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Who's in your export market? The changing pattern of competition in world trade

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WHO'S IN YOUR EXPORT MARKET? THE CHANGING PATTERN OF COMPETITION IN WORLD TRADE

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By Sonia Araujo, Thomas Chalaux and David Haugh

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ABSTRACT/RÉSUMÉ

Who's in your export market? The changing pattern of competition in world trade

The rapid integration of emerging market economies (EMEs) into world trade over the past three decades has raised widespread concerns about the effects this is having on trade-exposed sectors in advanced OECD countries. An analysis of international trade patterns of over 4000 products between 1995 and 2015 shows that the export product overlap between advanced OECD economies and EMEs has been increasing. However, the product overlap between advanced countries is still higher and increasing faster, suggesting that competitive pressures in export product markets on advanced economies is mainly coming from other OECD members. Regression analysis corroborates this finding, supporting the idea that competition from EMEs remains relatively moderate. Regression analysis show that a move to specialise in a product by the United States exerts about twice as much competitive pressure as a similar decision in China. However, competition effects on average are small compared to changes in world demand as drivers of country competitiveness at the individual product level. The negative effect of a one standard deviation decrease in world demand for a product exerts 8 times more pressure than a one standard deviation increase in specialisation of the United States for that product. In short, specialising in what the world wants to buy remains the key for export performance.

JEL Codes: F14, F15.

Keywords: competitiveness; competition; trade; exports; performance; product specialisation; emerging market economies; EMEs; advanced countries; OECD.

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Qui est sur votre marché d'exportation ? Le modèle changeant de la concurrence dans le commerce mondial

L'intégration rapide des économies de marché émergentes (EME) dans le commerce mondial au cours des trois dernières décennies a suscité de nombreuses inquiétudes quant à l'impact sur les secteurs exposés au commerce dans les pays avancés de l'OCDE. Une analyse de la structure des échanges internationaux de plus de 4000 produits entre 1995 et 2015 montre que le chevauchement des produits d'exportation entre les économies avancées de l'OCDE et les marchés émergents est en augmentation. Cependant, le chevauchement des produits entre les pays avancés est encore plus important et augmente plus rapidement, ce qui suggère que les pressions concurrentielles sur les marchés des produits d'exportation des économies avancées proviennent principalement des autres membres de l'OCDE. Une analyse de régression corrobore cette constatation, confortant l'idée selon laquelle la concurrence des marchés émergents reste relativement modérée. Une analyse de régression montre que la décision des États-Unis de se spécialiser dans un produit exerce environ deux fois plus de pression concurrentielle qu'une décision similaire en Chine. Cependant, les effets de la concurrence en moyenne sont faibles comparés aux changements de la demande mondiale en tant que moteurs de la compétitivité des pays au niveau des produits individuels. L'effet négatif d'une diminution d'un écart-type de la demande mondiale d'un produit exerce une pression 8 fois supérieure à celle d'une augmentation d'un écart-type de la spécialisation des États-Unis pour ce produit. En bref, se spécialiser dans ce que le monde veut acheter reste la clé de la performance à l'exportation.

Classification JEL : F14, F15.

Mots-clés: compétitivité; concurrence; commerce; exportations; performance; spécialisation de produits; économies de marché émergentes; EME; pays avancés; OCDE.

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Who's in your export market? The changing pattern of competition in world trade.

Sonia Araujo, Thomas Chalaux and David Haugh[1]

Introduction

Over the past three decades, emerging market economies (EMEs) have become increasingly integrated in global trade, contributing to a large expansion in world trade intensity and changes in country's merchandise export market shares and structure (Figure 1). The integration of EMEs has provided new opportunities for advanced countries by opening up new markets, and allowing for efficiency gains made possible by the splitting and reorganisation of production across borders into global and regional value chains (Baldwin, 2016). It has also generated increased competition and concerns that this competition is hurting advanced countries' firms and workers. A growing literature examines the effects of mounting import competition on local labour markets, especially from China, in advanced economies, notably the United States (Autor et al., 2013; 2016). However, less attention has been paid to how the integration of EMEs has affected trade volumes and patterns in advanced economies. The claim is that competition from EMEs in international trade is restraining export growth potential and indirectly, also jobs. Indeed, advanced OECD countries have experienced losses in global export market share over the past 20 years (Cheptea et al., 2014; Gonzalez Pandiella, 2015). A recent paper finds that workers in Portuguese industries facing greater competition from Chinese exports in the European Union market have experienced lower wages and shorter job tenure (Cabral et al., 2018)

This paper examines more widely how OECD countries, both advanced and EMEs, as well as the largest EMEs outside the OECD area, including Argentina, China and the other BRIICs, have shifted the composition of their merchandise export baskets and who they are trading with. The paper looks at trade shares, overlapping comparative advantages, changes in specialisation patterns and product characteristics, and at the relative role of competition and demand in determining comparative advantage. The analysis is undertaken for the period 1995-2015, a time of increased integration of many EMEs in global production and trade. The selected EMEs economies comprised about 27% of world merchandise trade in 2015.

Trade in services accounts for 23% of total world trade. During the period under analysis, EMEs have also rapidly increased their services exports (Figure 2). However, this was from a low base and their level remains modest in comparison with their exports of goods. EME service exports are also low compared to those of advanced countries, suggesting competitive pressure from EMEs in the markets for services exports remains moderate. For these reasons and a lack of disaggregated bilateral trade data for services at the product level, the paper focuses on competition in merchandise trade between advanced and EMEs.

[1] The authors are Senior Economist, Junior Economist and Senior Economist respectively, in the OECD Economics Department. They would like to thank Dave Turner, Sven Blondal, Catherine L. Mann, and Sebastian Barnes as well the referees, Ben Westmore and Hildegunn Nordas, for comments on earlier versions and Aman Johal for technical assistance.

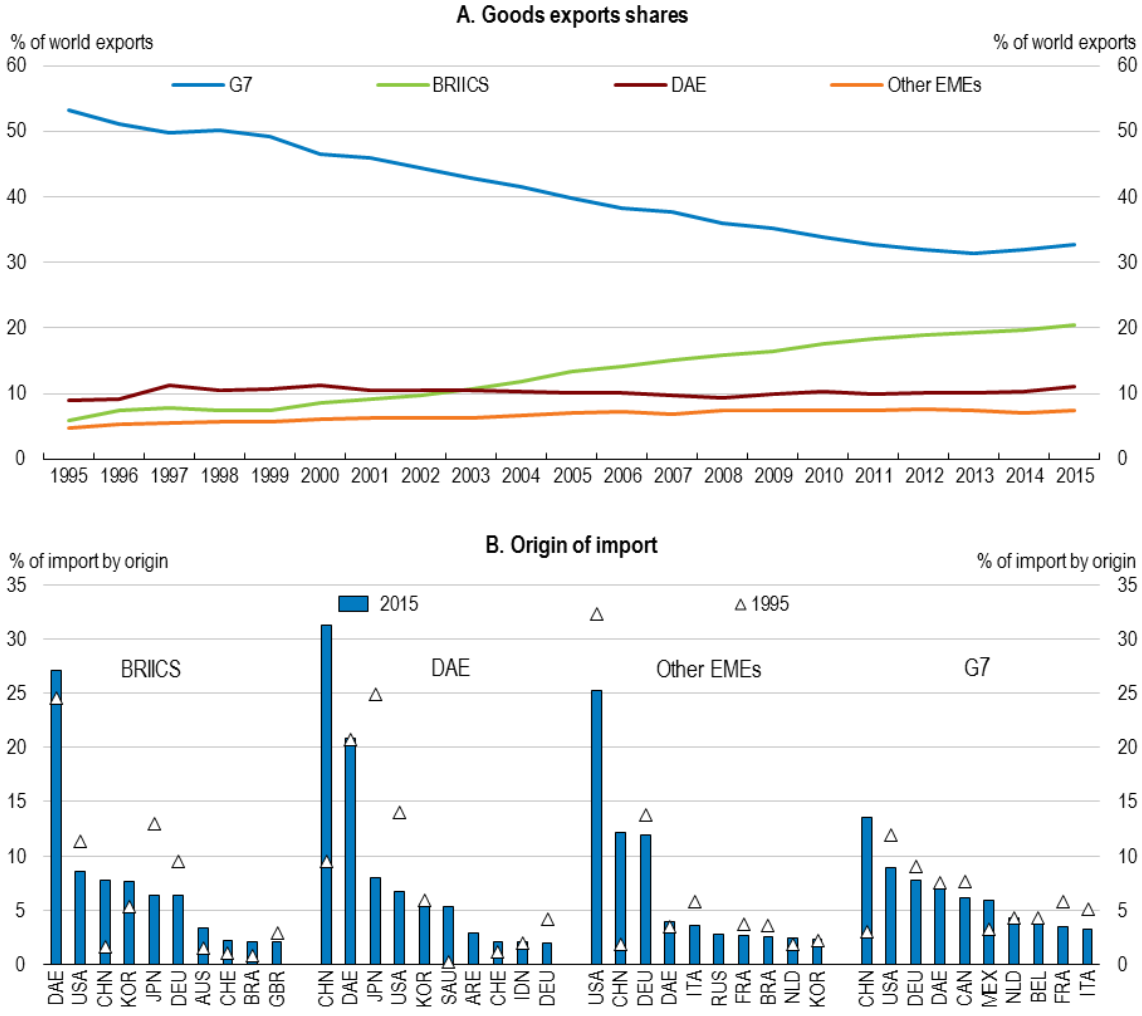
The remainder of the paper is structured as follows. The next section sets out the methodology to investigate competitive pressures in advanced OECD economies arising from increased participation of EMEs in world markets. Section 3 describes the dataset used. Section 4 analyses the changing pattern of export specialisation in OECD and EMEs, contrasting the level of sophistication and technology embodied in exports of the two groups of countries as well as their degree of specialisation in high growth product markets. Section 5 assesses exposure to competition from EMEs over time, and investigates the relative influences of demand and competition on export performance of OECD and EMEs. The main findings of the paper are:

- Product competition between advanced OECD countries and EMEs is lower than between countries within each group and increasing slower in terms of the number of products with specialisation overlaps. Also, for most OECD countries the share of export value where at least one EME is also specialised is declining.
- Product competition among advanced OECD economies is not only fiercer than with EMEs, it is also getting stronger, especially with the United States. The share of specialisation overlap in terms of the share of export value of products in which China is also specialising is on average 23% compared to an average overlap of 40% for the United States. For many advanced OECD countries this overlap is lower than the average for China and higher than the average with the United States. These findings are consistent with a pattern of structural transformation away from China, i.e. OECD countries are converging to a production pattern that is more similar to the United States and differentiating from products in which China is gaining comparative advantage. However, this process varies across OECD countries. It is progressing in, for example Portugal, where competition with China has been felt acutely.
- Specialisation has narrowed in general among high-income OECD economies but widened in EMEs as well as in the southern European periphery. Notable exceptions in the first group are Finland and Sweden. Specialisation has narrowed in some EMEs as well (Argentina, Brazil, and Mexico).
- Regression analysis suggests that specialising in products with growing global demand is the most important contributor to trade performance. Very high-income countries tend to be specialised in fast growing world product markets. Although the European peripheral countries have increased the range of products in which they enjoy a comparative advantage, they have not specialised in products for which world demand is growing. Among EMEs, only Argentina, Brazil and Mexico have also specialised in products with increasing global demand.
- Asian economies, including China, have an export product mix skewed towards less mature products, defined as those with high or even exponential growth. This indicates that further gains in export performance may be reaped in the near future. Amongst large Latin American economies, the Mexican product mix is also biased towards less mature markets, boding well for future performance. By contrast, while Brazil currently has a high share of exports that are in growing markets, its product mix is more mature.
- Some OECD countries, including the United States and the Netherlands, have specialised in growing markets and also have a relatively immature mix of products with good growth potential. By contrast, other OECD countries, such as Finland, appear to have a more mature product mix, suggesting that although they have a

specialisation that has been previously tilted towards fast growing markets this advantage is fading, as reflected in relatively low share of exports that are now growing.

- Relative to EMEs, advanced OECD countries also tend to specialise in higher quality products, defined as those with above average market value.

Figure 1. Emerging market economies have become key players in world trade



Note: Other EMEs are the emerging markets economies (IMF definition) excluding the countries already included in the BRIICS. Dynamic Asian Economies (DAE) is a country grouping comprising Chinese Taipei; Hong Kong China; Indonesia; Malaysia; the Philippines; Singapore and Thailand.
Source: UN Comtrade database and OECD calculations.

Revealed comparative advantage and product specialisation

As common in the trade literature, trade specialisation and the intensity of export competition arising from the emergence of China and other EMEs as global competitors are assessed by comparing the degree of similarity in countries' revealed comparative advantages (RCAs) computed from market shares (Silgoner, 2015; Rae and Sollie, 2007). This analysis is conducted at a highly disaggregated level, allowing the identification of increased competitive pressures in very specific products in both gross export flows and how they have changed over time. Specifically, RCAs are calculated over the period 1995-2015 to determine whether the degree of overlap in OECD countries RCAs with those of EMEs' has intensified continuously over time or whether it has receded in the aftermath of the economic crisis, following the slowdown in global trade.

6. The RCA indicator, proposed by Balassa (1965) has been widely used to measure competitiveness in international markets:

$$RCA_{c,p} = \frac{Exports_{c,p}/\sum_p Exports_{c,p}}{Exports_{world,p}/\sum_p Exports_{world,p}} \quad (1)$$

where $Exports_{c,p}$ are total exports of product p by country c and $Exports_{world,p}$ are the total exports of product p in global trade.

Countries or economic regions have a "revealed" comparative advantage in product p when the export share of product p in their export basket is higher than the corresponding share of product p in world exports. The RCA indicator is frequently used to compare trade competitiveness across countries and over time (Kowalski et al., 2015).

Balassa's index in (1) is asymmetric, varying from zero to one for product categories in which countries and regions have a revealed comparative disadvantage and from one to infinity for product categories in which countries/regions have a revealed comparative advantage. This index is then normalised to attribute values below unity the same weight as values and changes above unity, a normalisation known in the literature as the revealed symmetric comparative advantage index, RSCA[2]:

$$RSCA_{c,p} = \frac{RCA_{c,p} - 1}{RCA_{c,p} + 1} \quad (2)$$

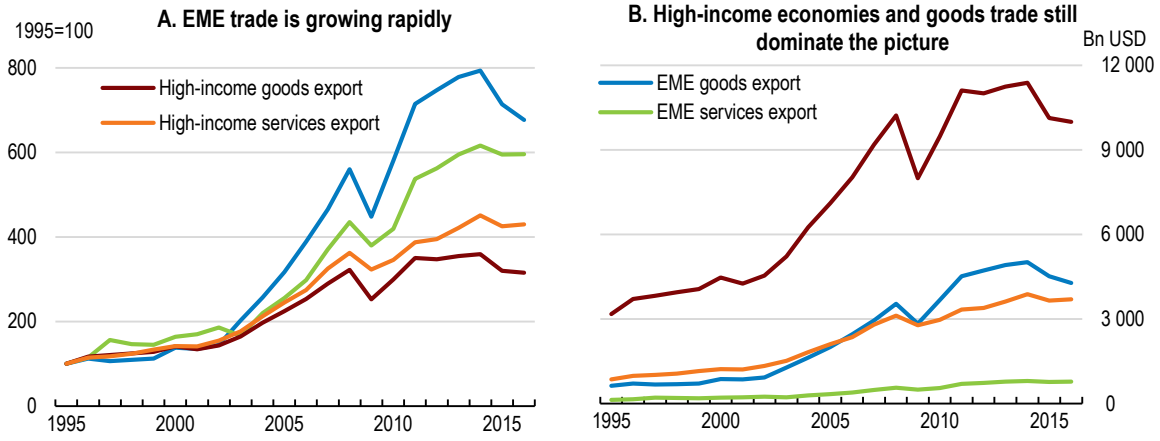
The RSCA indicator lies between -1 and +1. The greater the value of the RSCA for a given product p exported by country c, the greater is the relative weight that product p has in country's c export basket. A value of +1 means that country c is the world's only exporter of product p, while a value of -1 means that country c does not export it at all. A value of 0 means that a country's export share is identical to the world trade share of product p. In this paper a country is defined as specialised in a product if the RSCA is greater than 0, i.e. the share of that product in country's export basket is higher than the share of the product in world exports. Competition is defined by the amount of overlap of product specialisation between countries. The higher this overlap, the more likely it is that countries are competing in different varieties of the same goods, and face a high elasticity of substitution from their product to other countries, putting pressures on their margins.

[2] See for instance, Silgoner et al (2015) and Dalum, Laursen and Villumsen (1998).

Data

Gross flows of merchandise trade data are taken from the United Nations Comtrade database. The main part of the analysis is carried out using the six-digit HS (Harmonised System) - HS6 - product level classifications for manufactured goods only, i.e. excluding commodities. The HS6 manufactured goods only dataset is the preferable one for the analysis of competition effects for two main reasons. First, it's highly disaggregated and the higher product disaggregation is, the lower the risk is of confounding increased competition from EMEs and crowding out of OECD countries' products with closer integration of national production structures via global value chains (GVCs). Second, the HS6 manufacturing only series excludes commodities (corresponding to chapters 15 and 25 to 27 of the Harmonised System classification), which helps to avoid large swings in commodity prices affecting the denominator of the RSCA indicator that would contaminate the results. The analysis uses a maximum of 50 countries plus the region Dynamic Asia, representing 75% of world merchandise trade, over the period 1995-2015.

Figure 2. Emerging services exports are growing rapidly from a low base



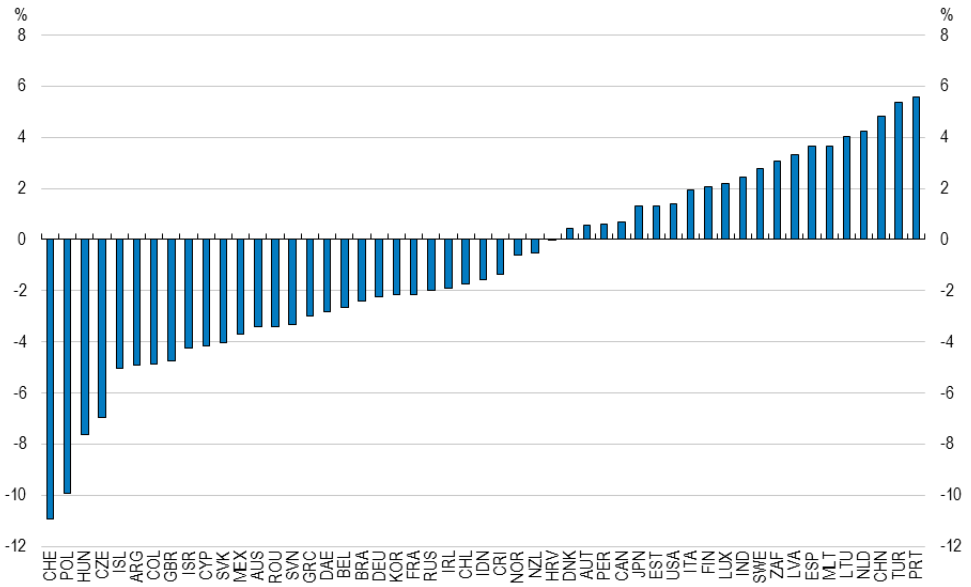
Source: World Bank, World Development Indicator database.

How is the pattern of world trade and country specialisation changing?

Comparative advantage analysis shows that the range of products in which many advanced countries are specialised in world markets has narrowed as global trade intensity has increased (Harrigan, 2001). By contrast, emerging market economies have increased the range of products in which they enjoy a comparative advantage as well as countries in the southern European periphery undergoing structural adjustment (notably Portugal and Spain). However, as discussed below, they may not always be moving into the fastest growing markets, which would bring larger gains in export performance (Figure 3).

Figure 3. The specialisation of many advanced economies has narrowed

2000-2015 change in the share of products with a RSCA>0



Note: The share of products is the number of products with a RSCA above zero on the total number of products exported by each country.
Source: UN Comtrade database and OECD calculations.

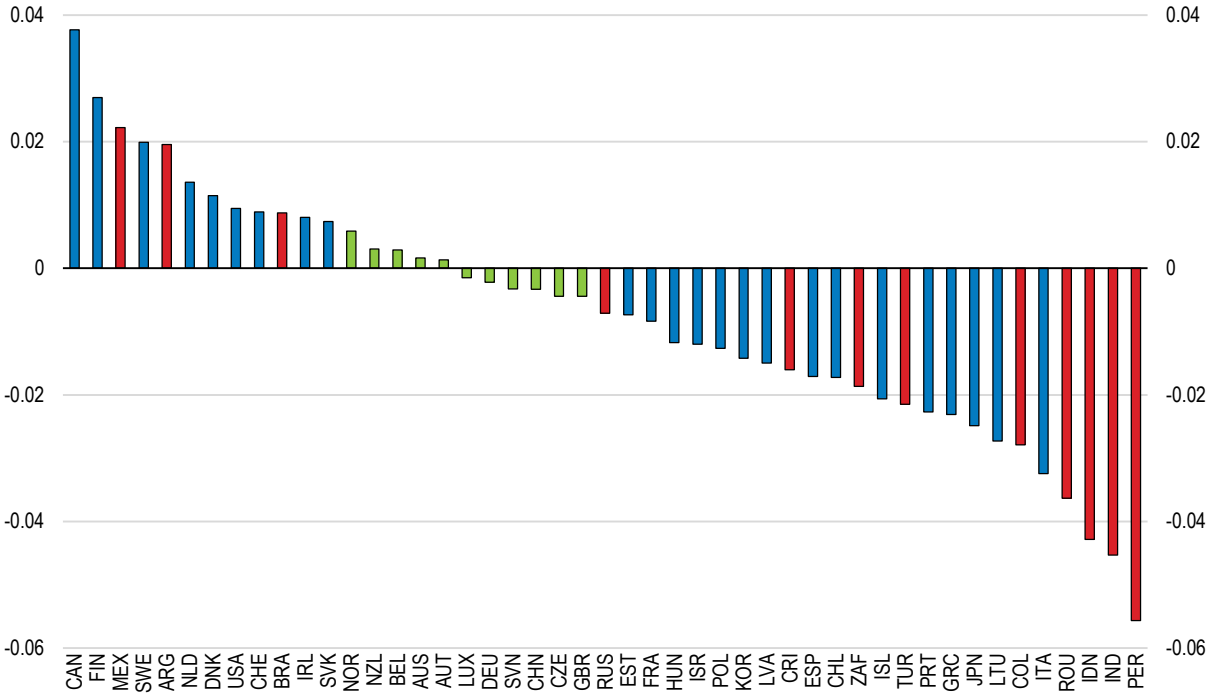
Who specialises in the fastest growing products?

An important influence on a country's export performance is the speed at which world markets are growing in the products in which it is specialised. The more a country is specialised in products where world demand is expanding fast, the more it is likely to have fast overall export growth. As discussed further below, specialising in rapidly growing product markets can help to more than offset growing competitive pressures (i.e. a smaller share of a fast growing pie is better than a larger share of a shrinking pie).

Correlation of a country's rank of products by specialisation with the rank of those products by the speed of world export growth reveals that many richer OECD countries have a product specialisation more tilted to faster growing products (Figure 4). These include Austria, Belgium, Canada, Finland, Ireland, the Netherlands, Switzerland, Sweden and the United States. The Slovak Republic, which is successfully converging towards richer OECD income levels, also displays this characteristic. By contrast, lagging economies in southern Europe, including Italy, Portugal and Spain appear to have a lower correlation with fast growing product markets, which makes it harder, all else equal, to achieve the same total export growth rates. Among EMEs, only Argentina, Brazil and Mexico have a high positive correlation between their product specialisation and products exhibiting fast world export market growth.

Figure 4. Very high-income OECD countries tend to be specialised in fast growing world product markets

Rank correlation between the RSCA and world trade growth, 1995-2015



Note: The green bars show an absence of statistical significance at the 10% threshold. The blue and red bars respectively correspond to high-income (IMF definition) OECD countries, and EME countries that are both from in and outside the OECD area.
Source: UN, Comtrade database and OECD calculations.

Overall, these results suggest that while some OECD countries have reduced the range of products in which they enjoy a comparative advantage as other countries increased their participation in international trade, the richer OECD countries, such as Switzerland, remain relative to other countries more specialised in products for which world demand is growing faster, including pharmaceuticals, integrated circuits, telephone and printing equipment (Annex A). Some richer OECD countries, such as the Netherlands, have even managed to both expand their product range and remain specialised in fast growing markets. By contrast, the export share growth of some EMEs, including Costa Rica, Columbia, Indonesia, India, Peru, Russia and Turkey, is somewhat hampered by a specialisation that is less correlated with fast growing markets.

To see how important increased participation in markets with growing world demand is for overall export performance and also prospects for the realisation of future gains, the approach of Audretsch (2012) is adopted to classify exports at the product level into four different categories depending on world demand trends based on coefficient estimates from the following equation:

$$\log(X_{it}) = \beta_0 + \beta_1 t + \beta_2 t^2 + \beta_3 \log(X_t) + e_{jt} \quad (3)$$

where X_{it} = sum exports of product i (across all countries) for each time t and X_t = total world exports (across all countries and all products) for each time t.

Based on Audretsch (2012) analysis of dynamic comparative advantage focussed on product life-cycles, we compute an index assessing the aggregate maturity level of products, M_{it}, by estimating the effect of the semi-elasticity of $\ln(X_{it})$ with respect to t,

$$M_{it} = \frac{dln(X_{it})}{dt} = \beta_{1i} + 2 * \beta_{2i} * t \quad (4)$$

The overall maturity associated with country j's export basket, M_{jt}^{All}, in turn can now be defined as:

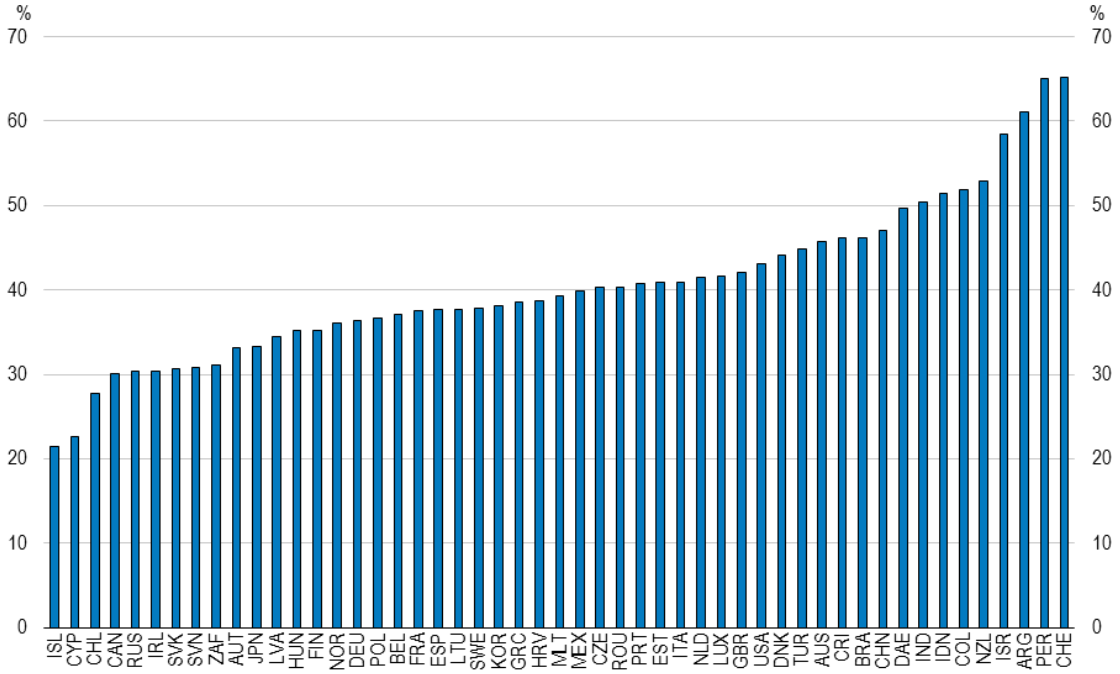
$$M_{jt}^{All} = \sum_{i} s_{ijt} M_{it} = \sum_{i} \frac{X_{ijt}}{X_{jt}} M_{it} \quad (5)$$

M_{jt}^{All} is a weighted average of product maturity M_{it} across all products for country *j* over time and the weights are the export shares of each product in the country's total exports. Higher values indicate younger products that are in the faster growing part of their life cycle, whereas lower values indicate more mature products with routine technologies.

The results show that some countries (e.g. Switzerland) that have historically specialised in faster growing product markets (Figure 4) still have a high share of exports that are growing but this does not apply to all countries (e.g. Finland) (Figure 5). They also reveal that some EMEs and regions, including China and Dynamic Asia, have a product mix more focussed on less mature products where future growth potential is highest (Figure 6), even if their past current export specialisation has not been skewed towards the fastest growing product markets (Figure 4). Among Latin American countries, a similar finding holds for Colombia and Costa Rica. These emerging economies seem to be successfully raising their technological capabilities, switching from a more mature export basket to one with newer, technologically complex products (see below for definition of complexity), as shown by the currently high share of exports that are in growing markets (Figure 5; Araújo and Linares, 2018; Araújo, Chalaux, Linares, 2018).

Figure 5. Share of growing export products

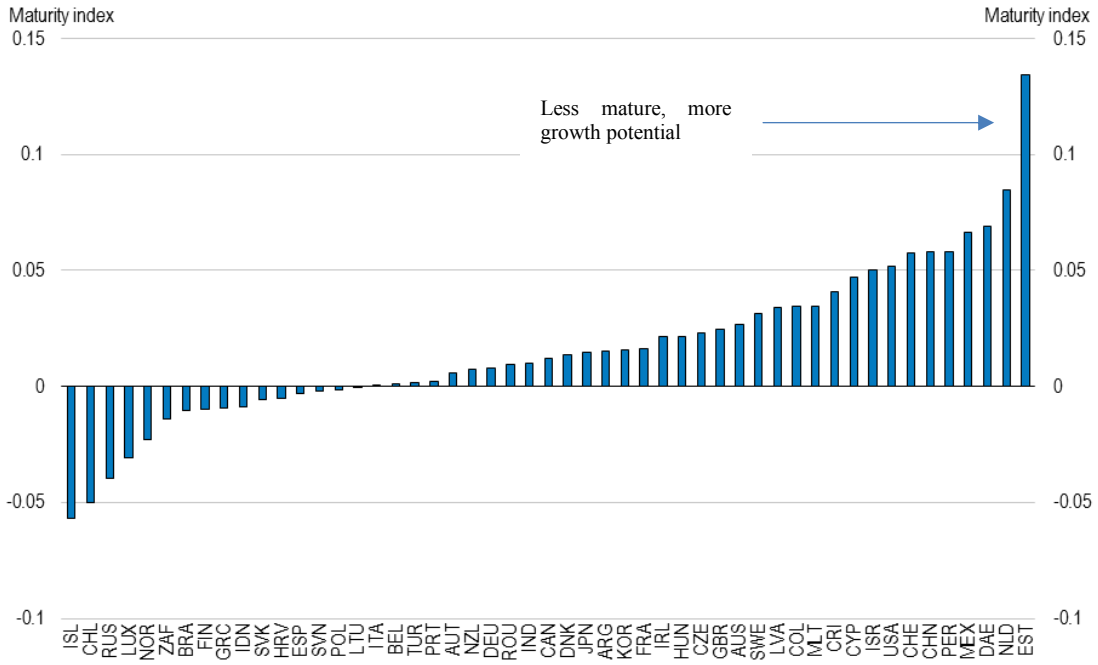
2015



Note: The share reported is the export share of the products for which at least one of the coefficients of the trend or square trend of equation (3), estimated on the 1995-2015 sample, is positive and significant.
Source: UN Comtrade database and OECD calculations.

Some OECD countries, including the United States and the Netherlands, have had a specialisation historically tilted towards growing markets (Figure 4) and also have a relatively young mix of products with good growth potential (Figure 6). Other countries, such as Finland, appear to have a more mature product mix, suggesting that, although they had a specialisation that was tilted towards fast growing markets, this advantage is fading, as reflected in relatively low share of exports that are now growing (Figure 5). Such an export structure poses a challenge for export competitiveness and growth as developed economies need to keep pushing the product frontier, and specialising in less mature and innovative products, in order to stay ahead of increasing competition pressures from abroad.

Figure 6. Countries by maturity index

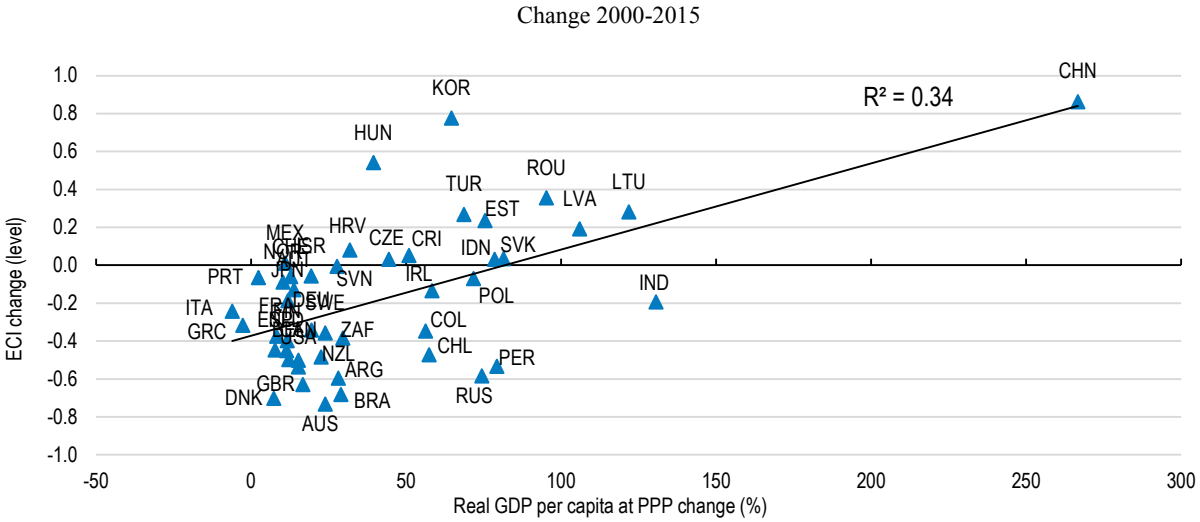


Note: The maturity level of a country's export products, Mit, is calculated by estimating the semi-elasticity of $\ln(X_{it})$ with respect to t, $\frac{dln(X_{it})}{dt} = \beta_{1i} + 2 * \beta_{2i} * t$. The overall maturity associated with country j's export basket, M_{jt}^{All}, in turn can now be defined as: $M_{jt}^{All} = \sum_i s_{ijt} M_{it} = \sum_i \frac{X_{ijt}}{X_{jt}} M_{it}$. The maturity index presented here is the 2011-2015 average.
Source: UN Comtrade database and OECD calculations.

The degree of sophistication of exports is higher in OECD countries than emerging market economies

The pressure on OECD countries from EMEs could also be stronger than the overlap of the number of products would suggest if it was concentrated in the more sophisticated or complex segments of the product spectrum, which are associated with higher productivity and income per capital levels (Hausmann et al, 2007). This paper uses Hildago and Hausmann's Economic Complexity Index (ECI) to measure the overall complexity of a country's economy and their product complexity index (PCI) to classify products by complexity. The framework of economic complexity and its rapidly growing research literature rests on the premise that a country's success in attaining higher levels of development is dependent on the capabilities it accumulates to produce more sophisticated (or complex) products and that this process of transformation of a country's production is mirrored in its export structure (Hausmann et al., 2007). Countries specialising in more complex goods grow faster (Hausmann and Hidalgo, 2009 and 2011). The acquisition of capabilities, defined as the broad set of skills, physical capital, technology and institutions that are needed to produce a specific good, are at the centre of this process of economic growth and help explain existing differences in living standards across countries (McMillan and Rodrik, 2011; Figure 7).

Figure 7. Increases in economic complexity are positively associated with GDP per capita growth



Source: UN Comtrade database and OECD calculations.

Using data up until 2008, the initial level of ECI was found to be a significant and positive determinant of subsequent GDP per capita growth, controlling for human capital and convergence effects through the initial level of GDP per capita (Hausmann et al., 2011). To control for the influence of changes in natural resource exports, which are not explained by complexity, the ratio of natural resources exports to GDP was also included as a control. Re-estimation of a similar equation on data through to 2015 confirms that the Hausmann et al. (2011) results continue to hold through the crisis and beyond, suggesting that ECI remains an important metric for assessing how a country's export performance is contributing to overall growth performance (Table 1). The negative sign on the interaction between ECI and the initial level of GDP per capita indicates that the positive effect of complexity on growth declines as countries become richer.

Table 1. Export Product Sophistication is a determinant of subsequent growth

	Growth of GDP per capita	
	(1)	(2)
Log of initial GDP per capita (t-1)	-0.015 (***)	-0.017 (***)
Increase in natural resources exports (t)/ GDP(t-1)	0.097 (***)	0.117 (***)
Initial ECI (t-1)		0.088 (***)
Initial ECI (t-1) * log of initial GDP per capita (t-1)		-0.008 (***)
Observations	215	215
Adjusted R^2	0.36	0.40
Year fixed effects	Yes	Yes

Note: Equation estimated using 5 periods 1990-1995, 1995-2000, 2000-2005, 2005-2010 and 2010-2015. Natural resource exports include raw agricultural, food, fuel and mining goods.
Source: UN Comtrade database, Penn World Tables, and OECD calculations.

The ECI infers complexity of an economy from the diversification of the basket of goods the economy has a revealed comparative advantage in: the greater the diversification, controlling for ubiquity, the more complex it is. The intuition is that producing and exporting a wide variety of goods produced by only a few countries (i.e. non-ubiquitous products) requires more capabilities (Abdon et al., 2010). The PCI infers product complexity from the ubiquity of its production, controlling for diversification. A product produced by fewer countries (i.e. that is less ubiquitous) that have a more diversified production structure is defined as more complex, with more embedded knowledge than a product produced by many undiversified countries (Hidalgo and Hausmann, 2009). To calculate ECI and PCI, a matrix of revealed comparative advantages is constructed, R_{jp}, where $R_{jp} = 1$ if country j has an RSCA in product p and zero otherwise. Diversification, defined as the number of products in which a country holds a comparative advantage, given by:

$$k_{j,0} = \sum_{p}^{N_p} R_{jp} \quad (6)$$

And ubiquity, defined as the number of countries producing a product for which they hold a comparative advantage, is given by:

$$k_{p,0} = \sum_{j}^{N_j} R_{jp} \quad (7)$$

where j denotes country, p product and n iteration. The ECI and PCI are jointly determined by iterating equations (8) and (9) to rank respectively the complexity of countries and products.

$$k_{j,n} = \frac{1}{k_{j,0}} \sum_{p=1}^{N_p} R_{jp} k_{p,n-1} \quad (8)$$

$$k_{p,n} = \frac{1}{k_{p,0}} \sum_{j=1}^{N_j} R_{jp} k_{j,n-1} \quad (9)$$

The equations are iterated until the ranking does not change in either (the method of reflections, Hausman and Hildago, 2009). At $n = 0$, the initial values of $k_{j,0}$ are the number of products country j exports in which it has a comparative advantage, and $k_{p,o}$ is the average number of countries that also export country j's exports. For example, country A may have fewer products than country B in which it has an RSCA (and initially seems less diversified) but on average its products are less ubiquitous so overall its complexity ranking will be higher than the initial value.[3]

[3] Alternatively, by inserting equation (9) into (8), $k_{j,n}$ can be written as:

$k_{j,n} = \sum_{j'} \widetilde{R_{jj'}} \, k_{j',n-2}$ where $\widetilde{R_{jj'}} = \sum_{p} \frac{R_{jp} R_{j'p}}{k_{j,0} k_{p,0}}$

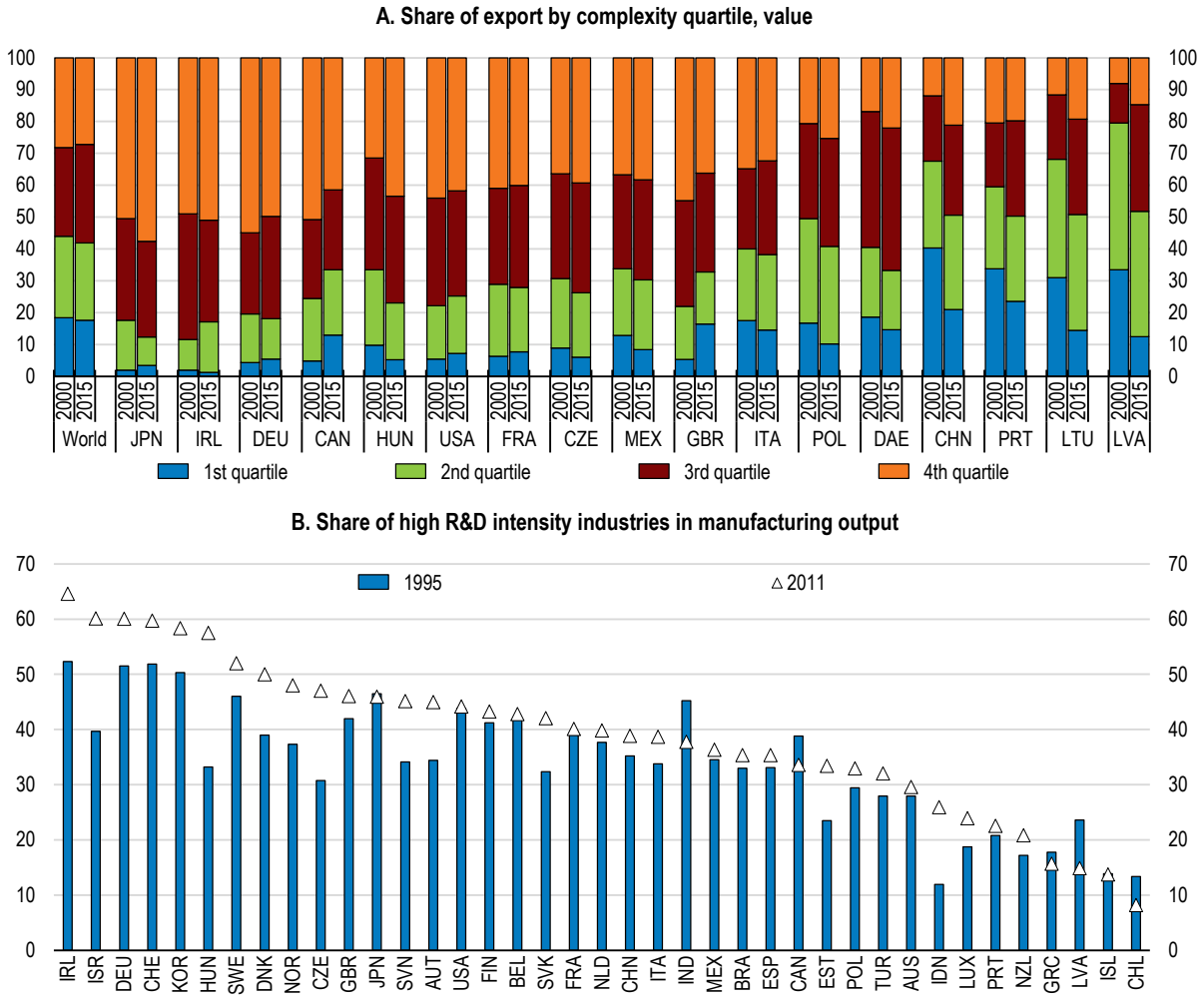
The PCI is used to classify products at the HS6 level of disaggregation in order to split a country's export basket into four groups of sophistication, using the 25th, 50th, and 75th percentile as cut off points. All products exported with PCI values below the 25th percentile are classified as low sophistication, those between 25th and 50th percentile medium-low, those between 50th and 75th percentile are medium-high, and those above the 75% percentile are high sophistication. The products are then ranked according to their PCI level. An example of a product in the 4th (highest) quartile is laser machine tools, which ranked 18th in 2015, out of 4612 products listed in the Harmonized System 6 classification that were ranked. A product in the 1st (lowest) quartile is cotton bed linen ranked 4413th in 2015.

Analysis using PCI to measure complexity shows OECD countries have more complex product mixes than EMEs (Figure 8, Panel A). Since 1995, emerging market economies have generally increased the share of knowledge-intensive activities in the manufacturing sector but the share remains below that of OECD countries (Figure 8, Panel B). While China has moved up the complexity ladder, the complexity of its product mix still remains behind major OECD economies (Amiti and Freund, 2010; Figure 9).

The ECI is then given by:

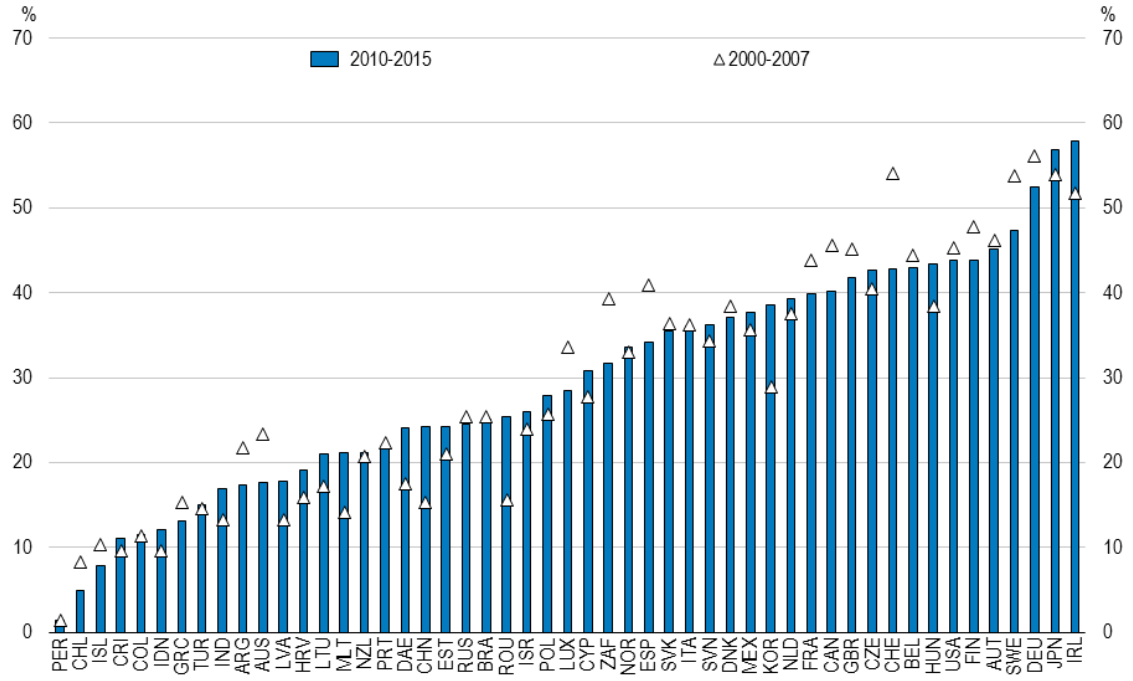
$ECI_j = \frac{\overrightarrow{Kj} - <\vec{K}>}{stdev(\vec{K})}$ where $\vec{K}$ is the eigenvector of $\widetilde{R_{JJ'}}$ associated with the second largest eigenvalue of the matrix and < > is the average and stdev the standard deviation. ECI_j is the jth element of the eigenvector in standardised form.

Figure 8. Advanced OECD countries specialise in more complex products than emerging market economies



Note: Panel A: The analysis is carried out using a high level of product disaggregation to try to capture specialisation at different stages of the production chain but nevertheless the data is measured in gross value and not value added terms as would be used in measures of global value chains (GVCs). Complexity is defined by the Product Complexity Index using the methodology of Hidalgo and Hausmann (2009).
Source: Panel A. UN, Comtrade database and OECD calculations; Panel B: OECD TiVA database.

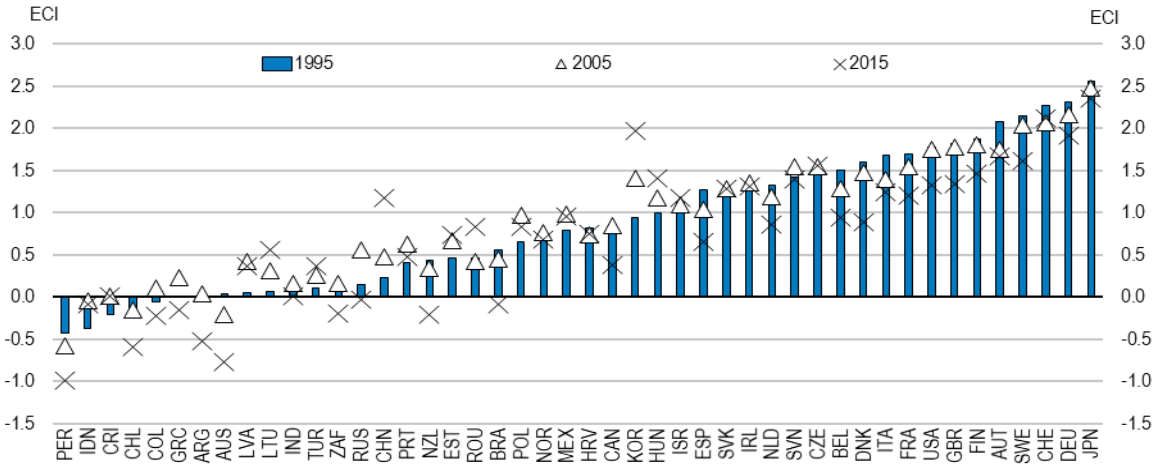
Figure 9. Exports shares of the most complex products



Note: The most complex products belong to the top quartile of goods ranked by the PCI complexity index.
Source: UN Comtrade database and OECD calculations.

An examination of ECI developments shows that China has markedly increased its ranking from 1995 (Figure 10). Among OECD countries, Korea has made the largest jump from 22nd position in 1995 to 4th in 2015, behind Japan, Switzerland and Germany, auguring well for the contribution to growth from exporting for Korea. Estonia also increased its rank considerably from 34th in 1995 to 24th.

Figure 10. China and Korea have increased the complexity of their production mix markedly



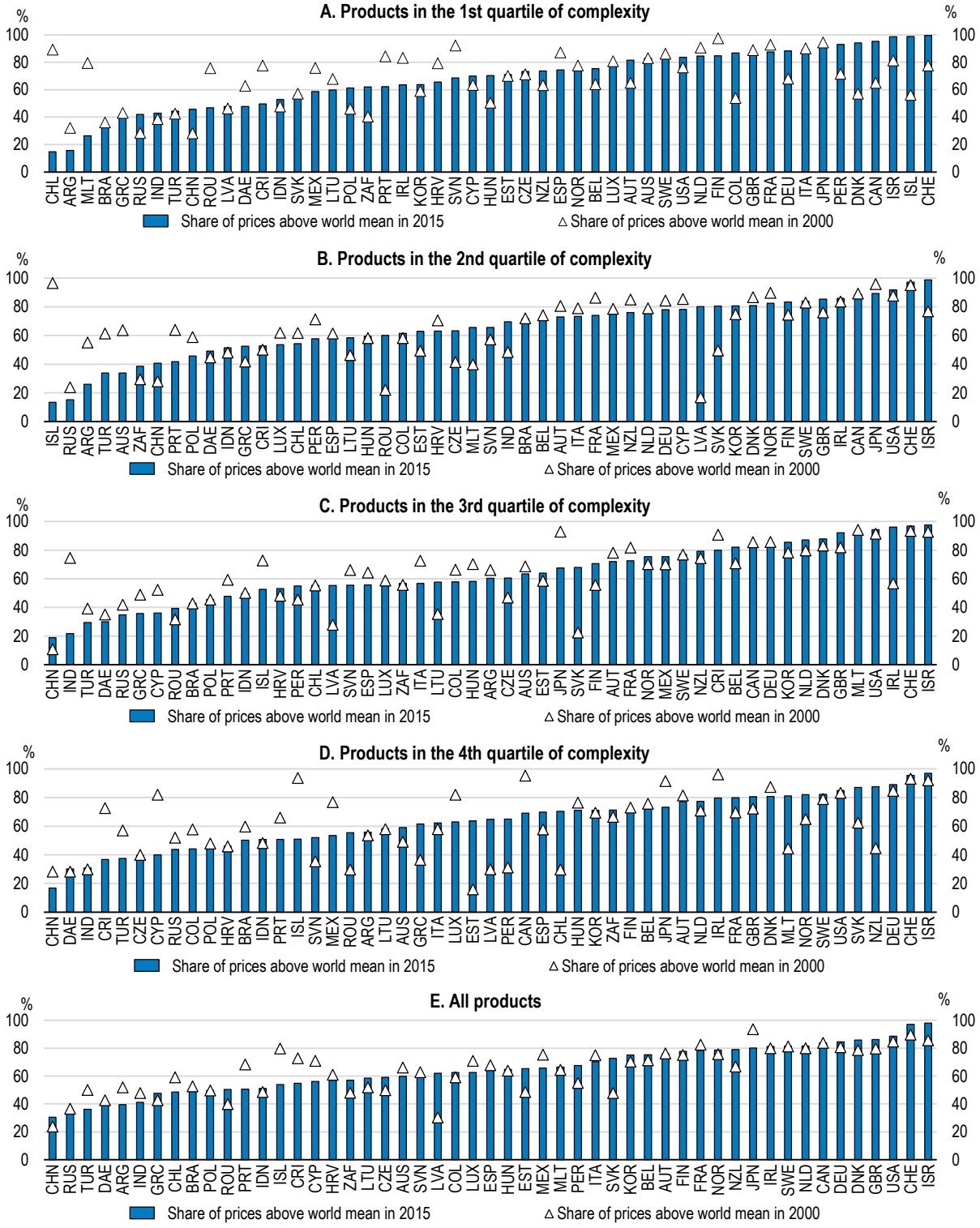
Note: Complexity is defined by the Economic Complexity Index (ECI) using the methodology of Hidalgo and Hausmann (2009).
Source: UN Comtrade database and OECD calculations.

The above analysis is conducted at a high level of disaggregation. However, to account for the possibility that countries may climb the quality ladder within the product basket in which they enjoy a comparative advantage, e.g. producing higher quality shoes, exports are further disaggregated into unit values (value of exports/quantity of exports) for each of the four levels of complexity of exported products. Unit values are an approximation of price received and a well correlated indicator of the quality embedded in a country's exports relative to other countries (Feenstra and Romalis, 2014). Selling at below average unit values reflects a specialisation in low quality products, characterised by low degrees of product differentiation. Unit values are calculated in US dollars per quantity metric (e.g. tonnes) for a given product by taking the ratio of the value of exports for that product divided by the quantity.

The disaggregation by complexity and unit value (quality) shows that generally advanced countries have a higher share of above average market value products than EMEs across all complexity categories (Figure 11). In quartile 1 (lowest complexity), advanced countries have increased the share of their products with above market average values, while many EMEs have experienced a decline in their share of above average values products. In some cases, although some EMEs such as China, India and Mexico have increased the share of their products in the most complex product category (4), the share of those with above average values (quality) has declined.

Across all goods, although increasing, the share of products with above average world prices (quality) is the lowest in China followed by other EMEs, Russia, Turkey, Dynamic Asia, Argentina and India. At the other end of the spectrum with the highest selling prices is Israel, which has almost all its products selling for higher than average world prices. Israel is followed by advanced OECD countries, including Switzerland, the United States, the United Kingdom, Denmark and Germany, all of which have increased from a high level their share of products sold for more than average values. The large value difference between EMEs and the OECD suggests the most OECD advanced countries are still selling quite different products in terms of quality than EMEs. This in turn moderates the competitive effects of emerging market entry into traditional OECD country product areas. Exceptions to this general pattern are OECD countries with a low share of high price (value) exports, including Greece, Iceland and Portugal, and EMEs that have a higher and increasing share of high value products include Estonia, Peru and the Slovak Republic.

Figure 11. Prices structure by complexity



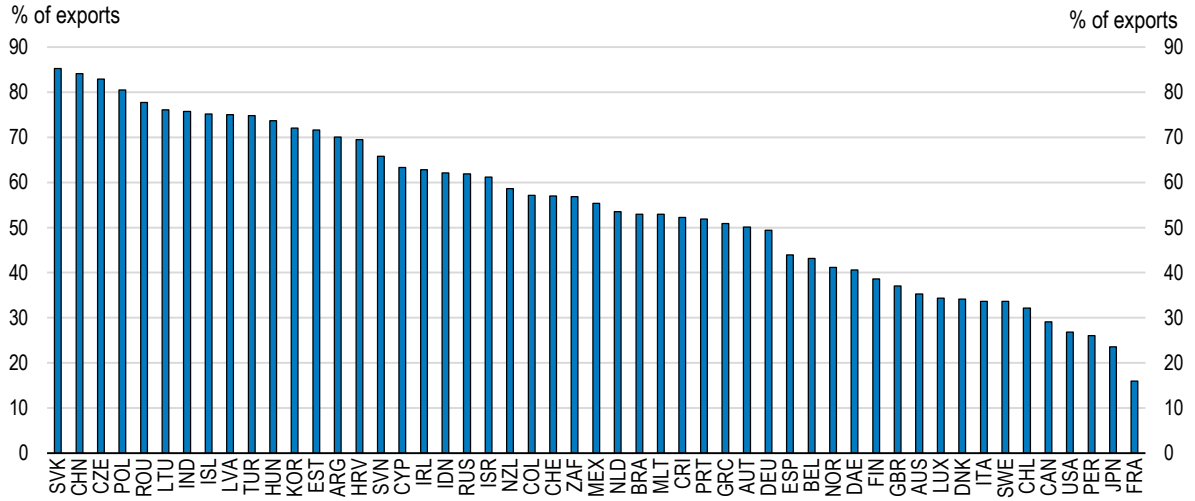
Source: UN Comtrade database and OECD calculations. Complexity defined by Product Complexity Index. Complexity is defined using the methodology of Hidalgo and Hausmann (2009).

These results are corroborated by looking at unit values at a finer level of the detail: an increase in unit values is typically interpreted as an increase in quality over the long run and not as an increase in production costs that are then passed on to prices. This is because it is considered difficult to pass on production costs due to the fiercer nature of global competition relative to domestic market. However, as a further cross-check, it is also investigated whether the increase in the unit value of a product is positively correlated with an increase in market share. An increase in unit values is more likely to signal a move up in the quality ladder, rather than reflecting an increase in production costs (and declining relative competitiveness), if it is associated with an increase in the global market share of that country in that product.

Looking at the product range for which countries increased the unit values of their export products, and matching those with countries' respective market shares in these products shows that both China (for the first three complexity levels) and Eastern European countries are growing fast in quality and simultaneously gaining market shares, while other OECD countries are not so dynamic in improving quality and increasing market shares (Figure 12). The results for China are consistent with previous studies that find evidence of a continuous upgrade in the quality of the country's exports (Fan, Li and Yeaple, 2015).

Figure 12. China and Eastern Europe are improving quality and gaining market shares

Share of exports both growing in market share and unit value 1995-2015.



Source: UN Comtrade database and OECD calculations.

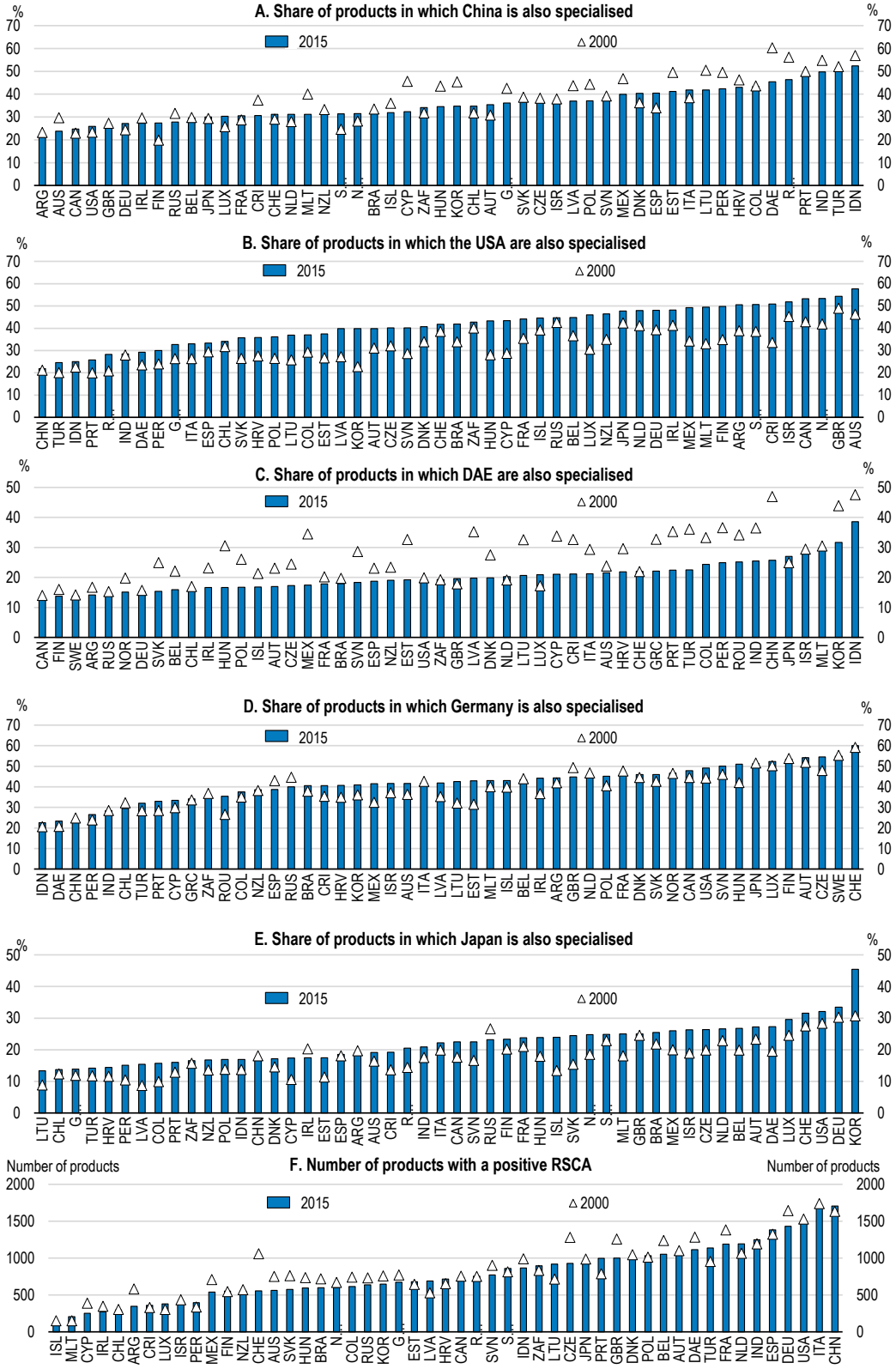
Export product overlap with emerging market economies is low

Cross-country competition in export markets is measured by the degree of specialisation of a country in a product. The higher the degree of specialisation of a pair of countries in a product as measured by the RSCA, the greater the level of competition in that product between those two countries in international markets. Which OECD countries are competing more directly with China and other EMEs is examined by looking at the extent of the overlap of products in which OECD countries and China and other economies are specialised.

Although indexes of revealed comparative advantage are often used to assess within country possibilities of reallocation of production across sectors, we follow the approach of Silgoner et al. (2015) and use RSCAs to assess the extent of overlap in production structures and external demand across countries. Overlaps in specialisation matter because they give an indication of the intensity of competition and structural change pressures from export markets on firms and workers. In particular, structural change in production and exports due to greater competition can lead to resource reallocation, both in jobs and the nature of jobs, as well as capital. Even reallocation of production away from a single product as a reaction to fiercer international competition can displace a significant number of jobs if the share of that product in national production is significantly large.

Indeed, generally the overlap is low between the types of products in which China and other EMEs specialise and in which the advanced countries specialise. These overlaps in which both advanced and emerging market economies are specialised, including China, is increasing (Figure 13, Panel A). Nevertheless, this increase in overlap between emerging and advanced countries is less than that between advanced countries (Figure 13, Panels B, D and E) and is increasing by less. Looking at the size of the overlap in terms of export values yields a similar conclusion: the share of exports represented by the range of products in which China is specialised is actually less than the overlap in terms of number of products (Figure 14, Panel A).

Figure 13. The evolution of goods trade specialisation overlap by products

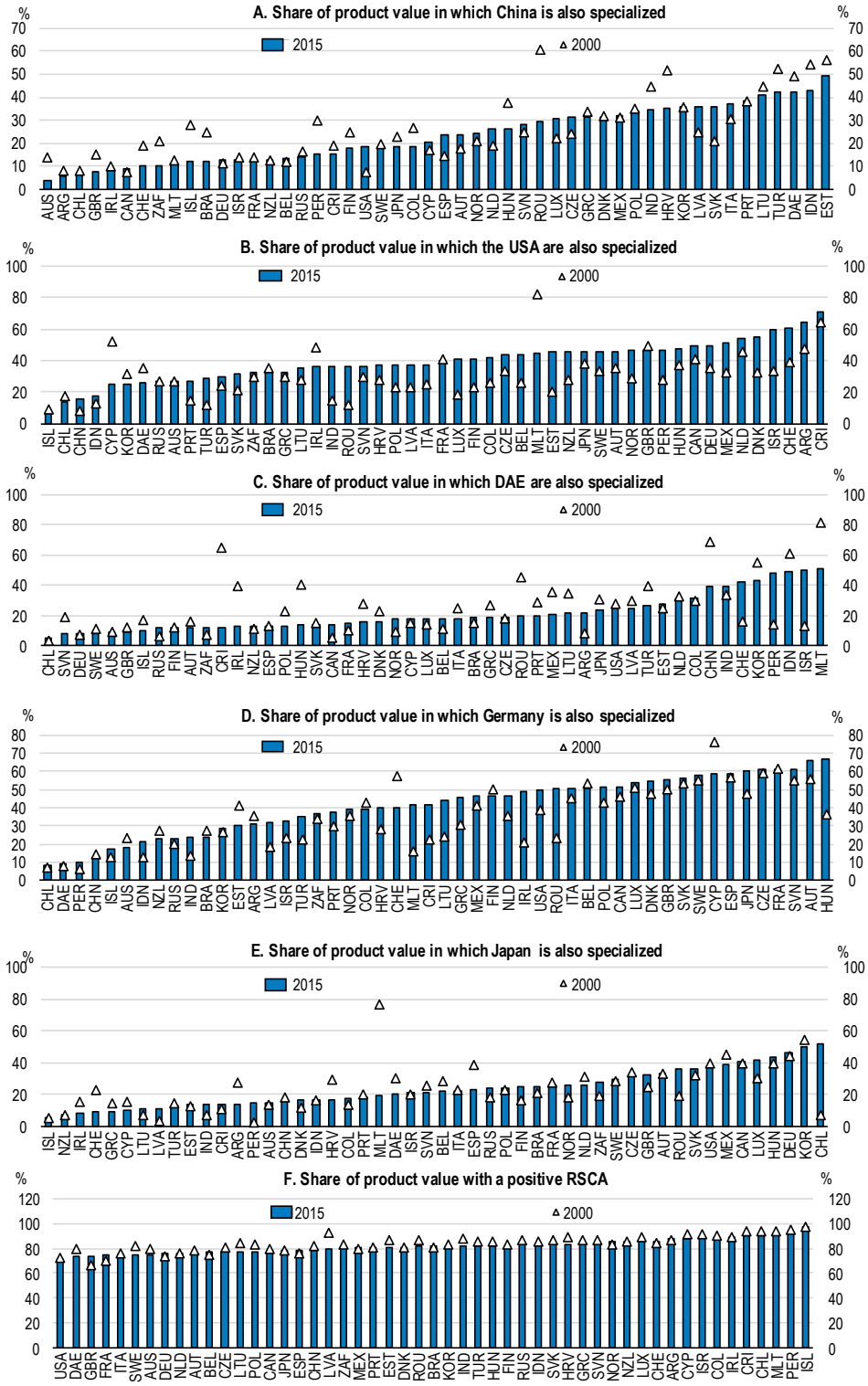


Note: The share refers to the proportion of exported goods where both countries have a positive RSCA.
Source: UN Comtrade database and OECD calculations.

Moreover, for most OECD countries the share of export value in total exports of those products for which there is an overlap with China has stagnated or even declined. Notable exceptions are some EU periphery economies (e.g. Czech Republic, Latvia and Slovakia) and the United States, albeit from relatively low levels (from 10% to 20% of total export value). By contrast, the share of export values in those products for which the United States is also specialised is generally higher and it has increased over time (Figure 14, Panel B). Many EU countries compete in similar products with Germany and the share of these products in total export values is high (Figure 14, Panel D). However, for these countries the share of total exports has not increased over time. In other countries, this share has increased quite significantly over time, but from a lower value. This is the case of Ireland, Romania and the United States.

This suggests that in export markets product competition pressure on OECD countries is mainly coming from other OECD members in export markets. At most, fiercer competition from EMEs is inducing some OECD economies to change their specialisation pattern. Indeed, although the value of OECD country exports that have at least one emerging market competitor has increased, many large OECD countries in particular still have a sizeable share of export value with no EME competitor at all. In some cases, the share of export value where the economy is specialised that overlaps with at least one EME has remained constant (Italy, Netherlands) or even declined (Sweden) (Figure 15).

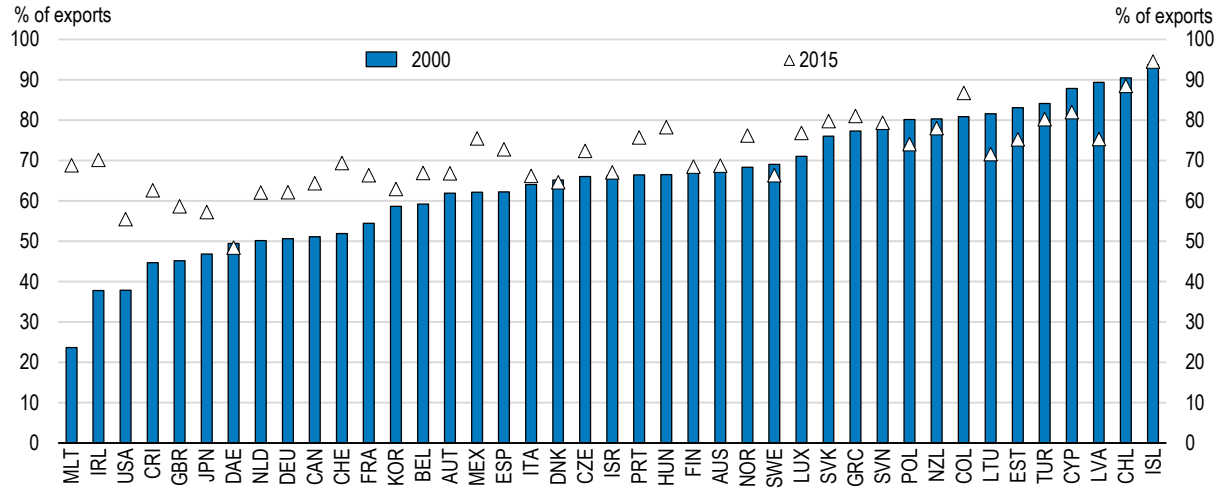
Figure 14. The evolution of goods trade specialisation overlap by value



Note: The share refers to the proportion of exported value where both countries have a positive RSCA.
Source: UN Comtrade database and OECD calculations.

Figure 15. Large OECD countries often have no emerging market competitor

Share of country export value where at least one emerging market is also specialised



Note: EMEs are Argentina, Brazil, China, Croatia, India, Indonesia, Peru, Romania, Russia, South Africa.
Source: UN Comtrade database and OECD calculations.

OECD country export product specialisation is becoming increasingly similar

An examination of the correlation in the change in the share of exports of the top 50 products of the G7 countries, China and Dynamic Asia confirms that, with the exception of Japan, product overlap is growing more strongly between the G7 countries (Table 2). For example, Italy has the strongest positive correlation with Germany and France in the change of the share of exports of its top 50 products from 2000 to 2015. By contrast, the change in the share of Chinese exports in these categories does not seem to be correlated with the change in product shares of Italy. This is in line with Bergamelli et al. (2017) that find since 2010 Italy's export specialisation has shifted towards vehicles and pharmaceuticals that face less competitive pressure from China.

Table 2. Correlation across the top 50 export products by share of exports, 2000-2015

	Share of top 50	CAN	DEU	FRA	ITA	JPN	GBR	USA	CHN	DAE
CAN	0.52	1.00	-0.02	-0.01	-0.12	0.03	**0.11**	**0.12**	-0.03	0.11
CHN	0.41	-0.10	-0.09	-0.19	0.29	0.30	-0.23	**0.40**	1.00	**0.54**
DAE	0.54	0.21	0.36	0.32	0.37	**0.75**	0.25	**0.58**	0.53	1.00
DEU	0.39	-0.03	1.00	**0.47**	0.33	0.03	**0.45**	0.08	-0.15	0.08
FRA	0.43	-0.08	**0.43**	1.00	-0.16	-0.01	**0.20**	**-0.52**	0.08	0.10
GBR	0.51	0.11	0.20	**0.24**	0.19	**0.21**	1.00	0.20	-0.34	0.03
ITA	0.30	-0.05	**0.40**	**0.45**	1.00	0.16	0.29	0.27	0.05	0.17
JPN	0.47	0.04	-0.01	0.12	0.25	1.00	0.19	**0.55**	0.41	**0.60**
USA	0.37	0.28	0.33	0.30	0.42	**0.59**	**0.58**	1.00	0.27	0.53

How to read this table: Bolded figures are the two highest correlations. The table shows the correlation across the top 50 export products by share of exports of the country in the first column with the share of exports in these categories for the countries in the remaining columns. The basket of 50 export products over which the calculation is done is that of the country in the first column. Reading across the row gives how correlated the change in export shares of the other countries in the top 50 products of the column 1 country is with the change in the share of the column 1 country these 50 products. For example, the exports shares of Germany's top 50 export products are most highly correlated with the shares of France and the United Kingdom, whose change in exports shares in these top 50 German export products have a positive correlation of 0.47 and 0.45 respectively with the change in Germany's shares in its top 50 products.
Source: UN Comtrade database and OECD calculations.

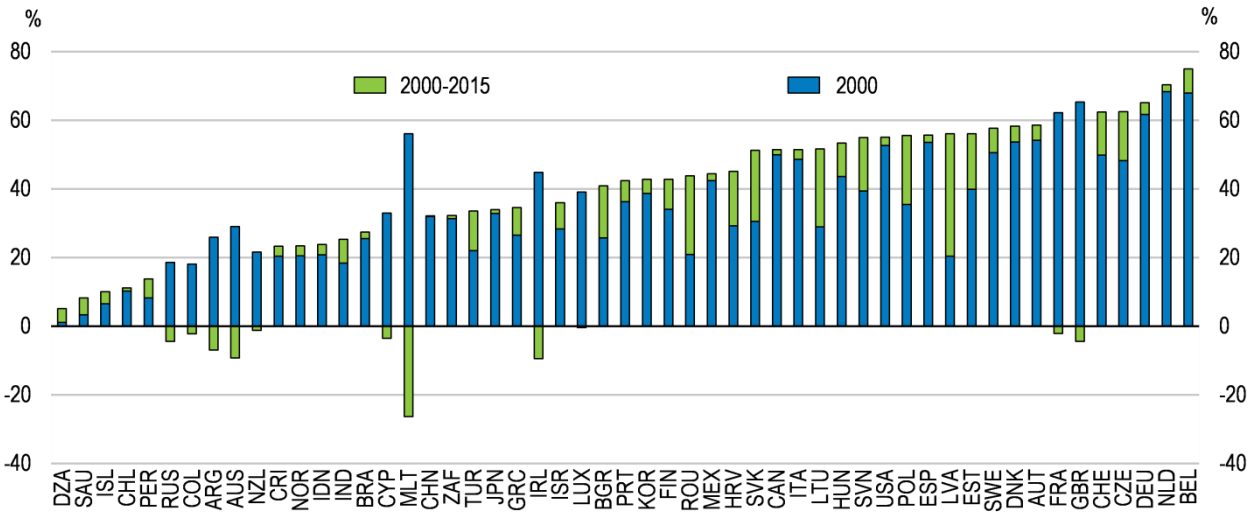
The increasing overlap between OECD countries appears to be occurring more in the upper half of the product complexity scale, where a number of OECD countries, including Germany, Italy, Portugal and Poland, have recently seen an increase in their respective export product share in the 3rd highest quartile of complexity. In addition, Czech Republic, Hungary and Mexico have increased the share of their exports in the 4th (most sophisticated) quartile by product complexity, while the share of large OECD countries in this category has remained approximately constant (Figure 8, Panel A).

Among the 10 most important products by their share in world exports in 2015, some of this growing competition is in automobiles between Canada, Germany, Japan, the United Kingdom and the United States, all increasing the share of their export basket in this category from 2000 to 2015 (Annex A). By contrast, China and Dynamic Asia have been increasing the share of TV, radio, telephone equipment in their export baskets. An area where there does tend to be an increasing overlap across major OECD countries and EMEs is in integrated circuits, which are becoming a larger share of the export baskets of the G7, as well as China and especially Dynamic Asia. This latter development reflects in part the rapid growth in the world market for this product.

Consistent with growing overlap, the percentage of intra-industry trade measured by the Grubel-Lloyd Index (Grubel and Lloyd, 1971) in many of the advanced OECD economies has increased from 2000 to 2015 (Figure 16). The main exceptions are the commodity producers, such as Australia, where the large increase in the demand for metals and other commodities associated with the integration of EMEs into world economy has provoked a shift in these economies towards inter-industry trade.

Figure 16. Intra-industry trade is growing in many OECD countries

Percentage of intra-industry trade.



Note: Percentage of Intra-Industry Trade is measured by the Grubel-Lloyd Index. A Grubel-Lloyd value is calculated for each product i as follows GLi=1- (absvalue (Xi-Mi))/(Xi+Mi). The overall Grubel Lloyd Index for a country is calculated as a weighted sum of the GLi using product shares of trade as the weights. The country index, GL lies between 0 and 1 and is interpreted as the share of intra-industry trade. If GL=1 then all trade is intra-industry. Nearly 5000 products are used in this calculation.
Source: UN Comtrade database and OECD calculations.

Demand plays a larger role than competition in export markets

To further analyse the effects of competition on export patterns and pressure to adjust, the relative effects of demand and competition on export growth are investigated using a panel regression, estimated using OLS with country, time and product fixed effects:

$$logExports_{c,p,t} = \beta_1 \Delta logExports_{c,p,t-1} + \beta_2 \Delta logExports_{c,p,t-2} + \beta_3 \Delta RSCA_{CHN,p,t} + \beta_4 \Delta RSCA_{DAE,p,t} + \beta_5 \Delta RSCA_{DEU,p,t} + \beta_6 \Delta RSCA_{USA,p,t} + \beta_7 \Delta NEER_{c,t} + \beta_8 \Delta logexport_{world,p,t} + \alpha_t + \varepsilon_p + \sigma_t \quad (8)$$

The dependent variable is the growth of exports at current prices by product. Explanatory variables are included to capture the influences of competition, price competitiveness and demand, with up to two lags of each[4]. Demand is measured as total world exports of a

[4] Demand and relative price terms are the main drivers of aggregate export volumes in the OECD's trade equations, as well as in the export equations in the National Institute of Economic and Social Research's NiGEM model. See Morin, M. and C. Schwellnus (2014), "An Update of the OECD International Trade Equations", *OECD Economics Department Working Papers*, No. 1129, OECD Publishing, Paris; and NSIER: NIGEM technical documentation available at: https://nimodel.niesr.ac.uk/index.php?t=5. Demand, price or exchange rate terms also appear in export equations estimated using firm-level data. See for example Sanghamitra Das & Mark J. Roberts & James R. Tybout (2007), "Market Entry Costs, Producer Heterogeneity, and Export Dynamics," *Econometrica*, Econometric Society, 75(3), 837-873 and Berman, N., P. Martin and T. Mayer (2012) "How do Different Exporters React to Exchange Rate Changes?," The *Quarterly Journal of Economics*, Oxford University Press, 127(1), 437-492.

product excluding the exports of the country itself. This is a broader demand measure than trading partner weighted imports used by the OECD and NiGEM models. It is included without trading partner weights as it is comparing the medium-term demand trend for the product with competition effects that is of primary interest, rather than short-run forecasting where the potential short-run demand a country faces is more pertinent. Higher world export growth is expected to have a positive effect on individual country export growth in that product. Competition is measured by overlap of specialisation in products between countries, with product specialisation measured by the RSCA. Greater competition is expected to have a negative effect on export growth.

Insufficient price data at the highly disaggregate HS6 product level prevents the use of individual product prices to capture relative price effects. Instead the nominal effective exchange rate (NEER) is used as a basic relative price control. As an aggregate variable this will have a proximate effect on all product prices. The nominal exchange rate is used because exports are measured in current prices. The empirical literature suggests a change in the exchange rate only partially passes through into consumer prices, especially in the case of manufactures (Campa and Goldberg, 2005; Ollivaud, Rusticelli and Schwellnus, 2015). The rest of the exchange rate change will be absorbed in either the exporter or importer margins. The expected sign on the exchange rate is negative. Dummies for year, country and product, are also included as controls. The regression is estimated with 50 countries, and one region, Dynamic Asia, over the period from 1995 to 2015.

The regression analysis confirms that the competitive pressure from China and EMEs has exerted less pressure on the export performance of advanced economies, given their typical export product mix, than competition with other advanced economies (Table 3). In particular, based on the average coefficients from 16 different equation specifications and using contemporaneous RSCA effects only as lags are often insignificant, the competitive pressure on a typical OECD country's exports of an increase in the United States specialisation in a product is about twice that of China and 1.2 times that of Dynamic Asia, although they all have a similar share of world trade. This is consistent with a large share of manufacturing trade between advanced countries and China and Dynamic Asia being driven by the outsourcing of parts of the value chain. By contrast, the advanced countries tend to be trading in different varieties of similar manufactured product, such as automobiles, generating more direct product competition.

Moreover, competition effects are on average small compared to a change in world demand for individual products. The negative effect of a one standard deviation decrease in world demand for a product exerts 8 times more pressure than a one standard deviation increase in specialisation of the United States for that product. In short, specialising in what the world wants to buy is the main contributor to export performance.

Despite the relative importance of demand on average across all products and countries, competition effects may still be important in particular products at particular times, especially in markets that account for a large share of a country's exports or if a new competitor enters a product market suddenly with a large share. In addition, competition effects may be more permanent when world demand fluctuates more. Finally, losses in market share may be more noticeable now than in the pre-crisis period, as world trade is growing more slowly.

To test for robustness and sensitivity of the regression results to data classification, country and product selection and disaggregation the panel regression is tested using both HS 6 and SITC Rev 3 data, with and without commodity products. Lags of the dependent and explanatory variables are also tested. The negative sign on the lagged dependent variable

suggests some mean reversion, a good export performance this year is likely to be followed by a weaker performance. The size and significance coefficients on the other explanatory contemporaneous explanatory variables appear to be robust to the inclusion of lags with the exception of the exchange rate. The sum of coefficients on the exchange rate is just below zero. This suggests a weakly negative long-run effect in line with strong pricing-to-market and only minimal pass-through to domestic prices on average.

The Central and Eastern European (CEE) countries are also excluded in order to isolate more precisely overlaps of product specialisation that represent German competition from product overlaps as a result of value chain linkages with these economies (Annex B). Comparing the results of the 8 models including the CEE countries (Table 3), and the other 8 excluding CEE countries (Annex B), shows that the effect of German competition is more negative for other country export performance once CEE countries are excluded. Nevertheless, while there is some variation across specifications, the main results are overall relatively robust to different datasets and product disaggregation etc. in terms of coefficient size, significance and relative importance as can be seen from comparing the coefficients across the regressions with the average (Table 3 and Annex B).

Table 3. Export performance, competition and world demand by product

Scenario	HS	HS manufacturing	SITC	SITC manufacturing	HS	HS manufacturing	SITC	SITC manufacturing	Average of the 8 models	Average of the 16 models
Equation	1	2	3	4	5	6	7	8	9	10
Dependent variable	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)
DLOG export (c,p,t-1)	-0.36	-0.37	-0.35	-0.36					-0.36	-0.36
DLOG export (c,p,t-2)	-0.16	-0.16	-0.16	-0.16					-0.16	-0.16
Change in RSCA of China (p,t)	-0.04	-0.05	-0.03	-0.05	-0.03	-0.04	-0.02	-0.03	-0.04	-0.04
Change in RSCA of China (p,t-1)	-0.02	-0.02	-0.05	-0.05					-0.04	-0.04
Change in RSCA of China (p,t-2)	-0.01	-0.01	**-0.01**	**-0.02**					-0.01	-0.02
Change in RSCA of Germany (p,t)	-0.03	-0.04	**0.00**	**0.00**	-0.04	-0.05	**0.00**	**-0.01**	-0.02	-0.04
Change in RSCA of Germany (p,t-1)	**0.01**	**0.01**	**0.00**	0.01					0.01	0.00
Change in RSCA of Germany (p,t-2)	0.02	0.02	**-0.01**	**0.02**					0.01	0.00
Change in RSCA of USA (p,t)	-0.07	-0.07	-0.03	-0.04	-0.08	-0.08	-0.07	-0.08	-0.06	-0.08
Change in RSCA of USA (p,t-1)	-0.02	-0.02	**0.01**	**0.02**					0.00	-0.01
Change in RSCA of USA (p,t-2)	**-0.01**	**-0.01**	**-0.01**	**0.00**					-0.01	-0.01
Change in RSCA of DAE (p,t)	-0.08	-0.08	-0.06	-0.05	-0.07	-0.08	-0.05	-0.04	-0.06	-0.07
Change in RSCA of DAE (p,t-1)	-0.03	-0.03	-0.01	**0.01**					-0.02	-0.02
Change in RSCA of DAE (p,t-2)	-0.01	-0.01	-0.02	**-0.01**					-0.01	-0.01
DLOG of NEER (c,t)	0.22	0.21	0.17	0.15	0.11	0.11	0.11	0.09	0.14	0.16
DLOG of NEER (c,t-1)	-0.10	-0.09	-0.07	-0.06					-0.08	-0.06
DLOG of NEER (c,t-2)	-0.13	-0.14	-0.11	-0.12					-0.12	-0.12
DLOG of World Exports (p,t)	0.29	0.29	0.43	0.42	0.24	0.23	0.38	0.37	0.33	0.32
DLOG of World Exports (p,t-1)	0.17	0.17	0.23	0.23					0.20	0.20
DLOG of World Exports (p,t-2)	0.09	0.10	0.12	0.13					0.11	0.10
Constant	-0.14	-0.15	-0.16	-0.17	-0.06	-0.07	-0.13	-0.13	-0.13	-0.13
Dummies year	yes	yes	yes	yes	yes	yes	yes	yes		
Dummies product	yes	yes	yes	yes	yes	yes	yes	yes		
Dummies country	yes	yes	yes	yes	yes	yes	yes	yes		

Obs	3,168,561	2,845,431	722,396	551,103	3,737,831	3,338,340	871,324	660,269
Period	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015
Countries	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE
Commodities	4770	4165	1011	737	4859	4221	1022	737

Note: c, p, t denote country, product and time. Dlog denotes log difference. NEER denotes nominal effective exchange rate. Exports are measured in current prices in US dollars. Dynamic Asian Countries is a country grouping comprising Chinese Taipei; Hong Kong China; Malaysia; the Philippines; Singapore, Thailand and Vietnam. Coefficients in bold are not significant at the 10% level. All other coefficients are significant at the 1% level. The standard deviation of world export growth by product is 0.17. The standard deviation of the change in the RSCA of China, Germany, USA and Dynamic Asia is 0.107, 0.073, 0.082 and 0.088.
Source: UN Comtrade database and Bank of International Settlements.

Table 4. The effect of competition on exports is not symmetrical

Scenario		HS	HS manufacturing	SITC	SITC manufacturing	HS	HS manufacturing	SITC	SITC manufacturing	Average of the 8 models	Average of the 16 models
Equation		1	2	3	4	5	6	7	8	9	10
Dependent variable		DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)
DLOG export (c,p,t-1)		-0.36	-0.37	-0.35	-0.36					-0.36	-0.36
DLOG export (c,p,t-2)		-0.16	-0.16	-0.16	-0.16					-0.16	-0.16
Change in RSCA of China (p,t)	up	-0.02	-0.02	**-0.01**	**-0.02**	-0.02	-0.02	-0.03	-0.06	-0.02	-0.03
Change in RSCA of China (p,t-1)	up	-0.03	-0.03	-0.06	-0.07					-0.05	-0.06
Change in RSCA of China (p,t-2)	up	-0.02	-0.02	-0.07	-0.03					-0.03	-0.04
Sum of lag coefficients		-0.06	-0.07	-0.13	-0.13					-0.10	-0.11
Change in RSCA of China (p,t)	down	-0.08	-0.09	-0.05	-0.08	-0.05	-0.06	**-0.01**	**0.00**	-0.05	-0.06
Change in RSCA of China (p,t-1)	down	-0.02	-0.03	-0.04	**-0.02**					-0.03	-0.03
Change in RSCA of China (p,t-2)	down	**-0.01**	**-0.01**	0.04	**0.01**					0.01	0.00
Sum of lag coefficients		-0.11	-0.12	-0.06	-0.09					-0.10	-0.11
Change in RSCA of Germany (p,t)	up	-0.02	-0.03	**-0.03**	**-0.03**	-0.02	-0.03	**-0.01**	-0.06	-0.03	-0.05
Change in RSCA of Germany (p,t-1)	up	**0.02**	**0.02**	**0.02**	**0.01**					0.02	0.00
Change in RSCA of Germany (p,t-2)	up	**0.01**	0.01	**0.01**	**0.00**					0.01	0.00
Sum of lag coefficients		0.01	0.00	0.00	-0.02					0.00	-0.05
Change in RSCA of Germany (p,t)	down	-0.04	-0.05	**0.03**	**0.04**	-0.06	-0.06	**0.00**	**0.03**	-0.01	-0.03
Change in RSCA of Germany (p,t-1)	down	**0.00**	**0.00**	**-0.01**	**0.01**					0.00	0.00
Change in RSCA of Germany (p,t-2)	down	0.02	**0.02**	**-0.04**	**0.04**					0.01	0.00
Sum of lag coefficients		-0.02	-0.02	-0.02	0.08					0.00	-0.03
Change in RSCA of USA (p,t)	up	-0.08	-0.09	**0.01**	**-0.03**	-0.08	-0.08	-0.07	-0.08	-0.06	-0.07
Change in RSCA of USA (p,t-1)	up	-0.03	-0.03	-0.05	-0.05					-0.04	-0.05
Change in RSCA of USA (p,t-2)	up	**-0.01**	**-0.01**	**-0.02**	**-0.01**					-0.01	-0.01

Sum of lag coefficients		**-0.12**	**-0.13**	**-0.06**	**-0.09**					**-0.10**	**-0.12**
Change in RSCA of USA (p,t)	down	-0.07	-0.06	-0.06	-0.06	-0.08	-0.07	-0.06	-0.08	-0.07	-0.08
Change in RSCA of USA (p,t-1)	down	**-0.01**	**0.00**	0.07	0.08					0.04	0.03
Change in RSCA of USA (p,t-2)	down	**-0.01**	**0.00**	**-0.01**	**0.00**					0.00	0.00
Sum of lag coefficients		-0.08	-0.07	0.00	0.02					-0.03	-0.05
Change in RSCA of DAE (p,t)	up	-0.06	-0.06	-0.06	-0.05	-0.06	-0.07	-0.05	**-0.03**	-0.05	-0.06
Change in RSCA of DAE (p,t-1)	up	-0.04	-0.05	**0.00**	**0.01**					-0.02	-0.02
Change in RSCA of DAE (p,t-2)	up	-0.02	**-0.01**	**-0.03**	-0.03					-0.02	-0.02
Sum of lag coefficients		-0.12	-0.11	-0.09	-0.07					-0.10	-0.11
Change in RSCA of DAE (p,t)	down	-0.10	-0.11	-0.06	-0.06	-0.08	-0.09	-0.05	**-0.05**	-0.08	-0.08
Change in RSCA of DAE (p,t-1)	down	-0.02	-0.02	**-0.02**	**-0.01**					-0.02	-0.02
Change in RSCA of DAE (p,t-2)	down	**0.00**	**0.00**	**-0.02**	**0.01**					0.00	0.00
Sum of lag coefficients		-0.13	-0.13	-0.09	-0.05					-0.10	-0.11
DLOG of NEER (c,t)		0.22	0.21	0.17	0.15	0.11	0.11	0.11	0.09	0.14	0.15
DLOG of NEER (c,t-1)		-0.10	-0.09	-0.07	-0.06					-0.08	-0.07
DLOG of NEER (c,t-2)		-0.13	-0.14	-0.11	-0.12					-0.12	-0.12
DLOG of World Exports (p,t)		0.30	0.29	0.43	0.42	0.24	0.23	0.38	0.37	0.33	0.32
DLOG of World Exports (p,t-1)		0.17	0.17	0.23	0.22					0.20	0.20
DLOG of World Exports (p,t-2)		0.09	0.10	0.12	0.13					0.11	0.10
Constant		-0.15	-0.15	-0.16	-0.16	-0.06	-0.07	-0.13	-0.13	-0.13	-0.13
Dummies year		yes	yes	yes	yes	yes	yes	yes	yes		
Dummies product		yes	yes	yes	yes	yes	yes	yes	yes		
Dummies country		yes	yes	yes	yes	yes	yes	yes	yes		
Obs		3,168,561	2,845,431	722,396	551,103	3,737,831	3,338,340	871,324	660,269		

Period	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015
Countries	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE	50+DAE
Commodities	4770	4165	1011	737	4859	4221	1022	737

Note: c, p, t denote country, product and time. Dlog denotes log difference. NEER denotes nominal effective exchange rate. Exports are measured in current prices in US dollars. Dynamic Asian Countries is a country grouping comprising Chinese Taipei; Hong Kong China; Malaysia; the Philippines; Singapore, Thailand and Vietnam. Coefficients in bold are not significant at the 10% level. All other coefficients are significant at the 1% level. The standard deviation of world export growth by product is 0.17. The standard deviation of the change in the RSCA of China, Germany, USA and Dynamic Asia is 0.107, 0.073, 0.082 and 0.088.

Source: UN Comtrade database and Bank of International Settlements.

The effect of increasing and decreasing competition on exports does not appear to be symmetric (Table 4). Concentrating on only contemporaneous effects as lagged RSCA terms are not always significant and HS manufacturing, an increase in competition from the United States, tends to be more harmful to exports than the benefit to exports from an equivalently sized decrease in competition. By contrast, withdrawal of China, Germany and Dynamic Asia from specialisation in a product appears to be more beneficial than its entry is harmful. These differences may arise due to asymmetric and varying pricing behaviour across countries (Bussiere, 2013) Some countries (e.g. Japan and the United States) appear to have more aggressive pricing strategies, reacting more strongly to currency appreciations than depreciations, and cutting their local currency prices more when their currency appreciates to protect market share than others (e.g. Italy).

Conclusion

This paper finds that, although export product competition is increasing between EMEs and advanced OECD countries, it remains moderate in comparison with the competition amongst the OECD countries themselves. Indeed, perhaps unsurprisingly the main contributor to export growth performance appears to be specialising in products where world demand is growing. The paper also confirms previous findings that specialising in complex products boosts per capita GDP. OECD countries are generally specialised in more complex goods of higher quality than EMEs and the complexity of the OECD economies is growing. Some EMEs are increasing the complexity of their product mix but these products have not always been of high quality at the most complex level (e.g. China and India). There are both advanced OECD countries (e.g. Netherlands and the United States) as well as EMEs (Costa Rica, China and Mexico) that have a product mix biased towards less mature products with high growth potential. There are also both advanced OECD countries (e.g. Finland) and EMEs (e.g. Brazil and Chile) that show signs of a maturing product mix that will weigh on future export performance. This suggests ensuring the export mix remains tuned for growth is an ongoing challenge for all countries regardless of their income level.

Annex A. Top 10 export products

Table A.1. Revealed Comparative Advantage, Top 10 products by share of exports in 2015

Commodity	2000		2015	
	RSCA	Export share	RSCA	Export share
Canada				
Automobiles, spark ignition engine of >3000 cc	0.80	13.7	0.80	8.3
Automobiles, spark ignition engine of 1500-3000 cc	0.00	2.8	0.59	8.1
Gold in unwrought forms non-monetary	0.46	0.7	0.48	4.6
Lumber, coniferous (softwood) thickness < 6 mm	0.83	3.7	0.86	2.5
Potassium chloride, in packs >10 kg	0.89	0.8	0.92	2.0
Fixed wing aircraft, unladen weight > 15,000 kg	-0.32	0.5	0.39	1.9
Medicaments nes, in dosage	-0.61	0.3	-0.07	1.8
Parts and accessories of bodies nes for motor vehicle	0.47	1.5	0.50	1.5
Chem wood pulp, soda or sulphate, conifer, bleached	0.83	2.1	0.85	1.4
Aluminium unwrought, alloyed	0.65	0.9	0.74	1.0
Germany				
Automobiles, spark ignition engine of 1500-3000 cc	0.36	6.0	0.34	4.2
Automobiles, diesel engine of 1500-2500 cc	0.54	2.9	0.56	3.8
Medicaments nes, in dosage	0.16	1.5	0.19	3.0
Fixed wing aircraft, unladen weight > 15,000 kg	0.39	2.3	0.55	2.8
Antisera and other blood fractions	0.40	0.2	0.40	1.7
Automobiles, spark ignition engine of >3000 cc	0.26	2.5	0.30	1.7
Automobiles, diesel engine of >2500 cc	0.42	0.4	0.59	1.2
Automobiles, spark ignition engine of 1000-1500 cc	0.04	0.6	0.28	1.1
Transmissions for motor vehicles	0.14	0.5	0.40	1.0
Monolithic integrated circuits, except digital	-0.44	0.4	-0.59	1.0
France				
Fixed wing aircraft, unladen weight > 15,000 kg	0.60	4.0	0.84	9.7
Medicaments nes, in dosage	0.38	2.3	0.26	3.5
Automobiles, diesel engine of 1500-2500 cc	0.50	2.6	0.25	1.7
Monolithic integrated circuits, except digital	-0.26	0.6	-0.44	1.5
Beauty, makeup and suntan preparations nes	0.69	0.7	0.71	1.3
Parts of turbo-jet or turbo-propeller engines	0.47	1.0	0.63	1.3
Grape wines nes, fortified wine or must, pack < 2l	0.74	1.2	0.75	1.3
Aircraft parts nes	0.13	0.7	0.38	1.3
Motor vehicle parts nes	0.29	1.8	0.16	1.1
Diesel powered trucks weighing < 5 tonnes	0.33	0.8	0.49	1.0

Italy				
Medicaments nes, in dosage	0.14	1.4	0.15	2.8
Jewellery and parts of precious metal except silver	0.74	2.1	0.32	1.4
Motor vehicle parts nes	0.24	1.7	0.26	1.3
Taps, cocks, valves and similar appliances, nes	0.59	1.0	0.53	1.3
Grape wines nes, fortified wine or must, pack < 2l	0.62	0.8	0.71	1.1
Automobiles, spark ignition engine of 1500-3000 cc	-0.34	1.4	-0.37	1.0
Automobiles, spark ignition engine of >3000 cc	-0.73	0.2	-0.02	0.9
Handbags with outer surface of leather	0.77	0.3	0.79	0.9
Diesel powered trucks weighing < 5 tonnes	0.30	0.7	0.41	0.8
Automobiles, diesel engine of 1500-2500 cc	-0.11	0.7	-0.15	0.8
Japan				
Automobiles, spark ignition engine of 1500-3000 cc	0.45	7.4	0.60	8.5
Automobiles, spark ignition engine of >3000 cc	0.28	2.6	0.63	4.1
Monolithic integrated circuits, except digital	-0.01	1.0	-0.01	3.8
Transmissions for motor vehicles	0.56	1.2	0.69	2.4
Cargo vessels other than tanker or refrigerated	0.63	1.3	0.64	1.6
Parts of printing machinery and ancillary equipment	-0.32	0.0	0.56	1.5
Equipment for photographic laboratories nes	0.73	0.8	0.68	1.1
Machines and mechanical appliances nes	0.55	2.1	0.51	1.0
Shovels and excavators with revolving superstructure	0.59	0.5	0.75	0.9
Optical devices, appliances and instruments, nes	0.45	0.5	0.25	0.9
United Kingdom				
Gold, semi-manufactured forms, non-monetary	-0.11	0.1	0.90	9.4
Medicaments nes, in dosage	0.46	2.9	0.41	5.0
Aircraft parts nes		0.0	0.71	3.3
Automobiles, spark ignition engine of 1500-3000 cc	-0.12	2.2	0.22	3.3
Automobiles, spark ignition engine of >3000 cc	0.04	1.6	0.43	2.3
Turbo-jet engines of a thrust > 25 KN	0.73	1.7	0.84	2.3
Parts of turbo-jet or turbo-propeller engines	0.59	1.4	0.73	1.9
Automobiles, diesel engine of 1500-2500 cc	0.11	1.1	0.18	1.5
Jewellery and parts of precious metal except silver	0.01	0.3	0.37	1.5
Paintings/drawings/pastels executed by hand	0.72	0.8	0.81	1.5
United States				
Monolithic integrated circuits, except digital	0.10	1.3	-0.15	2.9
Automobiles, spark ignition engine of 1500-3000 cc	-0.47	1.0	-0.04	1.9
Medicaments nes, in dosage	-0.21	0.7	-0.06	1.8
Automobiles, spark ignition engine of >3000 cc	-0.08	1.3	0.33	1.8
Telegraphic apparatus, nes	-0.30	0.1	0.26	1.7
Gold in unwrought forms non-monetary	0.49	0.7	0.03	1.7
Diamonds (jewellery) worked but not mounted or set	-0.02	0.5	0.41	1.6
Parts and accessories of data processing equipment ne	0.06	3.4	0.21	1.4
Motor vehicle parts nes	0.21	1.6	0.20	1.2
Antisera and other blood fractions	0.32	0.2	0.22	1.2

China				
Transmit-receive apparatus for radio, TV, etc.	0.00	1.3	0.50	5.6
Digital computers with cpu and input-output units	-0.26	0.4	0.58	4.2
Monolithic integrated circuits, except digital	-0.47	0.4	-0.11	3.1
Parts of line telephone/telegraph equipment, nes	-0.39	0.3	0.34	2.3
Telegraphic apparatus, nes	0.05	0.1	0.20	1.5
Optical devices, appliances and instruments, nes	0.33	0.4	0.45	1.4
Parts and accessories of data processing equipment ne	-0.11	2.4	0.17	1.3
Colour television receivers/monitors/projectors	-0.07	0.5	0.27	1.1
Computer input or output units	0.43	2.7	0.37	1.0
Photosensitive/photovoltaic/LED semiconductor devices	-0.30	0.1	0.35	1.0
DAE				
Monolithic integrated circuits, except digital	0.62	4.5	0.62	16.6
Transmit-receive apparatus for radio, TV, etc.	-0.18	0.9	0.32	3.7
Gold in unwrought forms non-monetary	-0.51	0.1	0.33	3.2
Parts of line telephone/telegraph equipment, nes	-0.21	0.4	0.44	2.9
Parts and accessories of data processing equipment ne	0.47	8.4	0.48	2.6
Computer data storage units	0.48	2.8	0.52	1.7
Telegraphic apparatus, nes	0.28	0.2	0.22	1.6
Electronic printed circuits	0.55	1.6	0.54	1.2
Photosensitive/photovoltaic/LED semiconductor devices	0.28	0.3	0.42	1.1
Parts for radio/tv transmit/receive equipment, nes	0.30	1.2	0.48	1.1

Source: UN Comtrade database.

Annex B. RSCA regression results excluding Central and Eastern European countries

Table B.1. The effect on export performance of competition and world demand (excluding CEE countries)

Scenario	HS	HS manufacturing	SITC	SITC manufacturing	HS	HS manufacturing	SITC	SITC manufacturing	Average of the 8 models	Average of the 16 models
Equation	1	2	3	4	5	6	7	8	9	10
Dependent variable	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)
DLOG export (c,p,t-1)	-0.37	-0.38	-0.36	-0.37					-0.37	-0.36
DLOG export (c,p,t-2)	-0.17	-0.17	-0.17	-0.17					-0.17	-0.16
Change in RCA of China (p,t)	-0.06	-0.07	-0.04	-0.07	-0.04	-0.05	-0.03	-0.05	-0.05	-0.04
Change in RCA of China (p,t-1)	-0.03	-0.04	-0.06	-0.06					-0.05	-0.04
Change in RCA of China (p,t-2)	-0.01	-0.02	-0.03	-0.02					-0.02	-0.02
Change in RCA of Germany (p,t)	-0.07	-0.08	-0.05	-0.04	-0.09	-0.09	-0.05	-0.06	-0.06	-0.04
Change in RCA of Germany (p,t-1)	-0.02	-0.02	**-0.02**	**-0.01**					-0.02	0.00
Change in RCA of Germany (p,t-2)	**0.00**	**0.00**	-0.03	**0.01**					-0.01	0.00
Change in RCA of USA (p,t)	-0.09	-0.10	-0.04	-0.07	-0.10	-0.10	-0.10	-0.12	-0.09	-0.08
Change in RCA of USA (p,t-1)	-0.03	-0.03	**0.00**	**0.01**					-0.01	-0.01
Change in RCA of USA (p,t-2)	-0.02	-0.02	**-0.01**	**0.00**					-0.01	-0.01
Change in RCA of Dynamic Asia (p,t)	-0.09	-0.10	-0.07	-0.07	-0.09	-0.09	-0.05	-0.05	-0.08	-0.07
Change in RCA of Dynamic Asia (p,t-1)	-0.04	-0.04	**-0.01**	**0.00**					-0.02	-0.02
Change in RCA of Dynamic Asia (p,t-2)	-0.02	-0.01	-0.03	**-0.02**					-0.02	-0.01
DLOG of NEER (c,t)	0.24	0.23	0.19	0.16	0.14	0.13	0.13	0.10	0.17	0.16
DLOG of NEER (c,t-1)	-0.07	-0.06	-0.04	**-0.02**					-0.05	-0.06
DLOG of NEER (c,t-2)	-0.12	-0.13	-0.11	-0.12					-0.12	-0.12
DLOG of World Exports (p,t)	0.27	0.26	0.40	0.39	0.21	0.20	0.34	0.33	0.30	0.32
DLOG of World Exports (p,t-1)	0.16	0.16	0.22	0.22					0.19	0.20
DLOG of World Exports (p,t-2)	0.08	0.08	0.11	0.12					0.10	0.10
Constant	-0.15	-0.15	-0.15	-0.16	-0.07	-0.08	-0.12	-0.13	-0.13	-0.13
Dummies year	yes	yes	yes	yes	yes	yes	yes	yes		
Dummies product	yes	yes	yes	yes	yes	yes	yes	yes		
Dummies country	yes	yes	yes	yes	yes	yes	yes	yes		

Obs	2,586,055	2,317,481	581,167	442,222	3,037,802	2,708,205	700,648	529,693
Period	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015
Countries	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE
Commodities	4770	4165	1011	737	4859	4221	1022	737

Note: c, p, t denote country, product and time. Dlog denotes log difference. NEER denotes nominal effective exchange rate. Exports are measured in values. Dynamic Asian Countries is a country grouping comprising Chinese Taipei; Hong Kong China; Malaysia; the Philippines; Singapore, Thailand and Vietnam. Coefficients in bold are not significant at the 10% level. All other coefficients are significant at the 1% level. The standard deviation of world export growth by product is 0.17. The standard deviation of the change in the RSCA of China, Germany, USA and Dynamic Asia is 0.107, 0.073, 0.082 and 0.088.
Source: UN Comtrade database and Bank of International Settlements.

Table B.2. The effect of competition on exports is not symmetrical (excluding CEE countries)

Scenario		HS	HS manufacturing	SITC	SITC manufacturing	HS	HS manufacturing	SITC	SITC manufacturing	Average of the 8 models	Average of the 16 models
Equation		1	2	3	4	5	6	7	8	9	10
Dependent variable		DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)	DLOG export (c,p,t)
DLOG export (c,p,t-1)		-0.37	-0.38	-0.36	-0.37					-0.37	-0.36
DLOG export (c,p,t-2)		-0.17	-0.17	-0.17	-0.17					-0.17	-0.16
Change in RCA of China (p,t)	up	-0.02	-0.03	-0.01	-0.02	-0.02	-0.02	-0.04	-0.07	-0.03	-0.03
Change in RCA of China (p,t-1)	up	-0.04	-0.04	-0.09	-0.10					-0.07	-0.06
Change in RCA of China (p,t-2)	up	-0.02	-0.02	-0.08	-0.04					-0.04	-0.04
Sum of lag coefficients		-0.08	-0.09	-0.18	-0.17					-0.13	-0.11
Change in RCA of China (p,t)	down	-0.10	-0.11	-0.08	-0.11	-0.07	-0.08	-0.03	-0.02	-0.08	-0.06
Change in RCA of China (p,t-1)	down	-0.03	-0.04	-0.03	-0.01					-0.03	-0.03
Change in RCA of China (p,t-2)	down	-0.01	-0.01	0.03	0.00					0.00	0.00
Sum of lag coefficients		-0.14	-0.16	-0.08	-0.13					-0.13	-0.11
Change in RCA of Germany (p,t)	up	-0.06	-0.07	-0.09	-0.09	-0.07	-0.08	-0.06	-0.09	-0.08	-0.05
Change in RCA of Germany (p,t-1)	up	-0.02	-0.02	-0.03	-0.02					-0.02	0.00
Change in RCA of Germany (p,t-2)	up	-0.01	0.00	-0.01	0.00					0.00	0.00
Sum of lag coefficients		-0.09	-0.09	-0.13	-0.11					-0.10	-0.05
Change in RCA of Germany (p,t)	down	-0.08	-0.09	0.00	0.00	-0.10	-0.11	-0.03	-0.03	-0.05	-0.03
Change in RCA of Germany (p,t-1)	down	-0.02	-0.02	0.00	0.00					-0.01	0.00
Change in RCA of Germany (p,t-2)	down	0.00	0.00	-0.05	0.02					-0.01	0.00
Sum of lag coefficients		-0.10	-0.11	-0.05	0.02					-0.06	-0.03
Change in RCA of USA (p,t)	up	-0.10	-0.12	-0.01	-0.05	-0.10	-0.11	-0.10	-0.11	-0.09	-0.07
Change in RCA of USA (p,t-1)	up	-0.04	-0.05	-0.05	-0.06					-0.05	-0.05
Change in RCA of USA (p,t-2)	up	-0.03	-0.03	-0.01	-0.01					-0.02	-0.01

Sum of lag coefficients		-0.17	-0.20	-0.07	-0.11					-0.14	-0.12
Change in RCA of USA (p,t)	down	-0.09	-0.08	-0.08	-0.08	-0.10	-0.10	-0.10	-0.12	-0.10	-0.08
Change in RCA of USA (p,t-1)	down	-0.01	-0.01	0.06	0.07					0.02	0.03
Change in RCA of USA (p,t-2)	down	-0.01	-0.01	0.00	0.00					0.00	0.00
Sum of lag coefficients		-0.11	-0.10	-0.03	-0.01					-0.06	-0.05
Change in RCA of Dynamic Asia (p,t)	up	-0.07	-0.07	-0.08	-0.08	-0.08	-0.08	-0.06	-0.05	-0.07	-0.06
Change in RCA of Dynamic Asia (p,t-1)	up	-0.04	-0.05	0.00	0.01					-0.02	-0.02
Change in RCA of Dynamic Asia (p,t-2)	up	-0.03	-0.02	-0.03	-0.03					-0.03	-0.02
Sum of lag coefficients		-0.14	-0.14	-0.11	-0.10					-0.12	-0.11
Change in RCA of Dynamic Asia (p,t)	down	-0.12	-0.12	-0.07	-0.06	-0.10	-0.10	-0.05	-0.04	-0.08	-0.08
Change in RCA of Dynamic Asia (p,t-1)	down	-0.03	-0.03	-0.03	-0.01					-0.02	-0.02
Change in RCA of Dynamic Asia (p,t-2)	down	0.00	0.00	-0.03	0.00					-0.01	-0.01
Sum of lag coefficients		-0.15	-0.16	-0.13	-0.06					-0.12	-0.11
DLOG of NEER (c,t)		0.24	0.23	0.19	0.16	0.14	0.13	0.13	0.10	0.17	0.16
DLOG of NEER (c,t-1)		-0.07	-0.06	-0.04	-0.02					-0.05	-0.06
DLOG of NEER (c,t-2)		-0.12	-0.13	-0.11	-0.12					-0.12	-0.12
DLOG of World Exports (p,t)		0.27	0.26	0.40	0.39	0.21	0.20	0.34	0.33	0.30	0.32
DLOG of World Exports (p,t-1)		0.16	0.16	0.22	0.21					0.19	0.19
DLOG of World Exports (p,t-2)		0.08	0.08	0.11	0.12					0.10	0.10
Constant		-0.15	-0.16	-0.15	-0.15	-0.07	-0.08	-0.12	-0.13	-0.13	-0.13
Dummies year		yes	yes	yes	yes	yes	yes	yes	yes		
Dummies product		yes	yes	yes	yes	yes	yes	yes	yes		

Dummies country	yes	yes	yes	yes	yes	yes	yes	yes
Obs	2,586,055	2,317,481	581,167	442,222	3,037,802	2,708,205	700,648	529.623
Period	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015	1995-2015
Countries	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE	40+DAE
Commodities	4770	4165	1011	737	4859	4221	1022	737

Note: c, p, t denote country, product and time. Dlog denotes log difference. NEER denotes nominal effective exchange rate. Exports are measured in values. Dynamic Asian Countries is a country grouping comprising Chinese Taipei; Hong Kong China; Malaysia; the Philippines; Singapore, Thailand and Vietnam. Coefficients in bold are not significant at the 10% level. All other coefficients are significant at the 1% level. The standard deviation of world export growth by product is 0.17. The standard deviation of the change in the RSCA of China, Germany, USA and Dynamic Asia is 0.107, 0.073, 0.082 and 0.088.
Source: UN Comtrade database and Bank of International Settlements.

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