly digitally intensive, it would be important to further investigate the possible policy instruments that could...
further promote a larger number of SMEs to expand their exporting activities in the high digital intensive sectors. Since many of the digital technologies (e.g. artificial intelligence, digital business-to-business (B2B) platforms, big data, 3D printing, blockchain) are developed by and exported by various services sectors, it becomes more important than ever for EU policy makers to have a better picture of services trade by SMEs. Therefore, the extension of the SME services trade database (STEC) coverage to all EU Member States becomes a major EU analytical priority.

5. EU SME export competitiveness and GHG emission intensity

In order to show the external competitiveness of EU SMEs against the backdrop of climate-related commitments, the competitiveness of the SMEs is shown here for groups of industries of different emission intensities. First, the industries were divided into quartiles, depending on their GHG emission intensities in 2014 available from Eurostat, the year for which RCA indexes could be calculated based on the latest available data. Then the two middle quartiles were grouped together, for easier interpretation. In this way, we were able to assess revealed comparative advantages of EU SMEs across three groups of industries of different emission intensities. The data suggests that EU SMEs seem to be more competitive than the non-EU SMEs within the medium-emission intensive group of industries.

**Box.2. Economic sectors and their GHG emission intensities**

Industries were divided into quartiles, depending on their GHG emission intensities in 2014:

- **low GHG emission intensity**: electronic and optical products, industrial machinery, furniture, other manufacturing, ICT, financial and insurance activities, real estate activities, professional, scientific and technical activities, administrative and support service activities;
- **medium-low GHG emission intensity**: printing and media, pharmaceutical products, metal products, motor vehicles, repair of machinery and equipment, construction, wholesale and retail trade;
- **medium-high GHG emission intensity**: food and beverages, tobacco, textiles, apparel, leather, wood products, rubber and plastic products, electrical equipment;
- **high emission intensity**: agriculture, forestry and fishing, mining and quarrying, paper, coke and petroleum products, chemicals, mineral products, metals, electricity, gas, water supply, sewerage, waste management, transportation and storage.

*Source: Authors’ calculations on the basis of Eurostat data (Air emissions intensities by NACE Rev. 2 activity [env_ac_aeint_r2])*

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7 See for instance European Commission (2020) for an example of recent efforts to map out the future of new digital technologies and their impact on EU SMEs.
Figure 14. Share of low and medium-low GHG intensive exports for SME and non-SME exporters, 2017

Source: Authors’ calculations based on Eurostat OECD TEC database.

An important metric of the performance of EU exporting SMEs in terms of climate change objectives is the share of their exports that have relatively low levels of GHG emissions (Figure 14). By this metric, EU exporting SMEs are very well positioned to benefit from the European Green Deal objectives. In 2014, almost two thirds of the goods sold by the EU SMEs outside of the European Union belonged to the industries characterised by low or medium-low emission intensity. By 2017, the share of lower GHG-intensive exports in total EU SME exports went up to 70%. In comparison, the same share for non-SME EU exports was 53% in 2017. The difference was mainly due to medium-low emission intensive group of sectors.

The metrics presented in this section offered another key SME-related message: EU exporting SMEs are contributing less to the total EU export-related GHG emissions than non-SME exporters.

6. Jobs supported by EU exporting SMEs

As mentioned in the introductory section, trade and jobs feature prominently among the key performance indicators used in EU trade policy making for several years already. The latest in-house estimates by the EU Joint Research Centre and the Chief Economist team (Arto et al, 2018) indicate that EU exports supported 36 million jobs in Europe in 2017, up two thirds from 2000. This means that 1 in 7 jobs in the EU depends on exports. Our analysis based on the latest available national accounts data across EU Member States and various sectors, shows that
exports create opportunities for everyone, both skilled and unskilled workers. Moreover, these export-supported jobs have a “wage premium”, being better paid on average.

EU SMEs also contribute significantly to the value of EU exports and therefore to the number of jobs in Europe that are supported by extra-EU exports. Cernat et al (2014) using a simplified methodology based on the TEC enterprise size distribution, produced a first estimate of the total number of “direct jobs” found in EU exporting SMEs. At the lower end of the range, it was estimated that at least 6 million jobs in Europe are found in EU exporting SMEs in 2011. However, this number did not include the upstream value-added, indirect number of jobs along the supply chains that are contributing to SMEs exports.8

In this paper, we use a much more precise and comprehensive methodology that combine the data sources used in Arto et al. (2018) and the Eurostat TEC and STEC databases. The jobs supported by EU SME exports can be estimated by weighting the sectoral jobs estimates in Arto et al. (2018) with the TEC and STEC sectoral shares of SMEs exports in the primary, manufacturing and services sectors. Summing up all the sectoral jobs figures, we estimate that EU exporting SMEs support over 13 million jobs in Europe, with goods and services exports having a comparable contribution.

Figure 15. EU jobs supported by EU SME exports, 2017

Source: Authors’ calculations, based on Arto et al. (2018) and Eurostat TEC and STEC databases.

It is important to note that EU exporting SMEs seem to generate a higher share of EU jobs supported by exports (around 37%) than their corresponding share in total EU exports.

8 For example, while only 3% of total value added generated by independent micro SMEs in Sweden is exported directly, an additional 18% of their value added is indirectly embodied in exports (OECD, 2018).
Several elements may explain this finding. One caveat for this finding is the fact that the data on the participation of EU SMEs in services exports is rather incomplete and therefore the accuracy of the jobs supported by EU services exporting SMEs is based on a sub-sample of all EU Member States (see Figure 2). However, this higher share of jobs supported by EU exporting SMEs is in line with the empirical evidence available in the economics literature: in most countries, SMEs are found to be more labour intensive than larger firms (which tend to be more capital intensive). Therefore, in general SMEs tend to employ more people for the same value of exports. In the EU, SMEs seem also more dynamic in terms of employment generation than larger firms.  

![Figure 16. Distribution of jobs supported by EU SME exports, 2014](image)

**Source:** Authors’ calculations, based on Arto et al. (2018) and Eurostat TEC and STEC databases.

While the jobs supported by services exports are highly aggregated, the jobs supported by SME goods exports can be further broken down by several sectors (Figure 16). We observe that the sector with the largest contribution (41%) to the number of jobs supported by EU exporting SMEs is “transport, wholesale trade and business services”. In the goods area, “machinery and transport equipment” supports 23% of the total number of jobs linked to EU SME exports.

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9 According to OECD (2018), compensation of employees constitutes the largest part of value added, particularly in SMEs, which tend to be less capital-intensive than larger firms.

10 According to de Kok et al. (2011), European SMEs are more dynamic in terms of job creation than large enterprises. Between 2002 and 2010, 85% of total employment growth was attributable to SMEs, and SMEs have a much higher employment growth rate (1% annually) than large enterprises (0.5% a year).
7. Concluding remarks

Throughout this paper we have highlighted a number of key performance indicators (KPIs) that characterise the importance of EU SMEs for the overall export competitiveness of the EU economy during the 2014-2017 period, the latest period for which data is available (Eurostat, 2020a). For instance, in 2017, more than 700,000 EU27 enterprises sold goods outside of the EU. Out of all these enterprises, around 615,000 were small and medium-sized. **EU SMEs exported goods worth 476 billion euro, which represented 28% of the total value of extra-EU export in that year.** Over half of the EU27 SMEs exports was accounted for by SMEs from the four Member States: Italy, France, Spain and Germany. While this is somewhat expected, given the size of large Member States, **for several smaller EU Member States exporting SMEs generate a sizeable share of their total exports, well above the 28% EU average** (e.g. Estonia, Cyprus, Latvia, Hungary, Portugal). For several economic sectors, EU SMEs generate a higher value of exports than the average across total EU exports.

Another key performance indicator guiding EU trade policy is the link between trade and jobs. Building on Arto et al. (2018) and Eurostat (2020b), we have updated the previous estimates by Cernat et al. (2014) of the number of jobs supported by SMEs exports. For 2017, our estimates indicate that **over 13 million jobs in Europe depend on EU SME exports.** These jobs are equally distributed between services and goods exports.

The paper also extends our previous work of Cernat et al. (2014) by including a series of important indicators: an SME-specific revealed comparative advantage (RCA) and two KPIs linked to digital intensity of EU exporting SMEs and the greenhouse gas intensity, as well as the value of their exports. Several sectors stand out in terms of several competitiveness dimensions (e.g. machinery, metal products). It is also noteworthy that **EU SMEs account for more than 50% of the total value of extra-EU exports in many economic sectors (textiles, furniture, printing and media, agricultural products, wood products),** despite a relatively small number of exporting SMEs.

**European SMEs seem to perform better than the OECD SMEs in sectors of medium digital intensity.** When compared to the large EU firms, it is striking that the SMEs are competitive in sectors characterised by medium-high digital intensity, where the EU large firms seem to have a comparative disadvantage in extra-EU export.

Across the four digital-intensity groups, all EU firms, on average, perform better than the OECD exporters in medium-low digital intensive sectors only. However, even in this group of sectors, SMEs outperform larger firms. When the EU SMEs exports are compared to the export of the OECD enterprises of all sizes (large and small), **services SMEs exporting goods in their related sectors seem to be more competitive.** Few medium-digital intensive manufacturing sectors also make the cut.
When looking from the climate-related perspective, EU SMEs seem to be more competitive than OECD SMEs within the medium GHG emission intensive group of industries. What is interesting is that by 2017, **70% of the goods sold by EU SMEs outside of the European Union belonged to the industries characterised by low or medium-low emission intensity.** In comparison, the same share of extra-EU exports for non-SME firms was 53%.

The complex interplay between goods and services and the critical importance of competitive services sectors for manufacturing export success is also true in the case of EU exporting SMEs. **Export of goods by the EU SMEs seem to be globally competitive when exported by firms from related service sectors:** in 2014, they accounted for over 40% of the total extra-EU27 exports by SMEs. Predominantly, these are low digitally intensive service sectors (water supply, transportation, construction, agriculture) with the notable exception of the export of wholesale and retail trade (medium digital) and professional, scientific and technical activities as well as administrative and support services.

Despite these very promising KPIs for SMEs, compared to their contributions to national economies, SMEs remain under-represented in global trade, not only in the European Union but also in other OECD countries (OECD, 2018). The overall conclusion of this paper is that, given the major role played by SMEs in EU exports as measured by various KPIs (and their untapped potential as a driver of economic dynamism), **ensuring that EU SMEs continue to remain strongly engaged in exporting activities in the post-COVID19 recovery is of paramount importance.**

Beyond engaging in trade and global supply chains, **EU SMEs could further internationalise via outward foreign direct investment (FDI) as part of the post-COVID19 exit strategy.** However, this form of internationalisation is relatively uncommon among EU SMEs. In a 2009 survey of European SMEs, only 2% indicated direct investment abroad (European Commission, 2010). In this regard, empirical evidence suggests that public measures to support outward FDIs by SMEs are effective in enhancing firm performance in terms of domestic turnover and productivity growth, especially for smaller and younger firms (Bannò et al., 2014).

Several other SME-related policy initiatives taken at both EU and national level have offered targeted short-term assistance to SMEs to shield them from the negative economic consequences of the COVID19 pandemic. Trade policy is also well positioned to offer global market opportunities. **A more comprehensive and detailed analytical base, both in terms of general firm-level characteristics would enhance our ability to deploy the most effective trade policy responses**, notably in the area of services trade (where data remains unsatisfactory). A stronger engagement by EU Member States in sharing such SME specific data at EU level would be one simple “low investment, high returns” type of initiative that would have considerable dividends in terms of other EU policy objectives aimed at jobs creation, and promoting a digital future for the EU economy on a sustainable basis.
8. References


Cernat, L., Norman, A. and Dutch T-Figuered, A. (2014) SMEs are more important than you think! Challenges and opportunities for the EU exporting SMEs, Chief Economist Note 3/2014.


Annex I: SME extra-EU exports by Member States

Exporting SMEs and all enterprises, by Member States, in number and value, 2017

<table>
<thead>
<tr>
<th></th>
<th>Number of enterprises</th>
<th>Share of SMEs in all (%)</th>
<th>Export value (billion €)</th>
<th>Share of SMEs in all (%)</th>
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Source: Authors’ calculations based on the Eurostat TEC database