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Beneath the surface: investigating industry heterogeneity in Italy's goods export market share performance

by Stefano Federico and Claire Giordano

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BENEATH THE SURFACE: INVESTIGATING INDUSTRY HETEROGENEITY IN ITALY'S GOODS EXPORT MARKET SHARE

by Stefano Federico* and Claire Giordano*

Abstract

Exploiting several highly granular datasets, we compute Italy's goods export market shares at a 5-digit sector of economic activity level over 2010–19 to identify the "market-share gainer" and "loser" sectors in world markets over the past decade, and "stable" sectors, identified residually. We next assess the main structural characteristics, both domestic and external, of these categories of sectors. Finally, we analyse Italy's 5-digit goods export developments in 2020 in order to verify the performance of the various sector groupings during the Covid-19 pandemic. Italy's gainers are mainly agri-food products, the fashion industry and pharmaceuticals, whereas losers are more heterogeneous across macro-sectors; around 40 per cent of industries are classified as stable, consistently with the resilience of Italy's aggregate world market share. Gainers are characterized by significantly lower competition from both China and Central-Eastern Europe and by higher quality positioning than losers; they are also more productive, more intensely involved in GVCs and display a higher share of young and of female workers. On average, market-share gainers fared relatively better than the other industries in 2020, albeit only slightly.

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1 Introduction[1]

Since 2010 - the year world trade began to recover after the Great Trade Collapse (GTC) - and until 2019 - the year prior to the Covid-19 pandemic - Italy's goods export share in world markets has remained broadly unchanged despite the rising competition of powerful players, such as China and Central and Eastern Europe (Fig. 1).[2] In 2020, despite the pandemic, this share proved to be resilient, remaining at 2.8 per cent, against a decline in France and a sharp gain in China.[3]

Figure 1: **Goods export shares in world markets of selected countries**
(current prices, according to national account data)
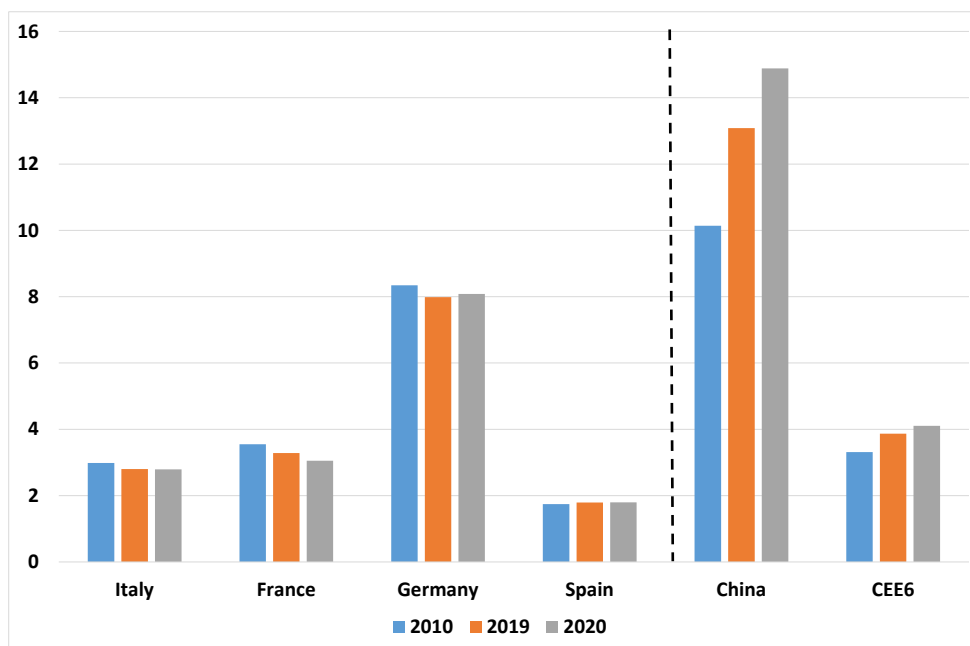
Source: Banca d'Italia and authors' calculations on Eurostat and IMF-WEO national account data. Notes: CEE6 is defined as the sum of Bulgaria, the Czech Republic, Hungary, Poland, Romania and Slovakia.

The stability in Italy's share, however, hides significant heterogeneity in export performance across underlying economic sectors. To investigate this heterogeneity, this paper computes Italy's market shares in goods world trade at the 5-digit level of the Ateco 2007 – the Italian adaptation of NACE Rev.2 – sector classification between 2010 and 2019. The aim is to identify the "market-share gainers" and "losers", loosely defined as those industries in which Italy managed to gain most market shares and those in which instead the country suffered the largest loss over the last decade; "stable" sectors are defined residually, as those sectors which marked a broadly stable export market share over the time-frame considered. We also single out Italy's "strongholds",

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[1]We thank Gloria Allione, Silvia Fabiani, Alberto Felettigh, Lionel Fontagné, Giammario Impullitti, Alfonso Rosolia and Roberto Torrini for useful suggestions on this project. The views expressed in this paper are the authors' and do not represent those of the affiliated institution.

[2]In order to cover 2020, the export market shares reported in Figure 1 are based on Eurostat and IMF-WEO goods national account (NA) series at current prices. For consistency reasons relative to the remainder of this paper and as a robustness check, in Figure A.1 in the Appendix A.1 these shares are instead computed on CEPII-BACI international trade value data and discarding both goods traded by the utilities and services sectors and those for which world trade in 2019 (last year available in the CEPII-BACI database) was below 10 EUR billion. These market shares are very similar to those computed on NA data for all reported countries bar Germany and China, for which CEPII-BACI shares are approximately 0.6 percentage points lower and 1.0 percentage points higher than the corresponding shares computed on NA series; dynamics over the period under study are anyhow similar, whichever the data employed.

[3]On recent trends in aggregate export market shares, see also Istat (2021).

i.e. those sectors in which the country's market shares have been structurally very high, as well as the worldwide "best-selling" sectors, i.e. those industries whose world trade or whose contribution to world trade growth were the highest.

We next analyse a variety of structural characteristics of Italian industries and of world trade in each 5-digit sector, in particular comparing gainers, stable sectors and losers in order to gauge any statistically significant difference. Finally, we assess Italy's export developments in 2020 to understand whether the Covid-19 pandemic differentially affected sectors that were market-share gainers or losers in the decade prior to the shock.

The main findings of our study are the following. Around 40 per cent of Italy's industries recorded a broadly unchanged export market share over the period 2010–19, suggesting broad-based resilience in the Italian economy; amongst these stable sectors, we find the majority of the industries we defined as best-selling. Market-share gainers are mainly agri-food products, fashion articles and pharmaceuticals and include nearly half of Italy's strongholds, whereas loser sectors belong to a larger number of macro-sectors, with minerals and metal products being the most represented, but also all furniture sectors, several transport equipment industries and many chemical, rubber and plastic products stand out.

Gainers are characterised by significantly lower competition from both China and the CEE6 region and by higher quality positioning than losers; they also display higher labour productivity, a greater import-to-exports ratio and a structurally larger share of young and female workers, as well as more employees located in Southern Italy and in the islands, than loser industries. During the Covid-19 pandemic, market-share gainers on average fared slightly better than the other industries, yet still marking a decline in their exports compared to 2019.

The remainder of the paper is organized as follows. Section 2 briefly discusses the related existing literature. Section 3 presents the manifold data sources we employ. Section 4 explores Italy's 5-digit sector export market shares, while Section 5 examines industry-level structural characteristics and export market-share status. Section 6 assesses export developments during the Covid-19 pandemic. Section 7 draws some conclusions.

2   Related literature

Our work is closely related to the existing empirical literature on Italy's goods exports. While previous studies (Lissovolik, 2008; Tiffin, 2014; Bugamelli et al., 2018; Fabiani et al., 2019; ICE, 2020; Istat, 2020) have generally looked at Italy's export performance from a macro perspective or at most using a 2-digit industry disaggregation, this paper provides a much more granular assessment of the country's external competitiveness. We indeed adopt a significantly more disaggregated sectoral classification (5-digit), showing relevant heterogeneity which is hidden at the 2-digit industry level.

Our work also speaks to country-level studies of export market shares (Danninger and Joutz, 2008 on Germany; Bas et al., 2015 on France), as well as to the literature based on shift-share decompositions of market shares (e.g. "constant market share" (CMS) analyses and econometric decompositions; Memedovic and Iapadre, 2009; Cheptea, Fontagné and Zignago, 2014; Bugamelli et al., 2018). The latter literature decomposes the change in a country's export market share into various components. The "structural" components measure whether exports are exposed to markets that grow faster or slower than world trade due to their composition by sector or by geographical destination. The "competitiveness" component reflects price and non-price factors that determine competitiveness gains or losses in each market. With respect to this literature, our work offers a complementary perspective, by focusing on the export performance of finely defined sectors (rather than on a country's aggregate export performance) and by specifically assessing sectors' key structural, domestic and external, characteristics.

Finally, we contribute to the very recent studies focusing on Italy's external performance during the Covid-19 outbreak in 2020 (e.g. Allione and Felettigh, 2021; Istat, 2021; ICE-

Prometeia, 2021). All three mentioned studies run their analyses at the 2-digit sector level. Given that at the time of writing we are limited in the data available for 2020 for some trading partners, we can only assess Italy's export, and not export market share, developments at the 5-digit level; this analysis may nonetheless yield useful insights.

3 Data

The first main data source employed in this paper is the CEPII-BACI dataset, including annual data on world bilateral trade flows of goods disaggregated at the 6-digit product level in dollar value terms. As discussed in detail in the reference methodological paper (Gaulier and Zignago, 2010), this database is built from information directly reported by each country to the United Nations (Comtrade) and then reconciled between exporter and importer in order to correct for bilateral asymmetries. For the purpose of this study we employ the 2007–19 CEPII-BACI dataset, which follows the 2007 Harmonized System product nomenclature, and we focus solely on the post-GTC period in order to avoid noise stemming from the crisis years. After having converted the data into euros, we first reclassify these data according to the CPA 2008 product coding with minor adjustments; we then aggregate up to the 5-digit level and match the CPA codes with 5-digit Ateco (the Italian adaptation of NACE Rev.2) sectors, which is the classification employed in this paper.[4] While our final classification is indeed based on sectors, we loosely use the terms "sectors", "industries", "goods" or "products" interchangeably throughout the paper. As already mentioned in footnote 1, we exclude goods traded by the utilities and services sectors and also those exported by sectors for which world trade is below 10 EUR billion in 2019.[5] Resulting 5-digit sectors amount to 200, representing 90 per cent of Italy's total goods exports in 2019. We employ this dataset both to measure Italy's export market shares and to compute industries' external characteristics.

The second significant data source is a recently released dataset on structural characteristics of Italian industries at the 5-digit Ateco level by Istat (*Contributo e posizionamento all'interno del sistema produttivo italiano dei settori di attività economica, secondo la classificazione Ateco a 5 cifre*), which we refer to hereon as Istat (2020). The variables included in the dataset are measured in a benchmark year, generally 2017. Thanks to the afore-mentioned reclassifications of the CEPII-BACI dataset, we are able to conveniently merge these two databases. Istat (2020) does not, however, include products of agriculture, forestry and fishing, such that the sectors resulting from the merge are 183. Section 5 and Section 6 of this paper are therefore conducted on this slightly smaller number of 5-digit industries.

We also explore additional structural characteristics of 5-digit sectors constructed on the basis of other information reported by Istat (International trade in goods Statistics - ITGS, Structural business statistics, Inward statistics on foreign affiliates).

Finally, in order to assess Italy's export developments during the Covid-19 pandemic in 2020, we employ publicly available ITGS sourced from Istat, again broken down at the 5-digit Ateco sector level.[6]

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[4]For nine sectors we had to aggregate up to the 4-digit level in order to guarantee a perfect matching between the two classification systems.

[5]Resulting changes in export market shares of such small sectors world-wide are indeed quite volatile. We select a threshold of 10 EUR billion that is equivalent to 0.1 per cent of world trade in that year.

[6]As mentioned in the introduction, we do not have access to timely data on trade for all countries in the world for 2020; in order to analyse external trade in 2020, Berthou and Stumpner (2021), for example, employ updated Trade Data Monitor statistics, but this database is not freely available.

4 Italy's export market shares in levels and dynamics

4.1 Export market shares in 2019

Based on our calculations, Italy's export market shares display significant heterogeneity across 5-digit sectors. While the mean market share amounts to 4.0 and the median to 3.25 per cent in 2019 (against 2.7 per cent of the national average, based on CEPII data, depicted in Figure A.1 in Appendix A.1), the range of shares goes from a minimum of 0.0 to a maximum of 23.7 per cent, with a distribution skewed towards zero (Table 1 and Fig. 2).

Table 1: **Italy's export market shares: summary statistics**
(percentage values for levels and percentage points for changes)

	mean	min	p10	p25	p50	p75	p90	max
Level (2019)	4.02	0.00	0.41	1.42	3.25	5.45	7.69	23.67
Abs. change (2010-19)	-0.38	-5.68	-1.51	-0.73	-0.22	0.05	0.52	4.45
Perc. change (2010-19)	16.60	-85.47	-39.20	-22.33	-10.60	4.32	28.58	4506.19

Source: Authors' calculations on CEPII-BACI data. Notes: Goods that are produced by utilities or service sectors and goods for which world trade in 2019 is below 10 EUR billion are excluded.

Figure 2: **Distribution of Italy's export market shares in 2019**

(densities on y-axis; percentage values on x-axis)
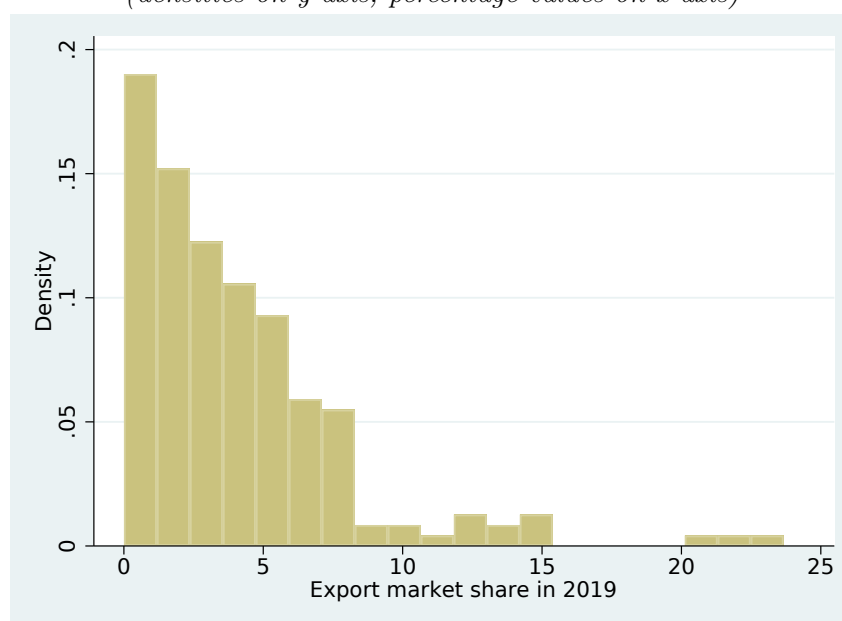
Source: Authors' calculations on CEPII-BACI data. Notes: Goods that are produced by utilities or service sectors and goods for which world trade in 2019 is below 10 EUR billion are excluded.

Twelve industries record a share that is higher than 10 per cent, both in 2019 and in 2010, and are hence defined as Italy's "strongholds". These sectors span several key macro-sectors of the Italian economy reported in Table 2, namely minerals and metal products, leather articles, beverages, machinery, furniture, transport equipment, and "other manufacturing products" (Figure 3).[7] As shown in Figures A.3, A.4 and A.5 in Appendix A.1, the number of strongholds is larger in Italy than in France (7) and Spain (5), albeit standing at much lower levels than

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[7]The choice of the threshold is clearly arbitrary, yet if we lowered it to 9 per cent, for instance, which is roughly three times Italy's aggregate goods market share reported in Figure 1, this would only add one further sector to Italy's strongholds (metal tools, which also belong to the machinery and equipment macro-sector).

in Germany (57), also as a result of the larger size of the latter economy.[8] Italian strongholds' exports, however, account for less than 10 per cent of the country's total goods foreign sales, against shares of 24 and 60 per cent in France and Germany, respectively.

Figure 3: **Italy's strongholds' export market shares in 2019**
(percentage values)
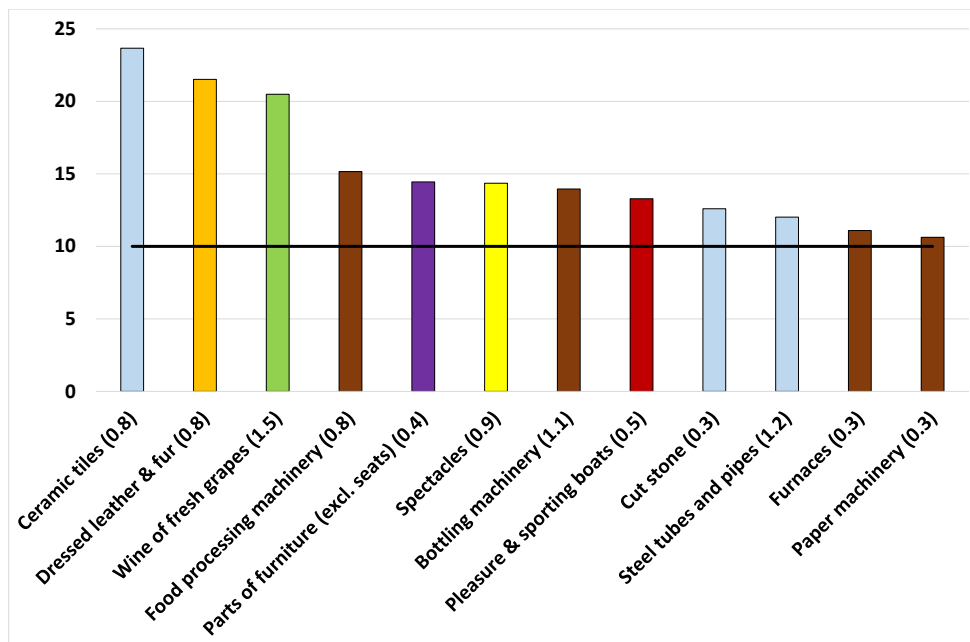
Source: Authors' calculations on CEPII-BACI data. Notes: Strongholds are defined as those sectors whose export market share in both 2010 and 2019 is higher than 10 per cent; sectors are ordered in descending order according to their export market share in 2019. The share of exports in Italy's total exports of goods (net of utilities, service sectors and goods for which world trade in 2019 is below 10 EUR billion) for each 5-digit industry is reported in brackets. The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2.

We also identify the subset of "best-selling" sectors worldwide, i.e. those sectors which individually account for a significant portion of world trade or of world trade growth. In particular, we define best-selling sectors those that either recorded world exports above 200 EUR billion in 2019[9] or that contributed to world trade growth in 2010-19 by at least 1 percentage point. We single out 22 best sellers (which include, for instance, motor vehicles, crude petroleum, computers, pharmaceuticals, etc.), accounting for half of total world trade in goods and over one third of Italy's total exports of goods. Italy's market share in best sellers ranges between peaks of 7.8 per cent in footwear and 6.3 per cent in final pharmaceutical goods to very negligible shares in electronic components, as well as in commodities such as crude petroleum and natural gas; Figure 4).

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[8]Differently to Italy, Spain's large export market shares were concentrated in the food industry with only one exception (ceramic tiles), whereas France's strongholds belong to only three macro-sectors, namely the food, chemical and transport (in particular, air and spacecraft) industries. Given the vast number of Germany's strongholds, they are highly diverse across macro-sectors, but machinery clearly stands out; moreover, for this country the whole of the motor vehicle production chain, from components to final goods and accessories, is classifiable as a stronghold.

[9]This threshold implies that a 5-digit industry on its own accounts for at least 1.2 per cent of world trade in 2019.

Figure 4: **Italy's export market shares in worldwide best-selling sectors and world trade in 2019**

(percentage values on left-hand side; EUR billions on right-hand side axis)
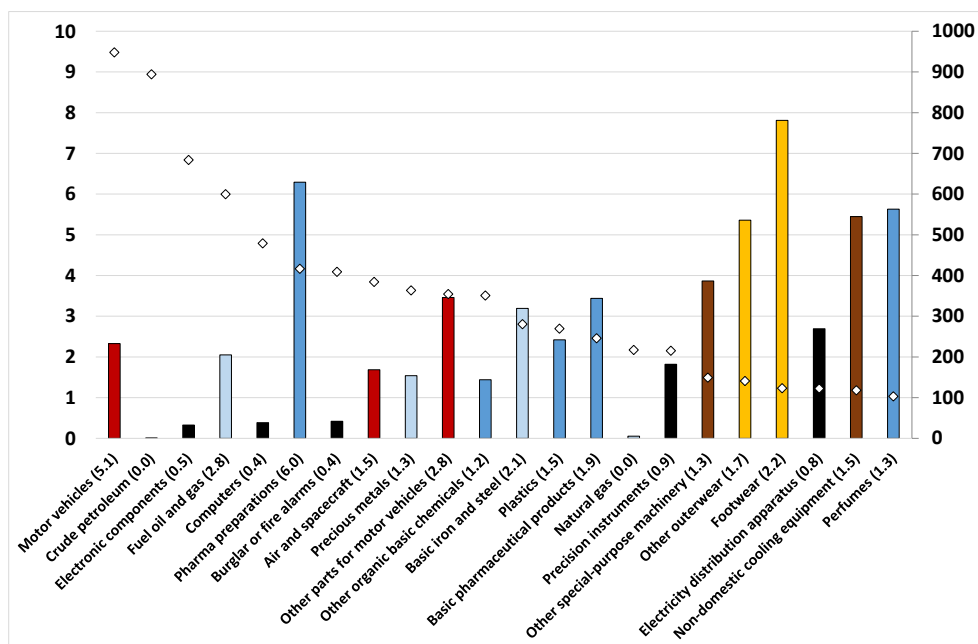
Source: Authors' calculations on CEPII-BACI data. Notes: We define "best-selling" sectors those sectors in which world trade in 2019 is higher than 200 EUR billion or which contributes to world trade growth over 2010-19 by at least 1 percentage point. Sectors are in descending order according to world trade in 2019. The share of exports in Italy's total exports of goods (net of utilities, service sectors and goods for which world trade in 2019 is below 10 EUR billion) for each 5-digit industry is reported in brackets.The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2.

4.2 "Market-share gainers" and "losers" over the 2010-19 decade: an overview

Relative to 2010, the number of 5-digit industries that recorded a decline in their export market share in absolute terms was generally higher than that of those that recorded an increase, although many sectors marked a broadly stable share (Fig. 5 and Table 1), hence driving the aggregate outcome seen in Figure 1. The number of 5-digit industries reporting a gain in market shares was broadly balanced with that reporting a loss in some macro-sectors, namely in the agri-food, fashion and mining and metal macro-sectors (Fig. 6). The average absolute change in market shares over 2010-19 across all industries under study was equal to -0.38 percentage points, whereas the median change was -0.22 points (again see Table 1).[10]

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[10]Conversely, the mean and median 2010-19 percentage changes display an opposite sign (16.6 per cent vs. -10.6 per cent), due to the presence of several extreme observations, especially on the right-hand side of the distribution. For instance, the extraordinary maximum percentage growth rate of 4,506 per cent was recorded by tobacco products. This is the main reason for which this paper is based on absolute changes, and percentage changes are only examined for the sake of robustness. The left-hand skewness of the distribution of export market shares across sectors is confirmed if percentage changes are considered (Fig. A.2 in Appendix A.1), as opposed to absolute changes. Yet in this case the sectors had to be trimmed at the 10th and 90th percentile for the chart to be legible, due to the aforementioned (mainly right-hand side) outliers.

Figure 5: **Distribution of Italy's export market share (absolute) changes**
(densities on y-axis; percentage points on the x-axis)
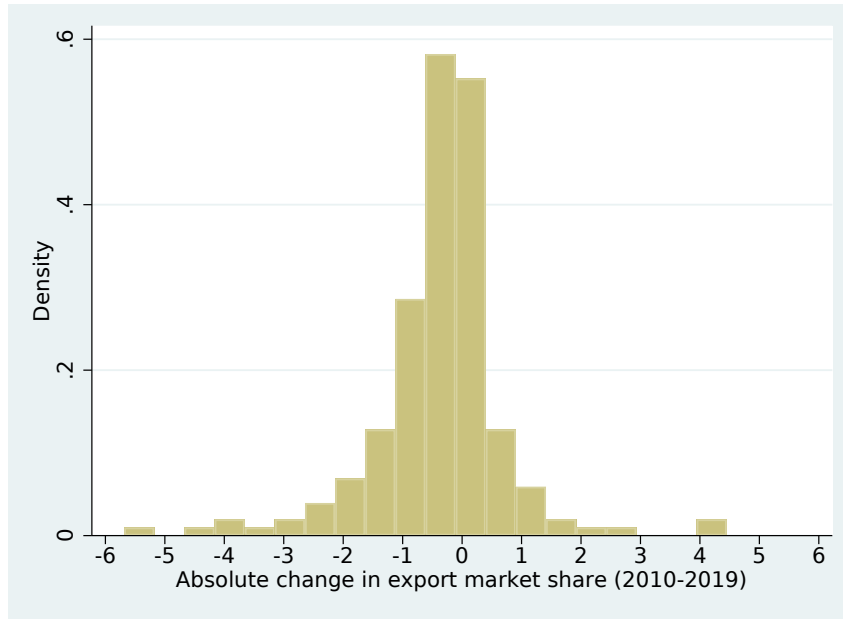
Source: Authors' calculations on CEPII-BACI data. Notes: Goods that are produced by utilities or service sectors and goods for which world trade in 2019 is below 10 EUR billion are excluded.

Figure 6: **Italy's export market shares by macro-sector: 2019 vs 2010**
(percentage values)
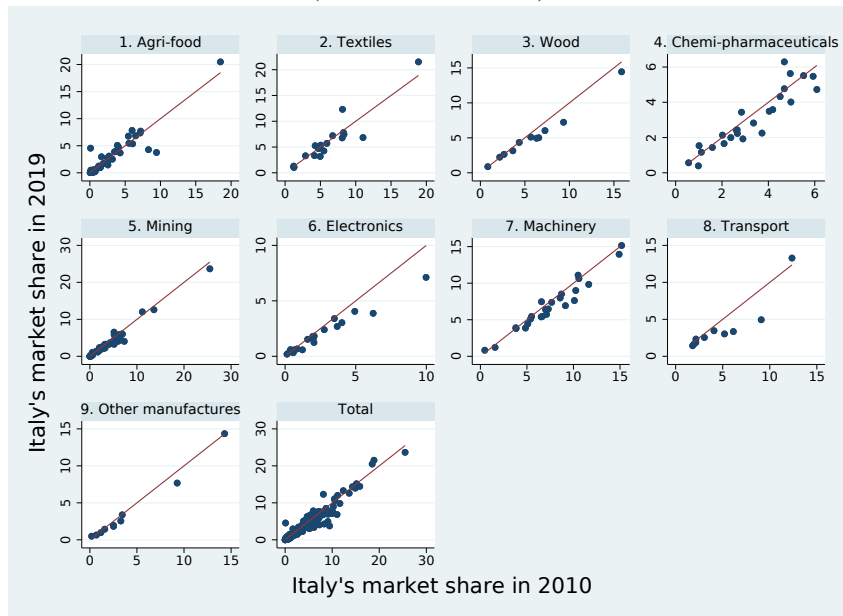
Source: Authors' calculations on CEPII-BACI data. Notes: Goods that are produced by utilities or service sectors and goods for which world trade in 2019 is below 10 EUR billion are excluded. The full names of the macro-sectors are found in Table 2.

As a baseline criterion to identify market-share gainer (loser) sectors, we consider those industries whose export market shares' absolute gain (loss) between 2010 and 2019 was greater than 0.3 percentage points, a threshold that corresponds to roughly one tenth of Italy's aggregate export market share, reported in Figure 1. According to this definition, 32 sectors are gainers and 90 are losers, reflecting the fact that the distribution of Italy's export market share changes

is skewed to the left, as shown in Figure 5; the remaining sectors (78), around 40 per cent of all sectors, are hence classified as "stable", holding their 2019 export market share broadly unchanged relative to 2010. However, losers weigh the most in Italy's export basket: indeed, lumped together, market-share gainers account for one fourth of Italy's total exports of goods, losers for around 45 per cent, stable sectors for the remaining 30 per cent.

In Appendix A.1 we also provide main results based on two alternative criteria. The first defines market-share gainers (losers) as those sectors whose market share (absolute) variation over the same period belongs to the upper (lower) 20th percentile of the distribution of all 5-digit sectors under study. This criterion is by construction symmetric, pinning down 40 gainers and 40 losers. The second robustness criterion defines market-share gainers (losers) as those sectors whose percentage gain (loss) was larger that 10 per cent and delivers more gainers and losers than the baseline classification (namely 37 and 102).

Before singling out each 5-digit sector according to its market-share status, it is interesting to consider broad economic sectors as in Table 2.[11] On the one hand, at least half or just under half of the agri-food chain, the fashion industry and the chemical-pharmaceutical branch is made up of gainer sectors; however, whereas the residual stable and loser industries are equally balanced in the first and third macro-sectors, nearly 40 per cent of the broad fashion industry is made up of losers, with very few stable sectors in between. On the other hand, the wood production industry, electronics and electrical equipment and "other manufacturing products" display no gainers at all, with the majority of underlying industries being classified as losers.[12] Finally, transport equipment is the only macro-sector in which most of its (relatively few) component 5-digit industries are stable, thereby displaying notable broad-based resilience, whereas in the mineral and metal macro-sector and in the machinery macro-sector losers prevail, followed by stable industries.

Table 2: **Italy's market-share gainer, stable and loser sectors by macro-sector**

(according to the threshold criterion on absolute changes; percentage values)

Macro-sector	% gainers	% stable	% losers	% mkt share	change in mkt sh.	%sh. in exports
Agriculture, food, beverages & tobacco	60.2	20.6	19.2	2.93	0.20	8.5
Textiles, wearing apparel & leather	53.1	8.1	38.8	5.92	0.05	11.5
Wood, paper & furniture	0.0	31.2	68.8	3.99	-0.35	3.8
Chemicals, pharmaceuticals, rubber & plastic	49.1	23.1	27.8	3.52	0.18	19.1
Mining, minerals, metals & metal products	14.6	23.7	61.7	1.81	-0.11	15.2
Electronics & electrical equipment	0.0	53.8	46.2	1.21	-0.26	8.8
Machinery & equipment	10.6	29.2	60.3	5.98	-0.38	18.1
Transport equipment	4.1	61.9	34.0	2.50	-0.20	11.3
Other manufacturing products	0.0	39.7	60.3	3.45	-0.06	3.8

Source: Authors' calculations on CEPII-BACI data. Notes: Market-share gainer (loser) sectors are those sectors whose export market share (absolute) gain (loss) over the period 2010–2019 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). Stable sectors are defined residually. The gainer-stable-loser percentages are computed by weighting each 5-digit sector within each sector grouping by its exports.

By definition, the variation in a sector's export market share is a result of the change of both exports and world imports of that given sector. World demand for Italy's gainer and loser products grew, on average, at a similar pace over the 2010-19 period. However, there is large heterogeneity within each sector grouping. When mapping each 5-digit industry according to world trade dynamics and to Italy's export dynamics (Figure 7, the vast majority of industries is found in the upper right quadrant, implying general positive growth of both these variables over the decade. Losers, by construction, are positioned above the 45 degree line (representing equal world trade and Italian export percentage changes), whereas gainers are below; stable sectors are

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[11]By construction, the latter have a different weight in Italy's overall goods exports, reported in the last column of Table 2, but results by macro-sector are anyhow insightful.

[12]In the case of the wood production industry, this result is mainly driven by the four 5-digit furniture industries, as will be made clearer in Section 4.3.

mainly concentrated around the 45 degree line.[13] About half of Italy's gainers were affected by slow (i.e. below average, represented by the horizontal dashed line), if not even negative, world trade growth; these included all gainers belonging to the mineral and metal products macro-sector. Conversely, when Italy's agri-food sectors are market-share gainers, it is because they recorded large increases in their exports and not because of sluggish world imports. Amongst loser sectors, about one sixth, covering all macro-sectors, lost market shares over the 2010-19 decade because of a decline in Italy's foreign sales.

We know that the geographical orientation of exports matters for a country's competitiveness (e.g. Cheptea, Fontagné and Zignago, 2014) and we hence analyse the different categories of industries by their export destination (Table 3). Over the 2010-19 decade gainers increased their export market shares in nearly all geographical areas, suggesting a structural improvement in these industries.[14] Gainers reached comparable shares of 7 to 9 per cent in particular in the euro area, in non-euro area EU countries and in the rest of Europe. Losers' losses, on the other hand, were also broad-based and especially large in Europe (including euro area) and in the "Rest of the World"; one notable exception is the North American market, in which even loser industries marked an export market share gain over the 2010-19 period, plausibly aided by an improvement in price competitiveness relative to this specific market.[15] Finally, stable markets displayed broadly unvarying shares in all destinations, with the exception of North America again, where the documented gain was of 0.6 percentage points.

Turning to Italy's strongholds, these sectors' export market shares generally increased or remained stable (Table 4); indeed their average change over the decade was equal to 0.29 percentage points. The few exceptions are ceramic tiles, parts of furniture, cut stone and bottle-filling machinery, whose market shares, albeit significantly declining, anyhow remained solidly above the 10 per cent benchmark value.[16]

Italy's export performance also proved to be resilient in the subset of worldwide "best-selling" sectors. Market shares significantly increased in two pharmaceutical sectors (basic pharmaceutical goods and pharmaceutical preparations, by 1.6 and 0.6 percentage points, respectively),[17] in perfumes and toilet preparations (0.7 points) and in other outerwear (0.3 points). Italian exporters also increased their market share in the production of motor vehicles (by 0.2 percentage points, against losses recorded by the other three main euro-area countries; Table A.1 in Appendix A.1).[18] In roughly half of top selling products Italy's export market shares were

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[13]The stable sectors that are far from the 45 degree line are either sectors with small export market shares, such that high or low growth did not lead to a 0.3 percentage-point (positive or negative) change, or sectors whose market share change over the 2010-19 decade was very close to the 0.3 point thresholds. In the first case, we find several agricultural products (green markers) or raw materials (gray markers), such as crude petroleum; in the second case, we find, for example, cultured pearls and precious stones (the yellow square in the far right-hand side), which recorded a market-share gain of 0.297 points and hence did not make the baseline "market-share gainer" definition by a fraction (incidentally, this sector is considered a "gainer" when the two robustness classifications are employed, as Tables A.4 and A.5 in Appendix A.1 document).

[14]Table A.3 in Appendix A.1 confirms that this result broadly holds across all 5-digit gainer sectors, considered individually.

[15]Over the period considered, the euro indeed depreciated significantly relative to the US dollar.

[16]As will be later described in more detail, four industries that reported an export market share higher than 10 per cent in 2010, then recorded a loss in the subsequent decade, such that their share in 2019 was below the 10 per cent threshold. Due to these unfavourable developments, these sectors are not catalogued as strongholds and their loss is such that they end up in the loser category. If we were to consider also these four industries in the list reported in Table 4, then the number of loser sectors (8) would be exactly equal to the sum of gainer and stable industries (8).

[17]In 2019 Italy's pharmaceutical sector, whose exports were already growing steadily since 2010, experienced a boom in foreign sales, in part due to statistical biases in ITGS and in part due to structural factors (Allione, Bronzini and Giordano, 2020). Both types of pharmaceutical goods are anyhow identified as market-share gainers even if 2018 is employed as the final benchmark year.

[18]Note that in Table A.1 Germany's export market share loss in pharmaceutical preparations is determined by very unfavourable developments in 2017, according to the original CEPII data employed in this paper, which sensibly lowers the 2019 value relative to ITGS sourced from Destatis; by considering annual growth rates of

broadly stable; indeed, the average change over the decade was of 0.03 percentage points. The main negative exceptions were fuel oil and parts and accessories for motor vehicles, together with footwear, other special purpose machinery, electricity distribution apparatus and non-domestic cooling equipment.

Figure 7: **World trade and Italy's export dynamics in 2010-19**
(percentage changes)
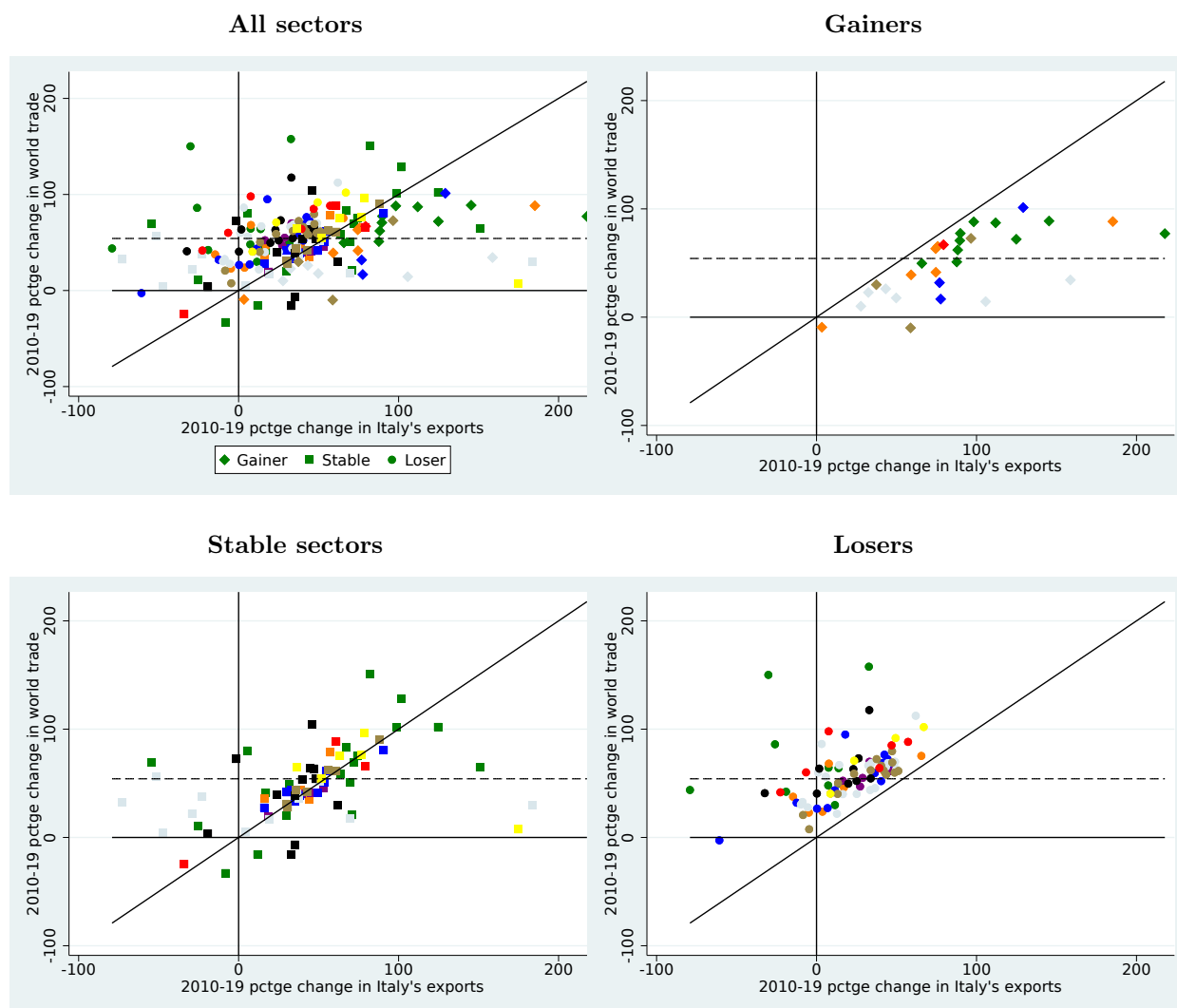
Source: Authors' calculations on CEPII-BACI data. Notes: Market-share gainer (loser) sectors are those sectors whose export market share (absolute) gain (loss) over the period 2010–2019 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion, as well as tobacco products, wood in the rough and basic pharmaceuticals, which are off scale). Stable sectors are defined residually. Gainer, stable and loser sectors are identified by the shape of the marker, as shown in the legend of the upper-left chart. Macro-sectors are identified according to their colour, as in previous charts (agriculture, food, beverages and tobacco is green; textiles, wearing apparel and leather is orange; wood, paper and furniture is purple; chemicals, pharmaceutical, rubber and plastic is blue; mining, minerals, metals and metal products is light blue; electronics and electrical equipment is black; machinery and equipment is brown; transport equipment is red; other manufacturing products is yellow). The horizontal line represents the average world trade percentage change across all 5-digit industries in 2010-19.

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exports sourced from Destatis as of 2017, Germany appears to have recorded a substantial gain in this sector, of 4.05 points, which is more in line with expectations, and which outsizes even Italy's improvement.

Table 3: **Export market shares by geographical area**
(according to the threshold criterion on absolute changes; percentage values and points)

Geographical area	Gainers		Stable		Losers	
	Market share (2019)	Change in market share (2010–19)	Market share (2019)	Change in market share (2010–19)	Market share (2019)	Change in market share (2010–19)
Euro area	7.0	1.2	2.9	0.2	6.4	-1.1
Other EU	7.0	0.6	3.5	0.3	6.4	-1.1
Non-EU Europe	8.7	1.1	3.1	-0.0	5.7	-1.8
North America	4.9	1.8	1.4	0.6	2.2	0.2
Central and South America	3.3	0.7	1.0	-0.0	2.0	-0.4
Asia	4.0	1.0	0.6	-0.0	1.9	-0.7
Rest of the world	3.8	-0.3	1.8	-0.3	4.1	-2.0
Total	5.7	1.0	1.6	0.0	3.8	-0.9

Source: Authors' calculations on CEPII-BACI data. Notes: Gainer (loser) sectors are those sectors whose export market share (absolute) gain (loss) over the period 2010–19 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). Stable sectors are defined residually. The gainer-stable-loser percentages are computed by weighting each 5-digit sector by its exports. The UK is considered as a non-EU country throughout the period under analysis.

Table 4: **Italy's strongholds' export performance**

Sector code	Sector description	Exports (2019) (EUR billions)	World trade (2019) (EUR billions)	Market share (2019) (percentage values)	Change in market share (2010–19) (percentage points)
15110	Tanned leather and fur	3	16	21.52	2.63
11021	Wine of fresh grapes; grape must	7	33	20.49	2.00
30120	Pleasure and sporting boats	2	15	13.29	0.93
24202	Steel tubes and pipes	5	42	12.02	0.87
28210	Ovens and furnaces	1	11	11.09	0.59
32504	Spectacles, lenses and parts thereof	4	27	14.36	0.04
28950	Paper machinery	1	11	10.63	0.04
28930	Machinery for food and beverage processing	4	24	15.16	-0.01
28293	Bottle-filling machinery	5	34	13.96	-0.95
23700	Cut, shaped and finished stone	1	10	12.59	-1.02
31094	Parts of furniture (except seats)	2	13	14.45	-1.42
23310	Ceramic tiles and flags	4	15	23.67	-1.82
	Total strongholds	39	252	15.36	0.29

Source: Authors' calculations on CEPII-BACI data. Notes: Strongholds are defined as those sectors whose export market share in both 2010 and 2019 is higher than 10 per cent; sectors are ordered in descending order according to their export market share in 2019.

Table 5: **Italy's export performance in best-selling sectors world-wide**

Sector code	Sector description	Exports (2019) (EUR billions)	World trade (2019) (EUR billions)	Market share (2019) (percentage values)	Change in market share (2010–19) (percentage points)
29100	Motor vehicles	22	948	2.3	0.2
6100	Crude petroleum	0	894	0.0	-0.0
26110	Electronic components	2	684	0.3	-0.2
19202	Fuel oil and gas; lubricating oils	12	600	2.1	-0.7
26200	Computers and peripheral equipment	2	479	0.4	0.1
21200	Pharmaceutical preparations	26	416	6.3	1.6
26302	Electrical apparatuses	2	409	0.4	-0.2
30400	Air and spacecraft	6	384	1.7	-0.3
24410	Precious metals	6	363	1.5	-0.5
29320	Other parts and accessories for motor vehicles	12	354	3.5	-0.6
20140	Other organic basic chemicals	5	351	1.4	-0.1
24100	Basic iron and steel and ferro-alloys	9	280	3.2	0.1
20160	Plastics in primary forms	7	269	2.4	-0.2
21100	Basic pharmaceutical products	8	246	3.4	0.6
6200	Natural gas, liquefied or in gaseous state	0	217	0.1	-0.2
26512	Precision instruments	4	215	1.8	-0.2
28996	Other special-purpose machinery	6	149	3.9	-1.0
14130	Other outerwear	8	141	5.4	0.3
15201	Footwear	10	123	7.8	-0.5
27120	Electricity distribution and control apparatus	3	123	2.7	-1.0
28250	Non-domestic cooling and ventilation equipment	6	118	5.4	-1.2
20420	Perfumes and toilet preparations	6	103	5.6	0.7
	Total best sellers	162	7869	2.06	0.03

Source: Authors' calculations on CEPII-BACI data. Notes: Best-selling sectors are those industries that either record world exports above 200 EUR billion in 2019 or that contribute to world trade growth in 2010-19 by at least 1 percentage point. Goods that are produced by utilities or service sectors are excluded. Sectors are ordered in descending order according to their share in world trade.

4.3 "Market-share gainers" and "losers" over the 2010-19 decade: a more granular analysis

By examining the status of each 5-digit industry individually, Italy's top gainer over the period 2010-19 was tobacco products,[19] followed by leather articles (leather saddlery and handbags; tanned leather and fur), wine, coffee and pharmaceutical preparations (Figure 8; Table A.2 in Appendix A.1). Of the 32 identified sectors of the baseline criterion, five are strongholds (in addition to tanned leather and wine, also steel tubes and pipes, pleasure boats, and ovens and furnaces), out of 12. Over one third of the gainer industries covered agri-food products; another third was equally balanced between textiles/wearing apparel/leather and mining/metals.[20] When analysing export market shares by year over the period under study (Table A.6), it be-

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[19]In particular, this outcome is driven by the underlying product "Tobacco: other than homogenised or reconstituted or smoking", which includes the tobacco of e-cigarettes.

[20]Employing the upper 20th percentile criterion (Table A.4 in Appendix A.1), eight further sectors are considered as market-share gainers, four of which belong to the already predominant agri-food industry (vegetable oils, prepared pet foods, preserves and oil seeds), whereas the remaining four are cultured pearls and precious stones, consumer electronics, motor vehicles and rubber tyres. Amongst the gainers, the latter experienced the smallest gain over the decade under study, equal to 0.12 percentage points. If we instead define gainers based on percentage, as opposed to absolute, gains in export market shares as in Table A.5, the gainers broadly coincide with those discussed thus far, with tobacco again resulting as the top gainer. Biscuits, condiments and vegetable oils are not identified as market-share gainers, yet three other agri-food products (beverage crops, sugar and milk) are, such that the predominance of agri-food goods is yet again confirmed. Interestingly, in addition to office equipment (excluding computers) and consumer electronics, computers are also defined as winning industries, given their 24.5 per cent export market share gain over the 2010-19 decade (against a 0.08 percentage-point gain in absolute terms). Finally, it is noteworthy that amongst the top 18 gainers according to this classification, Italy's exports of only four industries are non-negligible, i.e. higher than 1 EUR billion, confirming that the percentage change criterion is partly biased towards small sectors.

comes clear that the vast majority of gainers' market shares peaked in 2018 or 2019, suggesting overall gradual increases with some annual variability.[21] Finally, Italy's main competitors in its gainer sectors are either advanced and emerging economies, depending on the industry under study (Table A.7). In 2019 Italy displayed the world's highest export market share in tanned and dressed leather and fur (21.5 per cent); over the decade under study it was instead the country that gained the most in leather saddlery and handbags (2.6 percentage points), wine (2.0 points) and dairy products (1.3 points).

Representing 40 per cent of Italian sectors, stable industries are very heterogeneous and hence hard to cluster. However, it is noteworthy that Italy's export market shares over the 2010-19 period were broadly unchanged in several electrical and electronic industries (such as computers and peripheral equipment, electronic components, electric motors and generators), types of machinery (food processing, paper and construction machinery), transport equipment products (motor vehicles, engines excl. aircraft) and miscellaneous products, such as spectacles.

On the opposite side of the distribution are the 90 sectors we define as "market-share losers", according to the baseline criterion (Fig. 9; Table A.8 in Appendix A.1), which range from "other pome and stone fruits" (recording a 5.7 percentage-point loss over the 2010-19 period) and stockings, socks and other hosiery, and motorcycles (both registering an approximately 4.2 point loss) to power-driven hand tools (0.35 loss); 35 industries recorded a loss larger than one point. Loser sectors include four strongholds, as previously reported in Table 4, yet all these products continued, by definition, to record a market share larger than 10 per cent in 2019. In addition, losers cover four sectors that in 2010 recorded a market share above 10 per cent and which subsequently marked such a significant loss to be classified as a loser; these industries are the afore-mentioned stocking, socks and other hosiery, and three types of machinery (agricultural tractors; other taps and valves; other machine tools). Over one fifth of losers refer to mineral and metal products; furniture, various transport equipment industries (motorcycles, bicycles, trains and various components and accessories of motor vehicles) and several chemical, plastic and rubber industries also turn out to have performed very poorly.[22] Whereas 2019 was the year in which export market shares of most sectors achieved their minimum level relative to 2010, for several products 2015 was instead the minimum year, implying a U-shaped pattern in market shares (Table A.10).[23]

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[21]There are, however, two notable exceptions. Pleasure boats' share peaked at 17.2 points in 2014 and then gradually declined to 13.3 points in 2019, still a significantly higher level than that recorded in 2010; the share of leather clothing accessories and hats reached its maximum in 2012, although their 2019 value was only 0.2 points lower.

[22]The overlap of loser sectors is quite high when we consider the threshold criterion applied to percentage changes (Table A.9 in Appendix A.1). In addition, as well as some agricultural goods, crude petroleum, natural gas and other non-ferrous metal ores are identified as losers according to the latter criterion; moreover, air and spacecraft are pinpointed, owing to their 14.6 per cent market share loss (against an absolute loss of 0.29 percentage points, which hence entails this industry was not defined as a loser also by the baseline criterion only by a very slim margin). Finally, we do not report the loser sectors obtained according to the percentile criterion in that they coincide with the 40 largest losers of Table A.8.

[23]To name some examples, woven textiles, workwear and footwear all dropped to their lowest value of the decade in 2015 (at 6.7, 3.1 and 7.3 percentage points, respectively, from 8.1, 4.2 and 8.3 points at the beginning of the decade) to then rise slightly to 7.1, 3.4 and 7.9 points in 2019. The stronghold sector of ceramic tiles displayed a similar pattern, whereas trains and railways' share dropped from 6.1 percentage points at the beginning of the decade to 2.3 points in 2013, to then moderately pick up again and reach 3.3 in 2019.

Figure 8: **Italy's gainers' export market share changes over 2010-19**
(according to the threshold criterion on absolute changes; percentage points)
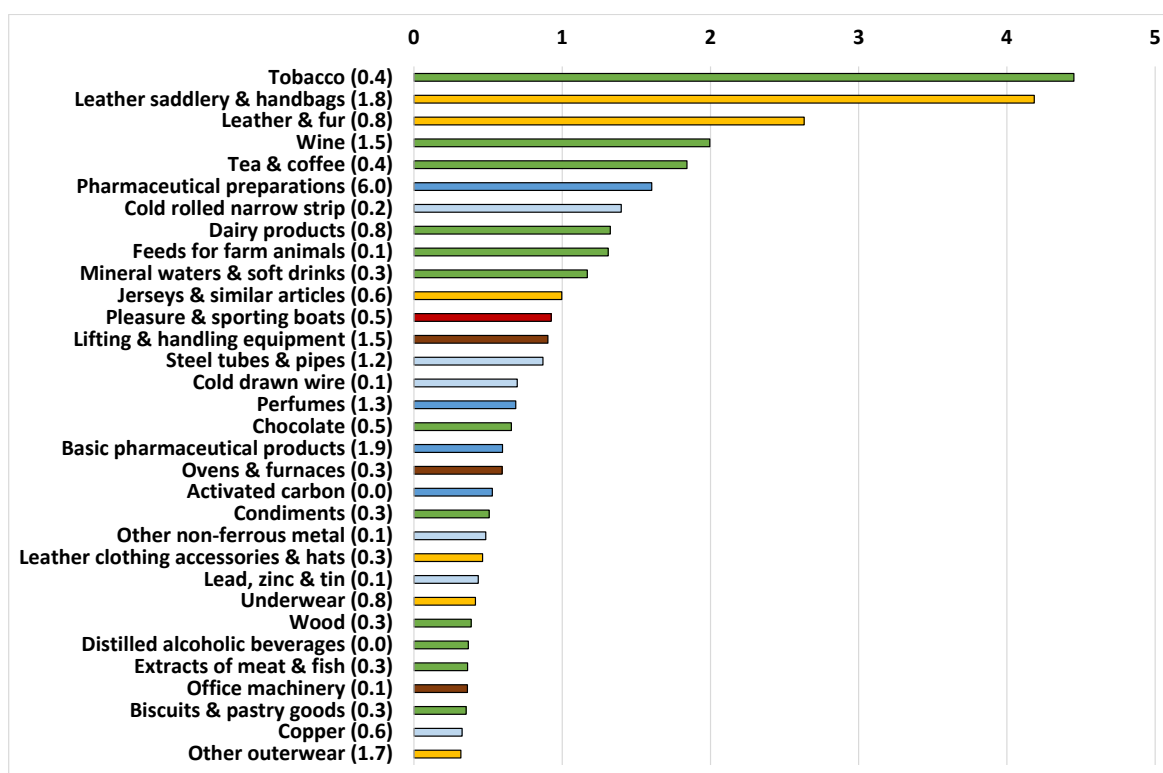
Source: Authors' calculations on CEPII-BACI data. Notes: Gainer sectors reported in this figure are those sectors whose export market share (absolute) gain over the period 2010–19 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2.

5 Industry-level structural characteristics and export performance

5.1 A selection of key structural characteristics

While the previous section highlighted recent trends in Italy's export market shares at a highly disaggregated 5-digit industry level, this section instead investigates the same sectors' structural characteristics. The aim is to uncover recurring patterns across industries, i.e. specific structural features that characterise, for instance, market-share gainer sectors, to a different extent than losers.

Structural characteristics can be divided into two broad categories. The first includes factors related to the external environment, i.e. the characteristics of world export markets of a given industry. The second includes domestic factors, i.e. characteristics of Italian firms operating in a given industry. The selection of structural characteristics is guided by the literature on the determinants of export performance. Details on the construction of the variables are provided in Appendix A.2.[24]

Amongst the first group, we consider a measure of revealed comparative advantage (RCA) according to the Balassa index (Balassa, 1965). To capture the type of competition faced by Italian exporters, we calculate a PRODY index (Hausmann, Hwang and Rodrik, 2007), namely a

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[24]Variables are typically measured in 2010, the initial year of the period under analysis, or in 2017, the year for which variables sourced from Istat (2020) are available.

Figure 9: **Italy's losers' export market share changes in the period 2010-19**
(according to the threshold criterion on absolute changes; percentage values)

Source: Authors' calculations on CEPII-BACI data. Notes: Loser sectors reported in this figure are those sectors whose export market share (absolute) loss over the period 2010–19 is larger than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2.

weighted average of income per capita of the countries that export a given (5-digit) product; the underlying idea is that exports by wealthier countries are more likely to be more technologically advanced. Furthermore, we consider the export market share of China (Autor, Dorn and Hanson, 2016) and of CEE6 countries (Fabiani et al., 2019), which both exerted a strong competitive pressure in certain industries in recent years. Finally, we include an indicator of Italy's quality positioning relative to its competitors (Khandelwal, 2010; Feenstra and Romalis, 2014), which is estimated adapting the methodology developed by Khandelwal, Schott and Wei (2013).

As regards domestic factors, we first consider the ratio between exports and total sales as a measure of export propensity of a given industry. We then compute the share of exports accounted for by the top five exporters in a sector, to take into account the "happy few" stylised fact that the international performance of a given country might depend on the behaviour of a small number of exporting firms at the top of the distribution (Melitz, 2003; Mayer and Ottaviano, 2007; Freund and Pierola, 2015; Giordano and Lopez-Garcia, 2021).

Next we consider the role of productivity. On the one hand, only the most productive firms can afford to incur the costs linked to entering foreign markets (Melitz, 2003); on the other hand, exporting leads to productivity gains via several channels, such as learning-by-exporting (e.g. Bustos, 2011; Bloom, Draca and Van Reenen, 2016), upgrading by sourcing better-quality imports (e.g. Chiacchio, Gradeva and Lopez- Garcia, 2018), as well as a better reallocation of production factors across firms (e.g. Bernard and Jensen, 2004). We investigate this dimension on the basis of value added per worker, a proxy of labour productivity.[25] Productivity may, however, simply reflect the different degree of capital intensity across sectors. To test for this, and lacking sectoral data on the capital stock, we employ an inverse proxy, namely the wage share of value added, assuming that sectors with a lower capital intensity record a higher wage share.

Linked to productivity and export concentration, is also average firm size. The "happy few" are generally the largest and the most productive firms in each sector.[26]

Foreign ownership and participation in global value chains (GVCs) might also be correlated with export performance, reflecting the competitive advantage of multinational enterprises (MNEs), on the one hand, and the benefits from involvement in complex production processes on a global scale and from using higher quality imported inputs, on the other hand (Markusen, 1989; Grossman and Helpman, 1991). We measure foreign ownership with the share of foreign-owned firms in total sales and participation in GVCs with the ratio of imports to exports of exporting firms in each 5-digit sector.[27]

Skill composition of the workforce might be a key driver for achieving and sustaining a firm's competitive advantage (Brambilla, Lederman and Porto, 2012). We capture the role of human capital through two measures: the share of workers with at least a university degree and the share of white collars (i.e. employed persons who perform professional, desk, managerial, or administrative work). We also consider additional variables related to the composition of the workforce, namely the share of female workers, the share of workers aged under 40 and the share of workers located in each of the various Italian macro-regions for a given 5-digit industry. We do not have strong *a priori* expectations on how these additional variables correlate with export performance. However, there is, for instance, evidence in the literature of a positive link between exports and female labour participation (Juhn, Ujhelyi and Villegas-Sanchez, 2013; Rocha and Winkler, 2019).

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[25]Unfortunately, at the 5-digit sector level, data on R&D activity and innovation measures are unavailable.

[26]As discussed in Appendix A.2, we exclude the natural gas sector, given its exceptionally high average firm size.

[27]Participation in GVCs is generally measured employing international input-output tables, which however are available only at a highly aggregate industry level (e.g. Borin and Mancini, 2019). An alternative measure we employ is a dummy variable taking the value of one when a 5-digit sector refers to intermediate goods, according to either the international Broad Economic Category (BEC) classification or the Italian Main Industrial Grouping (MIG) classifications.

We also follow the insights from the economic geography literature, suggesting that location advantages might be an important determinant for export specialization in a given industry, reflecting economies of scale, agglomeration benefits and local spillovers (Krugman, 1991; Signorini and Omiccioli, 2005). We therefore compute a Herfindhal-Hirschman index (HHI) of local concentration of employment.

Before moving on to discuss our results, three caveats are worth mentioning. First, we consider each structural characteristic separately and in a linear fashion. There may be, however, a degree of interactivity between some structural factors. In order to be analysed, this possibility would require a non-linear multivariate framework and cannot be tackled by the simple t-tests we employ in the following section. Second, data in Istat (2020) are available only for a benchmark year, generally 2017, hence we can only test the difference in levels of the structural characteristics of interest between sector groupings and not the difference in their evolution over the 2010-19 period, which may also be insightful. Third, it would be highly desirable to compare key structural characteristics of Italian exporters across industries with those of their main competitors. However, severe data limitations prevent us from undertaking this direction. Indeed, the main source for worldwide firm-level data (Bureau van Dijk's Orbis database) has a very uneven coverage in terms of countries.[28] It also does not generally provide information on export activity. Moreover, cross-country data on manufacturing sectors are typically available only at a much more aggregated industry level (e.g. 2-digit sectors).[29]

5.2   Our results

In order to determine whether characteristics significantly differ between sector groupings, we run formal t-tests on the two groups "market-share loser" and "gainer" sectors,[30] testing the null hypothesis of whether a given (unweighted) average structural factor is statistically any different between the two identified groups.[31] We also display averages of "stable" sectors as a further benchmark. Results according to our baseline sectoral classification are displayed in Table 6.[32]

Starting with external factors, market-share gainer industries were found to display a similar comparative advantage in 2010 than loser sectors. A few gainers marked significant negative RCAs, as in the case of consumer electronics, cultured pearls and precious stones, and office equipment (excluding computers). The average GDP per capita of Italy's main competitors (PRODY index) is not statistically different than that in loser sectors. Hence, the technological content of Italy's exports (which is expected to be related to competitors' income per capita) does not appear to have played a significant role in explaining the success or not of a given sector.[33]

Conversely, a clear monotonic relationship emerges between an industry's status and the degree of competition stemming from both China and the CEE6 countries. In particular, China's

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[28]For example, Germany has little coverage due to confidentiality restrictions, such that analyses based on Orbis data do not include this country (e.g. see Abèle, Bénassy-Quéré and Fontagné, 2021 on TFP in the main European countries after the global financial crisis, which only focuses on Italy, France and Spain).

[29]For this reason we also cannot include those variables that are based on underlying international comparisons, such as a price-competitiveness indicator, in our analysis.

[30]We constructed data on structural characteristics for the full number of sectors achieved by merging the CEPII-BACI dataset and the Istat structural characteristics dataset (i.e. 183 sectors, as mentioned in Section 3), with the exception of the share of exports of the top five exporters and imports-to-exports ratio, for which a handful of industries are missing.

[31]Statistical significance is determined on the basis of Welch's t-test (Welch, 1947), which is less restrictive compared to the original Student's t test, in that it does not assume that the variance is the same in the two groups.

[32]Tables A.11 and A.12 in Appendix A.1 report results based on the percentile criterion on export market share absolute changes and the threshold criterion on export market share percentage changes, discussed in Section 4.2.

[33]This finding could also be linked to the fact that the share of medium-high/high technology products is not significantly higher in gainers than in losers (result available upon request).

2010 export market share in Italy's loser industries is significantly higher than in gainer industries (about 4 percentage-point difference), with stable sectors displaying an intermediate level of competition. Amongst gainers, only six or seven (according to the adopted criterion) industries faced a Chinese export market share that was larger than 25 per cent, concentrated in the wearing apparel and leather industries, but also in basic pharmaceutical goods and office equipment excluding computers. The evidence concerning the fashion sectors is consistent with the presence of a high quality differentiation, which allowed Italy to gain export market shares in these industries, despite high competition from China. Loser sectors also suffered from significantly higher competition from the CEE6 region than the other industries, although the average CEE6 export market share in 2010 was much lower than China's corresponding share whatever an industry's status, and the difference in CEE6 competition between gainers and losers is around 1 percentage point only. In market-share gainer sectors, competition from CEE6 economies was generally low across the board, with the exceptions of tobacco products and some metals.

Finally, quality positioning in an international comparison is higher in gainer sectors than in losers, by around two positions in the ranking. This finding confirms the relevance of non-price competitiveness factors in explaining export performance and also suggests that quality differentiation was indeed a critical factor in shielding market-share gainer sectors from the rising competition stemming from emerging economies.

Turning to domestic factors, export propensity generally turns out to be no different in gainers than in losers. This result is mainly driven by the food industries and by raw materials, for which the share of exports in total sales is below one third.

Export concentration, measured by the share of exports sold by the top five exporters, is not structurally higher in gainer industries than in losers. Amongst gainers, this share is generally larger than two thirds for pharmaceutical products, raw materials, machinery, tobacco and activated carbon, whereas it is lower than this threshold for food and beverages, textiles, leather and wearing apparel.[34]

Average firm size is also not significantly different between gainer and loser sectors, since they employ 12 employees on average.[35] Market-share gainers indeed include, on the one hand, fashion and food industries with less than 10 employees per firm and on the other, pharmaceutical, tobacco and minerals, which record an average firm size of between 49 and 339 units. Interestingly, stable sectors are larger on average than gainers and losers, since they cover industries, such as motor vehicles, rubber tyres and aircrafts, with over 200 employees per firm.

Labour productivity is significantly lower in loser industries than in gainer and stable sectors.[36] Indeed, productivity is generally low across the board within losers, with the exceptions of machinery and electrical equipment and chemicals, plastic and rubber; it is particularly low in the textile-wearing apparel industries and in raw materials. Conversely, amongst gainers, labour productivity is particularly high in distilled alcoholic beverages, pharmaceutical preparations, lead, zinc and tin and tobacco products. Given that this variable is measured on 2017 data, the result of higher productivity in gainers and stable sectors is compatible with the "learning by exporting" hypothesis, although it does not exclude in any way a labour productivity premium for these two sector groupings also at the beginning of the decade under analysis. As expected, the wage share is lower in gainer sectors than in losers, suggesting higher capital intensity in the former, but this difference is only statistically significant at the margin (or when gainers and losers are defined by the percentile criterion).

The share of sales of foreign-owned firms is 5 percentage points higher in gainer sectors

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[34]In particular, amongst gainers, the least concentrated sectors are the two leather industries ("Saddlery and harness; luggage, handbags and the like; other articles of leather" and "Tanned and dressed leather; dressed and dyed fur", whose share of exports in the top five exporting firms is slightly less than 30 per cent.

[35]Qualitatively similar results are obtained if the analysis is restricted solely to exporting firms, whose average firm size is larger.

[36]Differences are, however, not statistically significant when the percentage criterion is used to identify sector groupings.

than in losers, but the difference is not statistically significant. Indeed, while seven gainers display a very high incidence of foreign MNEs (i.e. a share higher than 40 per cent), such as tobacco, pharmaceutical preparations, chocolate, mineral waters and soft drinks, activated carbon, and some raw materials, other gainers, such as most agri-food products, register a negligible incidence. Conversely, fourteen losers record a share higher than 40 per cent, such as chemical goods, synthetic rubber, mineral products, trains and railways and other electric, electronic or mechanical articles, which was however offset by low percentages recorded in other sectors.

Gainers are decidedly more import-intensive than losers: the ratio of imports to exports in exporting firms is 29 percentage point higher in the former group of sectors. Indeed, only a small number of gainers has a low import intensity, mainly in the food and fashion industries. This finding goes in the direction that involvement in GVCs benefits a given industry in terms of its export performance. The result is not driven by differences in the specialization in intermediate goods. Indeed, approximately one third of either gainers or losers export intermediate goods (regardless of the BEC or MIG definition).

As concerns firms' employment characteristics, relative to loser industries market-share gainers undoubtedly record a higher percentage of young (under 40) and of female employees, with stable sectors falling in between the two extremes. Conversely, there is no evidence of a significant difference between the two groupings in the share of white-collar workers, whereas the differential is significant for the quota of university-educated workers only when the percentile sector classification criterion is used.[37] Our results hence point to the presence of a more balanced age and gender distribution in the workforce in Italy's internationally successful sectors, as well as a possible positive stimulus of human capital. The former result, which would require (unavailable) time-series data in order to be fully explained, is at least in part due to the structurally high presence of female employment, for instance, in the fashion production chain (Tartaglione, 2014). Gainer industries also display a higher percentage of workers located in Southern Italy, Sardinia and Sicily than losers. The most plausible explanation is once again the sectoral composition of Italy's gainers, namely the predominance of food and beverages amongst the successful industries, whose share of employment in Southern Italy and in the two islands is nearly 18 per cent on average.

Finally, we find no clear relation between local concentration and an industry's export market share performance, with the HHI being roughly equal to 0.1 on average in all sector groupings. These averages, however, mask underlying heterogeneity in terms of geographical distribution of activity, for example, within the gainer category, which ranges from sectors with high local concentration (selected fashion industries and pharmaceuticals) to much more geographically disperse sectors, as in the food industry.

Next, we consider only those market-share gainer sectors whose world trade grew more than the average across all industries over 2010-19 (i.e. the gainers above the horizontal dashed line in Figure 7), and compare their features with those of losers (Table 7). As concerns external characteristics, only quality ranking is found to be significant: the selected gainers feature an even more favourable quality positioning than the full set of market-share gainers (6.9, against 7.3), which possibly helped shield them from competitive pressures stemming from China and the CEE6 region, in turn not significantly different to those faced by losers. As regards industry characteristics, the selected gainers display higher quotas of female, young and Southern workers, but also a higher percentage of university-educated employees, confirming the role of human capital in explaining favourable export performance. Productivity, firm size and import intensity

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[37]It is noteworthy that the share of university-educated workers is generally very low even within gainer industries, exceeding one fifth only in the case of chemical and pharmaceutical goods and, amongst losers for navigational and meteorological instruments, pesticides (which are, again, chemical products), turbines, trains and railways, and weapons. For some sectors such as the chemical-pharmaceutical industries, in addition to workers with tertiary education, employees with diplomas from secondary technical schools could be another asset; information on these diplomas is, however, unfortunately not available at our granular level of analysis.

are instead not statistically significant in the selected gainer-loser comparison.

Table 6: **Structural characteristics of Italy's market-share loser, stable and gainer sectors**

(percentage values and points; threshold criterion on absolute changes to identify sector groupings)

Structural characteristic	Mean losers	Mean stable	Mean gainers	Diff. gainers vs. losers	p-value
External factors:					
Balassa index	0.2	-0.3	0.2	0.0	0.979
PRODY index	12.9	13.9	13.5	-0.56	0.713
China's export market share	17.3	14.2	12.9	-4.4	0.065
CEE6's export market share	4.6	3.4	3.2	-1.3	0.011
Quality ranking	9.6	9.6	7.3	-2.2	0.002
Domestic factors:					
Export propensity	38.6	31.6	36.8	-1.9	0.604
Export share of top 5 exporters	61.2	68.4	61.7	0.5	0.920
Firm size	12.2	13.4	11.0	-1.2	0.623
Labour productivity	74.3	88.6	83.9	9.6	0.080
Wage share	54.8	41.3	40.3	-14.5	0.119
Import-to-exports ratio	59.2	93.6	88.2	29.0	0.049
Share of foreign-owned firms	19.8	23.8	24.8	5.1	0.279
Share of white-collar workers	35.7	39.6	37.0	1.3	0.628
Share of university-educated workers	10.8	12.5	12.5	1.7	0.278
Share of employees aged less than 40	31.7	33.1	35.1	3.4	0.037
Share of female employees	26.1	28.1	34.3	8.2	0.044
Share of employees in the South and Islands	11.9	16.1	16.8	4.9	0.049
Local employment concentration	0.1	0.1	0.1	0.0	0.971

Source: Authors' estimates on CEPII-BACI and Istat data. Notes: Gainer (loser) sectors are those sectors whose export market share change over the period 2010–2019 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below EUR 10 billion); stable sectors are the remaining sectors. The null hypothesis of the t-test underlying this table tests whether a given (unweighted) average structural factor is statistically any different between gainers and losers.

To complete the analysis, in Table 8 we also examine the structural characteristics of world-wide best-selling products and of Italy's strongholds. The country's comparative advantage in best-selling sectors is negative, implying under-specialization, which clearly drags on the country's overall export performance.[38] The opposite holds for strongholds, by construction. The PRODY index is quite high for best-selling products, although not as high as that of Italy's strongholds. Competition from both China and the CEE6 region is lower for best-selling products as well as for strongholds, compared to the average across all sectors. The quality ranking is instead worse in best-selling sectors, suggesting an imperfect positioning in the context of foreign competition. Amongst the domestic factors, it is noteworthy that the concentration of exports in the top five exporting Italian firms, average firm size, labour productivity, capital intensity, measured by the inverse proxy of the wage share, are high in best sellers, as is the share of foreign-owned firms; they are instead relatively low for strongholds. The quotas of white-collar and college-educated workers are also greater in best-selling sectors than for all sectors on average.

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[38]Note, however, that whereas in 2010 the Balassa index for best sellers was -0.6, as reported in Table 8, by 2019 it had become -0.5, flagging a reduction in Italy's under-specialization in these products.

Table 7: **Structural characteristics of Italy's market-share losers and selected gainers**

(percentage values and points; threshold criterion on absolute changes to identify sector groupings; gainers are only those whose world trade growth was above average in 2010–19)

Structural characteristic	Mean losers	Mean gainers	Diff. selected gainers vs. losers	p-value
External factors:				
Balassa index	0.2	0.2	0.1	0.463
PRODY index	13.5	12.2	-1.3	0.535
China's export market share	17.3	13.5	-3.8	0.454
CEE6's export market share	4.6	3.8	-0.8	0.262
Quality ranking	9.6	6.9	-2.7	0.002
Domestic factors:				
Export propensity	38.6	36.8	-1.8	0.728
Export share of top 5 exporters	61.2	57.9	-3.3	0.574
Firm size	12.2	9.7	-2.5	0.282
Labour productivity	74.3	84.8	10.5	0.270
Wage share	54.8	39.2	-15.5	0.104
Import-to-exports ratio	59.2	75.7	16.6	0.405
Share of foreign-owned firms	19.8	24.8	5.1	0.279
Share of white-collar workers	35.7	37.8	2.0	0.470
Share of university-educated workers	10.8	13.3	2.5	0.066
Share of employees aged less than 40	31.7	38.9	7.2	0.004
Share of female employees	26.1	39.2	13.1	0.012
Share of employees in the South and Islands	11.9	15.6	3.8	0.098
Local employment concentration	0.1	0.1	0.0	0.190

Source: Authors' estimates on CEPII-BACI and Istat data. Notes: Gainer (loser) sectors are those sectors whose export market share change over the period 2010–2019 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below EUR 10 billion); in the case of gainers only those whose world trade growth in the decade 2010-19 is above average are considered. The null hypothesis of the t-test underlying this table tests whether a given (unweighted) average structural factor is statistically any different between the selected gainers and the losers.

Table 8: **Structural characteristics of best-selling and stronghold sectors**

(percentage values and points, unless otherwise specified)

Structural characteristic	Best-selling	Strongholds	All sectors
External factors:			
Balassa index	-0.6	0.6	0.0
PRODY index	14.5	17.1	12.9
China's export market share	13.2	12.8	15.4
CEE6's export market share	3.1	2.7	3.9
Quality ranking	10.1	7.1	9.2
Domestic factors:			
Export propensity	42.2	46.0	35.7
Export share of top 5 exporters	71.4	47.1	64.0
Firm size	22.2	10.4	12.2
Labour productivity	118.4	74.1	81.3
Wage share	40.1	43.4	47.3
Import-to-exports ratio	70.4	46.5	76.8
Share of foreign-owned firms	28.6	14.9	22.1
Share of white-collar workers	51.0	34.2	37.4
Share of university-educated workers	17.1	9.4	11.7
Share of employees aged less than 40	33.0	32.0	32.8
Share of female employees	27.9	22.3	28.3
Share of employees in the South and Islands	18.6	12.8	14.3
Local employment concentration	0.1	0.1	0.1

Source: Authors' calculations on CEPII-BACI and Istat data. Notes: Best-selling sectors are those industries that either record world exports above 200 EUR billion in 2019 or that contribute to world trade growth in 2010-19 by at least 1 percentage point. Strongholds are those industries in which Italy's market share is larger than 10 percent in 2010 and 2019.

6 Industry trends during Covid-19

As regards 2020, the year of the first and second wave of the Covid-19 pandemic, as already mentioned in Section 3, it is not possible to construct Italy's export market shares by 5-digit sector due to our lack of access to timely information for many of the country's trading partners, such as, for example, China.[39] For this reason, we here analyse export dynamics at current prices by 5-digit industry relative to 2019, an exercise which is anyhow insightful in that we can assess the resilience of Italy's strongholds and market-share gainers even during such an unprecedented shock.

First, we examine year-on-year export developments according to the market-share gainer, stable and loser categories, which, we recall, are defined *ex ante* over the 2010-19 decade. We exclude industries for which Italy's exports are below 50 EUR million.[40] By weighting each 5-digit sector with its share in Italy's overall goods exports in 2020, the drop in exports of gainer sectors as a whole is one-percentage point more contained than that for the other sectors (Table 9), suggesting some degree of structural resilience of the former industries.[41] Interestingly, at the upper and lower 10th percentile of their distribution, stable sectors display the largest slump and the greatest rise, respectively, relative to the other two sector groupings, confirming the vast heterogeneity of products underlying this category. Anyhow, differences across groupings are not particularly large, implying that even many structurally gainer industries could not escape the strong negative impact of the Covid-19 outbreak.

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[39]We expect these data to be publicly available for all countries by the beginning of 2022.

[40]These are four industries, namely crude petroleum, sugar, processed potatoes and bicycle and invalid carriage parts. Descriptive findings here reported are anyhow unchanged even if these sectors are included.

[41]Similar results are also found when the two robustness classifications are employed (results available upon request).

Table 9: Year-on-year export changes in 2020 for market-share gainer, stable and loser sectors

(percentage changes)

	(Weighted) average	p10	Median	p90
Loser	-8.6	-22.7	-9.7	+ 2.5
Stable	-9.9	-24.1	-10.4	+5.7
Gainer	-7.6	-18.9	-8.5	+2.5

Source: Authors' calculations on Istat ITGS. Notes: Utilities, services and sectors for which world trade in 2019 is below 10 EUR billion and sectors for which Italy's exports are below 50 EUR million are excluded. The three categories market-share gainers/stable/losers refer to the 2010-19 decade. To compute the average change in exports by sector grouping, each 5-digit industry is weighted according to its share in Italy's total goods exports in 2020. p10 refers to the 10th percentile and p90 to the 90th percentile of the distribution of annual growth rates by sector grouping.

Digging deeper into the 5-digit dimension, in 2020 exports of under one fifth of all the industries under study marked an increase or were broadly stable (i.e. recorded a decline of less than 0.2 percentage points) relative to the previous year (Fig. 10; Table A.13 in Appendix A.1). These sectors were mostly what we previously defined as "stable" sectors (denoted by the letter "S" in the chart, based on our baseline classification); only two of these industries were worldwide best sellers in 2019 (identified by the letter "B"), namely precious metals and pharmaceutical preparations. Six of these sectors were gainers for Italy over the 2010-19 period (denoted by "G"), all falling in the "agri-food, beverages and tobacco" macro-sector, with the exceptions of consumer electronics and pharmaceutical preparations, yet none are strongholds. Conversely, 12 sectors were historical losers ("L") for Italy, such as agricultural tractors, weapons, domestic electrical appliances, and surface floor coverings.

Further two noteworthy facts stand out, reported in Table A.13 in Appendix A.1. First, nearly one third of these resilient sectors exported intermediate goods, confirming that regional and/or global value chains did not break down during the pandemic, but rather Italy contributed to keep them operational.[42] Second, the industries that performed relatively well in export terms in 2020 did not coincide only with those sectors that were left open throughout the six-week lockdown in March-April 2020, but also with some of those industries that were forced to temporarily suspend their activity.[43] This finding confirms that some sectors of the Italian economy managed to recover their sudden halt in production and exports in the months following lockdown and that overall 2020 export developments were not only explained by (negative) supply factors, namely the mandatory closure of entire sectors in the Spring, but also by (at times positive) demand factors.[44]

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[42]This fact is consistent with the evidence reported in Giglioli et al. (2021) relating to internationalised firms in Italy that actually suffered less from the Covid-19 outbreak than enterprises less involved in GVCs.

[43]For a complete picture of lockdowns on trade, it would be necessary to have the same information on closures by 5-digit sector for Italy also for all its main trading partners, as well as information on the duration of these lockdowns. The main source for country-by-country mandatory closures is the Oxford Stringency Index, developed by Hale et al. (2020) and updated on a daily basis. This indicator, however, is not available with a sectoral breakdown and is indeed employed even in external trade analyses at the aggregate level (e.g. Berthou and Stumpner, 2021).

[44]The rise in ship exports is largely due to the sales to the US recorded in January-February 2020, hence prior to the outbreak of Covid-19 in the Western world. Also see Allione and Felettigh (2021) for the impact of Italy's 2020 lockdown on the country's export performance.

Figure 10: **Year-on-year export changes in Italy's growing or stable sectors in 2020**
(percentage changes)
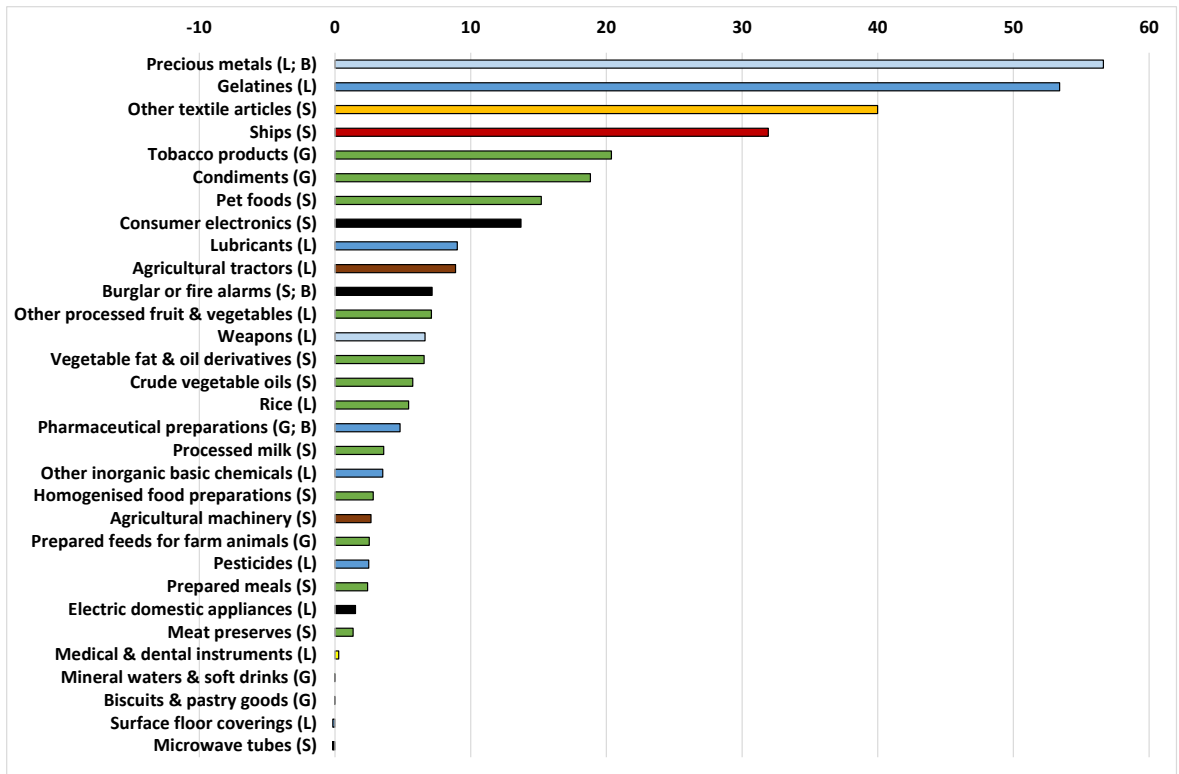
Source: Authors' calculations on Istat ITGS. Notes: Utilities, services and sectors for which world trade in 2019 is below 10 EUR billion and sectors for which Italy's exports are below 50 EUR million are excluded. Sectors are in descending order according to their change in exports in 2020 relative to 2019. The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2. G, L and S denote gainer, loser and stable sectors, respectively, according to the baseline threshold criterion on absolute changes; B indicates best-selling products.

Of the 150 industries that registered a slump in their exports in 2020, 25 marked a contraction that was larger than 20 per cent (Fig. 11). All contracting sectors went into lockdown in March-April 2020, with the only two exceptions of pulp and paper, and "other petroleum products". However, the affected macro-sectors suggest that also other factors were at play. Indeed, the contracting industries generally belong to the fashion/luxury chain, whose demand dropped during the pandemic also due to the cancellation of the main fairs and events and to the high incidence of tele-working in 2020; moreover, they include several types of machinery, in connection with the slump in the international business cycle. Zooming into the 5-digit level, three of the declining sectors are Italy's market-share gainer sectors (saddlery, luggage and handbags; tanned and dressed leather and fur; precious stones).

Figure 11: **Year-on-year export changes in Italy's most declining sectors in 2020**
(percentage changes)
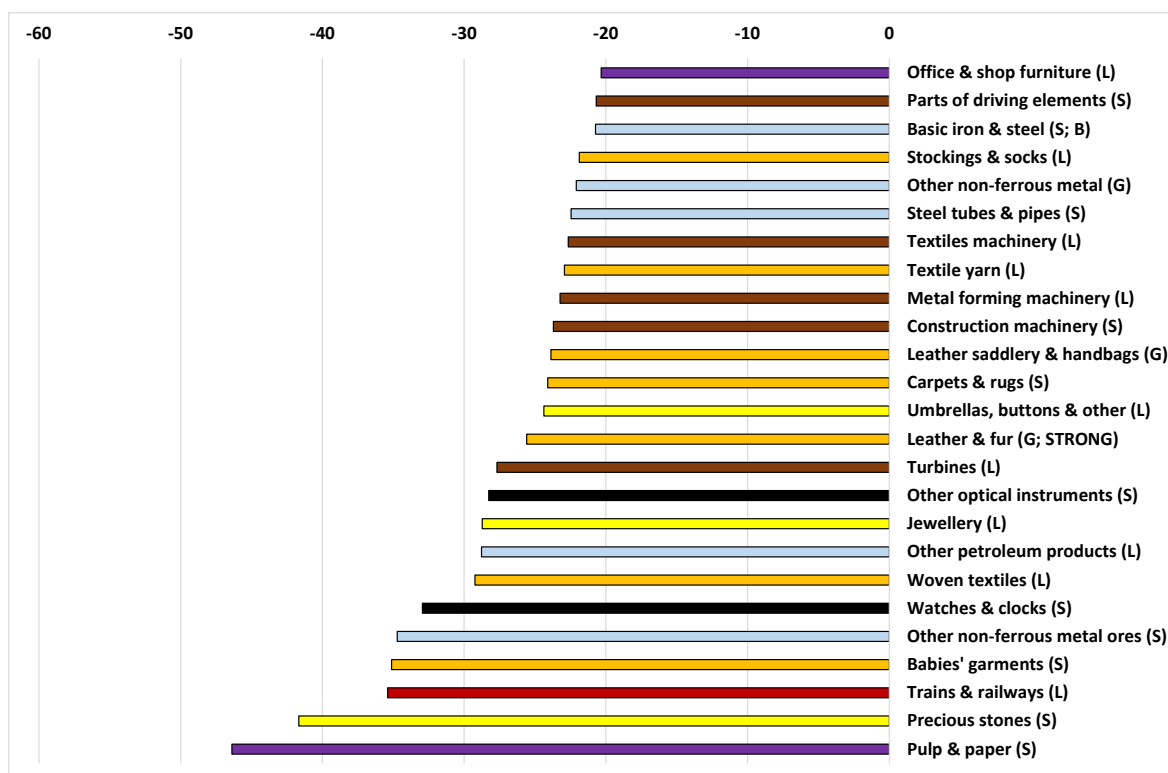
Source: Authors' calculations on Istat ITGS data. Notes: Utilities, services and sectors for which world trade in 2019 is below 10 EUR billion and sectors for which Italy's exports are below 50 EUR million are excluded. Sectors are in descending order according to their change in exports in 2020 relative to 2019. The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2. G, L and S denote market-share gainer, loser and stable sectors, respectively, according to the baseline threshold criterion on absolute changes; B indicates best-selling products; STRONG refers to strongholds.

Looking forward, at this stage it is very hard to predict future trends in world demand by industry and their impact on Italy's export performance, given the high uncertainty linked to the duration of the still ongoing pandemic. However, we can reasonably expect a further increase in the demand of pharmaceutical goods, which was one of the main gainer industries in Italy over the past decade.[45] The agri-food industry, in which Italy's export market shares have also risen, proved to be very resilient during the Covid-19 pandemic, setting the country in good stead to satisfy future demand. More uncertainty instead applies to the other main gainer sector (the fashion industry), which may be hard hit, due to the higher incidence of remote working and the lower incidence of social events. ICT-related goods and consumer electronics is one of the sectors that may receive a boost due to social distancing, together with more intense investment in automation. However, while Italy's market share in consumer electronics increased over the 2010-19 years, it remains still quite low at the end of the decade. Among other industries, the fate of the motor vehicle industry at world level is currently unclear, in relation to possible changes in transportation habits and to the transition to electrical and hybrid vehicles. Italy's market share in motor vehicles marginally increased over the past decade (by 0.2 percentage points), whereas its market share in bodies and parts of cars fell sharply. It is hard to foresee

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[45]Note that at the 5-digit level we cannot disentangle the (anti-Covid-19) vaccine component in Italy's pharmaceutical preparations exports, whose demand in 2021 has naturally spiked. Recent highly disaggregated data made available by Eurostat will allow tracking anti-Covid19 vaccine imports and exports at a monthly frequency even for Italy, but only as of January 2021.

how Italy's future exports in these industries will be affected in future years; an additional factor may be related to the increasing concentration in the industry and its impacts on the network of Italian suppliers. Other transport equipment, the aviation industry in particular, may record a sharp drop in world demand, yet Italy is not particularly highly specialised in this particular field. Some commentators predict a boost in trade in furniture, given households' investments in improving the home environment, triggered by lockdowns and remote working (e.g. ICE-Prometeia, 2021); in this industry Italy, however, has marked substantial export market-share losses over the past decade and therefore would need to regain competitiveness. For the same reasons, housing materials and appliances may also receive a future boost; in this respect, Italy is placed in a better stead, given for example that the country's export market share is structurally high in ceramic tiles. Finally, the post-Covid-19 recovery plans announced and endorsed in the major advanced economies worldwide, which are focused on enhancing green technologies and digitalization, will also presumably boost the demand for these goods and services, although Italy's competitive positioning in these sectors needs to be improved.

7 Concluding remarks

This paper is motivated by the recent performance of Italian goods exporters, which managed to maintain their share in world markets in 2010–19, in sharp contrast to the marked decrease during the previous decade. To investigate whether this resilient performance hides sectoral heterogeneity, we compute Italy's export market shares for 200 5-digit sectors. This allows us to identify sectors that gained market shares over the last decade, those that managed to keep their share unchanged and finally those that instead lost their share in world markets. We then focus on sectors' structural characteristics, with the aim of uncovering recurring patterns across industries, i.e. specific structural features that characterise market-share gainer sectors.

We find evidence of a significant across-industry heterogeneity, with 40 per cent of sectors marking a stable export market share, thereby confirming a broad-based resilience in the Italian export-oriented economy. Market-share gainers (32 sectors, according to our baseline criterion) mainly include agri-food, fashion and pharmaceutical products, whereas losers (90 sectors) span various macro-sectors.

Market-share gainers tend to be sectors in which Italy enjoys a better quality positioning and in which competition from China or Central and Eastern European countries is less intense. They also display higher import intensity and labour productivity, as well as a structurally higher share of female and young employees. At the same time, gainers are characterized by a variety of organizational structures and corporate models, suggesting that in this respect "one size does not fit all". Indeed, gainers range from sectors dominated by foreign-owned companies and highly skilled labor force (such as pharmaceuticals) to sectors characterized by mostly standalone exporters and a lower skill intensity in the fashion and food industries.

Detailed policy implications go beyond the scope of this work, also given its highly descriptive nature, but we believe that collecting highly granular information on individual sectors' export performance and on their structural characteristics may be a useful starting point for the design of policy instruments to support foreign sales. The heterogeneity of corporate models in gainers points to the need of a variety of policy tools suitable both for large and small exporters. Higher productivity and product quality upgrading are confirmed to go hand in hand with a better export performance. Hence, policies supporting R&D activity and worker training could help in this direction. Policies aimed at supporting Italian firms' participation to GVCs would also further contribute to Italy's aggregate external competitiveness. Finally, there is evidence in the literature that age and gender diversity may be linked to a more successful export performance; our results, albeit inconclusive on the matter, do not contradict this point. In this sense, measures aimed at increasing labour market flexibility and enhancing female employment could thus also be beneficial.

A   Appendix: Additional information

A.1   Additional figures and tables

Figure A.1: **Goods export market shares of selected countries in key years**
(current prices, according to international trade data)
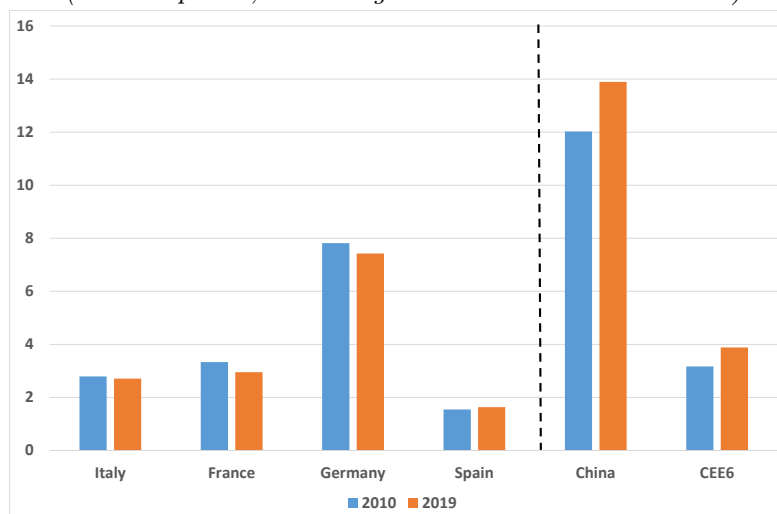
Source: Authors' calculations on CEPII-BACI data. Notes: The export market shares exclude goods that are produced by utilities or service sectors and goods for which world trade in 2019 is below 10 EUR billion.

Figure A.2: **Distribution of Italy's export market share (percentage) changes**
(densities on y-axis; percentage values on the x-axis)
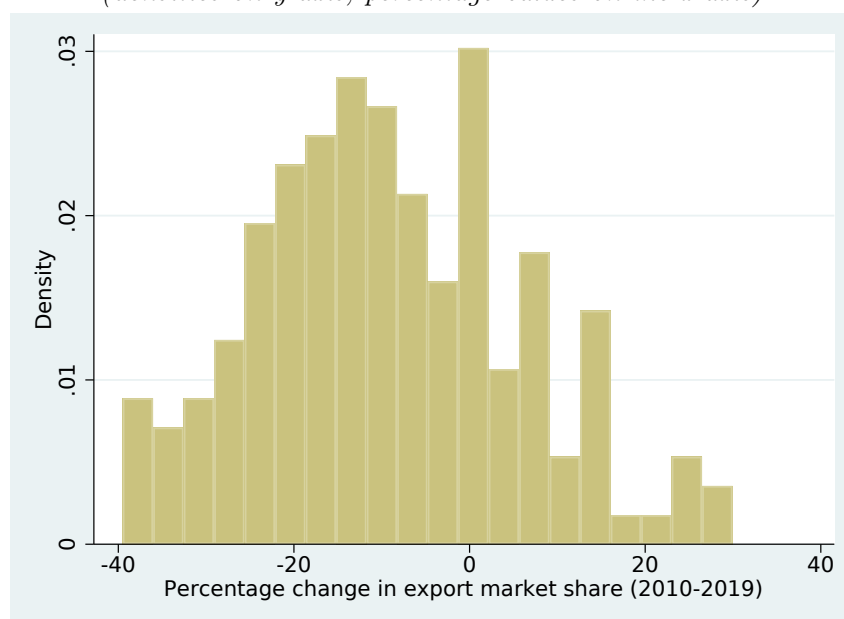
Source: Authors' calculations on CEPII-BACI data. Notes: Goods that are produced by utilities or service sectors and goods for which world trade in 2019 is below 10 EUR billion are excluded. The sectors are trimmed at the 10th and 90th percentile for the sake of legibility.

Figure A.3: **France's strongholds' export market shares in 2019**
(percentage values)
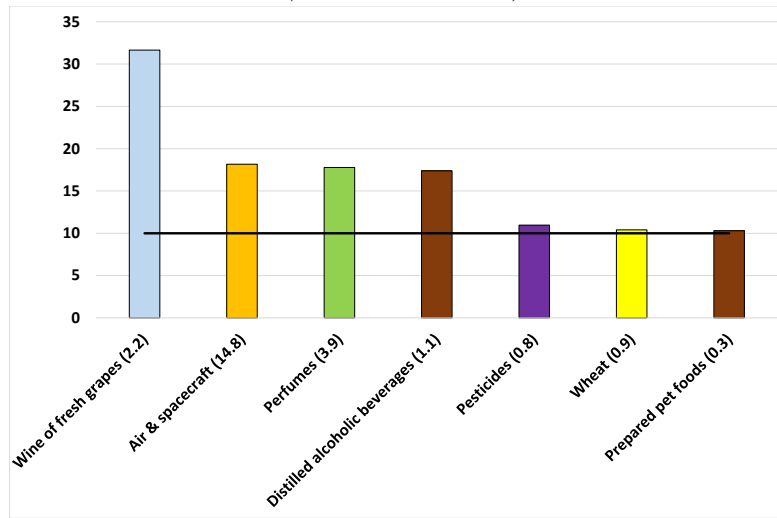
Source: Authors' calculations on CEPII-BACI data. Notes: Strongholds are defined as those sectors whose export market share in both 2010 and 2019 is higher than 10 per cent; sectors are ordered in descending order according to their export market share in 2019. The share of exports in France's total exports of goods (net of utilities, service sectors and goods for which world trade in 2019 is below 10 EUR billion) for each 5-digit industry is reported in brackets. The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2.

Figure A.4: **Germany's strongholds' export market shares in 2019**
(percentage values)
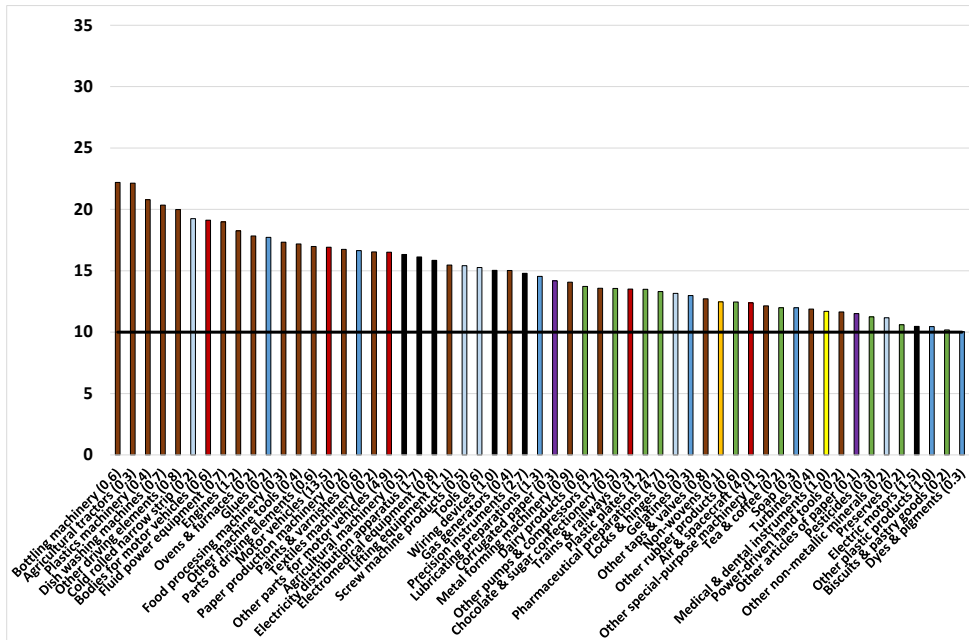
Source: Authors' calculations on CEPII-BACI data. Notes: Strongholds are defined as those sectors whose export market share in both 2010 and 2019 is higher than 10 per cent; sectors are ordered in descending order according to their export market share in 2019. The share of exports in Germany's total exports of goods (net of utilities, service sectors and goods for which world trade in 2019 is below 10 EUR billion) for each 5-digit industry is reported in brackets. The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2.

Figure A.5: **Spain's strongholds' export market shares in 2019**
(percentage values)
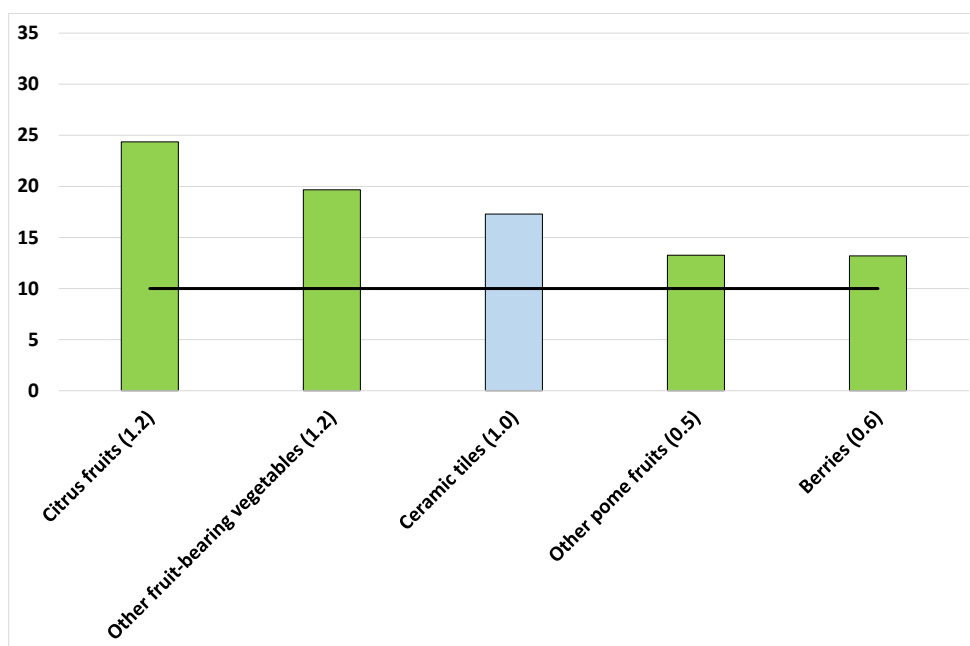
Source: Authors' calculations on CEPII-BACI data. Notes: Strongholds are defined as those sectors whose export market share in both 2010 and 2019 is higher than 10 per cent; sectors are ordered in descending order according to their export market share in 2019. The share of exports in Spain's total exports of goods (net of utilities, service sectors and goods for which world trade in 2019 is below 10 EUR billion) for each 5-digit industry is reported in brackets. The bars are coloured differently according to the nine macro-sectors into which we group each 5-digit industry, reported in Table 2.

Table A.1: **The change in best-selling products' export market shares: Italy vs. the other main euro area countries**

(percentage points)

Sector code	Sector description	Italy	France	Germany	Spain
29100	Motor vehicles	0.17	-0.64	-3.68	-0.16
6100	Crude petroleum	-0.01	0.01	-0.02	0.01
26110	Electronic components	-0.25	-0.41	-1.17	-0.27
19202	Fuel oil and gas; lubricating oils	-0.72	-0.66	-0.16	0.62
26200	Computers and peripheral equipment	0.08	-0.29	0.01	0.03
21200	Pharmaceutical preparations	1.60	-0.91	-0.79	-0.50
26302	Electrical apparatus	-0.17	-0.38	-0.74	0.11
30400	Air and spacecraft	-0.29	-3.42	-1.13	0.30
24410	Precious metals	-0.48	0.24	-2.33	0.17
29320	Other parts and accessories for motor vehicles	-0.62	-2.23	0.05	-0.66
20140	Other organic basic chemicals	-0.14	-0.85	-0.74	-0.21
24100	Basic iron and steel and ferro-alloys	0.05	-0.50	-0.49	-0.41
20160	Plastics in primary forms	-0.20	-0.60	-0.98	-0.11
21100	Basic pharmaceutical products	0.60	-1.51	7.00	-0.32
6200	Natural gas, liquefied or in gaseous state	-0.21	1.00	-1.19	-0.24
26512	Precision instruments	-0.24	-0.58	0.08	-0.10
28996	Other special-purpose machinery n.e.c.	-0.98	-0.11	-0.77	0.21
14130	Other outerwear	0.32	-0.05	0.37	0.77
15201	Footwear	-0.46	0.56	1.85	-0.21
27120	Electricity distribution and control apparatus	-1.00	-2.35	-1.74	-0.05
28250	Non-domestic cooling and ventilation equipment	-1.20	-1.17	-0.98	0.07
20420	Perfumes and toilet preparations	0.69	-2.54	-3.25	0.25

Source: Authors' calculations on CEPII-BACI data. Notes: Best-selling sectors are those industries that either record world exports above 200 EUR billion in 2019 or that contribute to world trade growth in 2010-19 by at least 1 percentage point. Goods that are produced by utilities or service sectors are excluded. Sectors are ordered in descending order according to their share in world trade.

Table A.2: **Italy's market-share gainers over the period 2010-19**
(according to the threshold criterion on absolute changes)

Sector code	Sector description	Exports (2019) (EUR billions)	World trade (2019) (EUR billions)	Market share (2019) (percentage values)	Change in market share (2010–19) (percentage points)
12000	Tobacco products	2	34	4.55	4.45
15120	Saddlery, luggage, handbags and other articles of leather	8	64	12.31	4.18
15110	Tanned and dressed leather; dressed and dyed fur	3	16	21.52	2.63
11021	Wine of fresh grapes; grape must	7	33	20.49	2.00
10830	Processed tea and coffee	2	20	7.83	1.84
21200	Pharmaceutical preparations	26	416	6.29	1.60
24320	Cold rolled narrow strip	1	11	6.54	1.40
10512	Butter cheese and other dairy products	3	51	6.77	1.32
10910	Prepared feeds for farm animals	0	15	2.96	1.31
11070	Mineral waters and soft drinks	1	23	5.07	1.17
14390	Jerseys, pullovers, cardigans, waistcoats and similar articles	3	51	5.26	1.00
30120	Pleasure and sporting boats	2	15	13.29	0.93
28220	Lifting and handling equipment	7	88	7.47	0.90
24202	Tubes and pipes of steel	5	42	12.02	0.87
24340	Cold drawn wire	1	10	5.86	0.70
20420	Perfumes and toilet preparations	6	103	5.63	0.69
10820	Cocoa, chocolate and sugar confectionery	2	47	4.72	0.66
21100	Basic pharmaceutical products	8	246	3.44	0.60
28210	Ovens, furnaces and furnace burners	1	11	11.09	0.59
20597	Activated carbon	0	14	1.54	0.53
10840	Condiments and seasonings	1	16	7.70	0.51
24450	Other non-ferrous metal	0	42	1.09	0.48
14191	Clothing accessories of leather, hats and headgear	1	20	7.20	0.46
24430	Lead, zinc and tin	0	25	0.90	0.43
14140	Underwear	3	106	3.30	0.41
11010	Distilled alcoholic beverages	1	31	3.88	0.39
2201	Wood in the rough	0	14	0.50	0.37
10890	Soups, eggs, yeasts, extracts and other food products	1	43	3.09	0.36
28230	Office machinery and equipment (except computers)	0	54	0.83	0.36
10720	Rusks and biscuits; pastry goods and cakes	1	20	6.84	0.35
24440	Copper	3	112	2.35	0.32
14130	Other outerwear	8	141	5.36	0.32
	Total market-share gainers	109	1934	5.66	1.02

Source: authors' calculations on CEPII-BACI data. Notes: Market-share gainers reported in this table are those sectors whose export market share (absolute) gain over the period 2010–19 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion).

Table A.3: **Gainers' change in market shares by geographical area**
(according to the threshold criterion on absolute changes; percentage points)

Sector code	Sector description	Euro area	Other EU	Non-EU Europe	North Amer.	Centr. & South Am.	Asia	Rest of world
12000	Tobacco products	0.6	0.6	5.2	0.1	0.4	9.2	0.3
15120	Saddlery, handbags and other articles of leather	2.4	1.3	6.8	4.3	1.9	4.9	5.3
15110	Dressed leather and fur	3.9	-1.6	4.9	9.5	6.7	-0.7	22.3
11021	Wine of fresh grapes; grape must	2.0	1.5	6.8	2.1	1.9	-0.1	3.4
10830	Processed tea and coffee	1.6	4.9	3.1	2.2	1.6	1.8	-1.0
21200	Pharmaceutical preparations	2.9	1.3	-0.4	3.9	0.9	-0.1	-0.9
24320	Cold rolled narrow strip	2.9	1.0	2.9	1.5	-1.1	-0.2	0.6
10512	Butter, cheese and other dairy products	2.1	2.5	2.0	-0.6	0.1	0.5	0.7
10910	Prepared feeds for farm animals	0.6	2.7	0.5	0.5	-0.0	2.6	0.5
11070	Mineral waters and soft drinks	1.9	2.6	1.7	1.0	0.8	0.5	0.1
14390	Jerseys, pullovers and similar articles	-0.3	0.4	3.4	0.8	-0.4	3.0	-1.8
30120	Pleasure and sporting boats	-0.0	-0.3	1.2	4.0	-8.8	11.4	4.3
28220	Lifting and handling equipment	0.6	-1.3	1.1	3.1	1.1	-0.1	-0.3
24202	Steel tubes and pipes	-0.7	2.9	0.6	-2.5	-0.6	2.3	-0.5
24340	Cold drawn wire	3.1	-5.2	7.5	0.3	-1.1	-0.1	-2.8
20420	Perfumes and toilet preparations	2.4	1.3	1.2	2.0	0.8	-0.5	0.4
10820	Cocoa, chocolate and sugar confectionery	0.8	0.6	-0.1	0.6	1.0	0.2	2.7
21100	Basic pharmaceutical products	1.1	1.7	0.7	0.7	0.2	-0.5	-1.8
28210	Ovens, furnaces and furnace burners	2.2	-1.9	0.2	1.6	2.4	0.4	-1.3
20597	Activated carbon	4.2	-0.1	0.4	1.2	0.1	0.7	
10840	Condiments and seasonings	1.1	1.4	0.3	1.8	0.2	0.6	0.4
24450	Other non-ferrous metal	0.4	1.6	1.4	0.4	-0.7	0.4	1.2
14191	Clothing accessories of leather and hats	-0.3	-0.3	2.9	1.1	1.2	-0.0	-0.9
24430	Lead, zinc and tin	0.8	0.6	1.7	-0.0	0.1	0.1	-0.2
14140	Underwear	-0.1	-0.6	2.1	0.4	0.1	1.2	-0.7
11010	Distilled alcoholic beverages	1.7	2.3	2.3	-0.4	0.5	0.4	1.1
2201	Wood in the rough	1.7	0.2	0.4	-0.0	-0.1	0.1	-0.6
10890	Soups, eggs, extracts and other food products	0.6	0.9	1.4	0.9	0.4	0.5	-0.1
28230	Office machinery (excl. computers)	0.4	1.1	0.5	0.4	0.7	0.0	1.4
10720	Biscuits; preserved pastry goods and cakes	1.2	1.2	1.3	0.5	-1.2	-0.4	1.8
24440	Copper	0.9	4.9	1.1	0.3	0.2	0.0	-1.5
14130	Other outerwear	-1.0	-1.5	1.5	0.6	-0.1	2.1	-0.7

Source: Authors' calculations on CEPII-BACI data. Notes: Gainer sectors here reported are those sectors whose export market share gain over the period 2010–2019 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). The UK is considered as a non-EU country throughout the period under analysis.

Table A.4: **Italy's market-share gainer sectors over the period 2010-19**

(according to the percentile criterion on absolute changes)

Sector code	Sector description	Exports (2019) (EUR billions)	World trade (2019) (EUR billions)	Market share (2019) (percentage values)	Change in market share (2010–19) (percentage points)
12000	Tobacco products	2	34	4.55	4.45
15120	Saddlery, luggage, handbags and other articles of leather	8	64	12.31	4.18
15110	Tanned and dressed leather; dressed and dyed fur	3	16	21.52	2.63
11021	Wine of fresh grapes; grape must	7	33	20.49	2.00
10830	Processed tea and coffee	2	20	7.83	1.84
21200	Pharmaceutical preparations	26	416	6.29	1.60
24320	Cold rolled narrow strip	1	11	6.54	1.40
10512	Butter cheese and other dairy products	3	51	6.77	1.32
10910	Prepared feeds for farm animals	0	15	2.96	1.31
11070	Mineral waters and soft drinks	1	23	5.07	1.17
14390	Jerseys, pullovers, cardigans, waistcoats and similar articles	3	51	5.26	1.00
30120	Pleasure and sporting boats	2	15	13.29	0.93
28220	Lifting and handling equipment	7	88	7.47	0.90
24202	Tubes and pipes of steel	5	42	12.02	0.87
24340	Cold drawn wire	1	10	5.86	0.70
20420	Perfumes and toilet preparations	6	103	5.63	0.69
10820	Cocoa, chocolate and sugar confectionery	2	47	4.72	0.66
21100	Basic pharmaceutical products	8	246	3.44	0.60
28210	Ovens, furnaces and furnace burners	1	11	11.09	0.59
20597	Activated carbon	0	14	1.54	0.53
10840	Condiments and seasonings	1	16	7.70	0.51
24450	Other non-ferrous metal	0	42	1.09	0.48
14191	Clothing accessories of leather, hats and headgear	1	20	7.20	0.46
24430	Lead, zinc and tin	0	25	0.90	0.43
14140	Underwear	3	106	3.30	0.41
11010	Distilled alcoholic beverages	1	31	3.88	0.39
2201	Wood in the rough	0	14	0.50	0.37
10890	Soups, eggs, yeasts, extracts and other food products	1	43	3.09	0.36
28230	Office machinery and equipment (except computers)	0	54	0.83	0.36
10720	Rusks and biscuits; pastry goods and cakes	1	20	6.84	0.35
24440	Copper	3	112	2.35	0.32
14130	Other outerwear	8	141	5.36	0.32
32122	Cultured pearls and precious stones	0	69	0.49	0.30
10411	Vegetable oils, crude	1	33	3.98	0.29
10920	Prepared pet foods	0	13	2.76	0.28
10130	Preserves and preparations of meat, meat offal or blood	2	25	7.36	0.23
26400	Consumer electronics	1	152	0.60	0.22
29100	Motor vehicles	22	948	2.33	0.17
1119	Other oil seeds	0	18	0.37	0.13
22111	New rubber tyres and tubes	2	75	2.14	0.12
	Total market-share gainers	138	3268	4.22	0.81

Source: authors' calculations on CEPII-BACI data. Notes: Market-share gainer sectors reported in this table are those sectors whose export market share (absolute) change over the period 2010–2019 falls in the upper 20th percentile of the distribution of all 5-digit sectors (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). Sectors are in descending order according to their export market share absolute change. Until the horizontal line these sectors coincide with the baseline winners.

Table A.5: **Italy's market-share gainer sectors over the period 2010-19**
(according to the threshold criterion on percentage changes)

Sector code	Sector description	Exports (2019) *(EUR billions)*	World trade (2019) *(EUR billions)*	Market share (2019) *(percentage values)*	Pctge. change in market share (2010–19) *(percentage points)*
12000	Tobacco products	2	34	4.55	4506.19
2201	Wood in the rough	0	14	0.50	277.22
32122	Cultured pearls and precious stones	0	69	0.49	155.62
5101	Hard coal	0	115	0.03	118.81
24430	Lead, zinc and tin	0	25	0.90	92.54
24450	Other non-ferrous metal	0	42	1.09	79.85
10910	Prepared feeds for farm animals	0	15	2.96	79.36
28230	Office machinery (excl. computers)	0	54	0.83	76.26
26400	Consumer electronics	1	152	0.60	58.05
1119	Other oil seeds	0	18	0.37	52.32
20597	Activated carbon	0	14	1.54	52.21
15120	Leather saddlery & handbags	8	64	12.31	51.47
26702	Other optical instruments	0	66	0.19	44.78
8990	Other mining and quarrying products n.e.c.	0	40	0.34	44.04
1271	Beverage crops	0	29	0.18	41.50
1291	Natural rubber	0	12	0.13	36.94
8990	Other mining products	0	40	0.34	44.04
21200	Pharmaceutical preparations	26	416	6.29	34.20
10810	Sugar	0	22	0.09	32.32
10830	Tea and coffee	2	20	7.83	30.78
11070	Mineral waters and soft drinks	1	23	5.07	29.95
24320	Cold rolled narrow strip	1	11	6.54	27.21
26200	Computers and peripheral equipment	2	479	0.39	24.48
10512	Dairy products	3	51	6.77	24.31
14390	Jerseys, pullovers and similar articles	3	51	5.26	23.42
21100	Basic pharmaceutical products	8	246	3.44	21.02
10820	Cocoa, chocolate and sugar confectionery	2	47	4.72	16.16
24440	Copper	3	112	2.35	16.00
14140	Underwear	3	106	3.30	14.38
15110	Dressed leather and fur	3	16	21.52	13.94
20420	Perfumes and toilet preparations	6	103	5.63	13.89
28220	Lifting and handling equipment	7	88	7.47	13.77
24340	Cold drawn wire	1	10	5.86	13.50
10890	Meat and fish extracts	1	43	3.09	13.28
10511	Milk	0	25	0.50	12.87
10920	Prepared pet foods	0	13	2.76	11.14
11010	Distilled alcoholic beverages	1	31	3.88	11.05
11021	Wine of fresh grapes	7	33	20.49	10.79
	Total market-share gainers	94	2709	3.46	42.79

Source: authors' calculations on CEPII-BACI data. Notes: Gainer sectors reported in this table are those sectors whose export market share percentage change over the period 2010–2019 is higher than 10 per cent (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion euros). Sectors are in descending order according to their export market share percentage change.

Table A.6: **Export market shares of Italy's gainer sectors by year**

(according to the threshold criterion on absolute changes; percentage values)

Sector code	Sector description	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
2201	Wood in the rough	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5
10512	Butter, cheese and other dairy products	5.4	5.4	5.5	5.3	5.4	5.7	6.1	5.9	6.2	6.8
10720	Biscuits and pastry goods	6.5	6.3	6.2	6.1	6.1	6.0	6.0	6.2	6.2	6.8
10820	Cocoa, chocolate and sugar confectionery	4.1	4.1	4.4	4.4	4.3	4.3	4.4	4.6	4.8	4.7
10830	Processed tea and coffee	6.0	6.0	6.2	6.6	6.9	6.7	7.1	7.3	7.8	7.8
10840	Condiments and seasonings	7.2	6.9	7.0	7.4	7.7	7.2	7.2	7.2	7.5	7.7
10890	Extracts of meat and fish	2.7	2.6	2.7	2.7	2.9	2.9	3.2	3.1	3.1	3.1
10910	Prepared feeds for farm animals	1.7	1.9	2.1	2.1	2.5	2.8	2.9	2.7	2.9	3.0
11010	Distilled alcoholic beverages	3.5	3.3	3.1	3.1	2.9	2.8	2.8	2.9	3.4	3.9
11021	Wine of fresh grapes; grape must	18.5	18.7	18.8	19.6	20.1	19.5	20.2	19.5	20.1	20.5
11070	Mineral waters and soft drinks	3.9	3.7	3.9	4.2	4.4	4.3	4.3	4.7	4.8	5.1
12000	Tobacco products	0.1	0.1	0.1	0.1	0.2	0.2	2.1	2.3	4.4	4.6
14130	Other outerwear	5.0	5.1	5.0	5.2	5.2	4.8	5.1	5.2	5.3	5.4
14140	Underwear	2.9	2.8	2.7	2.8	2.8	2.6	2.8	3.0	3.1	3.3
14191	Leather clothing accessories and hats	6.7	7.0	7.4	7.2	7.2	6.3	6.3	6.8	7.0	7.2
14390	Jerseys and similar articles	4.3	4.3	4.3	4.3	4.6	4.2	4.6	4.9	5.1	5.3
15110	Tanned and dressed leather and fur	18.9	20.3	19.1	18.5	18.3	17.5	19.3	19.6	20.7	21.5
15120	Leather saddlery, luggage and handbags	8.1	9.6	10.2	10.9	11.6	10.9	11.3	11.9	12.1	12.3
20420	Perfumes and toilet preparations	4.9	5.1	4.9	5.1	5.3	5.4	5.7	5.7	5.8	5.6
20597	Activated carbon	1.0	1.0	1.1	1.3	1.1	1.1	1.1	1.1	1.4	1.5
21100	Basic pharmaceutical products	2.8	2.6	2.7	3.1	3.6	2.8	3.0	3.4	3.9	3.4
21200	Pharmaceutical preparations	4.7	5.0	5.1	5.5	5.3	4.8	5.1	5.7	5.6	6.3
24202	Steel tubes and pipes	11.1	11.1	10.1	10.6	10.6	10.0	11.7	11.2	11.3	12.0
24320	Cold rolled narrow strip	5.1	5.5	5.3	5.4	5.6	5.4	5.9	6.3	6.7	6.5
24340	Cold drawn wire	5.2	5.4	5.4	4.8	4.8	4.5	4.8	5.2	5.5	5.9
24430	Lead, zinc and tin	0.5	0.6	0.7	0.5	0.5	0.7	0.7	0.7	0.7	0.9
24440	Copper	2.0	2.0	2.0	2.1	2.3	2.4	2.1	2.2	2.3	2.4
24450	Other non-ferrous metal	0.6	0.8	1.0	1.1	1.0	0.9	0.9	1.0	0.9	1.1
28210	Ovens, furnaces and furnace burners	10.5	11.6	10.8	11.2	11.4	11.5	11.5	12.9	12.4	11.1
28220	Lifting and handling equipment	6.6	6.8	6.6	7.1	7.2	6.9	7.3	7.5	7.6	7.5
28230	Office equipment (excl. computers)	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8
30120	Pleasure and sporting boats	12.4	13.9	12.4	16.3	17.2	15.6	11.5	12.4	12.4	13.3

Source: authors' calculations on CEPII-BACI data. Notes: Gainer sectors reported in this table are those sectors whose export market share (absolute) change over the period 2010–2019 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 billion euros). Sectors are ordered according to their product code.

Table A.7: **Market-share gainer sectors: main competitors**

(according to the threshold criterion on absolute changes)

Sector Code	Sector Description	1st Competitor	2nd Competitor	3rd Competitor	1st Gainer
12000	Tobacco products	Poland	UAE	Germany	UAE
15120	Saddlery, luggage, handbags and other articles of leather	China	Italy	France	Italy
15110	Tanned and dressed leather; dressed and dyed fur	Italy	Brazil	Thailand	Thailand
11021	Wine of fresh grapes; grape must	France	Italy	Spain	Italy
10830	Processed tea and coffee	Germany	Switzerland	Italy	France
21200	Pharmaceutical preparations	Germany	Switzerland	Ireland	India
24320	Cold rolled narrow strip	Germany	USA	Japan	Viet Nam
10512	Butter, cheese and other dairy products	Germany	Netherlands	France	Italy
10910	Prepared feeds for farm animals	Netherlands	USA	Germany	Viet Nam
11070	Mineral waters and soft drinks	Austria	France	Germany	Thailand
14390	Jerseys, pullovers, cardigans, waistcoats and similar articles	China	Bangladesh	Viet Nam	Viet Nam
30120	Pleasure and sporting boats	Netherlands	Italy	UK	Netherlands
28220	Lifting and handling equipment	China	Germany	Italy	China
24202	Tubes and pipes of steel	China	Italy	Germany	China
24340	Cold drawn wire	China	Rep. of Korea	Germany	China
20420	Perfumes and toilet preparations	France	USA	Germany	Rep. of Korea
10820	Cocoa, chocolate and sugar confectionery	Germany	Netherlands	Belgium	Poland
21100	Basic pharmaceutical products	Ireland	USA	Switzerland	Germany
28210	Ovens, furnaces and furnace burners	China	Germany	Italy	China
20597	Activated carbon	Japan	China	Other Asia, nes	Other Asia, nes
10840	Condiments and seasonings	USA	Italy	China	China
24450	Other non-ferrous metal	Russia	USA	China	USA
14191	Clothing accessories of leather, hats and headgear	China	Viet Nam	Italy	Viet Nam
24430	Lead, zinc and tin	Rep. of Korea	Canada	Spain	Rep. of Korea
14140	Underwear	China	Bangladesh	Viet Nam	Bangladesh
11010	Distilled alcoholic beverages	UK	France	Mexico	Mexico
2201	Wood in the rough	New Zealand	USA	Russia	New Zealand
10890	Soups, eggs, yeasts, extracts and other food products	USA	Germany	Singapore	Singapore
28230	Office machinery and equipment (except computers)	China	Japan	Germany	Malaysia
10720	Rusks and biscuits; pastry goods and cakes	Germany	Canada	Italy	Poland
24440	Copper	Chile	Germany	Zambia	Congo
14130	Other outerwear	China	Viet Nam	Bangladesh	Viet Nam

Source: authors' calculations on CEPII-BACI data. Notes: Market-share gainer sectors reported in this table are those sectors whose export market share (absolute) gain over the period 2010–19 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). Sectors are ordered according to their export market share gain.

Table A.8: **Italy's market-share loser sectors over the period 2010-19**

(according to the threshold criterion on absolute changes)

Sector code	Sector description	Exports (2019) (EUR billions)	World trade (2019) (EUR billions)	Market share (2019) (percentage values)	Change in market share (2010–19) (percentage points)
28240	Power-driven hand tools	0	24	1.22	-0.35
27330	Wiring devices	2	76	2.40	-0.37
29310	Electrical equipment for motor vehicles	1	67	1.43	-0.37
20599	Gelatines and other chemical products	1	26	2.00	-0.38
23130	Hollow glass	1	19	5.93	-0.39
26511	Navigational, meteorological and similar instruments	1	32	1.59	-0.39
1111	Wheat	0	40	0.07	-0.42
20200	Pesticides and other agrochemical products	1	32	2.23	-0.43
20130	Other inorganic basic chemicals	1	83	1.66	-0.43
22210	Plastic plates, sheets, tubes and profiles	6	105	5.48	-0.45
25940	Fasteners and screw machine products	2	38	5.13	-0.45
10110	Processed and preserved meat	1	103	1.03	-0.46
15201	Footwear	10	123	7.81	-0.46
24410	Precious metals	6	363	1.54	-0.48
16231	Builders' carpentry, of wood	0	10	3.15	-0.49
29200	Bodies for motor vehicles; trailers and semi-trailers	1	35	2.55	-0.50
300	Fish, crustaceans and molluscs	0	24	0.96	-0.51
23510	Cement	0	11	1.15	-0.52
20600	Man-made fibres	1	30	2.83	-0.53
1221	Tropical and subtropical fruits	0	23	0.21	-0.54
20594	Lubricating preparations and other chemical products	4	106	3.49	-0.54
32501	Medical, surgical and dental instruments	2	100	1.96	-0.55
17210	Corrugated paper and paperboard	1	23	5.11	-0.56
20591	Photographic plates and film	0	12	0.40	-0.59
10620	Starches and starch products	0	15	1.86	-0.59
28960	Plastics and rubber machinery	2	24	7.98	-0.59
23990	Other non-metallic mineral products n.e.c.	0	20	2.31	-0.59
22220	Plastic packing goods	2	50	3.58	-0.60
10320	Fruit and vegetable juices	0	13	3.68	-0.61
25110	Metal structures and parts of structures	1	36	3.66	-0.61
29320	Other parts and accessories for motor vehicles	12	354	3.46	-0.62
26301	Radio or television transmission apparatus	1	137	0.59	-0.64
28151	Other bearings, gears, gearing and driving elements	3	45	6.37	-0.64
28292	Gas generators, distilling and filtering apparatus	1	29	4.43	-0.66
10611	Rice, semi- or wholly milled, or husked or broken	1	21	2.52	-0.67
1231	Citrus fruits	0	13	1.79	-0.68
10390	Other processed and preserved fruit and vegetables	3	56	5.36	-0.69
32997	Lighters, pipes and other articles	0	25	1.82	-0.70
19202	Fuel oil and gas; lubricating oils	12	600	2.05	-0.72
25920	Light metal packaging	1	13	6.03	-0.72
32992	Umbrellas, buttons and products of textile materials	0	20	2.55	-0.74
27200	Batteries and accumulators	1	60	1.25	-0.79
25931	Wire products	1	22	4.07	-0.82
28112	Turbines and parts of turbines	2	38	6.47	-0.83
14120	Workwear	1	38	3.34	-0.83
25732	Moulds	1	17	5.93	-0.83
24330	Cold formed or folded products	1	18	3.25	-0.84
13950	Non-wovens and articles made from non-wovens	1	14	7.46	-0.87
27320	Other electronic and electric wires and cables	3	68	4.05	-0.88
25999	Paper trays and other articles of base metal	5	87	6.01	-0.91
28293	Machinery for cleaning or filling bottles	5	34	13.96	-0.95
22290	Other plastic products	4	111	4.01	-0.96
28996	Other special-purpose machinery	6	149	3.87	-0.98
20170	Synthetic rubber in primary forms	0	22	1.92	-0.98
27400	Electric lighting equipment	2	71	3.03	-0.99
19204	Other petroleum products	0	22	2.24	-1.00
27120	Electricity distribution and control apparatus	3	123	2.69	-1.00
23700	Cut, shaped and finished stone	1	10	12.59	-1.02
1133	Other fruit-bearing vegetables	0	16	1.45	-1.10
28410	Metal forming machinery	4	77	5.40	-1.13
28250	Non-domestic cooling and ventilation equipment	6	118	5.45	-1.20
31090	Other furniture	3	45	6.03	-1.23
13100	Textile yarn and thread	1	31	4.25	-1.24
28140	Other taps and valves	7	73	9.00	-1.25
13200	Woven textiles	4	65	6.77	-1.31
22190	Other rubber products	3	62	4.73	-1.36
31092	Seats and parts thereof	3	55	4.95	-1.37
28130	Other pumps and compressors	6	102	5.74	-1.37
31094	Parts of furniture (except seats)	2	13	14.45	-1.42
22230	Linoleum and hard non-plastic surface floor coverings	0	21	2.25	-1.47
17220	Household and toilet paper and paper products	1	28	5.02	-1.54
32121	Articles of jewellery	7	92	7.67	-1.60
13910	Knitted or crocheted fabrics	1	28	3.18	-1.79
28490	Other machine tools	3	26	9.83	-1.80
23310	Ceramic tiles and flags	4	15	23.67	-1.82
23120	Shaped and processed flat glass	1	21	3.26	-1.90
25991	Metal articles for bathroom and kitchen	1	20	4.07	-1.94
25720	Locks and hinges	2	43	4.40	-2.03
31010	Office and shop furniture	1	13	7.23	-2.11
30923	Parts and accessories of bicycles	0	11	3.03	-2.16
28941	Machinery for spinning, weaving and knitting textiles	1	16	6.93	-2.21
27510	Electric domestic appliances	5	117	3.88	-2.36
28301	Agricultural tractors	1	18	7.63	-2.47
30200	Railway locomotives and rolling stock	1	29	3.35	-2.78
27520	Non-electric domestic appliances	1	13	7.12	-2.86
25400	Weapons and ammunition and parts thereof	1	15	4.05	-3.26
1251	Berries	1	12	4.28	-4.03
30911	Motorcycles and side-cars	1	25	4.94	-4.15
14310	Stockings, socks and other hosiery	1	12	6.84	-4.19
1242	Other pome fruits and stone fruits	0	10	3.76	-5.68
	Total market-share losers	193	5124	3.77	-0.92

Source: authors' calculations on CEPII-BACI data. Notes: Loser sectors reported in this table are those sectors whose export market share (absolute) loss over the period 2010–19 is larger than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion). Sectors are in descending order according to their export market share change.

Table A.9: **Italy's market-share loser sectors over the period 2010-19**
(according to the threshold criterion on percentage changes)

Sector code	Sector description	Exports (2019) (EUR billions)	World trade (2019) (EUR billions)	Market share (2019) (percentage values)	Change in market share (2010–19) (percentage points)
26520	Watches and clocks	1	42	1.80	-10.08
13950	Non-wovens	1	14	7.46	-10.48
25920	Light metal packaging	1	13	6.03	-10.71
28112	Turbines and parts	2	38	6.47	-11.32
26120	Microwave and other valve tubes	0	44	0.58	-11.34
10390	Other processed fruit and vegetables	3	57	5.36	-11.44
10120	Processed and preserved poultry meat	0	26	1.66	-11.58
26512	Precision instruments	4	215	1.82	-11.59
1253	Nuts (excluding wild edible nuts)	0	24	1.71	-11.74
13922	Other made-up textile articles	0	34	1.09	-11.88
28140	Other taps and valves	7	73	9.00	-12.21
25732	Moulds	1	17	5.93	-12.27
30110	Ships and floating structures	2	93	1.88	-12.57
28292	Gas generators	1	29	4.43	-12.93
25999	Paper trays and other articles of base metal	5	87	6.01	-13.14
27330	Wiring devices	2	76	2.40	-13.37
20594	Lubricating preparations	4	106	3.49	-13.48
16231	Builders' joinery and carpentry, of wood	0	10	3.15	-13.48
10320	Fruit and vegetable juices	1	13	3.68	-14.17
25110	Metal structures and parts of structures	1	36	3.66	-14.27
13921	Made-up textile articles for the household	0	28	1.07	-14.33
22220	Plastic packing goods	2	50	3.58	-14.43
30400	Air and spacecraft	7	384	1.69	-14.63
29320	Other parts for motor vehicles	12	354	3.46	-15.12
28490	Other machine tools	3	26	9.83	-15.50
20600	Man-made fibres	1	31	2.83	-15.91
20200	Pesticides and other agrochemical products	1	32	2.23	-16.12
20599	Gelatines and miscellaneous other chemical products n.e.c.	1	26	2.00	-16.16
13200	Woven textiles	4	65	6.77	-16.23
29200	Bodies for motor vehicles	1	35	2.55	-16.49
25931	Wire products	1	22	4.07	-16.84
31090	Other furniture	3	45	6.03	-16.90
32402	Dolls and other toys	0	40	0.97	-17.16
10412	Cotton linters and refined oils	1	62	0.98	-17.23
32121	Jewellery	7	92	7.67	-17.29
28410	Metal forming machinery	4	77	5.40	-17.36
27320	Other electronic wires	3	68	4.05	-17.85
28250	Non-domestic cooling equipment	6	118	5.45	-18.04
22290	Other plastic products	5	111	4.01	-19.25
28130	Other pumps and compressors	6	102	5.74	-19.28
14120	Workwear	1	38	3.34	-19.90
26511	Navigational, meteorological and similar instruments	1	32	1.59	-19.93
28996	Other special-purpose machinery	6	149	3.87	-20.18
23990	Other non-metallic mineral products	1	20	2.31	-20.42
24330	Cold formed or folded products	1	18	3.25	-20.50
29310	Electrical and electronic equipment for motor vehicles	1	67	1.43	-20.61
20130	Other inorganic basic chemicals	1	83	1.66	-20.76
10611	Rice	1	21	3	-20.99
31092	Seats and parts thereof	3	55	4.95	-21.67
32501	Medical and dental instruments	2	100	1.96	-22.09
26701	Photographic equipment and parts thereof	0	20	0.67	-22.11
28240	Power-driven hand tools	0	24	1.22	-22.29
22190	Other rubber products	3	62	4.73	-22.38
13100	Textile yarn and thread	1	31	4.25	-22.52
31010	Office and shop furniture	1	14	7.23	-22.62
32992	Umbrellas and similar products of textile materials	1	20	2.55	-22.63
17220	Household paper products	1	28	5.02	-23.53
24410	Precious metals	6	363	1.54	-23.71
10620	Starches and starch products	0	15	1.86	-23.98
28941	Textiles machinery	1	17	6.93	-24.16
28301	Agricultural tractors	1	18	7.63	-24.48
27400	Electric lighting equipment	2	71	3.03	-24.57
19202	Fuel oil and gas; lubricating oils	12	600	2.05	-26.02
27120	Electricity distribution and control apparatus	3	123	2.69	-27.04
10860	Homogenised food preparations	0	12	0.72	-27.46
1231	Citrus fruits	0	13	1.79	-27.51
32997	Lighters and other articles	1	25	1.82	-27.70
26302	Burglar or fire alarms	2	409	0.42	-28.48
27520	Non-electric domestic appliances	1	13	7.12	-28.68
10110	Processed and preserved meat	1	103	1.03	-30.64
19204	Other petroleum products	1	22	2.24	-30.80
23510	Cement	0	11	1.15	-31.26
25720	Locks and hinges	2	43	4.40	-31.58
25991	Metal articles for bathroom and kitchen	1	20	4.07	-32.24
1161	Fibre crops	0	14	0.03	-32.64
20170	Synthetic rubber in primary forms	0	22	1.92	-33.70
300	Fish, crustaceans and molluscs	0	24	0.96	-34.63
13910	Knitted or crocheted fabrics	1	28	3.18	-35.96
23120	Shaped and processed flat glass	1	21	3.26	-36.84
27510	Electric domestic appliances	5	117	3.88	-37.82
14310	Stockings, socks and other hosiery	1	12	6.84	-37.99
27200	Batteries and accumulators	1	60	1.25	-38.89
22230	Non-plastic surface floor coverings	1	21	2.25	-39.51
1112	Maize	0	33	0.15	-41.56
30923	Parts of bicycles and of invalid carriages	0	11	3.03	-41.64
19203	Petroleum gases	0	51	0.34	-41.95
26110	Electronic components	2	684	0.33	-43.02
1133	Other fruit-bearing vegetables	0	16	1.45	-43.07
7100	Iron ores	0	116	0.00	-43.92
25400	Weapons and ammunition	1	15	4.05	-44.62

30200	Railway locomotives and rolling stock	1	29	3.35	-45.40
30911	Motorcycles and side-cars	11	25	4.94	-45.67
1251	Berries	1	12	4.28	-48.50
6100	Crude petroleum	0	894	0.01	-49.67
26301	Radio or television transmission apparatus	1	137	0.59	-51.99
20591	Photographic plates and film	0	12	0.40	-59.65
1242	Other pome fruits and stone fruits	0	10	3.76	60.20
7290	Other non-ferrous metal ores	0	103	0.07	-69.00
1221	Tropical and subtropical fruits	0	23	0.21	-72.06
1118	Soya beans, groundnuts and cotton seeds	0	52	0.04	-73.00
6200	Natural gas, liquefied or in gaseous state	0	217	0.05	-79.36
1111	Wheat	0	40	0.07	-85.47
	Total market-share losers	177	8271	2.14	-18.10

Source: Authors' calculations on CEPII-BACI data. Notes: Market-share loser sectors reported in this table are those sectors whose export market share percentage loss over the period 2010–19 is greater than 10 per cent (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion euros). Sectors are in descending order according to their export market share percentage change.

Table A.10: **Export market shares of Italy's loser sectors by year**

(according to the threshold criterion on absolute changes; percentage values)

Sector code	Sector description	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
300	Fish, crustaceans and molluscs	1.5	1.4	1.1	1.1	1.2	1.1	1.0	1.1	1.0	1.0
1111	Wheat	0.5	0.5	0.3	0.2	0.2	0.4	0.4	0.4	0.1	0.1
1133	Other fruit-bearing vegetables	2.6	2.2	1.9	2.1	2.1	1.8	1.7	1.6	1.6	1.5
1221	Tropical and subtropical fruits	0.7	0.5	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
1231	Citrus fruits	2.5	2.2	1.8	1.9	1.9	1.8	2.1	1.8	1.9	1.8
1242	Other pome and stone fruits	9.4	7.9	8.4	7.6	6.3	6.0	5.7	5.7	4.8	3.8
1251	Berries	8.3	7.5	6.1	7.0	7.1	5.9	5.5	5.4	4.5	4.3
10110	Processed meat	1.5	1.5	1.4	1.4	1.3	1.2	1.3	1.2	1.2	1.0
10320	Fruit and vegetable juices	4.3	4.1	4.1	4.0	4.0	3.4	3.6	3.6	3.9	3.7
10390	Other processed fruit and vegetables	6.1	5.8	5.6	5.6	5.6	5.2	5.2	5.2	5.3	5.4
10611	Rice	3.2	2.9	2.5	2.6	2.6	2.7	2.8	2.5	2.4	2.5
10620	Starch products	2.5	2.5	2.1	2.2	2.2	2.0	2.0	2.1	2.0	1.9
13100	Textile yarn and thread	5.5	5.4	5.0	4.6	4.6	4.3	4.4	4.1	4.3	4.3
13200	Woven textiles	8.1	7.8	7.4	7.4	7.4	6.7	6.8	7.1	7.1	6.8
13910	Knitted or crocheted fabrics	5.0	5.0	4.6	4.5	4.5	3.7	3.6	3.6	3.4	3.2
13950	Non-wovens	8.3	8.9	8.1	7.9	7.9	7.7	7.8	7.9	7.7	7.5
14120	Workwear	4.2	3.9	3.6	3.7	3.6	3.1	3.3	3.3	3.4	3.3
14310	Stockings, socks and other hosiery	11.0	10.6	9.5	8.8	8.2	7.4	7.0	7.1	6.9	6.8
15201	Footwear	8.3	8.5	8.0	8.2	8.0	7.3	7.7	7.7	7.9	7.8
16231	Builders' carpentry of wood	3.6	3.3	3.5	3.7	3.5	3.4	3.1	3.2	3.2	3.2
17210	Corrugated paper and paperboard	5.7	5.8	5.4	5.3	5.3	5.0	5.0	5.1	5.3	5.1
17220	Household and paper products	6.6	6.3	5.8	5.8	5.7	5.5	5.6	5.4	5.2	5.0
19202	Fuel oil and gas; lubricating oils	2.8	2.5	2.6	2.1	1.8	2.2	2.1	2.3	2.1	2.1
19204	Other petroleum products	3.2	2.8	3.0	3.1	3.2	2.5	2.3	2.2	2.5	2.2
20130	Other inorganic basic chemicals	2.1	2.2	1.9	2.1	2.2	1.9	1.8	2.0	1.6	1.7
20170	Synthetic rubber in primary forms	2.9	2.7	2.4	2.4	2.5	2.5	2.3	2.0	2.0	1.9
20200	Pesticides and other agrochemical products	2.7	2.7	2.3	2.2	2.2	2.3	2.4	2.2	2.2	2.2
20591	Photographic plates and film	1.0	0.9	0.9	0.7	0.6	0.6	0.6	0.4	0.4	0.4
20594	Lubricating preparations and other chemical products	4.0	3.9	3.7	3.8	3.7	3.6	3.6	3.6	3.5	3.5
20599	Gelatines and miscellaneous other chemical products	2.4	2.2	2.1	1.9	2.2	2.2	2.3	2.3	2.3	2.0
20600	Man-made fibres	3.4	3.2	3.3	3.2	3.3	3.1	3.2	3.1	2.9	2.8
22190	Other rubber products	6.1	5.3	4.9	5.1	5.2	4.7	4.9	4.9	4.9	4.7
22210	Plastic plates, sheets, tubes and profiles	5.9	5.8	5.4	5.5	5.6	5.3	5.4	5.4	5.5	5.5
22220	Plastic packing goods	4.2	4.2	3.9	3.9	3.9	3.7	3.7	3.6	3.7	3.6
22230	Non-plastic surface floor coverings	3.7	3.4	3.1	2.9	2.8	2.6	2.6	2.5	2.4	2.3
22290	Other plastic products	5.0	5.0	4.6	4.5	4.5	4.1	4.2	4.2	4.2	4.0
23120	Shaped and processed flat glass	5.2	4.9	4.3	4.6	4.2	3.7	3.6	3.5	3.5	3.3
23130	Hollow glass	6.3	6.3	6.1	6.1	6.0	5.8	5.7	5.8	5.9	5.9
23310	Ceramic tiles and flags	25.5	24.9	22.4	22.0	22.2	21.3	23.5	24.1	23.5	23.7
23510	Cement	1.7	1.4	1.3	1.4	1.4	1.3	1.1	1.1	1.2	1.1
23700	Cut, shaped and finished stone	13.6	13.8	13.3	13.6	13.1	12.6	12.7	12.7	12.6	12.6
23990	Other non-metallic mineral products n.e.c.	2.9	2.8	2.8	2.8	2.4	2.2	2.4	2.3	2.3	2.3
24330	Cold formed or folded products	4.1	4.1	3.6	4.0	4.2	3.6	4.0	3.9	3.7	3.3
24410	Precious metals	2.0	2.4	2.2	1.3	1.3	1.1	1.0	0.9	1.0	1.5
25110	Metal structures and parts of structures	4.3	4.4	3.6	4.1	4.3	4.0	4.1	3.9	3.9	3.7
25400	Weapons and ammunition and parts thereof	7.3	6.4	6.7	7.5	6.8	5.2	4.7	5.1	4.9	4.1
25720	Locks and hinges	6.4	5.9	5.4	5.3	5.0	4.6	4.7	4.6	4.6	4.4
25732	Moulds	6.8	6.8	6.8	6.6	6.7	6.0	6.4	6.5	6.2	5.9
25920	Light metal packaging	6.8	6.8	6.4	6.6	6.4	6.0	5.9	6.0	6.2	6.0
25931	Wire products	4.9	4.7	4.7	4.5	4.2	3.9	4.1	4.4	4.4	4.1
25940	Fasteners and screw machine products	5.6	5.7	5.2	5.4	5.3	5.1	5.2	5.3	5.4	5.1
25991	Metal articles for bathroom and kitchen	6.0	5.9	5.6	5.4	4.9	4.4	4.4	4.4	4.3	4.1
25999	Paper trays and other articles of base metal	6.9	7.0	6.5	6.7	6.6	6.1	6.0	6.1	6.2	6.0
26301	Radio or television transmission apparatus	1.2	1.0	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6
26511	Navigational, meteorological and similar instruments	2.0	2.2	1.7	2.0	1.6	1.4	1.2	1.1	1.7	1.6
27120	Electricity distribution and control apparatus	3.7	3.5	3.1	3.2	3.1	2.9	3.0	3.0	2.9	2.7
27200	Batteries and accumulators	2.0	2.0	1.8	1.9	1.8	1.7	1.8	1.7	1.4	1.2
27320	Other electronic and electric wires and cables	4.9	4.8	4.3	4.2	4.1	4.0	4.2	4.2	4.1	4.1
27330	Wiring devices	2.8	2.7	2.5	2.6	2.5	2.3	2.3	2.3	2.4	2.4
27400	Electric lighting equipment	4.0	3.9	3.5	3.4	3.3	3.1	3.1	3.1	3.1	3.0
27510	Electric domestic appliances	6.2	5.7	5.1	5.0	5.0	4.6	4.4	4.3	4.1	3.9
27520	Non-electric domestic appliances	10.0	9.9	9.4	9.4	8.8	7.6	7.4	7.2	7.5	7.1
28112	Turbines and parts of turbines	7.3	6.9	6.7	6.8	7.2	6.5	5.6	6.1	5.3	6.5
28130	Other pumps and compressors	7.1	6.8	6.8	6.8	6.8	6.4	6.3	6.4	5.8	5.7
28140	Other taps and valves	10.2	10.2	10.1	10.1	10.1	9.2	9.2	8.9	8.9	9.0
28151	Other bearings, gears, gearing and driving elements	7.0	7.3	6.8	7.0	6.5	6.0	6.1	6.4	6.4	6.4
28240	Power-driven hand tools	1.6	1.5	1.4	1.4	1.3	1.2	1.3	1.3	1.3	1.2
28250	Non-domestic cooling and ventilation equipment	6.6	6.4	6.1	6.4	6.2	5.7	5.6	6.0	5.7	5.4
28292	Gas generators, distilling and filtering apparatus	5.1	5.2	4.9	5.1	4.5	4.2	4.2	4.5	4.6	4.4
28293	Bottle-filling machinery	14.9	15.5	14.5	15.2	15.2	14.1	14.1	14.4	14.2	14.0
28301	Agricultural tractors	10.1	9.9	9.5	10.1	10.0	9.1	9.6	9.1	8.4	7.6
28410	Metal forming machinery	6.5	6.4	6.2	6.5	5.9	5.7	5.6	5.1	5.1	5.4
28490	Other machine tools	11.6	11.7	11.3	11.7	11.2	11.1	10.9	10.4	10.1	9.8
28941	Textiles machinery	9.1	9.2	8.5	8.3	7.7	7.6	7.7	7.6	7.3	6.9
28960	Plastics and rubber machinery	8.6	8.9	8.1	8.4	8.5	8.2	8.2	8.3	8.0	8.0
28996	Other special-purpose machinery n.e.c.	4.8	5.1	5.0	5.2	5.1	4.7	4.7	3.9	3.8	3.9
29200	Bodies for motor vehicles; trailers and semi-trailers	3.1	2.7	2.5	2.4	2.5	2.5	2.6	2.6	2.7	2.5
29310	Electrical and electronic equipment for motor vehicles	1.8	1.6	1.4	1.5	1.5	1.4	1.4	1.4	1.4	1.4
29320	Other parts and accessories for motor vehicles	4.1	4.3	3.8	4.1	3.9	3.5	3.4	3.4	3.5	3.5
30200	Railway locomotives and rolling stock	6.1	3.8	3.2	2.3	4.5	3.4	3.4	3.3	4.4	3.3
30911	Motorcycles and side-cars	9.1	9.0	8.5	7.2	6.5	6.3	6.1	5.3	5.0	4.9
30923	Parts of bicycles and of invalid carriages	5.2	4.8	4.5	4.7	4.4	3.9	3.8	3.6	3.4	3.0
31010	Office and shop furniture	9.3	8.9	8.3	8.9	8.7	8.0	7.8	7.6	7.8	7.2
31090	Other furniture	7.3	7.3	6.7	7.0	6.8	6.2	6.3	6.1	6.2	6.0
31092	Seats and parts thereof	6.3	6.2	5.5	5.6	5.4	4.9	5.0	5.1	5.0	4.9
31094	Parts of furniture (except seats)	15.9	16.7	14.9	15.2	15.5	15.0	14.3	14.3	14.4	14.4
32121	Articles of jewellery	9.3	7.9	7.7	8.8	7.9	7.6	7.8	8.3	8.0	7.7
32501	Medical, surgical and dental instruments	2.5	2.4	2.2	2.3	2.2	2.0	2.0	2.0	2.0	2.0
32992	Umbrellas and products of textile materials	3.3	3.2	2.9	3.0	2.9	2.5	2.5	2.6	2.6	2.5
32997	Lighters, pipes and other articles n.e.c.	2.5	2.5	2.4	2.6	2.4	2.2	2.1	2.0	2.0	1.8

Source: Authors' calculations on CEPII-BACI data. Notes: Loser sectors reported in this table are those sectors whose export market share (absolute) loss over the period 2010–19 is greater than 0.3 percentage points (excluding utilities or services and sectors for which world trade in 2019 is below 10 EUR billion).

Table A.11: **Structural characteristics of Italy's market-share loser, stable and gainer sectors**

(percentage values and points; percentile criterion on absolute changes to identify groupings)

Structural characteristic	Mean losers	Mean stable	Mean gainers	Diff. gainers vs. losers	p-value
External factors:					
Balassa index	0.4	-0.1	0.2	-0.2	0.039
Competitors' average GDP per capita (in units)	25.9	28.0	27.9	2.0	0.282
China's export market share	20.6	14.6	12.6	-8.0	0.022
CEE6's export market share	4.8	3.7	3.5	-1.3	0.060
Quality ranking	8.5	10.0	7.3	-1.2	0.188
Domestic factors:					
Export propensity	44.1	33.2	34.8	-9.3	0.022
Export share of top 5 exporters	57.5	66.6	62.4	4.9	0.354
Firm size	12.0	13.1	10.6	-1.4	0.599
Labour productivity (EUR thousands)	69.1	85.4	80.9	11.8	0.045
Wage share	44.7	50.4	40.0	-4.8	0.005
Import-to-exports ratio	38.3	85.9	88.1	49.7	0.000
Share of foreign-owned firms	17.5	23.8	21.7	4.2	0.380
Share of white-collar workers	34.4	38.7	36.4	2.1	0.410
Share of college-educated workers	9.6	12.2	12.3	2.7	0.056
Share of employees aged less than 40	30.7	32.7	35.4	4.7	0.007
Share of female employees	27.4	26.6	34.2	7.8	0.013
Share of employees in the South and Islands	10.0	14.5	17.8	6.8	0.076
Local employment concentration	0.1	0.1	0.1	0.0	0.730

Source: authors' estimates on CEPII-BACI and Istat data. Notes: Market-share gainer (loser) sectors are those sectors whose export market share change over the period 2010–19 falls in the upper (lower) 20th percentile of the distribution of all sectors (excluding utilities or services and sectors for which world trade in 2019 is below EUR 10 billion); stable sectors are the remaining sectors The null hypothesis of the t-test underlying this table tests whether a given (unweighted) average structural factor is statistically any different between gainers and losers.

Table A.12: **Structural characteristics of Italy's market-share loser, stable and gainer sectors**

(percentage values and points; threshold criterion on percentage changes to identify groupings)

Structural characteristic	Mean losers	Mean stable	Mean gainers	Diff. gainers vs. losers	p-value
External factors:					
Balassa index	0.0	0.1	0.0	0.0	0.931
Competitors' average GDP per capita (in units)	26.6	28.9	27.7	1.1	0.535
China's export market share	17.3	14.2	12.1	-5.2	0.054
CEE6's export market share	4.2	3.6	3.4	-0.8	0.087
Quality ranking	9.6	9.1	8.5	-1.1	0.075
Domestic factors:					
Export propensity	35.2	37.9	32.9	-2.3	0.566
Export share of top 5 exporters	65.1	59.4	69.7	4.6	0.338
Firm size	12.8	11.2	13.7	0.9	0.783
Labour productivity (EUR thousands)	83.7	74.1	88.2	4.5	0.312
Wage share	53.6	42.2	39.2	-14.4	0.103
Import-to-exports ratio	65.9	73.0	115.3	49.4	0.046
Share of foreign-owned firms	20.8	22.8	24.7	4.2	0.397
Share of white-collar workers	38.2	35.4	38.9	0.7	0.796
Share of college-educated workers	11.9	10.5	13.3	1.4	0.362
Share of employees aged less than 40	31.9	33.2	34.7	2.8	0.095
Share of female employees	28.0	27.2	31.1	3.1	0.383
Share of employees in the South and Islands	13.9	13.8	16.4	2.5	0.370
Local employment concentration	0.1	0.1	0.1	0.0	0.676

Source: authors' estimates on CEPII-BACI and Istat data. Notes: Market-share gainer (loser) sectors are those sectors whose export market share percentage gain (loss) over the period 2010–19 is greater than 10 per cent (excluding utilities or services and sectors for which world trade in 2019 is below EUR 10 billion); stable sectors are the remaining sectors. The null hypothesis of the t-test underlying this table tests whether a given (unweighted) average structural factor is statistically any different between gainers and losers.

Table A.13: **Export dynamics by 5-digit sector in 2020 in Italy**

Sector code	Sector description	% change in exports	Label (1)	Label (2)	Strong-hold	Best seller	Interm. (BEC)	Interm. (MIG)	Active in lockdown
6100	Crude petroleum	418.8	stable	stable	0	1	1	0	1
24410	Precious metals	56.6	loser	stable	0	1	1	1	0
20599	Gelatines and other chemical products	53.4	loser	stable	0	0	1	1	1
13922	Other made-up textile articles	40.0	stable	stable	0	0	0	0	0
30110	Ships and floating structures	31.9	stable	stable	0	0	0	0	0
12000	Tobacco products	20.4	gainer	gainer	0	0	0	0	0
10840	Condiments and seasonings	18.8	gainer	gainer	0	0	0	0	1
10920	Prepared pet foods	15.2	stable	gainer	0	0	0	0	1
26400	Consumer electronics	13.7	stable	gainer	0	0	0	0	0
20594	Lubricants and other chemical products	9.0	loser	stable	0	0	1	1	1
28301	Agricultural tractors	8.9	loser	loser	0	0	0	0	0
26302	Burglar or fire alarms	7.2	stable	stable	0	1	0	0	0
10390	Other processed fruit and vegetables	7.1	loser	stable	0	0	0	0	1
25400	Weapons and ammunition and parts	6.6	loser	loser	0	0	0	0	0
10412	Vegetable fat and oil derivatives	6.6	stable	stable	0	0	1	1	1
10411	Vegetable oils, crude	5.7	stable	gainer	0	0	1	1	1
10611	Rice	5.4	loser	stable	0	0	0	0	1
21200	Pharmaceutical preparations	4.8	gainer	gainer	0	1	0	0	1
10511	Processed milk and cream	3.6	stable	stable	0	0	0	0	1
20130	Other inorganic basic chemicals	3.5	loser	stable	0	0	1	1	1
10860	Homogenised food preparations	2.8	stable	stable	0	0	0	0	1
10810	Sugar	2.8	stable	stable	0	0	1	1	1
28309	Soil and other agricultural machinery	2.7	stable	stable	0	0	0	0	0
10910	Prepared feeds for farm animals	2.5	gainer	gainer	0	0	1	1	1
20200	Pesticides and other agrochemical products	2.5	loser	stable	0	0	0	0	1
10850	Prepared meals and dishes	2.4	stable	stable	0	0	0	0	1
27510	Electric domestic appliances	1.5	loser	loser	0	0	0	0	0
10130	Preserves and preparations of meat	1.3	stable	gainer	0	0	0	0	1
32501	Medical and dental instruments	0.3	loser	stable	0	0	0	0	1
11070	Mineral waters and soft drinks	-0.0	gainer	gainer	0	0	0	0	1
10720	Biscuits and pastry goods	-0.0	gainer	gainer	0	0	0	0	1
22230	Surface floor coverings	-0.2	loser	loser	0	0	1	1	1
26120	Microwave tubes and other valve tubes	-0.2	stable	stable	0	0	0	0	1
28299	Dish washing machines	-0.6	stable	stable	0	0	0	0	0
30911	Motorcycles and side-cars	-0.8	loser	loser	0	0	0	0	0
20597	Activated carbon	-0.9	gainer	gainer	0	0	1	1	1
20140	Other organic basic chemicals	-1.0	stable	stable	0	1	1	1	1
11021	Wine of fresh grapes	-1.2	gainer	gainer	1	0	0	0	1
26512	Precision instruments	-1.3	stable	stable	0	1	0	0	0

10890	Soups, eggs, yeasts and other food products	-1.3	gainer	gainer	0	0	1	1	1
25920	Light metal packaging	-1.5	loser	stable	0	0	0	0	1
25110	Metal structures and parts	-1.8	loser	stable	0	0	1	1	0
10200	Processed fish, crustaceans and molluscs	-1.9	stable	stable	0	0	0	0	1
11050	Beer	-1.9	stable	stable	0	0	0	0	1
25991	Metal articles for bathroom and kitchen	-2.1	loser	loser	0	0	0	0	0
20411	Soap, washing and cleaning preparations	-2.1	stable	stable	0	0	0	0	1
27200	Batteries and accumulators	-2.2	loser	stable	0	0	0	0	1
10512	Butter, cheese and other dairy products	-2.3	gainer	gainer	0	0	1	1	1
23310	Ceramic tiles and flags	-2.3	loser	loser	1	0	1	1	0
20150	Fertilisers and nitrogen compounds	-2.6	stable	stable	0	0	1	1	1
10820	Cocoa, chocolate and sugar confectionery	-3.0	gainer	gainer	0	0	0	0	1
17220	Household and toilet paper	-3.2	loser	loser	0	0	0	0	1
10620	Starches and starch products	-3.3	loser	stable	0	0	1	1	1
27120	Electricity distribution apparatus	-3.4	loser	loser	0	1	0	0	1
13950	Non-wovens	-4.1	loser	stable	0	0	1	1	1
20520	Glues	-4.2	stable	stable	0	0	1	1	1
10320	Fruit and vegetable juices	-4.4	loser	stable	0	0	0	0	1
22210	Plastic plates, sheets and tubes	-4.5	loser	stable	0	0	1	1	1
10310	Processed and preserved potatoes	-4.5	stable	stable	0	0	0	0	1
28250	Non-domestic cooling equipment	-4.7	loser	loser	0	1	0	0	0
23510	Cement	-4.9	loser	stable	0	0	1	1	0
22220	Plastic packing goods	-4.9	loser	stable	0	0	1	1	1
10830	Processed tea and coffee	-5.1	gainer	gainer	0	0	0	0	1
26200	Computers and peripheral equipment	-5.2	stable	stable	0	1	0	0	1
27520	Non-electric domestic appliances	-5.3	loser	loser	0	0	0	0	0
19202	Fuel oil and gas; lubricating oils	-5.9	loser	stable	0	1	0	0	1
21100	Basic pharmaceutical products	-6.04	gainer	gainer	0	1	1	1	1
32402	Dolls and other toys	-6.3	stable	stable	0	0	0	0	0
31090	Other furniture	-6.3	loser	loser	0	0	0	0	0
26511	Navigational instruments	-6.5	loser	stable	0	0	0	0	0
28293	Bottling machinery	-6.5	loser	stable	1	0	0	0	1
10110	Processed and preserved meat	-6.6	loser	stable	0	0	0	0	1
24440	Copper	-6.8	gainer	gainer	0	0	1	1	0
14120	Workwear	-7.1	loser	stable	0	0	0	0	1
17210	Corrugated paper and paperboard	-7.3	loser	stable	0	0	1	1	1
20530	Essential oils	-7.5	stable	stable	0	0	1	1	1
24340	Cold drawn wire	-7.5	gainer	gainer	0	0	1	1	0
8990	Other mining and quarrying products	-7.6	stable	stable	0	0	1	1	0
28292	Gas generators	-7.7	loser	stable	0	0	0	0	0
28130	Other pumps and compressors	-7.7	loser	loser	0	0	0	0	0
26110	Electronic components	-7.9	stable	stable	0	1	0	0	1
20300	Paints and varnishes	-8.0	stable	stable	0	0	1	1	1
28240	Power-driven hand tools	-8.2	loser	stable	0	0	0	0	0
23130	Hollow glass	-8.3	loser	stable	0	0	0	0	1
30120	Pleasure and sporting boats	-8.5	gainer	gainer	1	0	0	0	0
24320	Cold rolled narrow strip	-8.5	gainer	gainer	0	0	1	1	0
17290	Other articles of paper and paperboard	-8.7	stable	stable	0	0	1	1	1
24420	Aluminium	-9.3	stable	stable	0	0	1	1	0
24330	Cold formed or folded products	-9.4	loser	stable	0	0	1	1	0
27330	Wiring devices	-9.4	loser	stable	0	0	0	0	0
16210	Veneer sheets and wood-based panels	-9.7	stable	stable	0	0	1	1	1
10120	Processed poultry meat	-9.7	stable	stable	0	0	0	0	1
25720	Locks and hinges	-9.8	loser	loser	0	0	1	1	0
28140	Other taps and valves	-9.8	loser	loser	0	0	0	0	0
22290	Other plastic products	-9.9	loser	loser	0	0	1	1	0
32401	Toy trains and other games	-10.2	stable	stable	0	0	0	0	0
28151	Other bearings and driving elements	-10.4	loser	stable	0	0	0	0	0
32502	Therapeutic instruments	-10.6	stable	stable	0	0	0	0	1
20160	Plastics in primary forms	-10.6	stable	stable	0	1	1	1	1
28120	Fluid power equipment	-10.7	stable	stable	0	0	0	0	0
20591	Photographic plates and film	-10.9	loser	stable	0	0	1	1	1
6200	Natural gas	-10.9	stable	stable	0	1	1	0	1
27110	Electric motors and generators	-11.1	stable	stable	0	0	0	0	1
22190	Other rubber products	-11.4	loser	loser	0	0	0	0	0
24430	Lead, zinc and tin	-11.8	gainer	gainer	0	0	1	1	0
29100	Motor vehicles	-11.8	stable	stable	0	1	0	0	0
28960	Plastics and rubber machinery	-12.1	loser	stable	0	0	0	0	1
28210	Ovens and furnaces	-12.5	gainer	gainer	1	0	0	0	0
29200	Bodies for motor vehicles	-12.6	losers	stable	0	0	0	0	0
25931	Wire products	-12.6	losers	stable	0	0	1	1	0
29310	Electrical equipment for motor vehicles	-12.6	losers	stable	0	0	0	0	0
23700	Cut, shaped and finished stone	-12.8	loser	loser	1	0	1	1	0
26600	Electromedical equipment	-12.8	stable	stable	0	0	0	0	1
23990	Other non-metallic mineral products	-12.9	loser	stable	0	0	1	1	0
22111	New rubber tyres and tubes	-13.0	stable	stable	0	0	0	0	0
26701	Photographic equipment	-13.1	stable	stable	0	0	0	0	0
25940	Fasteners and screw machine products	-13.4	loser	stable	0	0	1	1	0
31092	Seats and parts	-13.5	loser	loser	0	0	0	0	0
28220	Lifting and handling equipment	-13.6	gainer	gainer	0	0	0	0	0
13910	Knitted or crocheted fabrics	-13.7	loser	loser	0	0	1	1	0
28996	Other special-purpose machinery	-13.9	loser	loser	0	1	0	0	0
20170	Synthetic rubber in primary forms	-14.0	loser	loser	0	0	1	1	1
28230	Office equipment (excl. computers)	-14.0	gainer	gainer	0	0	0	0	0
11010	Distilled alcoholic beverages	-14.2	gainer	gainer	0	0	0	0	1
13962	Metallised yarn and textile fabrics	-14.3	stable	stable	0	0	1	1	1
20120	Dyes and pigments	-14.4	stable	stable	0	0	1	1	0
26301	Radio or television transmission apparatus	-14.5	loser	stable	0	0	0	0	0
28930	Food processing machinery	-14.7	stable	stable	1	0	0	0	0
14130	Other outerwear	-14.9	gainer	gainer	0	1	0	0	0
14140	Underwear	-15.2	gainer	gainer	0	0	0	0	0
20420	Perfumes and toilet preparations	-15.3	gainer	gainer	0	1	0	0	1
29320	Other parts for motor vehicles	-15.5	loser	stable	0	1	0	0	0
25710	Cutlery	-15.7	stable	stable	0	0	0	0	0
24202	Tubes and pipes of steel	-15.9	gainer	gainer	1	0	1	1	0
32300	Sports goods	-16.1	stable	stable	0	0	0	0	0
16100	Wood, sawn and planed	-16.2	stable	stable	0	0	1	1	1
15201	Footwear	-16.4	loser	stable	0	1	0	0	0
14390	Jerseys, pullovers, and similar articles	-16.4	gainer	gainer	0	0	0	0	0

27320	Other electronic and electric wires	-16.4	loser	stable	0	0	1	1	0
16231	Builders' joinery and carpentry	-16.7	loser	stable	0	0	1	1	1
30923	Parts of bicycles	-16.7	loser	loser	0	0	0	0	0
25731	Tools	-17.5	stable	stable	0	0	0	0	1
23120	Shaped and processed flat glass	-17.5	loser	loser	0	0	1	1	0
25999	Paper trays and other articles of base metal	-17.6	loser	stable	0	0	1	1	0
27400	Electric lighting equipment	-17.9	loser	loser	0	0	1	1	0
20600	Man-made fibres	-17.9	loser	stable	0	0	1	1	1
13921	Made-up textile articles for the household	-18.0	stable	stable	0	0	0	0	0
25732	Moulds	-18.1	loser	stable	0	0	0	0	0
27900	Other electrical equipment	-18.2	stable	stable	0	0	0	0	0
28490	Other machine tools	-18.4	loser	loser	0	0	0	0	0
28950	Paper machinery	-18.6	stable	stable	1	0	0	0	1
32997	Lighters and other articles	-18.6	loser	stable	0	0	0	0	0
14191	Clothing accessories of leather and headgear	-18.9	gainer	gainer	0	0	0	0	0
32504	Spectacles and lenses	-19.2	stable	stable	1	0	1	1	1
31094	Parts of furniture (excl seats)	-19.2	loser	loser	1	0	0	0	0
28111	Engines, except aircraft	-19.3	stable	stable	0	0	0	0	0
31010	Office and shop furniture	-20.3	loser	loser	0	0	0	0	0
28152	Bearings and driving elements	-20.7	stable	stable	0	0	0	0	0
24100	Basic iron and steel	-20.7	stable	stable	0	1	1	1	0
14310	Stockings, socks and other hosiery	-21.9	loser	loser	0	0	0	0	0
24450	Other non-ferrous metal	-22.1	gainer	gainer	0	0	1	1	0
24201	Tubes and pipes of steel	-22.5	stable	stable	0	0	1	1	0
28941	Textiles machinery	-22.7	loser	loser	0	0	0	0	0
13100	Textile yarn and thread	-22.9	loser	loser	0	0	1	1	0
28410	Metal forming machinery	-23.2	loser	loser	0	0	0	0	0
28920	Construction machinery	-23.7	stable	stable	0	0	0	0	0
15120	Saddlery, luggage and handbags	-23.9	gainer	gainer	0	0	0	0	0
13930	Carpets and rugs	-24.1	stable	stable	0	0	0	0	0
32992	Umbrellas and buttons	-24.4	loser	stable	0	0	0	0	0
15110	Tanned and dressed leather and fur	-25.6	gainer	gainer	1	0	1	1	0
28112	Turbines and parts of turbines	-27.7	loser	stable	0	0	0	0	0
26702	Other optical instruments and parts thereof	-28.3	stable	stable	0	0	0	0	0
32121	Jewellery	-28.7	loser	loser	0	0	0	0	0
19204	Other petroleum products	-28.8	loser	loser	0	0	1	1	1
13200	Woven textiles	-29.2	loser	loser	0	0	1	1	0
26520	Watches and clocks	-32.9	stable	stable	0	0	1	1	0
7290	Other non-ferrous metal ores	-34.7	stable	stable	0	0	1	1	0
14192	Babies' garments	-35.1	stable	stable	0	0	0	0	0
30200	Trains and railways	-35.4	loser	loser	0	0	0	0	0
32122	Precious stones	-41.7	stable	gainer	0	0	1	1	0
17110	Pulp, paper and paperboard	-46.4	stable	stable	0	0	1	1	1

Source: Authors' calculations on CEPII-BACI data. Notes: Utilities, services and sectors for which world trade in 2019 was below 10 EUR billion are excluded. Sectors are in descending order according to their change in exports in 2020 relative to 2019. Label (1) is based on the threshold criterion applied to export market-share absolute changes and label (2) on the percentile criterion applied to export market-share absolute changes, both described in Section 4.2. Stronghold, best seller, intermediates (BEC), intermediates (MIG), active in lockdown are all dummy variables, taking value one if the sector is a stronghold, is a best-selling product, exports intermediate goods according to either the BEC or the MIG definition, and whose activity was not suspended during the March-April 2020 lockdown, respectively, zero otherwise.

A.2 A detailed description of the structural characteristics

This appendix provides details on the construction of the 5-digit sector-level structural characteristics employed in Section 5.

Amongst the external factors, the Revealed Comparative Advantage (RCA) index (Balassa, 1965) is defined as follows:

$$RCA_s^c = \frac{x_s^c}{x^c} - \frac{x_s^{WORLD}}{x^{WORLD}} \tag{1}$$

where x are goods exports, s denotes the 5-digit sector, c indicates the exporting country, and $WORLD$ refers to the total of all exporting countries. If the measure is larger than zero, the country has a comparative advantage in the given industry relative to all the other exporting countries. This variable is constructed for 2010 employing reclassified CEPII-BACI data, according to the harmonizations described in Section 3.

The PRODY index (Hausmann et al., 2007) is calculated as a weighted average of income per capita of the countries that export in a given industry in 2010, where the weights correspond to each country's relative comparative advantage in the industry. The numerator of the weight is the value share of the industry in the country's overall export basket, while the denominator aggregates the value shares across all countries exporting the good. Y^c is the GDP per capita at current prices.

$$PRODY_{st} = \sum_c \frac{\frac{x_s^c}{x^c}}{\sum_c \frac{x_s^c}{x^c}} Y^c \tag{2}$$

The underlying data we use to construct this variable are sourced from CEPII-BACI for the export market share and the CEPII Gravity database for income per capita, then converted into euros (Head, Mayer and Ries, 2010).

The export market shares of China and of the CEE6 countries are constructed using the reclassified CEPII-BACI data and refer to 2010.

In order to measure export quality positioning at the 5-digit level, similarly to Bas et al. (2015), we adapt the methodology developed by Khandelwal et al. (2013) on bilateral international data, sourced from CEPII-BACI. We estimate the following regression of quantity of product k exported by country i to country j in year t (q_{ijkt}) on its price p_{ijkt} (unit value), gravity determinants D_{ij}, the exporting country's GDP and fixed effects at the destination country-product-year level:

$$q_{ijkt} + \sigma p_{ijkt} = \beta GDP_{it} + \gamma D_{ij} + \alpha_{jkt} + \epsilon_{ijkt} \tag{3}$$

The regression includes the top 50 exporting countries in the world in 2010. Estimated quality is the residual of this equation, standardised by the elasticity of substitution of the corresponding product ($\sigma - 1$). Following the literature, we assume σ equal to 5 across all products. We then compute Italy's relative quality rank for a given product-market, and aggregate it up to the 5-digit industry level. The reference year is 2010.

As regards domestic factors, export propensity is defined as the ratio between exports and total sales of a given industry, sourced from Istat (2020) and referred to 2017.

The share of exports accruing to the top five exporters in a given industry is sourced from Istat (2020), and refers to 2019.

Average firm size is obtained by dividing the number of employees by the number of firms in 2017, sourced from Istat (2020).

Labour productivity is measured as nominal value added per worker and is sourced from Istat (2020), referred to 2017. Similarly, the wage share is computed as the ratio of gross wages to nominal value added for the same year and from the same source.

Foreign ownership is measured as the share of foreign sales of firms whose ultimate controlling entity is located in a foreign country on total sales in a given industry. It is built on Istat data for the year 2010.

The ratio of imports to exports, for the subset of exporting firms, is based on Istat data referring to the year 2010.

Our intermediate goods dummy is a variable taking the value of one when a 5-digit sector refers to intermediate goods and zero if it refers to other categories of goods. In order to define intermediate goods we employ either the international Broad Economic Category (BEC) classification or the Italian Main Industrial Grouping (MIG) classifications, which we carefully mapped to the 6-digit product CEPII-BACI original data.[46]

The share of workers with at least a university degree and the share of white collars are based on Istat data for the year 2011. The share of female workers, the share of workers aged under 40, the share of workers in the various Italian macro-regions (North-West; North-East; Centre; South and Islands) are based on Istat (2020) data and refer to 2017.

The Herfindhal-Hirschman index of local concentration of employment is based on Istat data on the structure of employment in local units by province and industry, referred to the year 2012.

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[46]We recall that the difference between BECs and MIGs is due largely to the fact that the BEC classifications considers energy products as an intermediate good, whereas the MIG classification considers energy products as a separate class.

$$HHI_s = \sum_p (\frac{emp_{ps}}{\sum_p emp_{ps}})^2 \qquad (4)$$

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