

# Beyond GDP: New Indicator System in Measuring the Developing Countries

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**Abstract:** Upholding the principle of ‘special and differential treatment’ in developing countries is in line with the fundamental interests of developing countries, and it also fits the long-term interests of all countries around the world. However, there is a lack of scientific convincing evaluation criteria about the developing countries, and some of the developed western countries like the U.S. frequently questioned China and other countries about their identities of being a developing country. February, 10th, 2020, the United States announced its countervailing duty investigation on 25 economic entities could no longer benefit from being a developing country. This approach was quite biased, which not only reveal the tendency of the United States’ aggressive trade unilateralism, but also raises the question of whether ‘GDP only’ method could scientifically and reasonably measure a country’s development level. Therefore, it is urgent to build a new indicator system to properly measure the identity of developing countries. This article built from three dimensions: economic growth, resource environment and social development to set up a new index system, which is based on 32 countries (regions)’ indicators between 2010 and 2017, calculate the estimated national comprehensive development index, and made comparisons between developed and developing countries. Through the comparative analysis of the calculation results, this article has effectively confirmed the fact that developing countries like China are still developing countries. It provides theoretical support for China’s position of upholding the status of developing countries and safeguarding the ‘special and differential treatment’ in developing countries. It can also provide new ideas and references for China’s participation in the negotiations on the development issues of WTO reform.

**Keywords:** developing countries; new index system; comprehensive development index; WTO reform

## 1. Introduction

Since the establishment of World Trade Organization (WTO), the economic and financial cooperation among countries have been increased steadily, and the WTO has become the management organization of multilateral trading system with legal personality. With the deepening and expansion of the global value chain, developing

countries have integrated into the world economy, the importance of global trade is also increasing. However, the impact made by the WTO on the trade of all countries is uneven [1]. In the recent years, the prevalence of the United States’ aggressive trade unilateralism has led to tensions in global trade and seriously hampered the normal operation of the multilateral trading system. With the issue of WTO reform being brought to discussion, the identification of ‘special and differential treatment’ on developing countries has become a hot topic. Most of the developing countries could not fully integrated into the global trading system due to poor infrastructure, trade-related intelligence studies and a series of structural barriers [2]. ‘Special and differential treatment’ is the preferential arrangement towards developing countries made by the WTO, it is the basic principles that to be followed to achieve its purpose which is helping developing countries to overcome trade barriers, boost the economic development and achieve the required development of fairness and inclusiveness. The ‘preferential’ function of this principle is realized by the identification of developing countries. Therefore, how to define a country is a developing country has become the core of this dispute.

Current international organizations have not formed a clear and unified definition of ‘developing country’. According to WTO’s related provisions, the method of self-declaration is being used. However, this ‘self-declaration’ method is being questioned and challenged by western developed countries led by the U.S. in January 2019, the United States submitted the report ‘An Undifferentiated World Trade Organization: Self-Identified Development Status Threats System Relevance’ to the WTO General Council, which denies the identity of some developing countries through data; in February 2019, the United States specifically listed four self-established criteria for developing country accreditation in the WTO reform proposal, i.e. non-organization for economic cooperation and development (the OECD) members, non-Group of Twenty (the G20) members, non-World Bank defined ‘high income’ countries and those countries accounted less than 0.5% of the world trade; in July 2019, US president Trump signed a ‘memorandum of reform of the WTO status in developing countries’ (hereinafter referred to as the ‘memo’), stressed that the U.S. will take all means to WTO that standard prescribed reforms in

developing countries, the Office of the United States Trade Representative (hereinafter referred to as the 'USTR') has the right to announce the list of developing countries made by the United States; at the fifth WTO General Council held in December of the same year, the United States again submitted a development proposal to deny the status of a group of developing countries and abolish their 'special and differential treatment'. As the latest progress on this issue, the United States issued an announcement in the Federal Register through USTR on February 10, 2020 to evict 25 economies from the list of developing countries benefit from WTO's 'special and differential treatment' rights. It is not difficult to find that the United States has frequently issued voices to the international community in various forms to cancel the current benefit of developing countries. However, the standards for developing countries established by the United States did not take into account and respect the actual development of developing countries. They tried to 'promote' the status of developing countries by subjectively formulating a few simple standards, so that they could meet the 'graduation requirements' in advance. It is bound to hinder the development of developing countries. These practices not only violated the WTO's basic principles and purposes, but also seriously violated and deprived developing countries of their legitimate rights and interests.

It can be seen that the aggressive attitude and arbitrary behaviour of the United States pose a threat that cannot be ignored for the development interests of many developing countries such as China, and it is imminent to solve the problem of defining developing countries. However, existing research is seriously inadequate on this issue, especially in the identification system of developing countries. Therefore, it is necessary to build a new indicator system to measure the status of developing countries as soon as possible, break the misunderstanding of the standards for the identification of developing countries made by the United States, reasonably reflect the development rights and demands of China and other developing countries, and provide a reasonable basis for promoting the reform of the multilateral trading system. The arrangement of the rest of this article is as follows: the second part elaborate on the construction ideas and specific contents of the new indicator system to measure the identity of developing countries; the third part analyses the measurement results of the new indicator system; the fourth part is the conclusion and enlightenment.

## **2. Construction of a New Indicator System to Measure the Identity of Developing Countries**

### **2.1. The Background of the New Indicator System**

For a long time, GDP indicators have been widely used to measure a country's economic development level. Although the invention and use of the National Economic Account were called 'one of the greatest inventions of the 20<sup>th</sup> century' by the US Bureau of Economic Analysis, it was submitted to the United States in 1934 by Simon Kuznets, the founder of the National Economic Account. The report of the Congress on the construction of an accounting system for measuring modern national income

with GDP clearly stated that there is a great risk in using GDP to measure the development level of a country. Judging the development level of a country involves all aspects of a country's economic and social development, and it is biased to use only a single economic indicator of GDP [3]. It is worth noting that the United States issued a notice to cancel the status of developing countries in a batch of economies on February 10, 2020. The certification standards are basically the same. The United States believes that developing countries have obtained development opportunities from the WTO system and strongly demands the realization of so-called trade parity. Although, studies have found that unilateral trade preferences such as GSP have a positive impact on bilateral trade to and from beneficiary countries [4]. However, the United States attributed its own social development problems to the 'special and differential treatment' enjoyed by developing countries as a victim of self-reliance, and unilaterally took many unreasonable actions [5].

According to the latest announcement issued by USTR, any one of the following must be 'delisted' from the WTO list of developing countries: first, the high-income countries specified by the World Bank, that is, the national income per capita (GNI) exceeds \$12,375 (there are many exceptions about this standard); second, account for more than 0.5% of the world trade; third, it is a member of the Organization for Economic Cooperation and Development (OECD), a member of the Group of 20 (G20), or a member of the European Union (EU); fourth, other factors such as self-declaration as a developing country or failure to declare themselves a developing country when entering the WTO. It is quite obvious that this announcement highlights the characteristics of the United States' compliance with 'GDP only' and subjectively extracting four simple criteria to measure a country's development level. The development of WTO itself is a comprehensive issue, and it is too one-sided to measure and define the status of developing countries by using only economic indicators. In other words, 'GDP only' only focuses on the total economic volume, but ignoring the sustainability of economic and social development, and it is difficult to reflect the overall picture of economic and social development. Under this background, it is an urgent and important task to establish a scientific and reasonable new indicator system to comprehensively measure and judge the development stage of a country to define the identity of a developing country.

### **2.2. Ideas for the Construction of a New Indicator System**

The construction of the new indicator system measures the comprehensive development level of a country. For developing countries, the main indicators need to reflect the measurement of the economic level. At the same time, the 'development' indicator system is a comprehensive index that includes and exceeds the economic level system. To construct a new index system as the standard for classifying countries, it is necessary to set up comprehensive indicators covering all aspects and

multiple dimensions covering economic and social development. Based on the principles of science, reasonableness and representativeness, this article draws on the ideas of Liu and Cai [6], Zhang etc. [7], Wang and Wu [8], and ‘The Changing Wealth of Nations 2018-Building a Sustainable Future’ published by the World Bank and the ‘Inclusive Development Index 2018’ (IDI,

2018) released by the World Economic Forum, constructing a new indicator system includes three primary indicators and twelve secondary indicators based on economic growth, resources, environment and social development to measure the identification of developing countries. (see Table 1)

**Table 1.** Indicator System for Measuring the Identification of Developing Countries

Primary indicator	Secondary indicator	Indicator content	Indicator attributes
Economic Growth Indicator (EGI)	Economic development level (EL)	GDP per capita of each country (GDP)	+
		Gross national income per capita (GNI)	+
	Economic structure (ES)	Value added of service industry as a percent of GDP	+
	Trade openness (TO)	The proportion of total imports and exports of goods and services to GDP	+
	Research development (RD)	R&D expenditure as a percent of GDP	+
Resources and environment indicator (REI)	Production capital (PC)	Infrastructure quality index	+
	Natural capital (NC)	The proportion of forest area to land area	+
		Energy use (kg oil equivalent per capita)	+
		Agricultural land area as a proportion of land area	+
	Human capital (HC)	Total renewable inland freshwater resources	+
		Life expectancy at birth	+
	Average years of education	+	
	Carbon dioxide damage intensity (CD)	Carbon dioxide damage as a percentage of GNI	-
Social development indicator (SDI)	Government integrity (CPI)	Global corruption index	+
	Business environment (DB)	Business environment convenience	+
	Factor Mobility (FM)	Capital flows- FDI net inflows	+
		Technology flow- number of patent applications per capita	+
		Personnel mobility- value of cross-border mobile services trade	+
Public health and wellness (PH)	Health expenditure per capita	+	

Note: in the column of ‘indicator attributes’, use ‘+’ to indicate positive indicators and ‘-’ to indicate negative indicators.

The main ideas for constructing the new indicator system are:

First, take the economic growth index (EGI) as a key primary indicator. GDP is an indicator to measure economic growth, although it cannot be equated with the national comprehensive development level, it cannot be simply denied that the stronger the economic foundation, the higher the GDP development level, the more beneficial it is to promote the development of the country in various fields. Although GDP is an important indicator for economic policy evaluation, it is not perfect, but compared with other measurement indicators, it can better show human innovation ability and possibility, and it is still the best indicator to measure economic growth at present [9]. Therefore, the new indicator system should include relevant indicators of GDP.

Second, the new indicator system should reflect the balanced and sustainable development of the economy. With the rapid economic growth of various countries, especially with the demand of rapid growth of GDP, it is inevitable that there will be questions such as environmental pollution [10]. In January 2020, the United Nations put forward the ‘Decade of Action’ plan for the

sustainable development goals, calling for addressing challenges such as acclimate change and achieving sustainable economic development. In order to make up for the shortcoming of ‘GDP only’ to measure the level of economic development, and truly achieve the unification of ‘quality’ and ‘quantity’ growth of economic, the sustainable development of resources and environmental indicators should be included in the indicator system, reflecting the balance and sustainability of economic growth in various countries.

Third, the new indicator system emphasizes the comprehensive and healthy development of the economy and society. Economic growth is the basis for promoting a country’s social equality, and the level of social development will largely reflect the quality of a country’s economic development. Under the new normal state, the focus of national economic growth should shift from blindly pursuing the growth of the total economy to putting people first and improving the development capacity and welfare of the people [11]. In addition to the traditional indicators, the new indicator system must include new indicator measures such as ‘factor flow’. At present, the epidemic of Covid-19 is spreading all over the

world, while it poses a great threat to people's lives, it also causes great losses to the economic and social development of various countries. Any country should put the people's right to live and health at first, so the 'public health and wellness' indicator should be included in the system to highlight the comprehensive and healthy development of the economy and society of all countries.

### 2.3. Index Decomposition of the New Indicator System

According to the construction of the above new indicator system to set the specific measurement method of each indicator, the indicator decomposition content is as follows:

#### 2.3.1. *Economic growth index (EGI)*

The first indicator constructed by this indicator system is the economic growth indicator. They are measured from four secondary indicators: economic development level (EL), economic structure (ES), trade openness (TO), and research and development capability (RD). The gross domestic product (GDP) statistical method is relatively simple, and it is the main internationally used indicator to measure the scale of economic development. On the one hand, considering that per capita GDP is calculated based on the population size of each country, it plays a role in diluting the total GDP, and select per capita GDP to measure a country's economic development level. On the other hand, the United States included GNI per capita in the latest published standards, so GNI per capita incorporated into the indicator system, together with GDP per capita, reflect the economic development level of each country. Whether the structure of economic growth is reasonable will affect the quality of national economic growth. Therefore, this paper chooses the proportion of service industry added value to GDP to measure the economic structure. Trade openness can reflect the openness of a country's economy. In this paper, it is measured by the ratio of the total volume of imports and exports of goods and services in each country to GDP. And the steady growth of a country's economy cannot be separated from R&D investment and technological innovation. Research and development innovation (RD) is measured by the proportion of R&D expenditure in GDP of each country This indicator reflects the ability of technological innovation to support economic growth.

#### 2.3.2. *Resource and environment indicator (REI)*

The second indicator is the resource and environment indicator. Specifically, it includes four secondary indicators: production capital (PC), natural capital (NC), human capital (HC), and carbon dioxide damage intensity (CD). The production capital (PC) indicator adopts the total infrastructure quality index in the Global Competitiveness Report, which specifically includes the overall infrastructure quality, highway infrastructure quality, railway infrastructure quality, port infrastructure quality, aviation infrastructure quality, available air seats Kilometres (millions/week), quality of power supply, number of fixed phones (per 100 people) and number of mobile phones (per 100 people), a total of 9 items. The

natural capital (NC) indicator draws on the treatment method of the 'Inclusive Wealth Report 2018' (IWR, 2018) issued by the United Nations Environment Programme, respectively, based on the proportion of forest area to land area, energy use (kg oil equivalent per capita), agricultural land The proportion of area to land area and total renewable inland freshwater resources are characterized. In terms of human capital (HC), two sub-indicators, life expectancy at birth and average years of schooling, are used to characterize together, revealing that human health is a basic requirement for sustainable economic and social development. Long-term investment in education will enhance the comprehensive development level of a country. The environmental pollution index uses carbon dioxide damage intensity (CD) as a proxy variable, and selects the proportion of carbon dioxide damage as a percentage of GNI for measurement.

#### 2.3.3. *Social development indicator (SDI)*

The third indicator is the social development indicator. This indicator dimension is measured from the four secondary indicators of the Government Corruption Indicator (CPI), Business Environment (DB), Factor Mobility (FM), and Public Health (PH), aiming to evaluate the improvement of human well-being in a country. The achievements. First, the government's integrity performance and business environment, which are closely related to attracting foreign investment, are included in the index system. The Global Corruption Perception Index measures government cleanliness, and the business environment is characterized by the Business Environment Convenience Index. Second, we must pay attention to the degree of openness of a country's economic and social development. The world today is facing severe challenges from trade protectionism, and building a 'community of human destiny' is precisely China's wisdom and plan to deal with the 'reverse globalization' trend and solve the world's development problems [12]. The high level of social development in a country can be reflected in the degree of market mobility of factors in capital, personnel, and technology [13]. This paper expresses capital flows in terms of FDI net inflows, and measures technological flows in terms of per capita patent applications. The movement of people is measured by the amount of trade in services resulting from the cross-border movement of people. The greater the mobility of a country's factors, the more it can reflect the fairness and efficiency of social development. Finally, considering the current impact of the global new coronary pneumonia epidemic, the state of public health in countries around the world is bound to become the main indicator for measuring the development level of a country. However, developing countries generally have problems such as weak public health systems and lack of management capabilities. This article reflects the country's public health and health status with data on health expenditure per capita in each country.

### 2.4. Measurement Indicator Processing

#### 2.4.1. *Selection of sample countries and data sources*

This article is based on the USTR's list of 25 developing countries withdrawn from developing status on February 10, 2020 (see Table 2), taking into account the comparison of development gaps between different categories of countries, including 'G7 Group' in the research sample. This article chose year 2010 to 2017 as the sample interval, and finally determined 32 countries (regions) as the research objects. In the new indicator system, the government's corruption level data uses the 'Global Corruption Indicator (CPI)' published by Transparency International (TI); the production capital index data measured by the total infrastructure quality index uses the 'Global' published by the World Economic Forum (WEF).

Competitiveness Report' (GCR); Human Capital Index data measured by average years of education use the 'Human Development Index (HDI)' provided by the United Nations Development Programme; the flow of technical elements expressed in patent applications per capita is derived from World Intellectual Property Organization (WIPO); the data on the movement of personnel elements reflected in the trade volume of cross-border movement of personnel services originates from the United Nations Conference on Trade and Development database (UNCTAD). The other indicator data are all derived from the World Bank (WB) World Development Indicators (WDI) database.

**Table 2.** List of WTO Developing Members Involved in the USTR Announcement on February 10, 2020

Country/region	GNI per capita exceeds \$12,375	Account more than 0.5% of global trade	Member of EU	Member of OECD	Member of G20	Declared itself a developed country or did not declare as a developing country when joined the WTO
Argentina					√	
China		√			√	
Brazil		√			√	
India		√			√	
Indonesia		√			√	
Malaysia		√				
Thailand		√				
Vietnam		√				
Bulgaria			√			
Romania			√			
Colombia				√		
Costa Rica				√		
South Africa					√	
Albania						√
Armenia						√
Georgia						√
Kazakhstan						√
Kyrgyzstan						√
Moldova						√
Montenegro						√
North Macedonia						√
Ukraine						√
Hong Kong of China	√	√				
Korea	√	√		√	√	
Singapore	√	√				

Data source: The author sorted out according to the announcement issued by the US Trade Representative Office (USTR) in the Federal Register on February 10, 2020 to cancel preferential treatment for developing countries in 25 economies.

2.4.2. Standardization of indicators

The indicator system constructed in this paper overcomes the shortcomings of single index such as 'GDP only' to measure the country's development level, and adopts a multi-index comprehensive evaluation system. However, the multi-indicator has the problem of inconsistent dimension and magnitude of the indicator. In order to eliminate its influence on the measurement result, the original data of the indicator needs to be standardized. Considering that the indicators in Table 1 include two types of positive indicators and negative indicators. Among them, the intensity of carbon dioxide damage is a reverse indicator, and the remaining secondary indicators are positive indicators. Refer to the methods of Chen and

Wang [14] to standardize the data.

The formula for normalizing the forward indicator data is as follows:

$$SX_{ij} = \frac{X_{ij} - X_{imin}}{X_{imax} - X_{imin}} \tag{1}$$

The standardization processing formula of reverse indicator data is as follows:

$$SX_{ij} = \frac{X_{imax} - X_{ij}}{X_{imax} - X_{imin}} \tag{2}$$

Among them, 'X<sub>ij</sub>' represents the original value of the i<sup>th</sup> indicator of the j<sup>th</sup> country; 'X<sub>imax</sub>' and 'X<sub>imin</sub>' represent the maximum and minimum values of the i<sup>th</sup> indicator, respectively. 'SX<sub>ij</sub>' represents the standardized

processing result of the  $i^{\text{th}}$  index data of the  $j^{\text{th}}$  country, with a value range of 0-1.

### 2.4.3. Assignment of indicator weights

In this paper, Principal Components Analysis (PCA) is used to assign weights to the indicators under the identification system of developing countries. When using SPSS software for principal component analysis, five principal components were extracted, and the cumulative contribution rate was 86.04%. By calculating the weights of the secondary and primary indicators, the final formula for the comprehensive development index (CDI) for measuring the identification system of developing countries is as follows:

$$CDI = (0.298EGI + 0.336REI + 0.366SDI) * 100 + C \quad (3)$$

Among them, the pre-EGI coefficient is the economic growth index score, REI is the resource and environment index score, SDI is the social development index score, and C is the basic score constant.

## 3. The Measurement Results and Analysis of the New Indicator System

### 3.1. Comparison of the Comprehensive Development Index (CDI) of the New Indicator System with the Total GDP

According to formula (3), the comprehensive development index (CDI) of the 32 sample countries (regions) is finally calculated. The results are shown in Table 3, Figure 1 and Figure 2 below. In order to evaluate the country's comprehensive development strength more rationally, this study divides the countries ranked first to tenth in the comprehensive development index into developed countries (regions), and their comprehensive development indexes are all greater than 60; ranking eleventh to twentieth Of countries are classified as emerging developing countries with an average value of 49.586; the countries ranked 21<sup>st</sup> to 30<sup>th</sup> are classified as sub-developing countries with an average value of 42.031. Countries other than 30 are classified as underdeveloped countries, and their comprehensive development indexes are all less than 40. The emerging developing countries, sub-developing countries and underdeveloped countries set in this article are all developing countries in the traditional sense, and there is a large gap between them and developed countries. At the same time, different developing countries have different levels of development.

From the perspective of developed countries, the comprehensive development index rankings of the representatives of the old developed countries, 'G7 Group', are all in the top ten, and belong to the ranks of developed countries. The country with the highest overall ranking is the United States, with a comprehensive development index of 93.606, and the resources, environment and social development dimensions are ranked first, and the economic growth evaluation index is ranked third, highlighting the strong national comprehensive development strength and GDP. The total ranking is the same. Both Germany and Japan have a combined development index of over 80, ranking 4<sup>th</sup> and 5<sup>th</sup>, with

scores of 81.061 and 80.275 respectively. Among them, Germany has outstanding performance in social development, ranking second in this sub-index ranking, second only to United States. Canada, the United Kingdom and France are ranked 6<sup>th</sup> to 8<sup>th</sup> in the comprehensive development index, of which Canada relies on rich forests and land and other natural resources to rank second in the resource and environment index. However, in 2017, Canada's total GDP ranked only 10<sup>th</sup>. It can be seen that 'GDP-only' ignores the sustainability of the country's comprehensive development brought by abundant natural resources. The Italian Comprehensive Development Index ranks 10<sup>th</sup> and is at the bottom of the G7 Group. It is not difficult to find that the developed countries represented by the G7 Group still have obvious advantages in national comprehensive development level, far ahead of most developing countries. The top ten countries (regions) in the comprehensive development index are Singapore and Hong Kong of China, ranking second and third respectively. However, the total GDP rankings of Singapore and Hong Kong of China are only 17<sup>th</sup> and 16<sup>th</sup>, which underestimates the comprehensive development of the two in multiple fields, which is not consistent with the facts. In addition, South Korea's GDP in 2017 ranked 11<sup>th</sup>, but according to the measurement method of the new indicator system, South Korea's comprehensive development index is 74.148, ranking 9<sup>th</sup>, and its performance in economic growth, resources, environment and social development is superior. Other developing countries.

From the perspective of developing countries, the GDP ranking of most countries differs from the comprehensive development index ranking. India's comprehensive development index is 38.088, ranking 31<sup>st</sup> among all sample countries (regions), of which the social development index ranks in the bottom of the list. The government's integrity, business environment, public health and health issues highlight India's national comprehensive development evaluation. It is relatively low, but in 2017, India's total GDP ranked sixth, which is 35 places different from the national comprehensive development index ranking, which is obviously inconsistent with India's real national and social development level. The total GDP of Montenegro ranks at the bottom (32<sup>nd</sup>), but depending on its outstanding performance in social development (the 15<sup>th</sup> ranking of social development indicators), Montenegro's comprehensive development index is 48.794, ranking all sample countries (15<sup>th</sup> place in the region), which is 17 places different from the GDP ranking. The countries that have the same situation are Indonesia, Costa Rica, South Africa, China, Georgia, etc. Many developing countries have a large gap between their GDP rankings and their comprehensive development index rankings. It can be seen that using GDP alone to evaluate a country's comprehensive strength ignores the country's comprehensive performance in many aspects of economic growth, resources, environment, and social development. To measure the comprehensive strength of a country, it is necessary not only to pass hard indicators such as GDP,

but also to pay attention to the positive promotion of the comprehensive development level of the country by sustainability indicators such as resource environment and social development.

In 2017, China's comprehensive development index was 55.502, ranking 11<sup>th</sup>. It was at the upper middle level among all sample countries (regions) and belonged to emerging developing countries. This is consistent with the fact that China is the largest developing country. Specifically, China's economic growth index is only ranked 15<sup>th</sup>, which is inconsistent with the situation of 'economic power' recognized by developed countries such as the United States. According to the data, the main reason for China's low economic growth index ranking is the low per capita national income and the unreasonable economic structure. China ranks 12<sup>th</sup> in terms of resources and environmental indicators. China is rich in resources and resources, but lacks per capita. The environmental pollution problems reflected by the high intensity of

carbon dioxide damage are outstanding, and the level of sustainable development is not high. China's comprehensive development index is only 59.3% of that of the United States, and it is also quite different from the average value of the comprehensive development index of developed countries (79.230). Compared with developed countries, China has greater economic growth, resources, environment and social development difference. In contrast, China's GDP ranks second, second only to the United States, and there is a big difference from the comprehensive development index ranking. This shows that although China's GDP is at the forefront, it also has sustainable development issues such as uneven economic development, overall growth slowdown, and environmental pollution. Therefore, Americans arbitrarily determined that the list of developing countries is subjective and one-sided in order to formulate a standard of 'GDP-only' characteristics. Facts have proved that China is still a developing country.

**Table 3.** Comparison of the Comprehensive Development Index (CDI) of 32 countries (regions) and Total GDP in 2017

Comprehensive Development Index (CDI)									Gross domestic product (GDP)		Change in ranking
Rank	Country	Total Value	Economic Growth (Score/rank)		Resources and Environment (Score/rank)		Social development (Score/rank)		Rank	Total Value	Difference between CDI and GDP ranking
1	United States	93.606	24.907	3	19.703	1	28.997	1	1	194853.939	0
2	Singapore	86.775	31.385	1	18.115	5	17.274	8	17	3384.065	15
3	Hong Kong of China	82.931	29.414	2	18.250	4	15.267	9	16	3416.871	13
4	Germany	81.061	22.421	4	16.762	8	21.878	2	4	36567.494	0
5	Japan	80.275	21.392	5	18.881	3	20.001	4	3	48599.506	-2
6	Canada	78.440	20.302	6	19.088	2	19.050	5	10	16468.672	4
7	United Kingdom	75.398	18.998	8	16.184	10	20.216	3	5	26662.292	-2
8	France	75.204	19.866	7	17.535	7	17.802	6	7	25862.854	-1
9	Korea	74.148	18.509	9	17.874	6	17.765	7	11	15307.509	2
10	Italy	64.460	15.742	10	15.990	11	12.728	11	9	19569.606	-1
11	China	55.502	7.513	15	14.548	12	13.441	10	2	121434.914	-9
12	Malaysia	53.693	9.523	11	14.207	13	9.962	13	18	3189.582	6
13	Costa Rica	50.741	8.105	13	13.508	14	9.128	17	25	581.745	12
14	Brazil	49.973	7.503	16	16.613	9	5.858	30	8	20535.950	-6
15	Montenegro	48.794	7.481	17	12.079	17	9.233	15	32	48.446	17
16	Bulgaria	48.520	8.701	12	10.644	21	9.174	16	24	582.210	8
17	Georgia	48.403	6.161	23	10.481	23	11.761	12	26	162.430	9
18	Romania	47.892	7.615	14	10.863	20	9.415	14	21	2116.954	3
19	Thailand	47.380	7.456	18	12.021	18	7.903	21	14	4552.755	-5
20	Argentina	44.964	6.383	22	11.364	19	7.217	24	13	6426.959	-7
21	North Macedonia	44.816	6.502	21	10.148	24	8.165	18	29	112.795	8
22	Colombia	44.419	4.690	26	12.995	15	6.734	27	19	3117.899	-3
23	Kazakhstan	42.641	5.928	24	8.556	29	8.156	19	22	1668.058	-1
24	Vietnam	42.523	6.525	20	10.069	25	5.930	29	20	2237.799	-4
25	Armenia	42.147	4.333	28	9.851	26	7.962	20	28	115.275	3
26	Albania	41.445	4.116	30	10.495	22	6.834	25	27	130.251	1
27	South Africa	41.169	6.600	19	6.753	31	7.816	22	15	3495.541	-12
28	Moldova	41.083	4.683	27	8.837	28	7.563	23	30	96.698	2
29	Indonesia	40.879	2.333	32	12.469	16	6.077	28	12	10154.235	-17
30	Ukraine	39.185	5.235	25	7.195	30	6.756	26	23	1121.904	-7
31	India	38.088	3.251	31	9.621	27	5.216	32	6	26522.429	-25
32	Kyrgyzstan	35.089	4.261	29	5.043	32	5.785	31	31	77.029	-1

Sources of data: The authors are based on Transparency International's (TI) Global Corruption Index (CPI), World Economic Forum (WEF) Global Competitiveness Report (GCR), UNDP's Human Development Index (HDI), World Intellectual Property Organization (WIPO); United Nations Conference on Trade and Development database (UNCTAD) and World Bank (WB) World Development Indicators (WDI) data is calculated and compiled. (The same below)

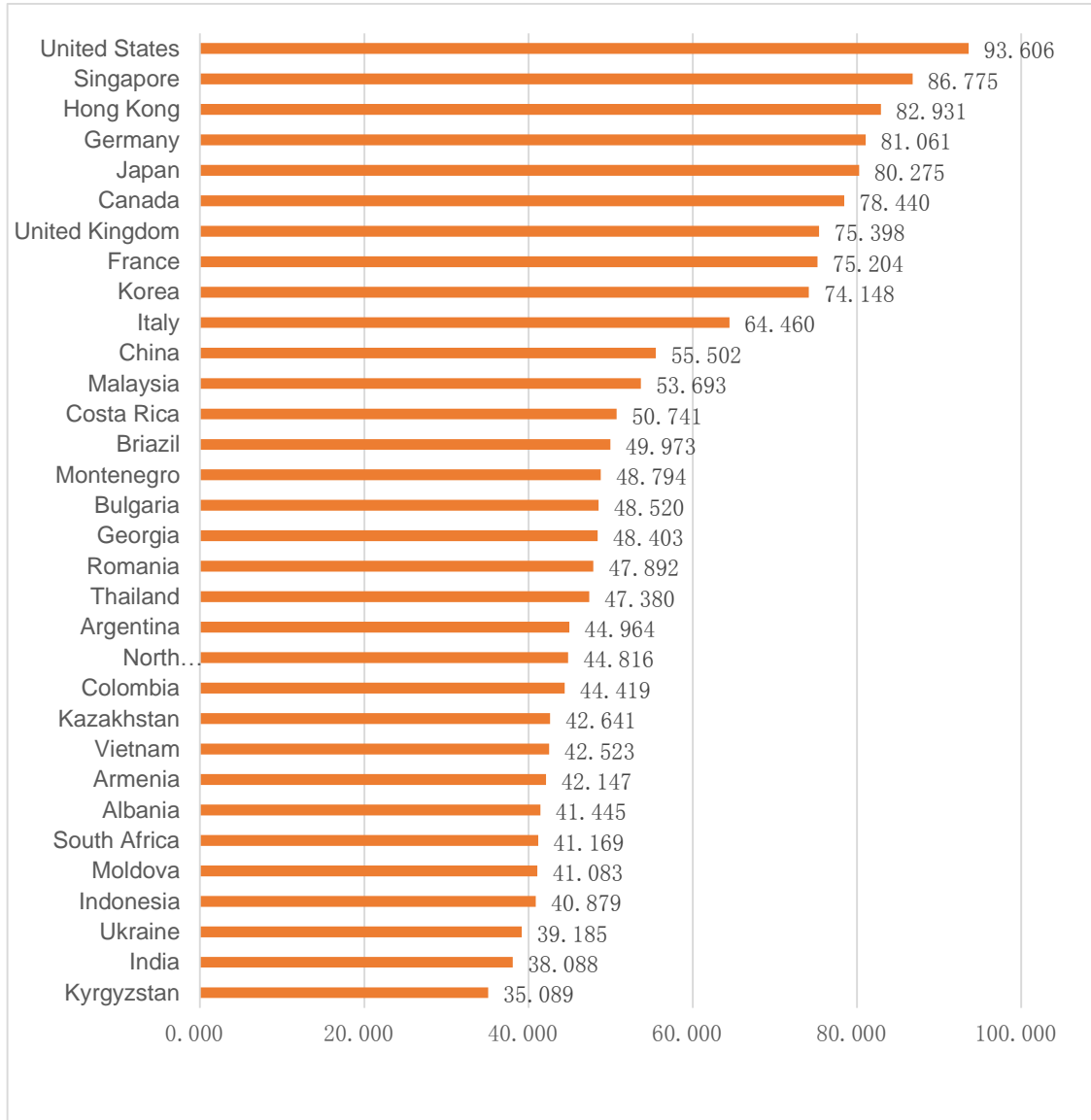


Figure 1. Ranking of the total indicators of the comprehensive development index (CDI) of 32 countries (regions) in 2017

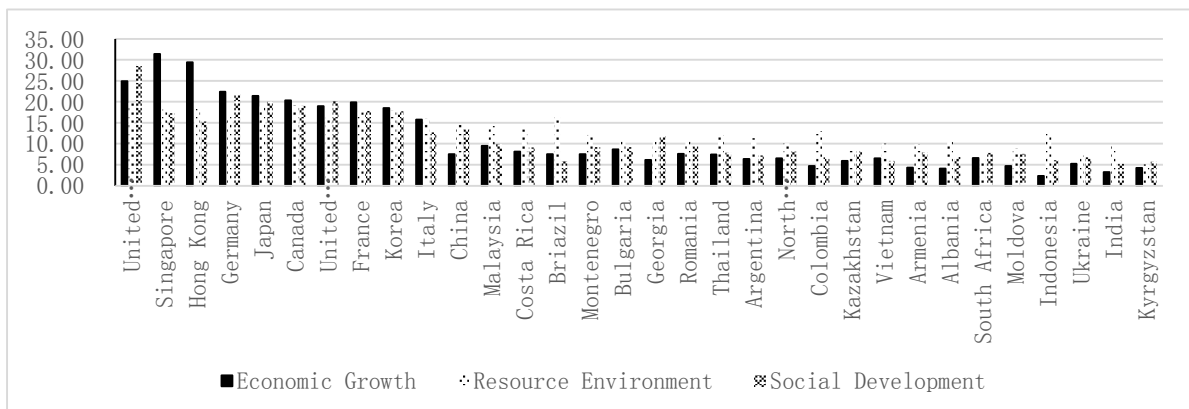


Figure 2. The scores of the composite indicators of 32 countries (regions) in 2017

3.2. Comparison of the Changing Trends of the Comprehensive Development Index (CDI) of Representative Countries

In order to gain a deeper understanding of the changing

trends of the comprehensive development index of various countries, this paper selects 12 representative countries to draw a line chart of the comprehensive development index for 2010-2017, and then analyses the comprehensive development index of countries with different



development levels from the perspective of international comparison trend.

It can be found from the development trend chart in Figure 3 below that the comprehensive development index of most countries in the research sample shows a volatile upward trend. From the perspective of the G7 Group as a whole, from 2010 to 2017, the average value of the United States' comprehensive development index (91.187) was 'a sudden rise' in the G7 Group, and the development trend has increased year by year since 2011, showing a relatively strong development strength. The comprehensive development indexes of Japan, Germany, Canada, Britain and France mostly fluctuated around the 70-80 range, and the trend lines of the comprehensive development index were relatively close. Italy's comprehensive development index is below 70, with an average value of 63.240, which is relatively weak in G7 countries. The trend line of Italy's comprehensive development index is in the range of 60-70. Above the pass line (60 points) are developed countries, and below are developing countries, forming a clear dividing line between developed and developing countries. On the whole, the overall national comprehensive development index of the old developed countries is much higher than that of other developing countries, the development level is relatively stable, and the overall development advantage is obvious.

In the group of developed countries, two other representative countries are Singapore and South Korea. Singapore's comprehensive development index has been at a high level, only less than the United States. However, since it peaked in 2014, there has been a slight downward

trend for three consecutive years, generally in the 85-90 range. South Korea's overall development level has increased significantly between 2010 and 2014, especially in 2011, the growth rate reached 4.8%. Although there was a slight decline in 2015, the growth trend of South Korea's comprehensive development level is still strong. In the group of developing countries, the two representative countries are Malaysia and Brazil, and their development trends are relatively stable. The national comprehensive development index is in the range of 45-55, which belongs to emerging developing countries.

As the largest developing country, China's comprehensive development index between 2010 and 2017 ranged from 45 to 55, with an average value of 51.863, and the trend of change fluctuated greatly. China's comprehensive development index rebounded rapidly after falling to a trough in 2011, and the overall trend was a steady upward trend from 2011 to 2016. But it is not difficult to find that the slope of the curve is gradually narrowing, and the growth trend is gradually slowing down. The change in China's comprehensive development index from 2011 to 2017 is different from the performance of rapid economic growth in recent years. Exposing China's good GDP performance, there are still many development shortcomings. If China wants to reach the lowest level of development in developed countries, the comprehensive development index must cross a score of nearly 10 points, indicating that there is a large development gap between China and developed countries. There is no doubt that China is still a developing country.

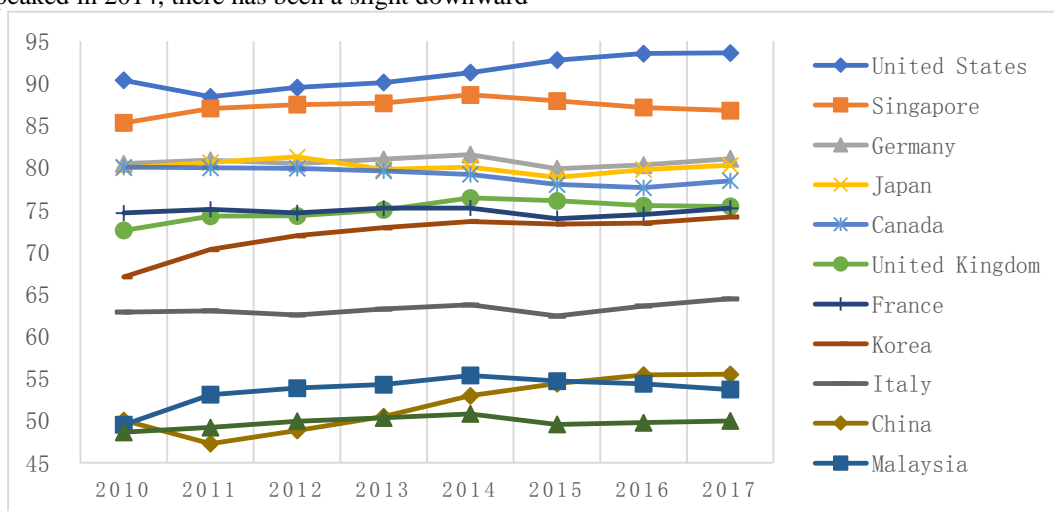


Figure 3. 2010-2017 representative countries' comprehensive development index (CDI) and its changing trend

#### 4. Conclusion and Enlightenment

This paper builds a new indicator system to measure the identification of developing countries from the three dimensions of economic growth, resource environment and social development, calculates and studies the comprehensive development index of 32 countries (regions) from 2010 to 2017. The study found that:

First, the top ten of the comprehensive development index (CDI) ranking calculated by the new indicator system includes the old developed countries represented

by the G7 Group. Most of the countries involved in the USTR's newly announced list are still under development. China. Compared with many developing countries, developed countries have strong comprehensive development strength and are in an absolute leading position. Second, China's comprehensive development index is at the upper middle level, ranking 11th among the 32 sample countries (regions), and it has a large development gap with developed countries, revealing China's lack of comprehensive development strength.

The conclusion of the study negates the rationality of

the four standards for measuring developing countries published by USTR on February 10<sup>th</sup>, 2020. First, the World Bank as a multilateral lender, its classification standards are not suitable for simple application in trade and other fields, and there are too many exceptions to this standard; second, the proportion of merchandise trade cannot be integrated with a country's comprehensive development. Linked to the level, it also needs to be combined with the level of social development other than the economic and trade field; third, the OECD and G20 are composed of developed countries and some developing countries, and jointly deal with the global economic, social and government crisis of international governance cooperation platform. It cannot be used as a standard for measuring the identification of developing countries. Fourth, the WTO uses a 'self-identification' method to determine the status of developing countries. It is intended to encourage more developing countries to join the WTO and integrate it into global trade and international affairs. 'Development' is far beyond the scope of trade, including various economic, environmental and social interactions. The results can only be reasonably evaluated by countries themselves, and developing countries should be allowed to declare their development status on their own, giving developing countries adequate development Power and flexibility. Obviously, these four standards expose the essential flaws of measuring the development level of a country with 'GDP only'.

Developing countries joining the WTO and enjoying 'special and differential treatment' can reduce unfair treatment and better integrate into world trade [15]. The trade war launched by the Trump administration in the United States mistakenly believes that developing countries are gaining more trade benefits due to the flexibility of 'special and differential treatment', but ignores that the enjoyment of this particularity and flexibility is bringing development. The economic and social development of China will also benefit the United States. Therefore, the list drafted by USTR to cancel the status of some developing countries has further eroded the rules-based multilateral trading system, and thus threatening developing countries is not worth the gains. The identification of developing countries cannot be unilaterally announced by the United States, and consensus must be reached through negotiations based on facts. 'Development' is a comprehensive dimension, and we cannot just look at a single economic aggregate [16]. The vast majority of developing countries should rationally recognize their own stage of development, resolutely oppose aggressive US unilateralism, and safeguard their own development rights. The success of the Uruguay Round negotiations was attributable to the concessions made by developing countries in areas such as intellectual property rights in exchange for the developed countries' agreement to guarantee the 'development' rights of developing countries. The reason why the 'Doha Round Negotiation' (also known as the 'Development Round') is in trouble is that the core is the game manifestation of developing countries in safeguarding their rights and demanding changes in the unreasonable

situation of the existing international trading system dominated by Western countries. Since the developed countries did not honour their commitments in the Uruguay Round negotiations, the benefits of 'special and differential treatment' to the economic development of developing countries are limited [17].

How to objectively understand China's status as a developing country. On the one hand, the new indicator system once again confirmed the fact that China is still a developing country. Both China and the world have witnessed the tremendous achievements China has made in the past 40 years of reform and opening up, but we must have an objective understanding of China's economic development. At the same time as the rapid growth of China's economy, it also brings about outstanding problems such as the deterioration of the resources and environment, incomplete development and uncoordinated development. The development gap between China and developed countries is still large. Therefore, it resolutely opposes the unfair treatment of western developed countries against my country and resolutely resists all hegemonic acts that harm national interests and hinder national development. On the other hand, in the negotiations on WTO reform, China must prepare for both hands. Not only must we adhere to the fact that China is still a developing country, we must also make a pre-negotiation plan in advance, and clarify and adhere to the bottom line of China's concessions on development issues. As a responsible big country, the Chinese government has clearly stated that it can assume more responsibilities and obligations that are suitable for its own development level and contribute to China's strength in promoting the healthy and orderly operation of the multilateral trading system.

### Acknowledgment

This work was supported in part by grants from National Social Science Foundation Project "Study on USMCA International Economic and Trade Rules Interpretation and Its Influence on China" (20FJLB010); Shandong Province Key R&D Program (Soft Science Project) "Research on the Mechanism, Path and Countermeasures of Economic Growth Driven by Enterprise Digital Transformation" (2020RZB01078).

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