

IV. Special topic: Export diversification

	I. Introduction	216
	II. Product diversification globally and by country	216
	III. Other diversification indicators	225
	IV. Conclusions	231

I. Introduction

The diversity of an economy's exports and its export performance reveal to what extent a country is able to compete in global markets. They are also indicators of the country's capacity to participate in global value chains, the worldwide network of processes that add value to the good or service being produced. While most studies have looked at trade values when analysing export diversification measures, this study focuses on the range of products as an indicator of diversification and technological capacity. This is known as the extensive margin of trade as trade volumes (beyond a certain threshold value) are not taken into account.

The study builds on analysis conducted by Hausmann and Hidalgo (2011), who measure the diversity of export performance through the range of technological capabilities and other endowments which give some countries a greater presence than others in world markets. This study uses a much larger dataset of trade statistics, taking into account both

geographical and historical "diversity" as well as product diversification in terms of items in the Harmonized System (HS), the system used to classify traded goods on a common basis. Since length of time in multiple markets with a wide range of products is a significant indicator of production diversification and integration in international market, this study explores the time dimension of export diversification. The analysis reveals that the global slowdown in trade in 2008 had a very significant impact on countries' trade diversification.

To achieve sound estimates, the diversification of products is measured at the HS six-digit level (comprising about 5,000 products). These statistics can be based on countries own export statistics or on their trading partner' import statistics. As is well known, these statistics do not usually match each other (Markhonko 2014) but for this analysis, this is not so important as it focuses on longer-term statistics and not on trying to match trade levels

for a given year. Import statistics have been used mostly as they are known to be more reliable than export statistics. The data have been drawn from the WTO's Integrated Data Base¹ and the UN COMTRADE database.² Import statistics for 18 countries³ from 1996 to 2014 at the HS six-digit level were used to calculate the export data for 146 countries and customs territories (see Annex 2). To ensure the robustness of the analysis, a minimum threshold of US\$ 10,000 is used to exclude insignificant trade flows.

The following section provides an overview of export diversification in terms of the numbers of product categories covered by countries' exports. The scope of exports across countries and across years is measured to explore the overall trends. Section 3 expands the analysis by considering the diversity of export markets and the length of time for the range of products. Based on these analyses, an index of export diversification is provided.

II. Product diversification globally and by country

The Harmonized Commodity Description and Coding System (generally referred to as the "Harmonized System" or simply "HS") provides a standardized list of about 5,000 products used by virtually all countries to classify their exports and imports. These products range from simple raw materials to the most sophisticated machinery. The HS provides a coding system

to classify these products. The most detailed product classification is known as a "subheading" and is denoted by a six-digit code.

Looking at the range of HS product codes covered by a country's exports is an obvious way to measure the diversification of exports as the number of HS subheadings provides a simple and transparent measure

of diversification. This indicator does not consider trade volumes. Although taking into account trade values could be useful in measuring intensity vis-à-vis product diversity, it could also distort the measurement of pure export potential as this could be under-estimated when trade values are given too much importance.

1. Product diversification across countries

It is not surprising that larger economies export and import a much larger spectrum of goods than small economies. The three traders with the most diverse range of products are the United States, the European Union and China, which export most of the 5,000 or so items listed in the HS

classification whereas small economies tend to export less than 100 of the products listed in the HS. Less than one-third of the countries analysed export more than 500 products.

Table 1 categorizes the 146 countries analysed into six groups according

to the number of product categories they exported annually from 1996 to 2014. The first group consists of the European Union, the United States and China which trade most of the 5,000 products in the HS list.

1. <https://tao.wto.org>

2. <https://comtrade.un.org>

3. Argentina, Australia, Brazil, Canada, China, Egypt, the European Union, India, Indonesia, Japan, Republic of Korea, Mexico, Nigeria, the Russian Federation, Kingdom of Saudi Arabia, South Africa, Turkey and the United States. For the European Union a membership of 27, i.e. excluding Croatia was presumed to have existed throughout the whole period.



The next group of countries (including Canada, India, Japan Korea and Switzerland) exports between 3,000 and 4,500 product categories. Switzerland's inclusion in this group is noteworthy given its population of just 8 million. Switzerland's open trade regime (indicated by its participation in 40 regional trade agreements)

and its strong rankings in terms of competitiveness and innovation certainly play a role. Also its proximity to the European Union market is a factor. Being a relatively large economy or being close to a large market, such as the European Union, characterize the countries in the next two groups. These include most other developed countries,

large developing countries and some eastern European and Mediterranean countries such as Ukraine, Israel and Serbia. The last two groups, which export less than 500 and 50 product categories respectively, consist mostly of least-developed countries (LDCs) and other small island economies.

Table 1: Groupings of exporters according to numbers of product categories exported (average from 1996 to 2014)

4,500 -	Saudi Arabia, Kingdom of	Honduras	Uzbekistan
China	Serbia	Iceland	Venezuela, Bolivarian Republic of
European Union	Sri Lanka	Jamaica	Yemen
United States of America	Tunisia	Jordan	Zambia
3,001-4,500	Ukraine	Kenya	Zimbabwe
Canada	United Arab Emirates	Kuwait, the State of	1-50
Chinese Taipei	Uruguay	Kyrgyz Republic	Afghanistan
India	Viet Nam	Lao People's Democratic Republic	Antigua and Barbuda
Japan	51-500	Lebanese Republic	Benin
Korea, Republic of	Albania	Libya	Bhutan
Switzerland	Algeria	Macao, China	Burkina Faso
Turkey	Angola	Madagascar	Burundi
2,001-3,000	Armenia	Malawi	Cabo Verde
Australia	Azerbaijan	Mali	Central African Republic
Brazil	Bahamas	Mauritania	Comoros
Hong Kong, China	Bahrain, Kingdom of	Mauritius	Djibouti
Indonesia	Bangladesh	Moldova, Republic of	Dominica
Malaysia	Barbados	Mongolia	Equatorial Guinea
Mexico	Belize	Mozambique	Grenada
Norway	Bolivia, Plurinational State of	Myanmar	Guinea-Bissau
Russian Federation	Brunei Darussalam	Nepal	Iraq
Singapore	Cambodia	Nicaragua	Liberia
South Africa	Cameroon	Nigeria	Maldives
Thailand	Congo	Oman	Niger
501-2,000	Côte d'Ivoire	Panama	Rwanda
Argentina	Cuba	Papua New Guinea	Saint Kitts and Nevis
Belarus	Democratic Republic of the Congo	Paraguay	Saint Lucia
Bosnia and Herzegovina	Dominican Republic	Qatar	Saint Vincent and the Grenadines
Chile	Ecuador	Senegal	Samoa
Colombia	El Salvador	Sierra Leone	Sao Tome and Principe
Costa Rica	Ethiopia	Suriname	Seychelles
Egypt	Fiji	Syrian Arab Republic	Solomon Islands
Iran	Gabon	Tajikistan	The Gambia
Israel	Georgia	Tanzania	Tonga
Kazakhstan	Ghana	The former Yugoslav Republic of Macedonia	Vanuatu
Morocco	Guatemala	Togo	
New Zealand	Guinea	Trinidad and Tobago	
Pakistan	Guyana	Uganda	
Peru	Haiti		
Philippines			

2. Product diversification over time

If diversification of exports is associated with economic development, it is important to track diversification over time. Figure 1 shows the long-term trends of product diversification for all 154 countries surveyed from 1996 to 2014, together with the total value of

annual exports during the same period. Overall, an increase in diversification is visible over time, in line with an expansion in trade. The chart shows a fairly flat trend initially. A steep rise in product diversity occurs after 2001 accompanied by growth in the value of

exports. This increase in diversification continued until the beginning of the financial crisis in 2008-09. The slump in exports that followed did not only affect overall export volumes but also led to a decline in export diversification.

Figure 1: Long-term trend for product diversification and value of global exports



Source: Calculations based on WTO IDB/UN COMTRADE.

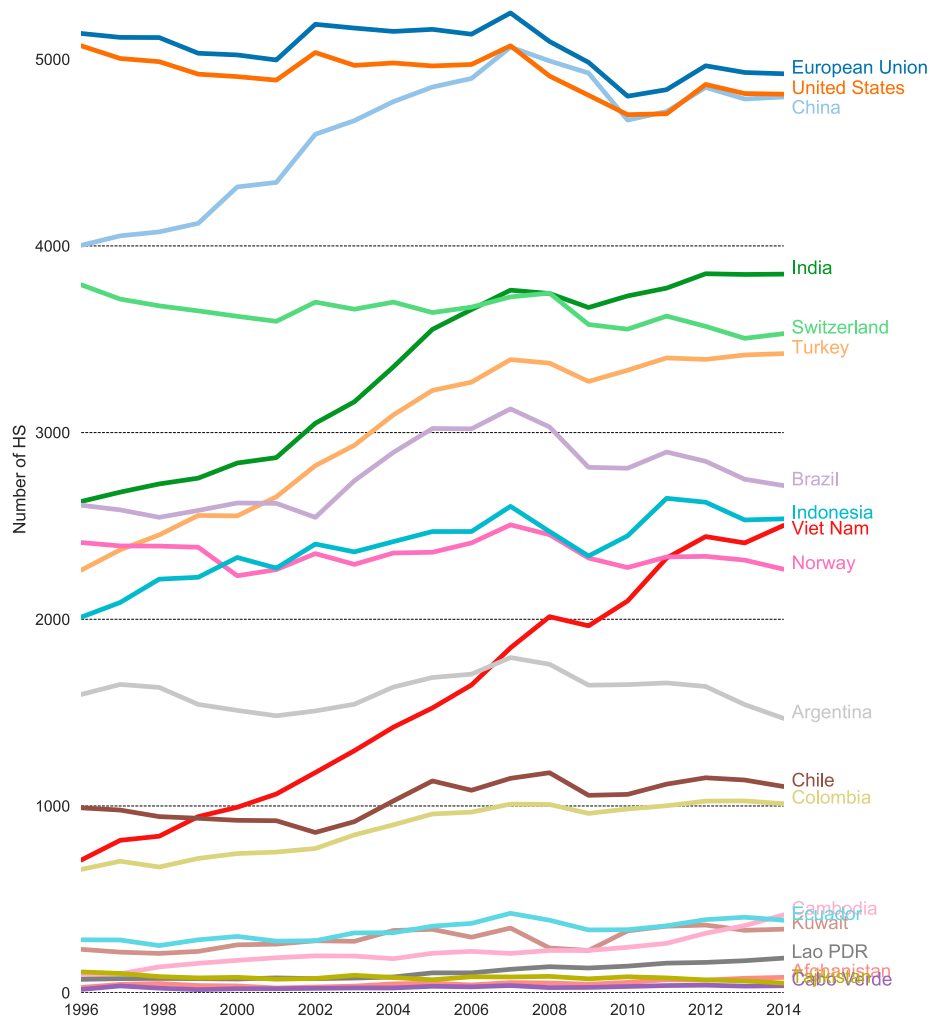
Figure 2 shows that the diversity of exports from developed countries has not changed much. This is mainly due to the stability of export structures in these countries and to the maturity of developed economies. The European Union and the United States were already exporting almost all 5,000 product categories in the 1990s and this has remained quite stable over the timeframe shown. The range of exports is also stable for

other developed economies, such as Australia, Japan and Switzerland.

By contrast, emerging economies have expanded their export diversity over the past two decades. In the early 2000s, China's export diversification saw an impressive increase, joining the European Union and the United States as the most diversified exporters. China's accession to the WTO in 2001 was probably a crucial factor in

supporting this impressive performance. India and Turkey also experienced a rapid expansion in export diversity. From 2000 to 2008, the number of product categories exported by India and Turkey increased by 32 per cent. Viet Nam doubled its diversification between 2000 and 2008, and achieved another 25 per cent increase between 2008 and 2014 while many other countries' export diversification contracted.

Figure 2: Product diversification of selected countries over time



Source: Calculations based on WTO IDB/UN COMTRADE.

Product diversification during the economic downturn

Product diversification in many countries stalled and even became negative in 2009 following the financial crisis whereas such a trend had been the exception from 1996 to 2007. In 19 of the 20 most diversified traders, there

is a decline in product diversification after 2008. The number of categories exported by China, the European Union and the United States were 8 per cent less in 2010 than the peak year of 2007. The only exception is

Viet Nam, which dramatically increased its diversification over the whole period. As export growth resumed, product diversification reached once again the pre-crisis level.

Long-term trends

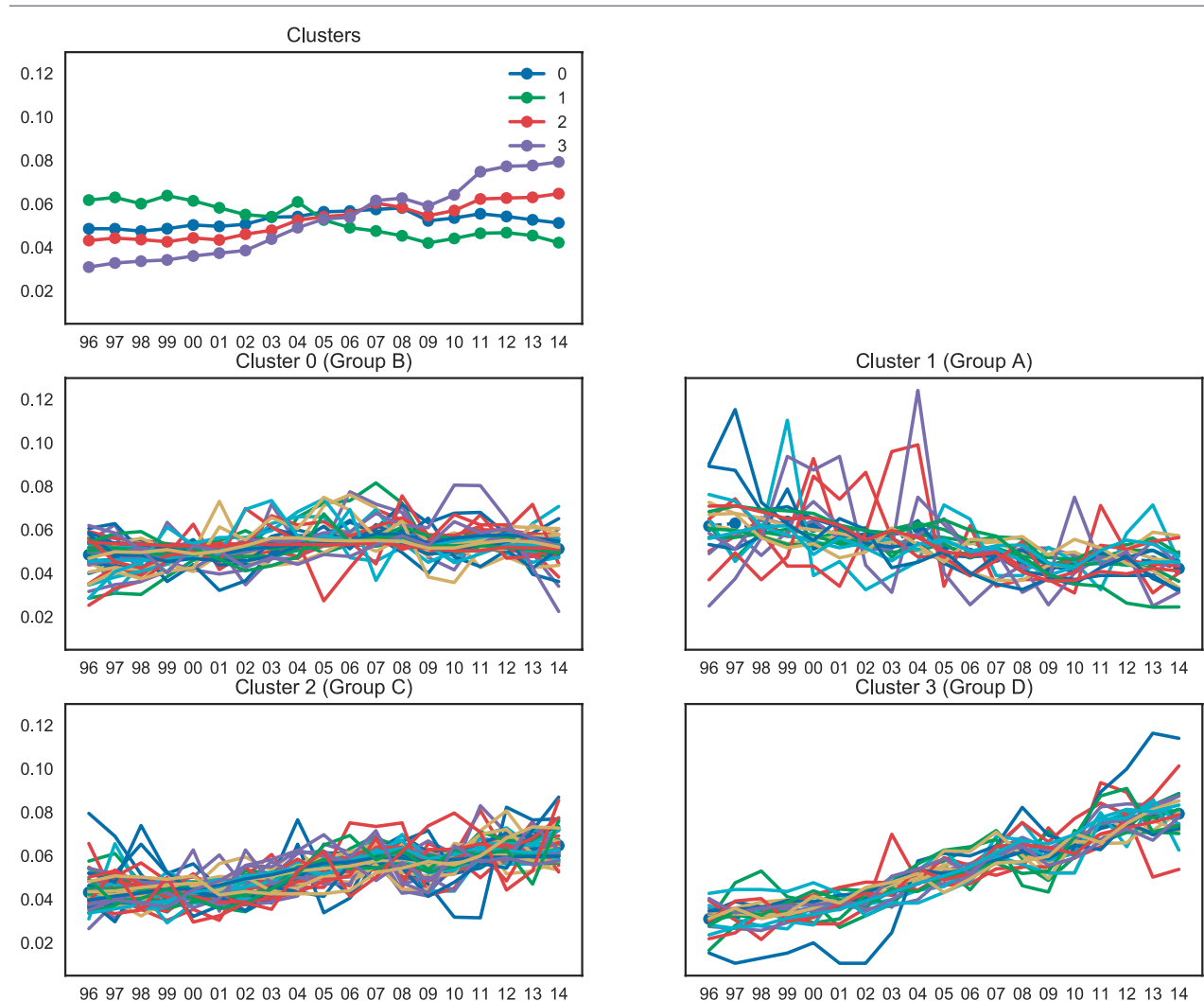
To identify long-term trends in product diversification, a clustering analysis has been used to examine the number of product categories exported by individual countries. For this analysis, an annual product diversification score (measured in terms of the number of product categories exported) was divided by the overall number of product categories from 1996 to 2014. A flat trend would show as a line of about 0.05 (1 over 19) on the vertical axis. Comparing the start and end points for the groups of countries provides an indication of the relative increase

or decrease in export diversification over time. Four groups (clusters) can be identified in terms of similar trends.

Group A consists of 20 countries, which are mostly small or island economy countries. The number of product categories exported by these countries is limited. There are large annual fluctuations in this group, with a slightly declining trend overall. Group B includes major exporters, including most G20 countries. The number of product categories exported remains relatively stable although there is some

variation in product diversification over time. Group C countries have experienced a moderate expansion in the scope of their exports. Although the growth is not striking and has relatively large variations, the upward trend is clear. Most of the countries in Group C are developing economies. Group D includes 23 countries, which have experienced a significant increase in export varieties. Among them are 11 LDCs, five Arab countries, four Eastern European countries, Ghana, Nicaragua and Viet Nam.

Figure 3: Long-term trends in product diversification: exporter clusters



Source: Calculations based on WTO IDB/UN COMTRADE.



Download the data:
www.wto.org/statistics

Group A: diversification declined	European Union	Cabo Verde	Senegal
Bahamas	Guinea	Cameroon	Seychelles
Barbados	Guyana	Colombia	Solomon Islands
Brunei Darussalam	Hong Kong, China	Congo	Sri Lanka
Comoros	Indonesia	Democratic Republic of the Congo	Suriname
Côte d'Ivoire	Israel	Djibouti	Thailand
Cuba	Japan	Dominican Republic	The former Yugoslav Republic of Macedonia
Fiji	Korea, Republic of	Ecuador	The Gambia
Grenada	Kyrgyz Republic	Egypt	Tunisia
Guinea-Bissau	Liberia	El Salvador	Turkey
Haiti	Malawi	Gabon	Vanuatu
Jamaica	Mali	Georgia	Yemen
Macao, China	Mexico	Guatemala	Zambia
Maldives	Mongolia	Honduras	Group D: diversification increased significantly
Saint Lucia	Nepal	Iceland	Afghanistan
Saint Vincent and the Grenadines	New Zealand	India	Albania
Sao Tome and Principe	Norway	Iran	Angola
Tajikistan	Panama	Kazakhstan	Armenia
Trinidad and Tobago	Philippines	Russian Federation	Bangladesh
Venezuela, Bolivarian Republic of	Russia	Sierra Leone	Bhutan
Zimbabwe	Singapore	South Africa	Bosnia and Herzegovina
Group B: diversification did not change	Switzerland	Sweden	Cambodia
Algeria	Syrian Arab Republic	Switzerland	Equatorial Guinea
Antigua and Barbuda	Togo	Taiwan	Ethiopia
Argentina	Tonga	Ukraine	Ghana
Australia	Ukraine	United States of America	Iraq
Belize	United States of America	Uruguay	Jordan
Brazil	Uruguay	Uzbekistan	Lao People's Democratic Republic
Burkina Faso	Group C: diversification increased moderately	Azerbaijan	Lebanese Republic
Canada	Azerbaijan	Bahrain, Kingdom of	Mozambique
Central African Republic	Bahrain, Kingdom of	Belarus	Nicaragua
Chile	Belarus	Benin	Qatar
China	Benin	Bolivia, Plurinational State of	Serbia
Chinese Taipei	Bolivia, Plurinational State of	Burundi	Tanzania
Costa Rica	Burundi		Uganda
Dominica			United Arab Emirates
			Viet Nam

Stability of product categories over time

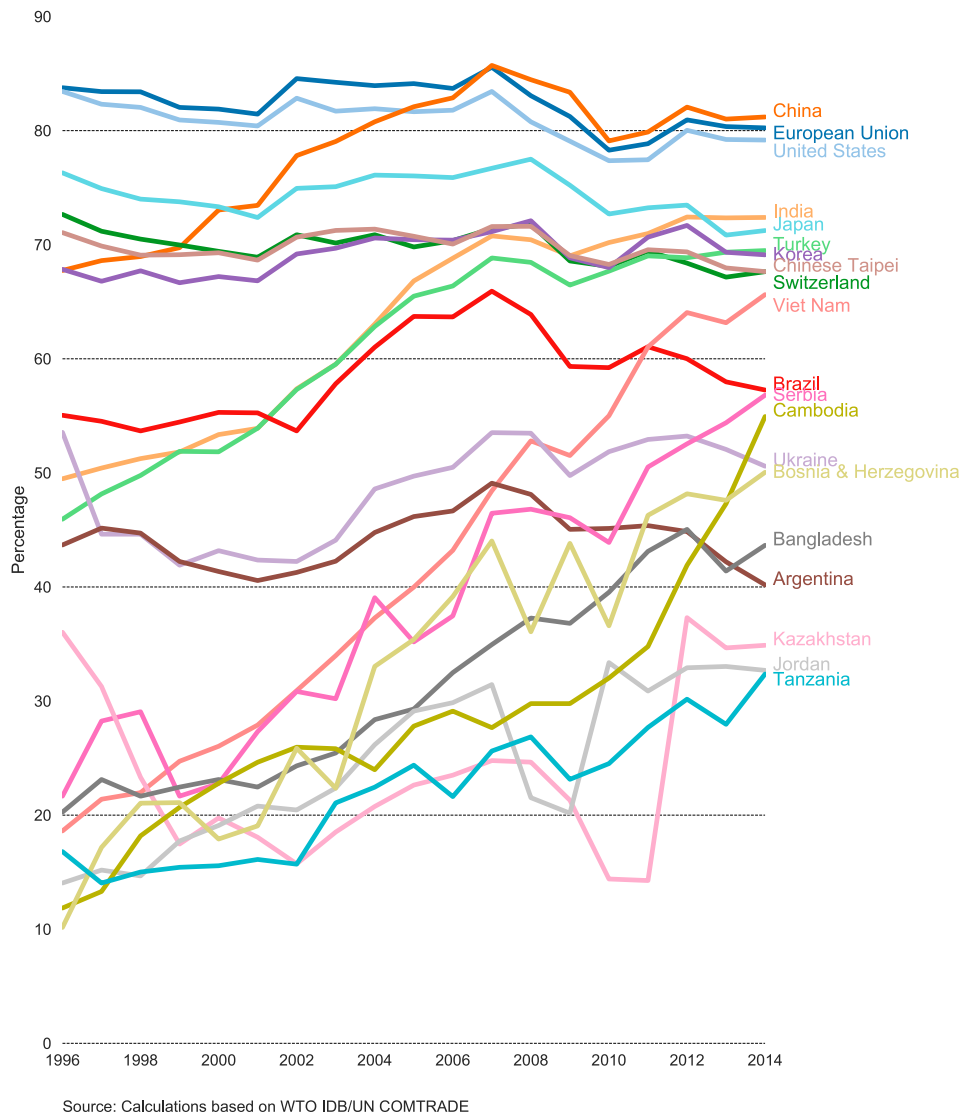
Another way of analysing product diversification over time is to look at the stability of the number of product categories across years. A stability index can be calculated by comparing the number of categories traded continuously, i.e. every single year, over a certain period with the number of individual product categories traded at any time over the reference period. The larger this ratio, the more persistent and established an exporter is in its export markets. Low ratios can indicate either erratic trading behaviour, in that a country moves in and out of

exporting certain categories, or it could be the result of significant increases in product diversification over time. To identify the latter cases, it is necessary to look at the ratio of unique product categories to the categories traded in the last year of the reference period.

The stability indexes for selected countries are illustrated in Figure 4. Not surprisingly, the major developed economies and Switzerland come out on top as very well established and diversified traders, along with China, Korea and Chinese Taipei. All

these countries have been exporting a very broad product spectrum throughout the reference period. India and Turkey quickly expanded their export diversity in the 1996-2008 time-frame and stabilized their product coverage after this. Most striking in terms of diversification are Viet Nam and Cambodia as developing countries as well as Serbia and Bosnia and Herzegovina.

Figure 4: Stability of product diversification



3. Product diversification in various product groups

This section looks at product diversification at a more disaggregated level. Since the number of product categories varies within various HS chapters, the ratio of the number of categories exported to the total number of categories listed in that chapter has been calculated. This provides an indicator of export diversification for each HS chapter. The results are

shown in Figure 5, which displays countries by income groups (high, upper-middle, lower-middle and low) and by total export values.

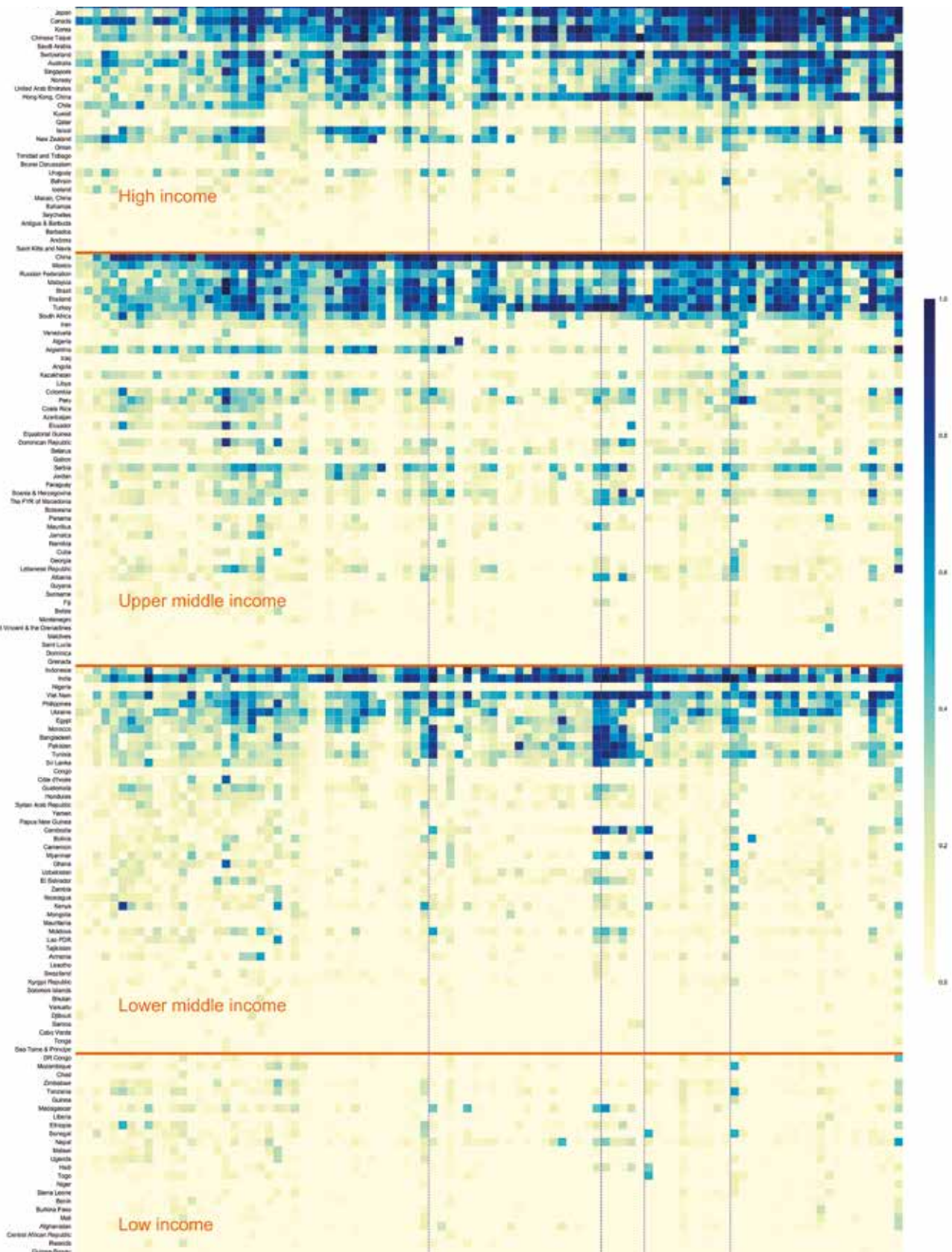
The chart reveals that higher-income countries, in general, have more diversified export structures than lower-income countries. However, within groups, the extent of diversification

can vary significantly. For example, most oil producers in the high-income group have a very low level of export diversification (even in Chapter 29, where crude oil is classified). This implies that their exports are highly concentrated in a very small number of categories, accounting for a very small portion of subheadings in that chapter.



Figure 5: Product diversification at the HS chapter level

HS subheading coverage ratio by HS chapters for all countries grouped by income levels



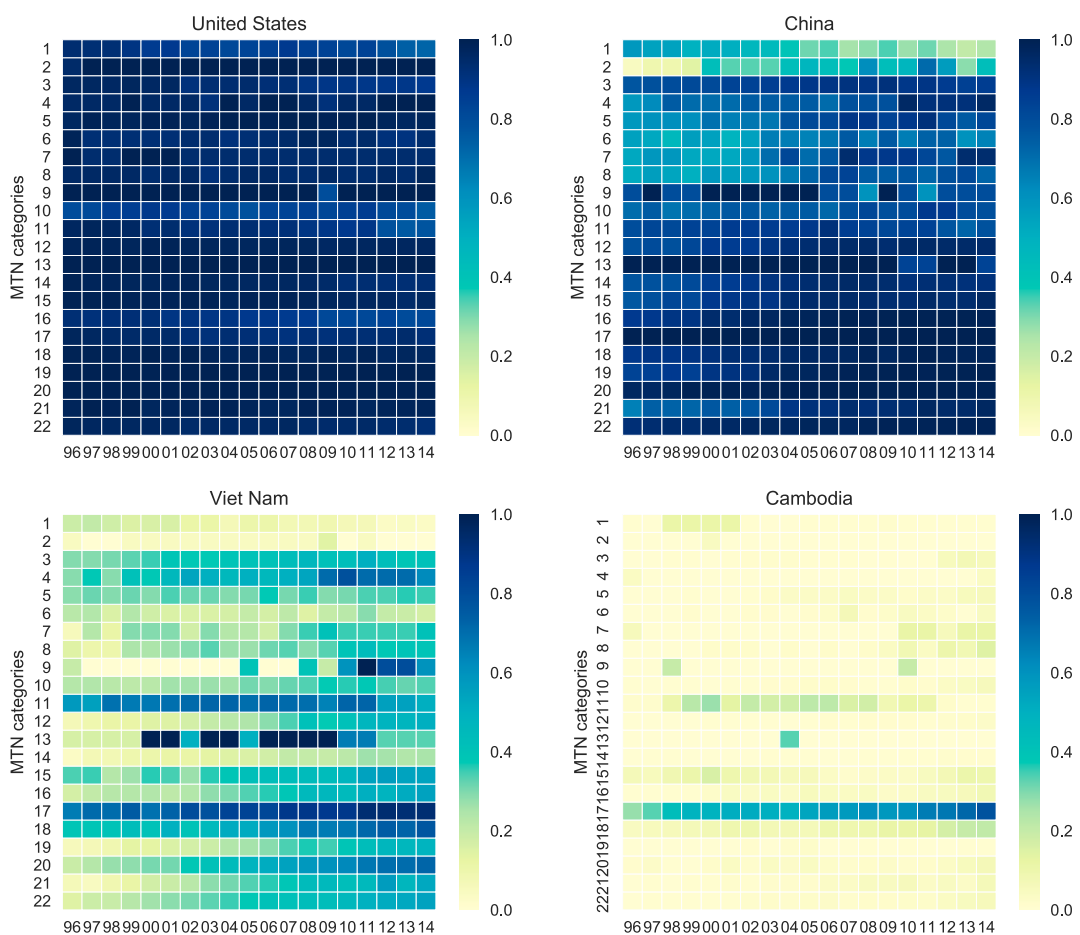
Note: The colour scale on the right shows the coverage ratio for HS subheadings. 1.0 means that all HS subheadings in an HS chapter have been traded. Countries/territories are ranked by decreasing product diversity in each group.

Many countries in the middle-income groups (upper and lower-middle) have very diversified exports. In particular, a number of large developing economies, such as Brazil, China, India and Mexico, already have an export structure similar to traditional industrialized economies. The export diversification of low-income countries, however, is very low. From a sector perspective, many developing countries have strong diversification in chapters 61, 62 and 64 (covering clothing and footwear) in line with their strong performance in terms of export values in these sectors. Many countries in middle and low-income groups also perform better in the agricultural sector than in industrial sectors, such as chemicals and machinery. Some chapters have

relatively high export diversity for many countries. These chapters normally contain a limited number of product categories, and list natural resources or non-manufactured goods, such as Chapter 78 (lead and articles thereof) and Chapter 97 (artwork antiques). It is also interesting to examine the evolution of certain countries in specific product categories. Figure 6 shows how the numbers of product categories under each Multilateral Trade Negotiations (MTN) category (see Annex 1) change over years for the United States, China, Viet Nam and Cambodia. The number of product categories exported by the United States remained generally stable across the 19-year time period although there was a slight decrease in agricultural

products, fish and textiles. For China, clothing and electrical machinery have been the strongest sectors. Other industrial sectors picked up quickly after China's accession to the WTO in 2001. A clear increase in the range of China's agriculture products has been seen in recent years. Viet Nam has recorded a strong expansion in product diversification in the past decade in most categories. This trend has been most apparent in clothing, footwear and electronics in recent years. As an LDC, Cambodia is still at the initial stage of diversification for most product categories, but it has made good progress in the clothing sector. There are also improvements in the footwear sector and in some agricultural sectors.

Figure 6: Changes in product coverage ratio over time by MTN categories for selected countries



Source: Calculations based on WTO IDB/UN COMTRADE.

Note: The colour scale on the right shows the coverage ratio for HS subheadings. 1.0 means that all HS subheadings in an HS chapter have been traded. Countries/territories are ranked by decreasing product diversity in each group.

III. Other diversification indicators

This section builds on the analysis of product diversification by looking into other areas of diversification, such as trading partner diversification and diversification over time. It could be argued that trading the same number of product categories with more trading partners reflects a stronger global presence in world markets, which in turn can be an indicator of bigger market shares. Furthermore, stable exports over time indicate continuity and a stronger presence in global markets.

1. Geographical diversification

The technological capabilities of a country can be assessed by its product diversification vis-à-vis the world market, as measured in the previous section by the diversity of its exports to the 18 major importers. However, exporting the same products to more than one market not only shows technological strength but also global “recognition”. At the same time, not being dependent on one export market is important.

A simple way of introducing the geographical dimension into the

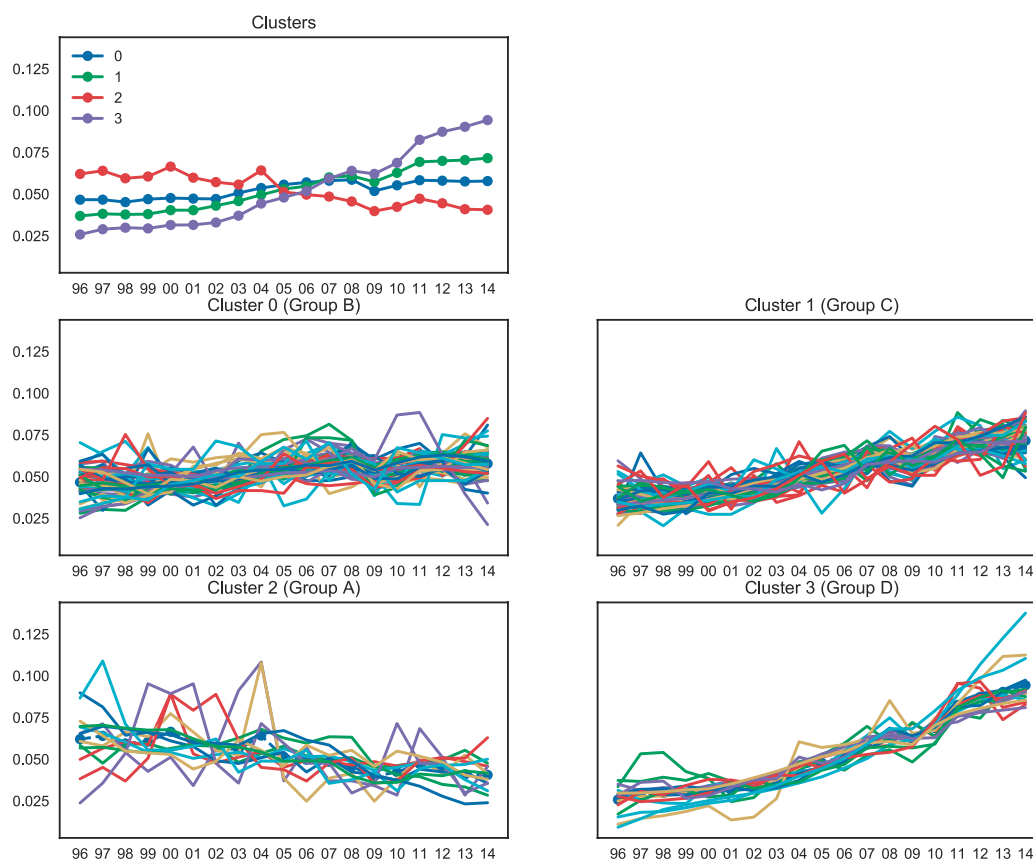
export diversification indicator is to simply multiply the number of traded product categories with the number of countries (markets) that a given country trades with in a given year:

$$HSDiv_{m,j} = \sum_{i=1}^N NHS_{m,j,i}$$

$HSDiv_{m,j}$: HS product diversification index for country m in year j
 NHS : number of HS product categories exported in year j
 $N_{m,j,i}$: number of markets that country m exported to in year j under HS subheading i

Taking into account the geographical diversification, a clustering exercise based on this new indicator has been undertaken. As was the case for Figure 3, the indicator is normalized by dividing each annual value by the cumulated 19-year period sum. Figure 7 shows how this indicator affects the country groupings.

Figure 7: Clustering countries by product and geographical diversification over time



Source: Calculations based on WTO IDB/UN COMTRADE.

A: Diversification declined
Bahamas
Barbados
Brunei Darussalam
Cuba
Fiji
Grenada
Guinea-Bissau
Haiti
Jamaica
Macao, China
Maldives
Saint Lucia
Saint Vincent and the Grenadines
Sao Tome and Principe
Tajikistan
The Gambia
Venezuela, Bolivarian Republic of
Zimbabwe
B: Diversification did not change
Algeria
Antigua and Barbuda
Argentina
Australia
Azerbaijan
Belarus
Belize
Brazil
Burkina Faso
Canada
Chile
Comoros
Côte d'Ivoire
Dominica
European Union
Guinea
Guyana

Hong Kong, China
Iran
Israel
Japan
Kazakhstan
Korea, Republic of
Kyrgyz Republic
Libya
Malawi
Mali
Mauritania
Mongolia
Nepal
New Zealand
Niger
Norway
Panama
Russian Federation
Singapore
Solomon Islands
South Africa
Switzerland
Syrian Arab Republic
Chinese Taipei
Togo
Tonga
Trinidad and Tobago
Ukraine
United States of America
Uruguay
Uzbekistan
Yemen
C: Diversification increased moderately
Afghanistan
Bahrain, Kingdom of
Benin
Bhutan
Bolivia, Plurinational State of

Burundi
Cabo Verde
Cameroon
Central African Republic
China
Colombia
Congo
Costa Rica
Democratic Republic of the Congo
Djibouti
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Gabon
Georgia
Ghana
Guatemala
Honduras
Iceland
Indonesia
Jordan
Kenya
Kuwait, the State of
Lebanese Republic
Liberia
Madagascar
Malaysia
Mauritius
Mexico
Moldova, Republic of
Morocco
Myanmar
Nicaragua
Nigeria
Oman
Pakistan
Papua New Guinea
Paraguay

Peru
Philippines
Rwanda
Saint Kitts and Nevis
Samoa
Saudi Arabia, Kingdom of
Senegal
Seychelles
Sierra Leone
Sri Lanka
Suriname
Tanzania
Thailand
The former Yugoslav Republic of Macedonia
Tunisia
Uganda
Vanuatu
Zambia
D: Diversification increased significantly
Albania
Angola
Armenia
Bangladesh
Bosnia and Herzegovina
Cambodia
Ethiopia
India
Iraq
Lao People's Democratic Republic
Mozambique
Qatar
Serbia
Turkey
United Arab Emirates
Viet Nam



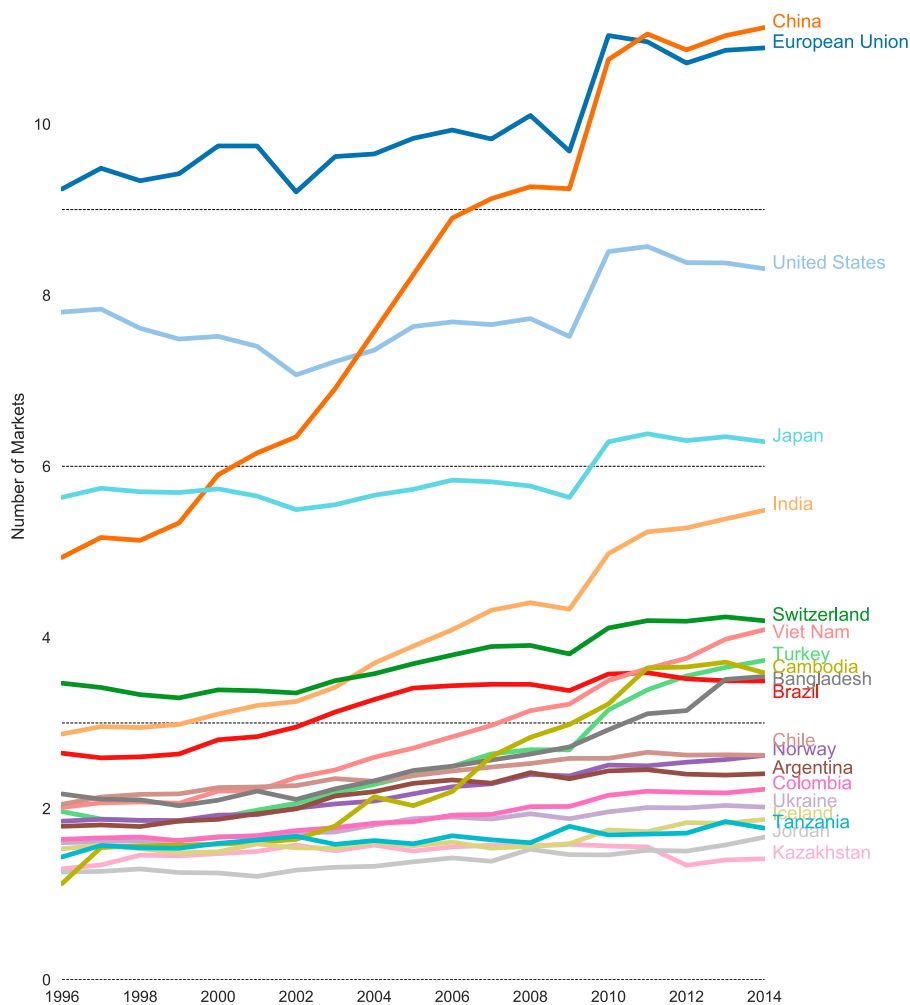
As shown in the table, adding the numbers of export markets has changed the groupings. For certain countries, downward trends in terms of numbers of product categories traded have changed to upward trends for the number of trading partners, while for others the opposite is true. For example, India and Turkey switched from the moderate increase category to the significant increase category. This indicates that the two countries which already had an

extensive diversification of product categories have expanded at the same time their geographical coverage.

Another way to look at the geographical or market diversification is to calculate the average number of trading partner per product category, which could provide more easily understandable figures. Figure 8 shows the results. The European Union stands out as the most geographically diverse economy (with an average of ten trading

partners per product category) closely followed by China (with eight) and the United States (with eight), clearly distancing themselves from all other economies. While the partner ratios for the United States and the European Union remained relatively stable over time, China doubled its partner ratio over the same period. Cambodia and Viet Nam are noteworthy in that they have more than doubled their partner ratio to 3.6 and 4.1 respectively.

Figure 8: Annual average number of trading partners per product category



Source: Calculations based on WTO IDB/UN COMTRADE.

2. Historical performance

Another important factor is how many years a country has exported individual product categories. When the distribution of all product categories is examined in terms of the number of years these products have been traded, there are two clear patterns. The first group includes big traders which have relatively stable product coverage over the years, with most products exported

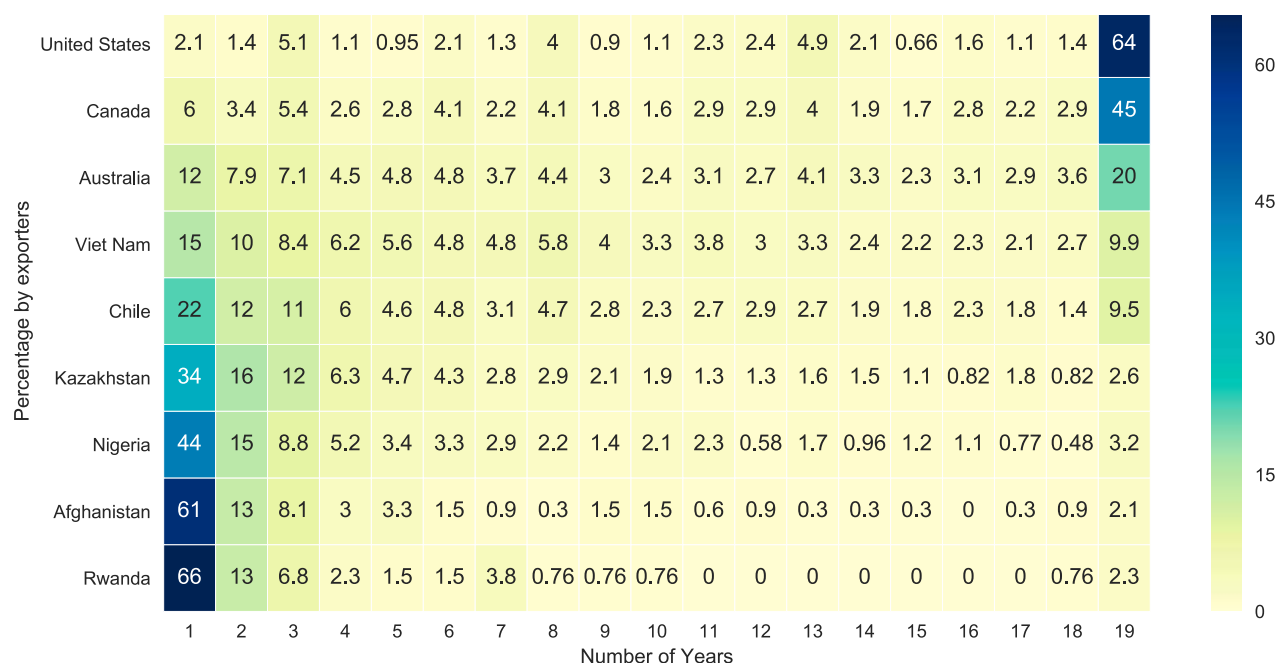
regularly in the 19-year period. For the second group, mostly small traders, the number of traded product categories tends to be volatile, with the majority of products exported for only one or two years and with very few products exported across the full period.

Figure 9 shows the percentage of product categories exported

consistently for selected countries. For countries such as the United States and Canada, about half of their product categories have export flows for all 19 years, while for some other countries, such as Kazakhstan or Nigeria, only about 3 per cent of their product categories have exports for all 19 years.

Figure 9: Percentage of product categories exported consistently over a number of years for selected countries

(darker colour represents higher percentage; see legend on the right)



Source: Calculations based on WTO IDB/UN COMTRADE.

3. Product diversification index

A product diversification index can be constructed by taking into account three factors: (1) the number of product categories covered by a country's exports, (2) the range of markets, and (3) the historical performance. For the latter two factors, a time span of three years has been used. In other words, the index for a specific year would be the number of product categories adjusted by geographical diversity and historical performance over the past three years. A natural logarithm transformation is used to scale down the range.

$$HSDiv_{m,y} = \ln \left(\sum_j^y y-3 \sum_{i=1}^{NHS_j} N_{m,j,i} \right)$$

$HSDiv_{m,y}$: HS product diversification index for country m in year y

NHS_j : number of HS subheadings exported in year j

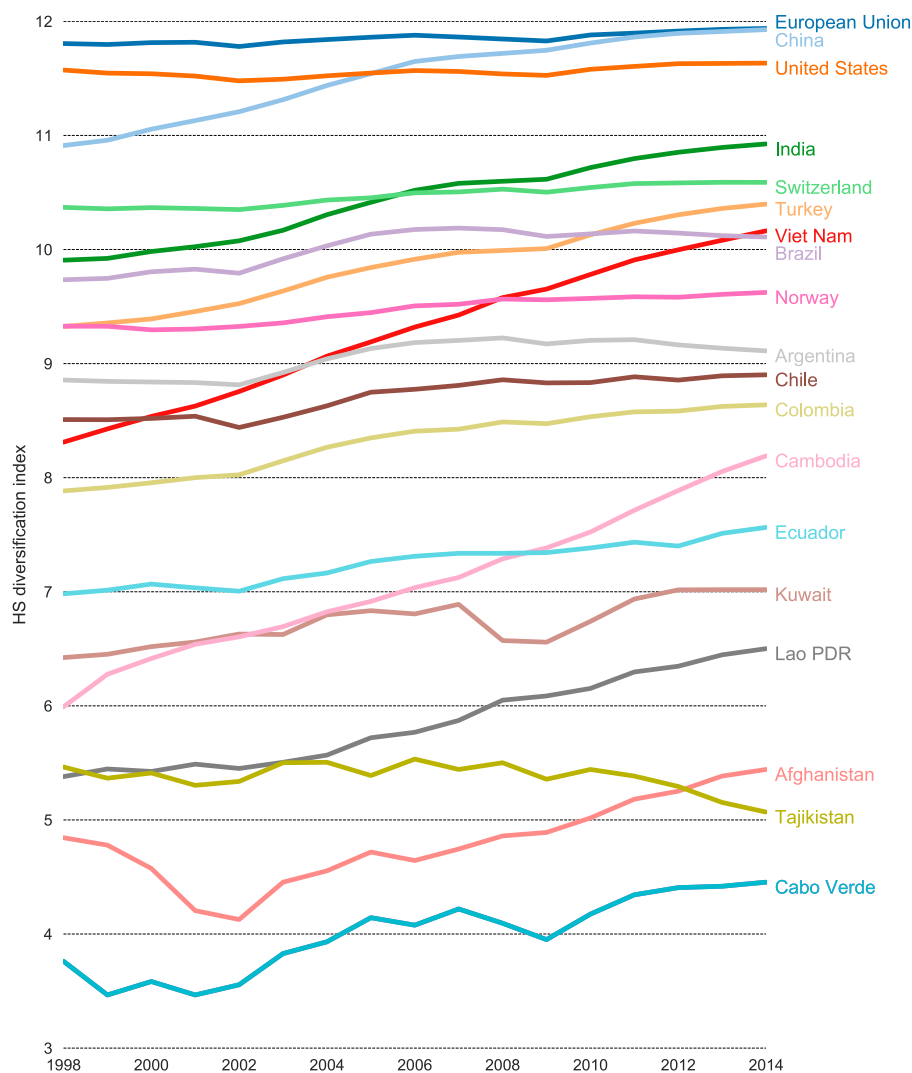
$N_{m,j,i}$: number of markets country m exported to in year j under HS subheading i

Figure 10 shows the index of selected countries in 1998-2014 and Annex 2 presents the index for all countries in the study. It is not surprising that the patterns in Figure 10 look similar to the product diversification shown in

Figure 2, but there are differences as the index also reflects geographical and historical factors regarding diversification. For example, the number of product categories exported by India and Turkey has remained static since 2006 (see Figure 2), following rapid growth in the earlier years of the time period. However, diversification in terms of market coverage has strengthened (see Figure 8). This has been captured in the diversification index as reflected in Figure 10, with regular upward trajectories for most developing countries as they established themselves at the global level.



Figure 10: Product diversification index for selected countries over time



Source: Calculations based on WTO IDB/UN COMTRADE.

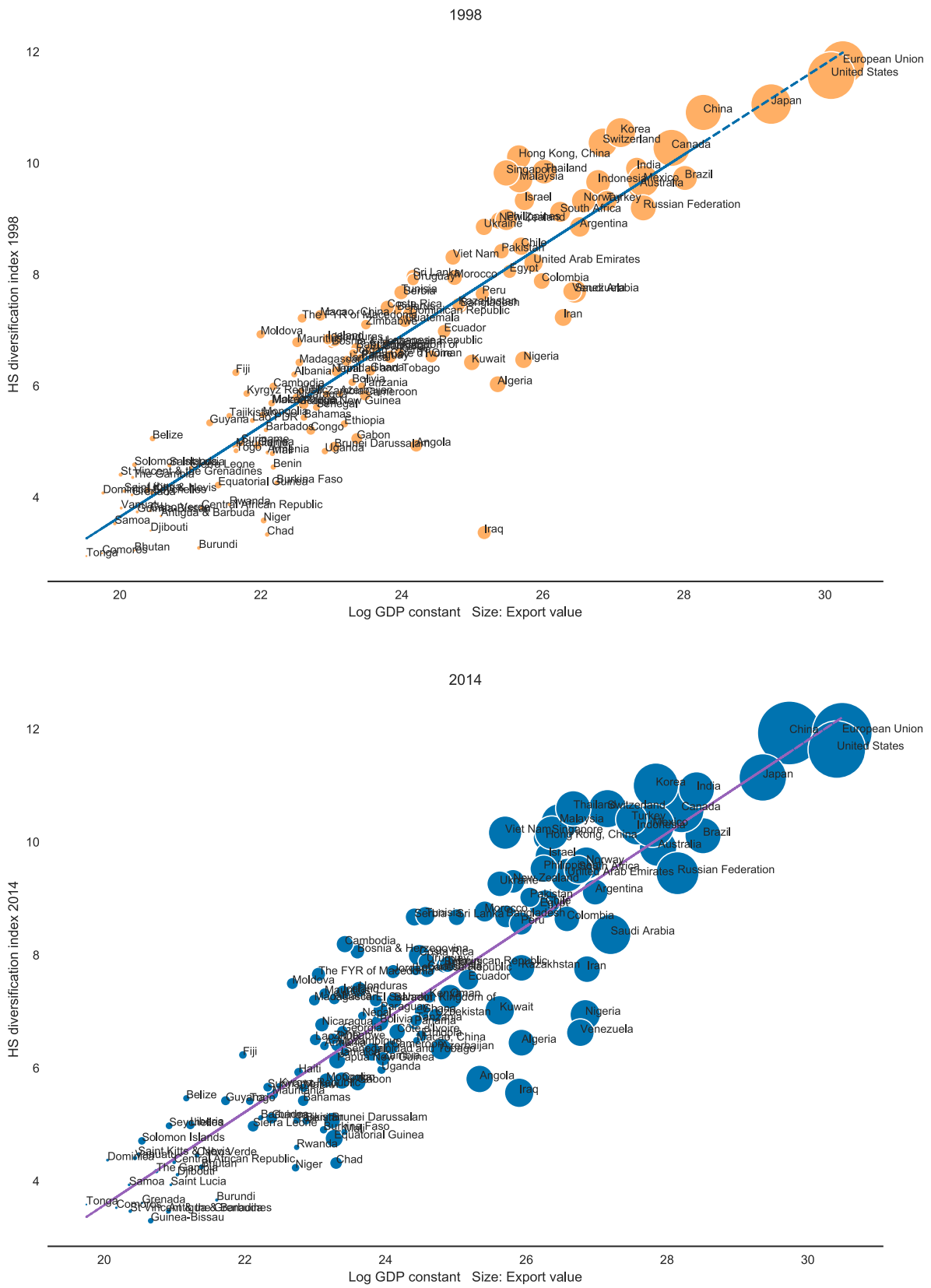
As discussed earlier, there is a clear positive relationship between product diversification and the size of the economy. This can be verified with the product diversification index. Figure 11 shows a strong correlation between product diversification and GDP. The trend is also correlated with the volume of trade, as a greater number of large bubbles (signifying large traders) are found in the upper right quadrant. It is evident that larger economies tend to have more diversified exports and

a larger volume of trade. The trend remains the same for the time-frame of 1998 to 2014, with the largest economies and traders featuring at the top of the upward trajectory, indicating a strong correlation between export diversification and size of economy/trade.

The countries with a small range of exports have more scope to diversify. Therefore, in theory, it should be easier for them to expand the range

of their exports. However, their export diversification has not changed significantly during the 15 year time-frame for many of them. The significant increases occurred for the group of countries in the middle of the chart, which are mostly middle-income developing countries. The developed countries in the upper right quarter of the chart have maintained an upward trend for export diversification, but at a very moderate pace.

Figure 11: Correlation between product diversification, size of economy and trade



Source: Calculations based on WTO IDB/UN COMTRADE and World Bank WDI Databases.



Download the data:
www.wto.org/statistics

IV. Conclusions

Diversification of exports as a means of obtaining bigger market shares is an important policy objective for many countries. This study has provided an overview of export diversification for various countries over a relatively long time period of almost two decades. The product diversification index - constructed on the basis of product coverage, market reach and historical performance - can be used as an indicator of the

technological and productive capacity of a country based on the breadth of its participation in the world market. This study finds that export diversity has increased in general over the past 20 years but in a very uneven way across countries. Many middle-sized developing countries have witnessed rapid growth in terms of diversification. This is particularly the case for some emerging countries, such as China and India. Likewise, some Asian LDCs

such as Bangladesh, Cambodia and Lao People's Democratic Republic have achieved significant increases, both in terms of product coverage and in market reach. The variety of exports from developed countries has not changed significantly due to the maturity of their export structure. On the other hand, most small sized developing countries, including LDCs, still have a very narrow range of export diversification.

References

R. Hausmann, C.A. Hidalgo, "The network structure of economic output", *Journal of Economic Growth*, 16 (2011) 309-342.
V. Markhonko, "Asymmetries in official international trade statistics and analysis of globalization", Discussion paper of International Conference on the Measurement of International Trade and Economic Globalization (2014).

Annex 1: Multilateral trade negotiations (MTN) product categories

N°	Categories
01	Animal products
02	Dairy products
03	Fruits, vegetables, plants
04	Coffee, tea
05	Cereals and preparations
06	Oilseeds, fats and oils
07	Sugars and confectionery
08	Beverages and tobacco
09	Cotton
10	Other agricultural products
11	Fish and fish products
12	Minerals and metals
13	Petroleum
14	Chemicals
15	Wood, paper, etc
16	Textiles
17	Clothing
18	Leather, footwear, etc
19	Non-electrical machinery
20	Electrical machinery
21	Transport equipment
22	Manufactures n.e.s.

For a detailed HS-based definition of these categories please see the technical notes of the country/territory profiles.

Annex 2: HS product diversification index

Code	Country Name	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AFG	Afghanistan	4.8	4.8	4.6	4.2	4.1	4.5	4.6	4.7	4.6	4.7	4.9	4.9	5	5.2	5.3	5.4	5.4
ALB	Albania	6.2	6.2	6.2	6.3	6.2	6.4	6.4	6.5	6.6	6.7	6.8	6.9	7	7	7.1	7.2	7.2
DZA	Algeria	6	6.1	6	6.2	6.3	6.3	6.4	6.4	6.4	6.5	6.6	6.4	6.5	6.4	6.3	6.4	6.4
AGO	Angola	4.9	4.9	4.9	4.9	5	5	5.3	5.2	5.3	5.4	5.5	5.6	5.5	5.9	5.9	5.7	5.8
ATG	Antigua and Barbuda	3.7	3.7	3.6	3.5	3.7	4	4	3.8	4.1	4.1	4.1	3.7	3.6	3.9	3.7	4	3.5
ARG	Argentina	8.9	8.8	8.8	8.8	8.8	8.9	9	9.1	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.1	9.1
ARM	Armenia	4.8	4.8	5.2	5.3	5.4	5.5	5.6	5.6	5.8	5.9	6.1	6	6.1	6.2	6.3	6.4	6.4
AUS	Australia	9.6	9.6	9.6	9.7	9.7	9.7	9.8	9.8	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
AZE	Azerbaijan	5.9	5.7	5.8	5.7	5.6	5.7	5.9	6.1	6.3	6.3	6.3	6.2	6.2	6.3	6.3	6.3	6.3
BHS	Bahamas	5.4	5.5	5.5	5.5	5.5	5.4	5.4	5.5	5.4	5.4	5.4	5.3	5.3	5.3	5.4	5.5	5.4
BHR	Bahrain, Kingdom of	6.7	6.6	6.6	6.7	6.7	6.7	6.8	6.8	6.9	6.9	6.9	6.9	7	7.1	7.1	7.1	7.2
BGD	Bangladesh	7.4	7.5	7.5	7.5	7.5	7.6	7.8	7.9	8	8.1	8.2	8.2	8.3	8.5	8.5	8.6	8.7
BRB	Barbados	5.2	5.3	5.4	5.1	4.9	5	5.1	5	5.1	5	5	5	5	5.1	5.1	5.1	5.1
BLR	Belarus	7.4	7.4	7.3	7.3	7.4	7.4	7.6	7.6	7.7	7.6	7.7	7.7	7.7	7.8	7.7	7.8	7.8
BLZ	Belize	5.1	5.2	5.3	5.1	5	5.1	5.3	5.3	5.4	5.3	5.2	5	5.2	5.4	5.3	5.4	5.5
BEN	Benin	4.5	4.6	4.6	4.7	4.6	4.5	4.5	4.7	5	4.9	4.9	4.8	4.9	5.1	5.1	5.1	5.1
BTN	Bhutan	3	3.4	3.2	3.5	3.6	4	3.9	4.2	4.1	4.3	4.4	4.4	4.5	4.6	4.6	4.2	4.2
BOL	Bolivia	6.1	6	6.2	6.1	6	6.2	6.4	6.6	6.7	6.7	6.8	6.8	6.9	6.9	6.8	6.8	6.8
BIH	Bosnia and Herzegovina	6.7	6.9	6.8	6.8	7	7	7.3	7.4	7.6	7.7	7.6	7.8	7.7	7.9	7.9	8	8.1
BWA	Botswana			3.7	4.2	4.4	4.4	4.9	4.9	4.9	4.9	4.7	4.6	4.3	4.3	4.5	4.4	4.5
BRA	Brazil	9.7	9.7	9.8	9.8	9.8	9.9	10	10.1	10.2	10.2	10.2	10.1	10.1	10.2	10.1	10.1	10.1
BRN	Brunei Darussalam	4.9	5	5.1	5.2	5.3	5.3	5.3	5.4	5.1	5	5.1	5	4.9	5	5	5	5.1
BFA	Burkina Faso	4.3	4.3	4.5	4.5	4.4	4.6	4.8	4.7	4.5	4.5	4.6	4.6	4.6	4.8	4.6	4.7	4.9
BDI	Burundi	3.1	3	3	3	3.3	3.5	3.4	3.5	3.5	3.3	3.5	3.5	3.6	3.9	3.8	4	3.7
CPV	Cabo Verde	3.8	3.5	3.6	3.5	3.6	3.8	3.9	4.1	4.1	4.2	4.1	4	4.2	4.3	4.4	4.4	4.5
KHM	Cambodia	6	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7	7.1	7.3	7.4	7.5	7.7	7.9	8.1	8.2
CMR	Cameroon	5.8	5.8	5.8	5.8	5.9	6	6	6.1	6.2	6.2	6.3	6.3	6.3	6.3	6.4	6.4	6.4
CAN	Canada	10.3	10.3	10.3	10.3	10.3	10.3	10.4	10.4	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.6	10.6
CAF	Central African Republic	3.8	3.8	3.9	4	4	4.1	4.2	4.2	4.4	4.5	4.6	4.5	4.6	4.6	4.6	4.5	4.3
TCD	Chad	3.3	3.4	3.4	3.4	3.2	3.6	3.7	3.9	3.7	3.8	3.8	4.3	4.1	4	3.9	4.2	4.3
CHL	Chile	8.5	8.5	8.5	8.5	8.4	8.5	8.6	8.7	8.8	8.8	8.9	8.8	8.8	8.9	8.9	8.9	8.9
CHN	China	10.9	11	11.1	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.7	11.7	11.8	11.9	11.9	11.9	11.9
COL	Colombia	7.9	7.9	8	8	8	8.1	8.3	8.3	8.4	8.4	8.5	8.5	8.5	8.6	8.6	8.6	8.6
COM	Comoros	3	3.3	2.9	3.2	3.1	3.4	3.3	3.5	3.5	3.2	3.3	3.4	3.5	3.3	3.2	3.6	3.5
COG	Congo	5.2	5.3	5.4	5.5	5.4	5.5	5.6	5.7	5.8	5.8	5.8	5.9	5.8	5.9	5.9	5.8	5.8
CRI	Costa Rica	7.4	7.5	7.5	7.5	7.5	7.5	7.6	7.7	7.8	7.8	7.8	7.8	7.8	7.9	7.9	8	8
CIV	Côte d'Ivoire	6.5	6.5	6.5	6.6	6.6	6.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.5	6.6	6.6	6.6
CUB	Cuba	5.9	6	5.9	5.9	5.9	6	6.1	6	6	6	6	5.9	5.9	6	6	6.1	6.1
COD	Democratic Republic of the Congo	5.1	4.9	5	4.9	4.9	5	5.2	5.4	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.7	5.7
DJI	Djibouti	3.4	3.3	3.1	3	3.2	3.4	3.9	3.7	3.7	3.9	4	4.2	3.9	4	4	4.2	4.1



Annex 2: HS product diversification index

Code	Country Name	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DMA	Dominica	4.1	4.4	4.1	4.2	3.9	4	4.2	4.2	4.3	4.2	4.4	4.3	4.2	4.3	4.3	4.3	4.4
DOM	Dominican Republic	7.3	7.3	7.3	7.3	7.4	7.5	7.5	7.6	7.7	7.7	7.8	7.7	7.8	7.8	7.8	7.8	7.8
ECU	Ecuador	7	7	7.1	7	7	7.1	7.2	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.4	7.5	7.6
EGY	Egypt	8.1	8	8.1	8.1	8.1	8.2	8.3	8.5	8.5	8.6	8.5	8.5	8.6	8.8	8.8	8.8	8.9
SLV	El Salvador	6.7	6.6	6.7	6.7	6.8	6.8	6.9	6.9	7	6.9	7	7	7	7.1	7.1	7.2	7.2
GNQ	Equatorial Guinea	4.2	4.2	4.2	4.4	4.3	4.5	4.6	4.7	4.6	4.8	4.7	4.7	4.8	4.9	4.7	4.8	4.8
ETH	Ethiopia	5.3	5.3	5.4	5.6	5.4	5.6	5.8	5.9	6	6.1	6.2	6.2	6.2	6.4	6.4	6.5	6.6
EU	European Union (27)	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.9	11.9	11.9	11.8	11.8	11.9	11.9	11.9	11.9	11.9
FJI	Fiji	6.2	6.3	6.3	6.2	6.1	6.1	6.2	6.2	6.1	6.2	6.1	6.1	6.1	6.2	6.2	6.3	6.2
GAB	Gabon	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.5	5.6	5.5	5.6	5.6	5.5	5.6	5.7	5.7	5.7
GEO	Georgia	5.7	5.7	5.8	5.9	5.8	5.9	6	6.2	6.2	6.2	6.3	6.3	6.4	6.4	6.5	6.6	6.6
GHA	Ghana	6.3	6.3	6.3	6.3	6.4	6.5	6.6	6.6	6.7	6.7	6.7	6.7	6.7	6.9	6.9	7	7
GRD	Grenada	4	4.1	4	4.1	3.9	3.8	4.1	3.5	3.1	3.3	3.3	3	3.2	3.4	3	3.5	3.6
GTM	Guatemala	7.2	7.2	7.2	7.2	7.3	7.3	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.6	7.7	7.7
GIN	Guinea	4.9	5	5.1	5.1	5.1	5.2	5.3	5.3	5.3	5.3	5.3	5.1	5.2	5.2	5.1	5	5.1
GNB	Guinea-Bissau	3.7	3.6	3.5	3.4	3.7	3.9	4.4	3.3	3.6	3	3.2	3	2.9	3.6	3.4	2.9	3.3
GUY	Guyana	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.4	5.5	5.4	5.4	5.3	5.4
HTI	Haiti	5.9	5.9	5.8	5.8	5.7	5.8	5.7	5.7	5.6	5.6	5.6	5.6	5.6	5.7	5.8	5.9	5.9
HND	Honduras	6.8	6.8	6.8	6.8	6.9	6.9	7	7	7	7.1	7.1	7.1	7.2	7.2	7.2	7.3	7.4
HKG	Hong Kong, China	10.1	10.1	10.1	10.1	10	10	10.1	10.1	10.1	10.1	10.1	10	10.1	10.1	10.1	10.1	10.1
ISL	Iceland	6.8	6.8	6.9	6.9	6.9	7	7	7.1	7.1	7.1	7.2	7.1	7.2	7.2	7.2	7.3	7.3
IND	India	9.9	9.9	10	10	10.1	10.2	10.3	10.4	10.5	10.6	10.6	10.6	10.7	10.8	10.9	10.9	10.9
IDN	Indonesia	9.7	9.7	9.8	9.8	9.8	9.8	9.9	10	10	10	10	10	10.1	10.2	10.2	10.2	10.2
IRN	Iran	7.2	7.3	7.4	7.4	7.5	7.6	7.7	7.8	7.8	7.9	7.9	7.8	7.9	7.9	7.9	7.8	7.7
IRQ	Iraq	3.4	3.6	3.9	3.5	3.6	3.8	4.6	4.8	4.8	4.9	5.1	5	5	5.2	5.3	5.5	5.6
ISR	Israel	9.3	9.4	9.4	9.4	9.4	9.4	9.5	9.6	9.6	9.6	9.7	9.7	9.7	9.7	9.8	9.8	9.8
JAM	Jamaica	6.5	6.4	6.3	6.2	6.2	6.3	6.3	6.3	6.3	6.2	6.2	6.1	6.1	6.2	6.1	6.2	6.2
JPN	Japan	11.1	11.1	11.1	11	11	11	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.2	11.1	11.1
JOR	Jordan	6.6	6.7	6.7	6.8	6.9	7	7.2	7.3	7.4	7.4	7.1	7.1	7.4	7.4	7.6	7.6	7.7
KAZ	Kazakhstan	7.5	7.2	7.2	7.2	7.1	7.2	7.3	7.4	7.5	7.6	7.6	7.5	7	7	7.4	7.6	7.8
KEN	Kenya	6.6	6.6	6.6	6.6	6.7	6.7	6.9	6.9	7	7	7	7	7.1	7.1	7.1	7.2	7.3
KOR	Korea, Republic of	10.5	10.6	10.6	10.6	10.6	10.7	10.7	10.8	10.8	10.8	10.8	10.8	10.9	10.9	11	11	11
KWT	Kuwait, the State of	6.4	6.5	6.5	6.6	6.6	6.6	6.8	6.8	6.8	6.9	6.6	6.6	6.7	6.9	7	7	7
KGZ	Kyrgyz Republic	5.9	5.5	5.6	5.4	5.4	5.7	5.9	5.9	5.9	6	6.2	6.1	6.2	6.2	6.1	5.8	5.7
LAO	Lao People's Democratic Republic	5.4	5.4	5.4	5.5	5.5	5.5	5.6	5.7	5.8	5.9	6	6.1	6.2	6.3	6.3	6.4	6.5
LBN	Lebanese Republic	6.8	6.8	6.8	6.9	7	7.1	7.2	7.4	7.5	7.6	7.4	7.3	7.5	7.6	7.7	7.8	7.7
LSO	Lesotho			3.4	4.3	4.8	4.9	4.9	5	5	5.1	5.1	5	5.2	5.2	5.2	5	5.1
LBR	Liberia, Republic of	4.1	4.4	4.7	4.5	4.6	4.6	4.4	4.6	4.7	4.5	4.8	4.8	4.9	5.1	5.2	5.2	5

Annex 2: HS product diversification index

Code	Country Name	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
LBY	Libya	5.6	5.4	5.5	5.6	5.6	5.8	5.8	5.9	5.9	5.9	5.9	5.9	6	5.9	5.6	5.8	5.9
MAC	Macao, China	7.3	7.2	7.3	7.3	7.3	7.4	7.5	7.4	7.3	7.3	7.3	7.1	6.9	6.8	6.7	6.7	6.5
MDG	Madagascar	6.4	6.5	6.5	6.6	6.5	6.6	6.7	6.7	6.8	6.8	6.9	6.9	6.9	7	7	7.1	7.2
MWI	Malawi	5.7	5.7	5.7	5.5	5.5	5.6	5.6	5.7	5.6	5.7	5.7	5.8	5.6	5.6	5.5	5.5	5.6
MYS	Malaysia	9.7	9.7	9.8	9.8	9.8	9.9	10	10.1	10.1	10.1	10.2	10.2	10.2	10.3	10.3	10.3	10.3
MDV	Maldives	4.1	4.3	4.8	4.8	4.9	4.6	4.3	4.1	4	4.1	4.2	4.1	4	4.2	4.1	4.2	4.5
MLI	Mali	4.8	4.7	4.9	5	4.6	4.8	4.8	4.9	5.1	5	4.9	4.8	4.9	4.9	4.9	4.9	4.9
MRT	Mauritania	4.9	5.1	5.1	5	5	5.1	5.2	5.1	5.2	5.2	5.2	5	5	5.2	5.2	5.3	5.5
MUS	Mauritius	6.8	6.8	6.8	6.8	6.8	6.8	6.9	6.9	7	7	7.1	7	7.1	7.2	7.2	7.3	7.3
MEX	Mexico	9.7	9.7	9.7	9.7	9.7	9.7	9.8	9.9	9.9	10	10	10	10.1	10.2	10.2	10.3	10.3
MDA	Moldova, Republic of	6.9	6.8	6.9	6.9	6.8	6.9	7	7.1	7.1	7.2	7.3	7.2	7.3	7.4	7.4	7.5	7.5
MNG	Mongolia	5.5	5.5	5.7	5.8	5.8	5.9	6.1	6.2	6	6.1	5.9	5.7	5.8	5.8	5.9	5.8	5.8
MNE	Montenegro									4.3	4.8	5.2	5.3	5.4	5.4	5.5	5.5	5.5
MAR	Morocco	7.9	8	8	8.1	8.1	8.2	8.3	8.3	8.4	8.5	8.6	8.5	8.6	8.6	8.7	8.7	8.8
MOZ	Mozambique	5.7	5.7	5.8	5.6	5.4	5.4	5.5	5.6	5.7	5.9	5.9	6	6	6.2	6.3	6.4	6.4
MMR	Myanmar	6.6	6.7	6.9	7	7	7	6.9	6.9	6.9	7	7.1	7.1	7.1	7.3	7.3	7.3	7.5
NAM	Namibia			4.5	5	5.4	5.5	5.6	5.8	5.8	5.8	5.8	5.7	5.7	5.8	5.7	6	5.9
NPL	Nepal	6.3	6.4	6.6	6.7	6.7	6.8	6.9	6.9	6.9	6.9	7	6.9	6.9	7	6.8	6.9	6.9
NZL	New Zealand	9	9	9	9	9	9.1	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.3	9.3	9.3	9.3
NIC	Nicaragua	5.8	5.8	5.9	6	6	6.1	6.2	6.3	6.4	6.4	6.5	6.5	6.5	6.6	6.7	6.7	6.8
NER	Niger	3.6	3.7	3.9	3.7	3.7	3.9	4	3.7	4.1	4.1	4.2	3.7	3.8	4	4	4.2	4.2
NGA	Nigeria	6.5	6.4	6.4	6.3	6.3	6.5	6.6	6.6	6.6	6.7	6.8	6.8	6.9	6.9	7	6.9	6.9
NOR	Norway	9.3	9.3	9.3	9.3	9.3	9.4	9.4	9.4	9.5	9.5	9.6	9.6	9.6	9.6	9.6	9.6	9.6
OMN	Oman	6.5	6.5	6.6	6.6	6.7	6.7	6.9	6.9	6.8	6.9	6.7	6.7	6.9	7.1	7.2	7.2	7.3
PAK	Pakistan	8.4	8.4	8.4	8.4	8.4	8.5	8.6	8.7	8.8	8.8	8.8	8.8	8.9	8.9	9	9	9
PAN	Panama	6.5	6.5	6.4	6.4	6.4	6.3	6.4	6.5	6.6	6.5	6.7	6.6	6.6	6.7	6.7	6.7	6.8
PNG	Papua New Guinea	5.7	5.6	5.6	5.7	5.7	5.8	5.9	6	6	6	6.1	6.2	6.1	6.3	6.2	6.1	6.1
PRY	Paraguay	6.5	6.4	6.4	6.4	6.2	6.4	6.5	6.6	6.7	6.8	6.9	6.9	6.9	7	6.9	7	7
PER	Peru	7.7	7.7	7.7	7.7	7.8	7.8	8	8.1	8.2	8.2	8.3	8.3	8.3	8.4	8.5	8.5	8.6
PHL	Philippines	9	9	9.1	9.1	9.1	9.2	9.3	9.3	9.3	9.3	9.4	9.3	9.4	9.5	9.5	9.5	9.5
QAT	Qatar	5.9	6	6.1	6.1	6.1	6.2	6.2	6.3	6.4	6.4	6.5	6.5	6.7	7	7	7	7
RUS	Russian Federation	9.2	9.2	9.2	9.2	9.2	9.2	9.3	9.3	9.4	9.3	9.3	9.3	9.3	9.4	9.4	9.4	9.4
RWA	Rwanda	3.9	3.7	3.9	3.6	3.7	3.5	3.7	3.7	3.7	3.9	4	3.9	4	4.2	4.4	4.5	4.6
KNA	Saint Kitts and Nevis	4.1	4.1	4.1	4	4	3.9	4	4.1	4.2	4.4	4.3	4.2	4.3	4.5	4.6	4.6	4.5
LCA	Saint Lucia	4.6	4.5	4.4	4.4	4.3	4.3	4.2	4.1	4.1	4.2	4	4	3.9	4	4	4.1	3.9
VCT	Saint Vincent and the Grenadines	4.4	4.1	4.1	4.1	4	3.7	3.8	3.8	3.8	3.6	3.5	3.6	3.3	3.6	3.6	3.7	3.5
WSM	Samoa	3.5	3.6	3.3	3.2	3.2	3.4	3.6	3.7	3.5	3.6	3.8	3.8	3.9	3.8	3.4	3.5	3.9
STP	Sao Tome and Principe	2.7	3.2	3.4	3.5	2.7	2.3	2.7	2.9	2.6	2.7	2.1	2.4	2.8	2.6	2.4	1.9	2.2
SAU	Saudi Arabia, Kingdom of	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.9	8	8.1	8.1	8.1	8.2	8.3	8.4	8.3	8.4



Annex 2: HS product diversification index

Code	Country Name	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
SEN	Senegal	5.6	5.6	5.7	5.7	5.7	5.8	5.9	5.8	5.9	6	6	5.9	6	6.1	6.1	6.2	6.3
SRB	Serbia	7.6	7.5	7.5	7.5	7.7	7.8	8	8	8.1	8.2	8.3	8.3	8.3	8.4	8.5	8.6	8.7
SYC	Seychelles	4.1	4.1	4.2	4.3	4.5	4.7	4.8	4.8	4.9	4.5	4.6	4.6	4.7	4.8	4.6	4.9	5
SLE	Sierra Leone	4.5	4.4	4.5	4.4	4.7	4.6	4.6	4.1	4.4	4.8	4.9	5	5.1	5	5.1	5	5
SGP	Singapore	9.8	9.8	9.9	9.8	9.8	9.9	9.9	10	10	10	10.1	10.1	10.1	10.2	10.2	10.2	10.2
SLB	Solomon Islands	4.6	4.4	4.3	4.1	4	4	4	4	4.3	4.3	4.2	4.1	4.2	4.3	4.3	4.5	4.7
ZAF	South Africa	9.1	9.2	9.2	9.2	9.2	9.3	9.4	9.4	9.4	9.4	9.5	9.4	9.4	9.5	9.5	9.5	9.5
LKA	Sri Lanka	8	8	8	8	8	8.1	8.2	8.3	8.3	8.4	8.4	8.4	8.4	8.6	8.6	8.6	8.7
SDN	Sudan	5.6	5.5	5.5	5.6	5.5	5.6	5.7	5.5	5.5	5.6	5.6	5.6	5.6	5.8			
SUR	Suriname	5	5	4.9	4.8	4.9	4.8	5	5	5.1	5.3	5.2	5.3	5.3	5.5	5.4	5.5	5.7
SWZ	Swaziland	1.1	1.1	4.8	5.3	5.8	5.9	6.1	6.1	6.2	6.1	6.1	6.1	6	5.9	5.9	5.9	5.9
CHE	Switzerland	10.4	10.4	10.4	10.4	10.3	10.4	10.4	10.5	10.5	10.5	10.5	10.5	10.5	10.6	10.6	10.6	10.6
SYR	Syrian Arab Republic	6.9	7	7	7.2	7.3	7.3	7.4	7.4	7.4	7.5	7.4	7.4	7.6	7.8	7.5	7	6.5
CHT	Chinese Taipei	10.7	10.7	10.7	10.7	10.7	10.7	10.8	10.8	10.8	10.8	10.9	10.8	10.9	10.9	11	11	11
TJK	Tajikistan	5.5	5.4	5.4	5.3	5.3	5.5	5.5	5.4	5.5	5.4	5.5	5.4	5.4	5.4	5.3	5.2	5.1
TZA	Tanzania	6	6	6	6.1	6	6.2	6.3	6.4	6.4	6.4	6.5	6.6	6.5	6.6	6.7	6.7	6.8
THA	Thailand	9.8	9.9	9.9	10	10	10.1	10.2	10.3	10.3	10.4	10.4	10.4	10.5	10.5	10.6	10.6	10.6
MKD	The former Yugoslav Republic of Macedonia	7.2	7.2	7.1	7	6.9	6.9	7.1	7.2	7.3	7.4	7.4	7.5	7.5	7.6	7.5	7.6	7.7
GMB	The Gambia	4.4	4.2	4.1	3.9	3.7	3.6	4	3.6	3.6	3.8	4	3.8	4.1	4	4.1	4.1	4.2
TGO	Togo	4.8	4.8	4.9	5.1	5.1	5.3	5.3	5.3	5.4	5.2	5.3	5	5	5.2	5.2	5.3	5.4
TON	Tonga	2.9	3.4	3.4	3.6	3.8	3.8	3.7	3.5	3.7	3.6	3.7	3.7	3.1	3.3	2.9	3.3	3.6
TTO	Trinidad and Tobago	6.3	6.3	6.1	6.1	6.1	6.1	6.2	6.2	6.2	6.2	6.3	6.2	6.2	6.2	6.3	6.3	6.3
TUN	Tunisia	7.7	7.7	7.8	7.9	8	8.1	8.2	8.2	8.3	8.4	8.4	8.4	8.5	8.6	8.6	8.7	8.7
TUR	Turkey	9.3	9.4	9.4	9.5	9.5	9.6	9.8	9.8	9.9	10	10	10	10.1	10.2	10.3	10.4	10.4
UGA	Uganda	4.8	4.9	5.1	5.2	5.2	5.3	5.4	5.4	5.4	5.4	5.6	5.7	5.7	5.8	5.8	5.8	6
UKR	Ukraine	8.9	8.8	8.8	8.8	8.8	8.9	9	9.1	9.2	9.2	9.2	9.2	9.2	9.3	9.3	9.3	9.3
ARE	United Arab Emirates	8.2	8.3	8.3	8.3	8.4	8.5	8.6	8.8	8.9	9	8.9	8.9	9.1	9.2	9.3	9.4	9.4
USA	United States of America	11.6	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.6	11.6	11.5	11.5	11.6	11.6	11.6	11.6	11.6
URY	Uruguay	7.9	7.8	7.8	7.7	7.5	7.6	7.7	7.9	7.9	7.9	8	7.9	7.9	8	7.9	7.9	7.9
UZB	Uzbekistan	6.7	6.6	6.7	6.7	6.6	6.7	6.7	6.8	6.8	6.9	6.9	6.9	7	7	7	7	6.9
VUT	Vanuatu	3.8	3.9	4	3.9	3.7	3.7	3.9	4.1	4.2	4.2	4.3	4.2	4.3	4.5	4.2	4.1	4.4
VEN	Venezuela, Bolivarian Republic of	7.7	7.7	7.6	7.6	7.5	7.5	7.6	7.7	7.6	7.6	7.4	7.2	7.1	7	6.8	6.7	6.6
VNM	Viet Nam	8.3	8.4	8.5	8.6	8.8	8.9	9.1	9.2	9.3	9.4	9.6	9.7	9.8	9.9	10	10.1	10.2
YEM	Yemen	5.4	5.4	5.6	5.6	5.7	5.7	5.8	6	6	6	5.8	5.6	5.9	6	6	6	5.9
ZMB	Zambia	5.9	5.8	5.8	5.6	5.6	5.6	5.7	5.6	5.7	5.8	5.9	5.9	5.9	6	6	6.1	6.2
ZWE	Zimbabwe	7.1	7.1	7.1	7	6.8	6.8	6.8	6.7	6.7	6.7	6.5	6.4	6.4	6.4	6.4	6.5	6.5