UNCTAD/STAT/IE/2019/1

INDICATORS EXPLAINED #3
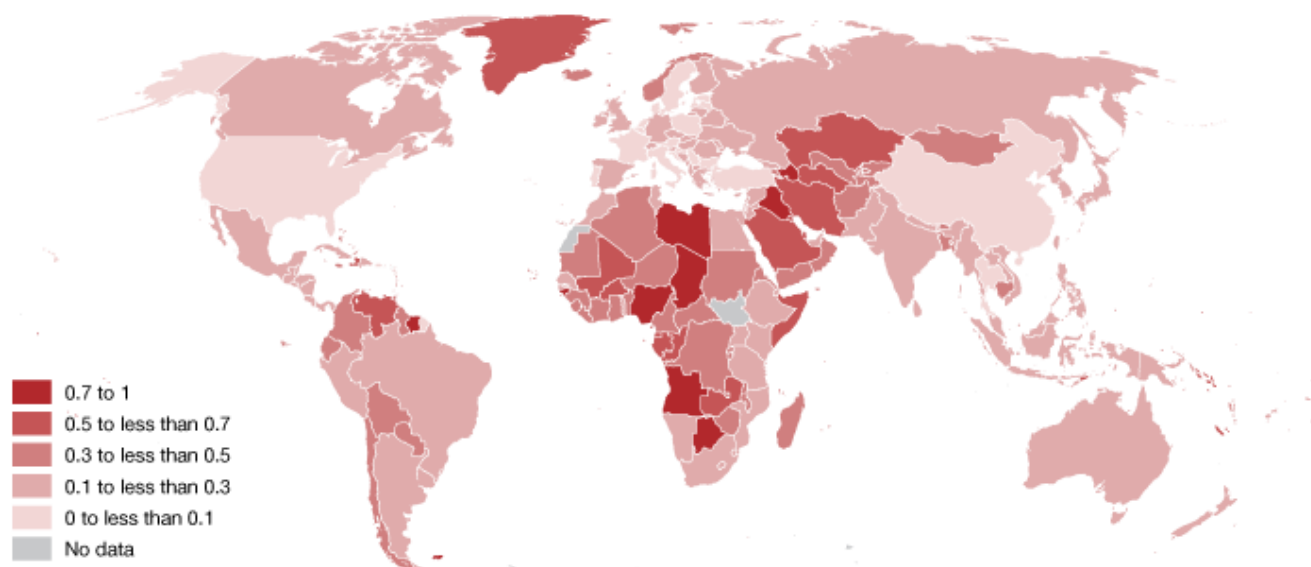## EXPORT PRODUCT CONCENTRATION INDEX

What does this indicator tell us?

This index measures, for each country, the degree of concentration of goods exported (it does not include services). It tells us if a large share of a country's exports is accounted for by a small number of commodities or, on the contrary, if its exports are well distributed among many products. Therefore, it can be used as a warning sign of low export diversification, with ensuing economic vulnerabilities. Its evolution through time can also give important signals about the changing productive structure of a country.

Unlike the *market concentration index* (see Indicators Explained #1), which gives the level of export concentration at the product level (i.e., if the exports of product X are concentrated on some countries of origin), the *product concentration index* measures the degree of export concentration at the country level (i.e., if the exports of country A are concentrated on some products).

There are large regional differences in the concentration of exports

Product concentration index of exports, 2017

Legend:
- 0.7 to 1
- 0.5 to less than 0.7
- 0.3 to less than 0.5
- 0.1 to less than 0.3
- 0 to less than 0.1
- No data

16 of the 20 most diversified countries are in Europe

They have managed to export significant shares of agricultural products, fuels, products from extractive industries and manufactures. This table shows the top 10 least concentrated (or most diversified) economies for 2017 in terms of merchandise exports.

Country	Product concentration index, 2017
Italy	0.05
Austria	0.06
Poland	0.06
Thailand	0.07
Croatia	0.07
Portugal	0.07
Netherlands	0.07
Turkey	0.08
Serbia	0.08
Latvia	0.09

20 countries with the highest concentration of exports are all developing economies or countries in transition

This table lists the ten economies that registered the highest concentration of exports of goods during 2017, including the main product that they export.

Country	Product concentration index, 2017	Main export (SITC3 3-digits)
Niue	0.97	Ships and boats
Iraq	0.94	Petroleum
Angola	0.93	Petroleum
Kiribati	0.90	Fish
Botswana	0.89	Pearls and precious stones
Guinea-Bissau	0.88	Fruit and nuts
Azerbaijan	0.81	Petroleum
Chad	0.77	Petroleum
Nigeria	0.76	Petroleum
Micronesia, Federated States	0.75	Fish

## Some countries have made great efforts to diversify their export basket

Beyond stabilizing export revenues and reducing the impact of changes of international prices on terms of trade, export diversification can also contribute to higher economic growth by enhancing productivity, stimulating structural transformation, and promoting competition. This is why export diversification is an explicit economic objective for many countries. Some have made significant progress in this regard.

Uganda is a noteworthy success story, having reduced its dependence on exports of coffee. This was achieved by broadening its export portfolio of manufactured goods.

Benin has also reduced its dependence on cotton, although this has been offset by an increased reliance on other commodities such as oil, gas and gold.

Some of the traditional oil-exporting countries in the Arabian Peninsula have made great efforts to diversify away from hydrocarbons. The **United Arab Emirates** and, to a lesser extent, **Oman** are succeeding in increasing the relative share of manufacturing in their export basket.
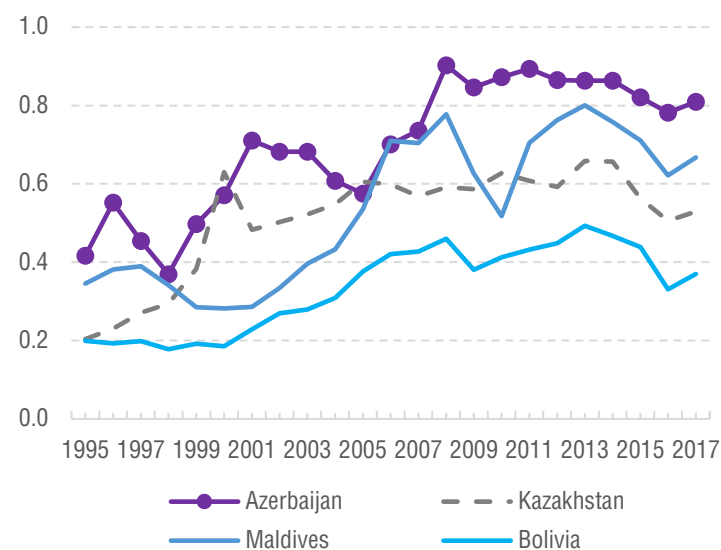
Product concentration index of exports
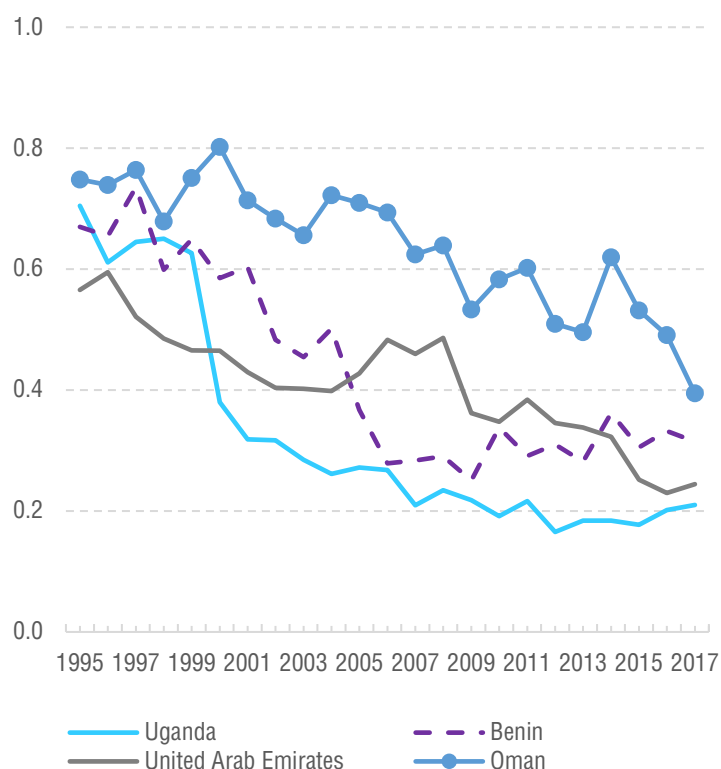
Other countries are increasingly reliant on a small number of commodities

In some economies the export basket has become more concentrated, with most exports coming from a limited number of products. This is frequently the case for new fuel exporters, such as some economies in Central Asia and the Caucasus. For instance, the oil boom in the late 1990s in **Kazakhstan** and **Azerbaijan** significantly increased the share of petroleum in their export baskets. This came at the expense of the manufacturing sector in both countries, where exports shrank in relative terms.

A parallel trend also took place in **Bolivia**, where exports of gas supplanted both manufactured and agricultural goods.

These patterns are not confined to fuel-exporting economies. The **Maldives**, for example, has seen a rising exports concentration around fish products at the expense of the garment sector, after most of the production of this sector relocated abroad. A high degree of product concentration can lead to volatility in revenues and introduce constraints for economic growth.

Product concentration index of exports

Legend: ● Azerbaijan — – – Kazakhstan — Maldives — Bolivia

Methodology

This indicator is defined as a normalized Herfindahl-Hirschmann index of the product concentration of merchandise exports at the country level. It is calculated according to the following formula,

$$H_j = \frac{\sqrt{\sum_{i=1}^{N}\left(\frac{X_{i,j}}{X_j}\right)^2} - \sqrt{\frac{1}{N}}}{1 - \sqrt{\frac{1}{N}}}$$

where H_j is the product concentration index of exports for country j, $X_{i,j}$ is the value of exports of product i by country j, X_j is the total value of exports of country j, and N is the number of products exported at the three-digit level of the SITC Revision 3. This index ranges from zero to one, with a larger value denoting a higher concentration of exports. For example, a value of H_j equal to one indicates that all exports of country j come from a single commodity, while a value of zero means that the country's exports are homogeneously distributed among all products. This is an annual indicator, currently available from 1995 to the latest period for all countries and country aggregates.

Note

All visualizations were created using the export product concentration index and other data series available at UNCTADstat. For additional details and data download, see http://unctadstat.unctad.org.

Disclaimer: The publication has not been formally edited.