

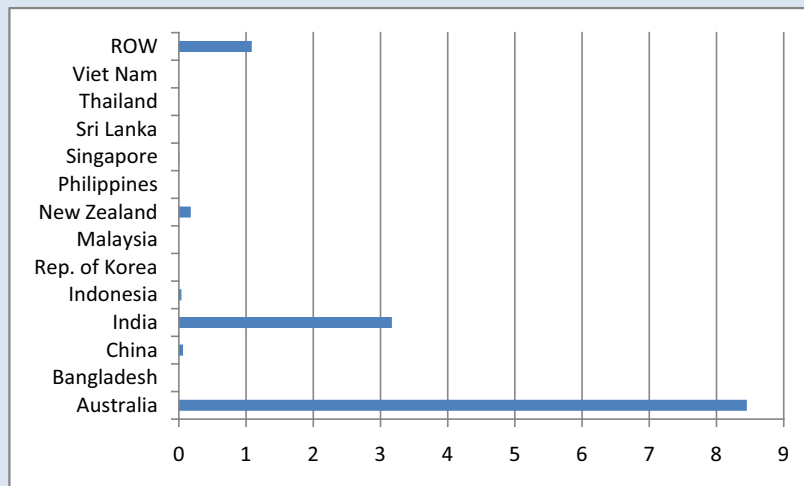
Revealed Comparative Advantage (RCA)

What does it tell us? Comparative advantage underlies economists' explanations for the observed pattern of inter-industry trade. In theoretical models, comparative advantage is expressed in terms of relative prices evaluated in the absence of trade. Since these are not observed, in practice we measure comparative advantage indirectly. Revealed comparative advantage indices (RCA) use the trade pattern to identify the sectors in which an economy has a comparative advantage, by comparing the country of interests' trade profile with the world average.

Definition: The RCA index is defined as the ratio of two shares. The numerator is the share of a country's total exports of the commodity of interest in its total exports. The denominator is share of world exports of the same commodity in total world exports.

Range of values: Takes a value between 0 and $+\infty$. A country is said to have a revealed comparative advantage if the value exceeds unity.

Limitations: The index is affected by anything that distorts the trade pattern, e.g., trade barriers.



RCA Index for Wheat (2002)

Example: Suppose we are interested in the wheat market, and need to determine which economies have a comparative advantage in wheat. The RCA calculation results are presented above for 2002. We are looking for values exceeding unity. In this sample, Australia, India and the rest of world are revealed to have a comparative advantage in wheat.

RCA – Technical Notes

Mathematical definition:

$$\frac{\sum_d x_{isd} / \sum_d X_{sd}}{\sum_{wd} x_{iwd} / \sum_{wd} X_{wd}}$$

Where **s** is the country of interest, **d** and **w** are the set of all countries in the world, **i** is the sector of interest, **x** is the commodity export flow and **X** is the total export flow. The numerator is the share of good **i** in the exports of country **s**, while the denominator is the share of good **i** in the exports of the world.

Data sources: The United Nations Commodity Trade database (COMTRADE), the World Trade Database (WTD) maintained by Statistics Canada, and the GTAP database.

Wheat	Australia	New Zealand	China	Rep. of Korea	ASEAN	ROW	Total
Australia	0	4	3	168	441	777	1393
New Zealand	0	0	0	0	7	0	7
China	0	0	0	54	18	2	74
Rep. of Korea	0	0	0	0	1	0	1
ASEAN	0	0	0	0	6	3	9
ROW	5	3	150	339	960	12836	14293
Total	5	7	153	561	1433	13618	15777

Total	Australia	New Zealand	China	Rep. of Korea	ASEAN	ROW	Total
Australia	0	3348	4878	5213	7070	41062	61571
New Zealand	2564	0	777	659	1187	9633	14820
China	6058	867	0	16243	23301	398969	445438
Rep. of Korea	2516	301	24232	0	17521	115477	160047
ASEAN	9850	1130	24832	15950	80320	253262	385344
ROW	43045	7169	156819	103738	174227	4341696	4762074
Total	64033	12815	211538	141803	303626	5160099	5893914

Sample calculation: Above we have two simplified trade matrices, representing trade flows for wheat and total trade flows, respectively. Total exports of wheat from Australia are highlighted in blue. Total exports from Australia are highlighted in red. Calculating the share of Australia's wheat exports to its total trade we have: \$1393/\$61571. World trade in wheat is highlighted in green, and total world trade in purple. The proportion of wheat in world trade is: \$15777/\$5893914. Taking the ratio of these two shares we have 8.45. This is the RCA index for Australia in wheat in 2002.