

# Latest Results from the 2021 International Comparison Program

The International Comparison Program (ICP) is a global statistical initiative to collect comparative price and detailed expenditure data to estimate Purchasing Power Parities (PPP) which facilitate international comparisons of macroeconomic aggregates, relative price levels, and standards of living across economies.

## Results from the [2021 ICP](#)

### PPP-based Gross Domestic Product [1]

PPP-based global output is the sum of gross domestic product (GDP) of all 176 economies that participated in the 2021 ICP cycle. In 2021, it amounted to US\$152.4 trillion. The two largest economies were Mainland China and the United States, accounting for 19% and 15% of the world's GDP shares respectively. India, with a world share of 7%, was the third-largest economy, followed by the Russian Federation and then Japan (Table 1). Collectively, these five economies had a PPP-based GDP of US\$74.7 trillion and accounted for nearly half of global output in 2021.

Singapore's PPP-based GDP accounted for 0.5% of the global output in 2021. In terms of PPP-based GDP per capita, Singapore was ranked 2nd in the world, after Luxembourg (Table 2). In 2017, Singapore came in 3rd in the world, after Macao SAR, China, and Luxembourg.

**Table 1: Relative Sizes of Economies, 2021**

Economies	GDP at PPP		
	US\$bil	Share (World=100)	Rank
Mainland China	28,821.6	18.91	1
United States	23,594.0	15.48	2
India	10,963.1	7.19	3
Russian Federation	5,732.4	3.76	4
Japan	5,566.7	3.65	5

**Table 2: Economies with the Highest PPP-adjusted GDP per Capita, 2021**

Rank	Economies	2021		Economies	2017	
		US\$	Index (World=100)		US\$	Index (World=100)
	WORLD	20,271	100	WORLD	17,006	100
1	Luxembourg	137,948	681	Macao SAR, China	122,838	722
2	Singapore	131,864	651	Luxembourg	114,954	676
3	Ireland	114,451	565	Singapore	95,628	562
4	Qatar	106,491	525	Qatar	92,839	546
5	Bermuda	90,577	447	Bermuda	85,454	502

[1] Compared to the use of market exchange rates to convert GDP based on a reference currency, the use of PPPs adjusts for the differences in the purchasing powers of currencies by eliminating price level differences to better estimate the volume of output across economies in real term.

# Relative Price Levels

The Price Level Index (PLI) is often used to assess the relative price levels across economies, reflecting how price levels of a common basket of goods and services compare against one another between economies. The index is computed as a ratio of PPP to market exchange rates. An economy with higher PLI implies that the overall price of a common basket of goods and services is relatively more expensive in that economy compared to a reference economy (where PLI = 100), and vice versa.

## An Illustration of PPP and PLI Based on a Single Commodity

The Big Mac is a food item available in most economies and is generally similar in terms of quality and specifications across the globe.

Suppose a Big Mac costs S\$5.90 in Singapore and US\$5.65 in the United States (US). The PPP for Big Mac (S\$ per US\$) is computed by taking the ratio of its price in Singapore to its price in the US (i.e., 5.90/5.65 = 1.04). The resulting value of 1.04 implies that S\$1.04 has the same purchasing power as US\$1 for 1 unit of Big Mac.

Suppose the prevailing exchange rate is S\$1.37 to US\$1. A tourist from the US visiting Singapore exchanges US\$5.65 (price of a Big Mac in the US) to S\$7.74 at a bank upon arrival (based on the prevailing exchange rate). After buying a Big Mac in Singapore, he will have S\$1.84 remaining.



Singapore: S\$5.90  
 USA: US\$5.65  
 PPP = 5.90/5.65 = 1.04S\$ per US\$

$$PLI = \frac{PPP_{SIN,USA}}{Exchange\ rate_{SIN,USA}} = \frac{1.04}{1.37} = 76$$

### Computation of PPP and PLI

	US *	Singapore
Cost of a Big Mac in local currency	US\$5.65	S\$5.90
PPP	1.00	1.04
Market Exchange Rate	1.00	1.37
PLI for Big Mac	100	76

\* Reference Economy

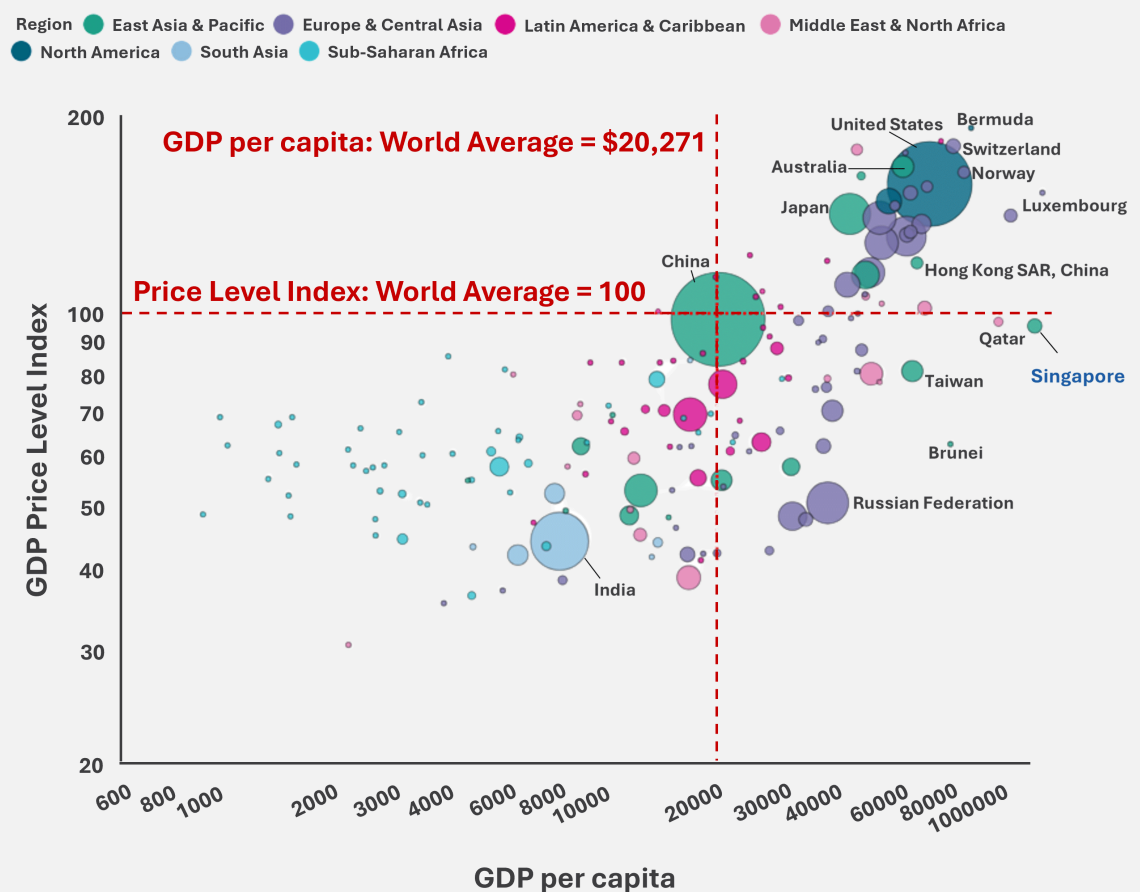
Thus, the PLI for Big Mac in Singapore is 1.04/1.37 \* 100 = 76 points. This means that the price of a Big Mac in Singapore is 76%, or three-quarters, of that in the US.

Typically, the PLI exhibits a positive relationship with income (i.e., PPP-based GDP per capita). For example, high-income economies (e.g., Luxembourg, Norway, and Switzerland) tend to have higher price levels.

Singapore's PLI at overall GDP level was 95.6 in 2021. Despite being one of the economies with the highest PPP-based GDP per capita, Singapore's PLI was about 4% lower than the world average of 100.

In the East Asia and Pacific region, Singapore's price level was ranked 8th, behind countries like Australia, Japan, Hong Kong, and Mainland China (Chart 1). This suggests that the general price level in Singapore was relatively lower compared to these countries in the region in 2021.

Chart 1: GDP PLI and PPP-Based GDP per Capita by Economy, 2021



Size of bubble indicates the relative size of PPP-based GDP for each economy. Source: 2021 ICP.