

Industrial chain value chain topic

## Latin America's adjustment and repositioning under the restructuring of global value chains\*

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**Abstract:** This article uses the UNCTAD-Eora global value chain database to measure the global value chain participation and status index of Latin American countries from 2006 to 2021. It comprehensively discusses Latin American participation from the three perspectives of the region as a whole, the country and the industrial sector. Typical characteristics and development trends of global value chains. On this basis, this article examines the changing trend of Latin America's commodity trade structure, and analyzes the conditions and possible boundaries for the region to further participate in the division of labor in global value chains. The research results show that in global value chains Against the background of the rising trend of "pan-securitization" reconstruction, Latin America has three short-term advantages of geography, institutions and rules, as well as three medium- and long-term advantages of endowment, industry and green. In recent years, its participation in the global value chain has increased overall. However, industry and country heterogeneity have also begun to appear. Most countries in the Caribbean and Central America and Mexico have benefited more, and more have joined the downstream of the global industrial chain. South American countries continue to remain in the upstream of the industry as raw material suppliers, but some countries The phenomenon of being marginalized is obvious. China should fully predict the situation in which Latin America will benefit from the restructuring of the global value chain, and proactively adjust its economic and trade cooperation strategies and tactics with Latin America in conjunction with

the construction of a new dual-circulation development pattern. Keywords: value chain

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### A review of research and policy on global value chain reconstruction

The global value chain (GVC) is a network organization that connects R&D, design, manufacturing, sales, logistics, after-sales and other divisions of labor on a global scale to realize the value of goods and services, which includes the global industrial chain and global supply chain. Chapter 2 After the Second World War, the global value chain network gradually formed. Especially since the 1990s, driven by the wave of economic globalization, the level of global trade liberalization has improved, and the reduction of international transportation costs and communication costs has driven the level of trade facilitation to synchronize. Improvement has led to the rapid development of global value chain trade, which accounted for about 52% of international trade in 2008. Its growth is mainly concentrated in the machinery, electronics, transportation and service sectors. East Asia and North America have comparative advantages in such industries, and Western Europe have become the world's three major value chain centers. Global value chain trade has brought obvious economic benefits. Specialized division of labor and economies of scale have promoted the increase in productivity and the reduction of production prices, thus bringing about a substantial increase in income. According to World Bank estimates, a 1% increase in global value chain participation is much higher than the 0.2% income growth brought about by standard trade.

Per capita income growth will exceed 1%

After the global financial crisis in 2008, the expansion of global value chains reached an inflection point, and the inhibitory effects of the three major boundary constraints became increasingly obvious. One is the boundary of distribution and division of labor. In the so-called division of labor in global value chains,

UNIDO "Industrial Development Report 2002 / 2003: C". <http://open.unido.org/api/documents/4692446/download> / UNIDO - Publication - 2002 - 4692446 [2023 - 05 - 26] Song Hua, Yang Yu East : «Analysis on the connotation and development

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Information" in Economics Department Working Papers No 1462 OECD Publishing 2018 <http://www.oecd.org/officialdocuments/publicdisplaydocumenpdf> [2023-05-26] World Bank: «World Development Report 2020: Trade

for Development in the Era of Global Value Chains» <http://server/api/core/bitstreams/ee8dcf1b-45e2-5ff8-8cdc-0152596c9696/content> [2023 - 05 - 26]

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In the "smile curve", developing countries and emerging economies are in the "value depression", with low entry barriers but fierce competition. Their low-cost advantages are gradually disappearing, and they intend to upgrade and transform to the high end of the value chain, while developed economies are in the "value depression". "High Value", trying to "lock" the former and keep it in a low-end locked position. Issues of imbalanced distribution and conflicts of interest in the global value chain system are becoming increasingly prominent, and trade frictions are intensifying, further promoting the rise of global trade protectionism. According to Global Trade Alert Network (GTA) statistics, from November 2008 to the present, of the 53,959 trade-related policies introduced around the world, only 17.2% are "green policies" that are conducive to trade liberalization, while 80.6% are "green policies" that are detrimental to trade interests. 22% are "orange policies" that may harm trade interests. The second is the deindustrialization boundary. As the fourth industrial revolution led by new energy and digital economy continues to deepen, new manufacturing represented by intelligent manufacturing Technology has completely changed the manufacturing ecology, reconstructing the innovative functions, value-added capabilities and factor inputs of the manufacturing links in the global value chain, thereby improving the status of the manufacturing links in the global value chain. This has prompted developed countries to revisit "re-industrialization". Industrial policies have been introduced one after another to provide subsidies, tax incentives, etc. to manufacturing companies that build factories in the country, encourage the reshoring of manufacturing, and form an intervention in the division of labor in the global value chain that was dominated by multinational companies and dominated by economic benefits in the early stage. The third is The border of economic integration. In the context of repeated setbacks in multilateral trade cooperation, the global trade governance model has accelerated its adjustment. Global trade negotiations under the leadership of the WTO have entered a new era, with the rise of plurilateral agreements and regional trade arrangements (RTAs). According to WTO statistics. When the WTO came into effect in 1995, the cumulative number of globally notified RTAs that had taken effect was only 55. By August 2023, the cumulative number had reached 593, an increase of nearly 10 times. The impact of regional trade arrangements on WTO covered Economic and trade rules have been deepened and updated, promoting the in-depth development of regional economic

Zhang Yuyan and Feng Weijiang: «From "engagement" to "lockdown": US strategic intentions towards China and four prospects of the Sino-US game», ed. «Tsinghua Financial Review», Issue 7, 2018, Pages 24-25.

D Ernstý "Industrial Upgrading through Low - C in East - West Working Papersý Economic Series ý 2013 ý p 133ý P Gehl Sampath and B Vallejoý "Global Value Chains and Upgrading: Whatý When and How ?"ý in MERIT Working Papers No 2018 - 016ý 2018ý Lu Yue, Chen Shuai, Sheng Bin: «Embedded in the global value chain Will it lead to "low-end lock-in" of Chinese manufacturing?»ý Published in "Management World", Issue 8, 2018, No. Pages 11-29, Tang Yihong, Zhang Pengyang: "Research on the position and change mechanism of Chinese enterprises embedded in the global production chain", published in "Management World", Issue 5, 2018, Pages 28-46, Global Trade Early Warning Network

Statistics [http://www.globaltradealert.org/global\\_dyn\\_amic](http://www.globaltradealert.org/global_dyn_amic) [2023-08-09] Ni Hongfu, Zhang Zhida: "Restructuring the global value chain and improving the stability of the industrial chain and supply chain", published in "Tsinghua Financial Review", Issue 10, 2022, Pages 48-51, Yu Chang, Deng Zhou: «Adjustment of global value chains driven by the new generation of information technology and its response strategies», published in "Globalization", Issue 2, 2021, Pages 89-101, Zhao Shujie: «Research on the impact of the reshoring of US manufacturing from the perspective of global value chain reconstruction», Master's thesis of Hebei University in 2018, World Economic Forumý "A Global Rewiring: Redefining Global Value Chains for the Future"ý 2022 <https://www3.wberor.org/docs> [2023-05-26] ý ýýýýý database ý ýý: // ýýýýýýýý / ýý/ ýýýýýýýý ainRTAHome.aspx [2023-08-09]

The development has also made the global value chain system increasingly decentralized and decentralized.

Under border constraints, the proportion of global value chain trade in international trade has hardly changed after 2008, and the risks caused by the global complex production network Gradually gaining attention. A series of interviews with supply chain experts by the McKinsey Global Institute showed that on average across industries, companies will experience supply chain disruptions lasting a month or longer every 37 years. The 10-year expected loss averages 42% of annual pre-tax income. Since 2020, the global COVID-19 epidemic and the outbreak of the Ukraine crisis have triggered frequent disruptions in the supply chain, while global political and economic uncertainty and the continued Sino-US trade conflict have It has also increased the concerns of various countries about the resilience of the supply chain. Against this background, the reconstruction of the global value chain has gradually increased the triple adjustment with "security" or "risk removal" as the core.

The first priority is the localization and short-chain adjustment of the value chain under supply chain security. The focus is to promote the return of some industrial chain divisions to the home country or to neighboring countries, thereby shortening the distance of the cross-border supply chain and reducing the risk of overlong supply chains. And the risk of suffering uncontrollable external shocks. Corresponding policy adjustments are mainly reflected in the industrial policies introduced by various countries, such as the "Revitalizing U.S. Manufacturing Framework" and the "National Strategic Plan for Advanced Manufacturing" during the Obama administration. Trump The "American Advanced Manufacturing Leadership Strategy" during the administration and the "Chip and Science Act" introduced by the Biden administration, the "National Advanced Manufacturing Strategy" and the "American Competition Act of 2022", etc., Germany's "National Industrial Strategy 2030" and "Federal Government Data Strategy", Japan's "Economic Stimulus Plan" and "Comprehensive Innovation Strategy 2022", and India's "Indian Manufacturing National Strategy", etc. Research by the United Nations Industrial Development Organization (UNIDO) shows that during the period from 2009 to 2019. The proportion of industrial policy in global trade policies has increased from 19% to 47%. The average number of industrial policies implemented by high-income countries is about 5 times that of low- and middle-income economies, and industrial policies are mainly used by middle-income industrial economies (such as BRICS countries), while low-income countries actually have no industrial policy.

The second priority is the near-shoring and diversification of the value chain under economic security. It focuses on forming a strategic multi-point layout of the value chain in neighboring countries and major regions to avoid reliance on some economies. Corresponding policies and measures

Shi Dan, Yu Jing: «Reconstruction of global value chains and strategic differentiation of multinational corporations —a discussion based on the globalization shift», published in «Economic Management», Issue 2, 2021, pp. 5-22, Cheng Dazhong, Jiang Bin, Wei Ruqing: "Global Value Chain Division of Labor and Free Trade Zone Development: Intrinsic Mechanisms and Enlightenments to China", published in "Academic Monthly", Issue 5, 2017, pp. 48-58, M Boffa, M Janse n and Olga Solledery "Do We Need Deeper Trade Agreements for GVCs or just a BIT?" in The World Economy Vol 42 No 6 2019. Research Paper No 849 Washington DC: World Bank 2018. Research Paper No 849 Washington DC: World Bank 2018. Research Paper No 849 Washington DC: World Bank 2018.

Typical examples are the U.S. government's "near-shoring" and regional multilateral initiatives, such as the "Economic Prosperity Network" in 2020, the "Blue Dot Network Plan" and "Build Back a Better World" in 2021, and the "Indian Initiative" in 2022. "Too Prosperous Economic Framework" and the "American Economic Prosperity Partnership". In the context of limited success in the reshoring of domestic manufacturing, the above-mentioned U.S. policy measures are expected to return the value chain to the periphery of the United States and form a "China + 1" in key regions such as the Asia-Pacific. " value chain and supply chain alternatives. Like the United States, the European Union and Japan are also pursuing external "diversity" value chain adjustment programs. In the resolution on Europe's new industrial strategy in November 2020, the European Parliament called for action to strengthen , shorten and diversify supply chains to make them more sustainable and reduce over-reliance on limited markets. It also requires the European Commission to develop a smart reshoring strategy to redeploy industry back to the EU to increase production and investment. and relocated industrial manufacturing. In addition, the EU has expanded the construction of free trade areas and signed free trade agreements with American countries such as Colombia, Peru, and Canada, as well as Asian countries such as Vietnam, Japan, and South Korea, to build new partners in its global value chain. The Japanese government has launched a "10 billion subsidy" plan totaling 243.5 billion yen to promote supply chain reform projects, of which 220 billion yen will be used to fund Japanese companies to move production lines back to Japan or to Southeast Asia.

The third level is the shore-friendly and ideological adjustment of the value chain under political security. The emphasis is on highlighting the consistency or similarity of values in the reconstruction of the global value chain. The corresponding policy measures are exemplified by the "friendly shore outsourcing" of the United States. Emphasizing that the United States will build new supply chains with "trustworthy and friendly countries" to alleviate the fragility of the supply chain system, especially reducing dependence on China. The Biden administration has introduced infrastructure investments to encourage value chains to flow to friendly countries. In conjunction with the Jobs Act, the Inflation Reduction Act and the Chip and Science Act, the so-called "Democratic Supply Chain Alliance" was launched to prioritize strengthening the resilience of the supply chain in areas with similar ideas. It established the "Chip Quad Alliance" and pointed out that it must work together with The allies built a "technological democracy alliance" and jointly announced the establishment of a trade and technology committee with the European Union, claiming that it would be based on "common democratic values" in five major areas including investment review, export control, artificial intelligence, semiconductor supply chain, and global trade challenges. Strengthen cooperation In addition, the United States has firmly built "small courtyards and high walls" and strictly restricted investment in countries of concern such as China, Russia, Iran and North Korea. The European Union has also adopted a similar concept. It released "Shaping Europe's Digital Future" « The three digital strategy documents "Artificial Intelligence White Paper" and "European Data Strategy" propose that the digital technology empowerment of European society is rooted in common values, emphasizing that European values and ethical rules as well as social and environmental standards must be applied to the digital space.

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It can be seen that in the reconstruction of the global value chain, developed countries have shown a more active and proactive policy adjustment trend. The direction and content of their adjustments reflect the prominent characteristics of "pan-security" and go beyond geopolitical and ideological considerations. The trend of considering economic benefits will play a greater role in the current adjustment of global value chains, industrial chains and supply chains. Against this background, in the short to medium term, countries with geographical proximity, similar democratic systems or similar values to Western countries such as the United States and Europe The region has become the focus of the global industrial chain and supply chain tilt. In addition to having the above three "near" characteristics, Latin America has also concentrated half of the free trade agreements concluded by the United States, and has signed relatively extensive agreements with the European Union, Japan and other economies. The free trade agreement has the advantageous conditions to undertake a new round of industrial chain and supply chain transfer in terms of mechanism construction.

## 2. Latin America's model and status of participating in global value chains

Driven by the restructuring of the global value chain, Latin America's overall participation in the global industrial chain and supply chain has accelerated, but the diversity at the country level and industry level is significant. This article disassembles the global market from two dimensions: industry and country. Value chain data quantifies the characteristics and trends of Latin American regions and countries in global industrial adjustment.

### (1) Research methods

In order to reflect the participation degree of Latin America and its countries in the global value chain, this article adopts the KWW method proposed by Robert Koopman<sup>1</sup>, based on the Eora Global Value Chain Database (UNCTAD-Eora Global of the United Nations Conference on Trade and Development). Value Chain Database), from around the world The current situation and division of labor in Latin America's participation in global value chains are examined from the two perspectives of value chain participation and global value chain status.

Among them, the global value chain participation index represents the degree to which an economy participates in the global value chain. The larger the value, the higher the degree of participation of the economy in the division of labor in the global value chain. The index can be decomposed into forward participation. (Forward GVC Partition) and Backward Participation (Backward GVC Participation) two indicators. Forward participation refers to the economy's participation in the global value chain by exporting domestic production inputs to the downstream production stage, while backward participation refers to the economy's participation in the global value chain. Economies participate in global value chains by importing foreign inputs to produce domestic goods and services for export.

The calculation formula of the global value chain participation index is as follows:

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<sup>1</sup> Robert Koopman, "Global Value Chains: A New Paradigm for the World Economy," *Journal of Economic Surveys*, vol. 28, no. 2, pp. 1-48, 2014.

Global value chain status index formula (1)

The global value chain status index indicates the position of an economy in the division of labor in the global value chain.

The larger the value, the higher the production stage of the economy in the global value chain. On the contrary,

it indicates that the economy is located in a relatively downstream position in the division of labor in the global value chain. Its calculation formula is

The formula is as follows (2):

Global value chain status index formula (2)

In equations (1), (2), foreign value added (FVA) is the overseas exports of an economy.

Value added, that is, the part of the added value produced by other economies that is exported, indirect value added (DVX)

Indicates the domestic value added used by other economies as export inputs, that is, the domestic value added of the economy is represented by its

The part of other economies used for exports. Gross Export is total exports.

The Eora database provides data on 190 economies and their 26 industry sectors from 1990 to 2021.

key indicators of the global value chain. This article focuses on Latin America and is based on the reconstruction of the global value chain.

According to the objective of the investigation, 2006-2021 was selected as the analysis period, and 26 were screened out from the Eora database.

For Latin American countries, we can obtain the value-added trade data of various sectors in each country, and then analyze the value-added trade data at the national and regional levels.

Global value chain participation indicators are calculated.

(2) Typical facts

1 The overall situation of Latin America's participation in global value chains

For a long time, Latin America's participation in global value chains has been lower than the global average, even

Less than the average level of the least developed countries, but in the context of the restructuring of global value chains, 2006-2021

During the year, the average value of its global value chain participation index increased to a certain extent, from 339% to

rose to 418%. The average annual growth rate Although the growth rate is much lower than that in Asia, it still objectively promotes

of 0.5%, regional employment improvement and economic growth has formed a positive incentive for Latin American countries to further participate in the global division of labor.

During this period, except for 2009, which was affected by the tail effect of the global financial crisis and showed a more obvious

In addition to the contraction, the average participation level of Latin America in the global value chain has shown a gentle increase.

The growth rate has accelerated since 2016, and there has been a second slight jump in recent times since 2018, showing that

Unless otherwise specified, the data in this section are calculated by the author based on UNCTAD-Eora global value chain data decomposition.

Based on the calculation of UNCTAD-Eora global value chain database data, in 2010, the world of global value chain participation

The average is 57% (the United States is 61%, the average for the European Union

and 45% for the least developed countries). See ILO: «Decent work in global supply chains», International Labor Conference No.

105th Session, Report IV, 2016, http://www.ilo.org/wcmsp5/groups/p\_ublic [2023-05-26]

The regions with the fastest growing participation in global value chains since 2010 have been East Asia, Southeast Asia and South Asia, with an average annual growth rate of more than 4%.

Above. See the website of the Ministry of Commerce of China: «Seizing new opportunities in the adjustment period of the global value chain», January 3, 2021. http://zys.mof

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Countries in the region are accelerating their integration into the global industrial division of

labor (see Figure 1). From the perspective of participation in the global value chain, the improvement in backward participation in Latin America has been relatively prominent. During the period from 2006 to 2021, the backward participation in Latin America was generally high. Regarding the forward participation (see Figure 1), among them, the forward participation increased slightly, roughly around 15%, while the backward participation technical increased from 19.8% to 10%. This shows that Latin America is adjusting to the current global value chain. China, limited by its own capabilities and manufacturing development level, its ability to process products and re-export intermediate goods to trading partners has not been significantly improved, nor has it made major breakthroughs in upstream links such as design and R&D. However, through the expansion of preferential policies such as export processing zones, it has increased its participation in terminal links such as processing and assembly, and has prepared possible conditions for the improvement of future manufacturing capabilities. At the same time, this will also lead to Latin American countries' reliance on external intermediate products. Investment creates higher dependence.

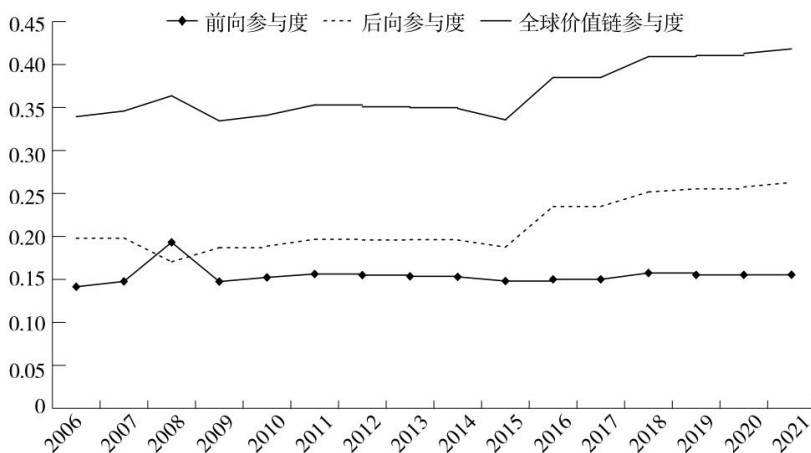


Figure 1 Average participation in global value chains in Latin America (2006-2021)

Data source: Calculated based on UNCTAD-Eora global value chain database data.

From the perspective of its embedded position in the global value chain, the trend of Latin America moving downstream is also obvious. During the examination period, except during the global financial crisis, the global value chain status index of Latin America was negative, and corresponding Since the two jumps in its average participation index, the decline has been obvious after 2016 and 2018 (see Figure 2). Therefore, the Latin American region is more dependent on extra-regional added value than other regions on its indirect added value. It has a lower status in the global value chain and is in a relatively low-end or downstream position. At the same time, the decline in the average status index in Latin America further proves that Latin America is in "onshore outsourcing", "nearshore outsourcing" and "friendly shore outsourcing" Due to the adjustment of supply chain policies, it has increased its participation in the global manufacturing terminal links, and its dependence on external parties continues to increase.



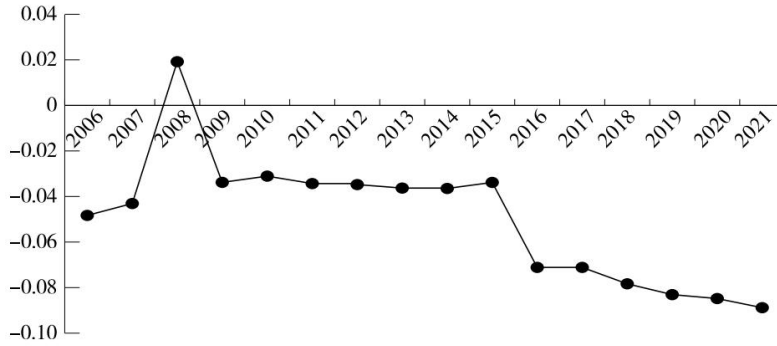


Figure 2 Average status index of global value chains in Latin America (2006-2021)

Data source: Calculated based on UNCTAD-Eora global value chain database data.

2. Latin America's participation in global value chains by country

The depth of participation of Latin American countries in global value chains shows a trend of differentiation. Caribbean, Central America

The two major sub-regions of China and Mexico are more involved in the division of labor and cooperation in the global value chain, while South America is more involved in the division of labor and cooperation in the global value chain.

The overall degree is low. The global value chain participation index of Latin American countries in 2021 shows that when data is available,

Region 26: Antigua and Barbuda, Barbados, Bahamas, Mexico, Belize, Panama

The indicator values of 9 countries, including Malaysia, Jamaica, Haiti and Chile, are higher than the regional average, and 5 of them are

Among Caribbean countries, 3 countries are located in Central America and Mexico, and only 1 country, Chile, is located in South America (see

Table 1). The global value chain participation of the remaining 17 countries is 40% and below, especially Brazil and Argentina.

The indicator values of the Southern Mercosur member countries such as Timor-Leste, Uruguay and Paraguay rank low in the region, while Secretariat

The indicator values of Pacific Alliance member states such as Russia and Colombia are also relatively low, indicating that they have poor performance in the global and regional areas.

In regional cooperation, the level of participation in the division of labor in the value chain is relatively low.

Table 1 Global value chain participation of Latin American countries (2021)

nation	global value chain Participation Index (%)	global value chain status index	nation	global value chain Participation Index (%)	global value chain status index
Antigua and Barbuda	68.0	-0.218	Honduras	55.5	0.005
Barbados	55.5	-0.175	Guyana	55.5	0.005
Bahamas	55.5	-0.194	Dominica	55.5	0.005
Mexico	55.5	0.005	Brazil	55.5	0.005
Belize	55.5	-0.093	Colombia	55.5	0.005
Panama	55.5	-0.197	Bolivia	55.5	0.005
Jamaica	55.5	-0.086	Ecuador	55.5	0.005
Haiti	55.5	-0.160	Argentina	55.5	0.005

Chile	ÿÿ ÿ	0 000 Guatemala	ÿÿ ÿ	ÿ ÿÿÿ
Nicaragua	ÿÿ ÿ	ÿ ÿ ÿÿÿ	cuba	ÿ ÿÿÿ
costa rica	ÿÿ ÿ	- 0 041 Uruguay	ÿÿ ÿ	ÿ ÿÿÿ
Trinidad and Tobago 38 0		0 068 Paraguay	ÿÿ ÿ	ÿ ÿÿÿ
Peru	ÿÿ ÿ	0 073 Venezuela	ÿÿ ÿ	ÿ ÿÿÿ

Data source: Calculated based on UNCTAD-Eora global value chain database data.

Latin American countries are heterogeneous in their embeddedness in global value chains. Caribbean and Central American countries

Most of them are in the downstream of the industry, while South American countries are in the upstream. Except for Trinidad and Tobago, Guyana,

Except for Guatemala and Cuba, the remaining Caribbean and Central American countries have higher global value chain participation indexes.

However, the status indexes are all negative, and the regional rankings in the backward participation index are relatively high, indicating that they are relatively inferior to other regions.

Other countries in the region have taken the lead in increasing global industrial connections and are now at the lower end of the industrial and supply chains.

The global value chain position index of South American countries and the above-mentioned Caribbean exception countries is positive, but its parameters

The low degree index indicates that these countries mainly serve as suppliers of raw materials in the global division of labor and appear in

Industrial chain and supply chain upstream

There are also certain differences in the participation of Latin American countries in global value chains. 2006-2021

During the period, only Guatemala, Bolivia, Brazil, Guyana, Uruguay, Argentina, and Venezuela

The participation in global value chains of eight countries including Paraguay and China has declined (see Figure 3). Among them, Mercosur 4

The outstanding performance of countries, Guyana and Guatemala is the decrease in backward participation, indicating their activities in the downstream of the industrial chain.

There is a trend of overall withdrawal of the movement. Bolivia's main performance is the decrease in forward participation, which shows that it is in the raw materials

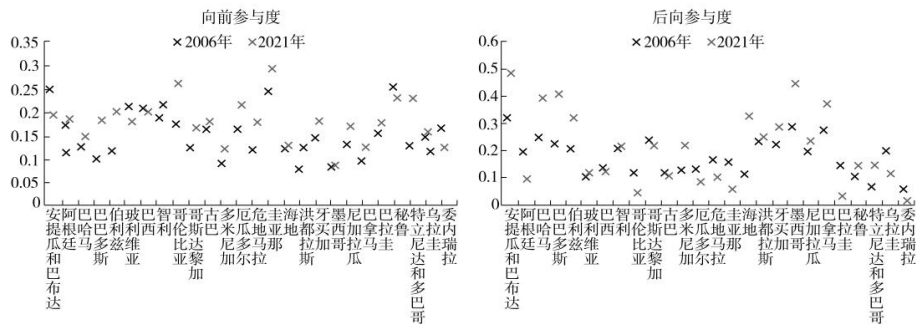
The relative shrinkage of the supply field, Venezuela has shown a simultaneous decrease in forward and backward participation, which is similar to the recent

The objective environment for external blockades in recent years has been consistent. The participation index of the remaining 18 countries has varied.

With the exception of Mexico and Panama, the countries with the fastest rise are all Caribbean countries, and their backward participation

The improvement in degree of participation is significantly greater than that of forward participation, while a few South American countries such as Chile, Colombia, and Ecuador

The increase in forward participation is even greater, indicating that its position in the international raw material market has been relatively improved (see Figure 3).



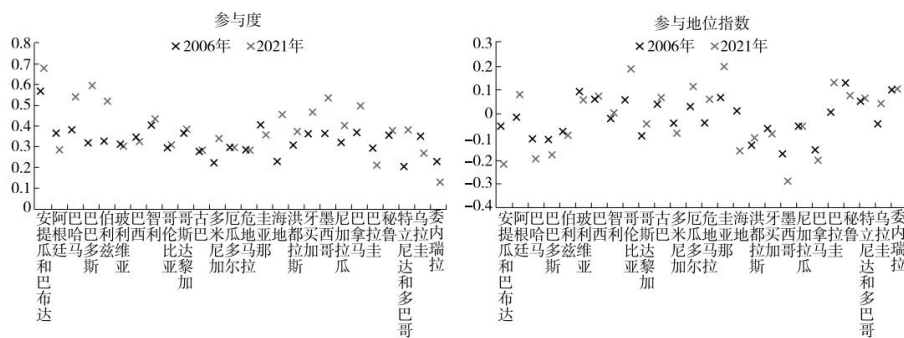


Figure 3 Changes in Latin American countries' participation in global value chains

Data source: Calculated based on UNCTAD-Eora global value chain database data.

### 3. Latin American industries participating in global value chains

The participation of various industrial sectors in Latin America in the global value chain is different, but its position in the global industrial chain and supply chain pattern remains stable. According to the participation index of UNCTAD-Eora global value chain data accounting, since 2006, the degree of embeddedness of Latin America in the global industry shows certain differences in different industrial sectors. It generally presents the following four types of forms: (1) In the recycling industry, electrical machinery products, transportation equipment and other manufactured products, pro-capital and pro-capital industries Technology and end-consumer industrial sectors are most deeply involved in the division of labor in the global industrial chain. The global value chain status indexes of relevant sectors are all negative, reflecting that the participation model in this region is the import of intermediate products and downstream processing and assembly. (2) In metal products, In resource- and capital-intensive industrial sectors such as the extractive industry, the global value chain participation index is relatively high, and the status index is positive, indicating that the region relies on its resource advantages and is embedded in global production as a supplier in the upstream of the industrial chain and supply chain. (3) In resource- and labor-intensive industrial sectors such as petroleum, chemicals and non-metallic mineral products, textiles and clothing, wood and paper products, Latin America's global value chain status index is negative, indicating that it is embedded in the global economy to a certain extent. Downstream of the industrial chain (4) Limited participation in global division of labor and cooperation in the agriculture, fishery and service industries (see Figure 4). Changes in the

participation of Latin American industries in the global value chain have shown a trend that is generally in sync with the world. 2006-2021 During the year, among the 9 sectors whose global value chain participation increased beyond the regional average, except for the two manufacturing sectors of electrical machinery products and transportation equipment and the fishery sector, the remaining 6 sectors were all in the service industry, namely public administration and management. Retail industry, education, health and other services, postal and telecommunications industry, financial intermediation and commercial activities, electricity, gas and water supply industry. Among the above-mentioned service sectors, except for the postal and telecommunications industry, the global value chain status index of the other sectors are all at the same level. is a positive value slightly greater than zero, indicating that Latin America is following the adjustment pace of global industries in the service industry and increasing its integration into global industries. However, limited by its service industry functions and competitiveness, it currently mainly provides

services, and has yet to make a breakthrough in the high value-added service sector.

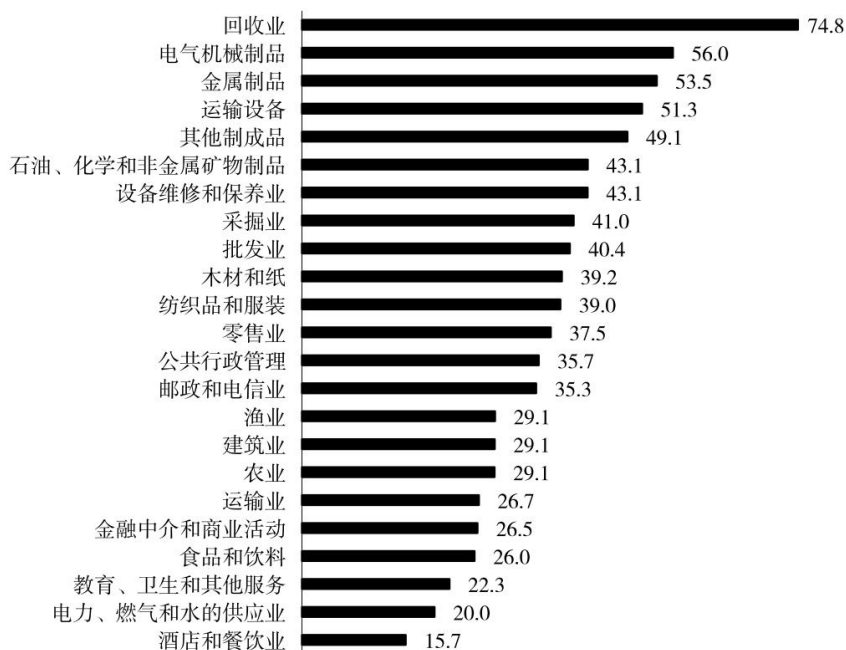


Figure 4 Global value chain participation in various industrial sectors in Latin America (2021) (%)

Data source: Calculated based on UNCTAD-Eora global value chain database data.

The industrial participation of Latin American countries in the global value chain is related to their resource endowments and competitive advantages. In terms of participation in the global value chain, the top three industrial sectors with the highest participation index in the 26 Latin American countries have a certain overlap, but the differences are more To highlight, specifically, 10 countries (Argentina, Barbados, Belize, Cuba, Dominica, Haiti, Jamaica, Nicaragua, Panama and Paraguay) use the transportation equipment industry as a key sector to participate in the global value chain, and they are all in the industrial chain. Downstream, the terminal processes such as processing and assembly are completed. Seven countries (Antigua and Barbuda, Argentina, Barbados, Brazil, Guyana, Haiti and Mexico) mainly participate in the global division of labor through the recycling industry, and they are all downstream of the industrial chain. There are 8 Countries (Chile, Cuba, Ecuador, Guatemala, Guyana, Honduras, Paraguay and Venezuela) focus on joining the global value chain through the extractive industry and are in the upper reaches of the industrial chain. There are 7 countries (Bolivia, Colombia, Costa Rica, Dominica, Honduras, Peru and Uruguay) The focus is on joining the global value chain through the wholesale industry, which is at the downstream of the industrial chain. It is worth mentioning that Latin America may have formed a certain intra-regional industrial division of labor in the metal products sector. The 15 countries in the region mainly participate in the global value chain through this sector. However, Argentina, Eight countries including Bolivia, Brazil, Chile, Guatemala, Peru, Trinidad and Tobago, and Venezuela are in this department.

The global value chain status index of the door is positive and they are in the upper reaches of the industry. However, the global value chain status index of seven countries including the Bahamas, Costa Rica, Dominica, Ecuador, Jamaica, Nicaragua and Panama is negative and they are in the downstream of the industry. Latin

American countries participate in the global value chain The industrial changes in the industry show greater differences. From 2006 to 2021, 3 out of 26 Latin American countries have experienced serious industrial "de-globalization". Among them, Bolivia has experienced a full-industry  $\bar{y}$  global value chain participation In Venezuela, except for the extractive industry, the participation of other industrial sectors has declined to varying degrees. In Argentina, except for public administration and the two public service sectors of electricity, gas and water supply, the participation of other industries in the global value chain has declined. are also on the decline. Judging from the top three industries with the fastest growing participation in global value chains in Latin American countries, most countries mainly focus on participating in the industrial sectors that rely heavily on the global industrial division of labor, such as regional education, health and other services, as well as The recycling industry is a sector that has received more attention in recent years. Among them, the growth of the former is more prominent in nine countries (Dominican Republic, Ecuador, Guatemala, Guyana, Haiti, Honduras, Nicaragua, Peru, Trinidad and Tobago), and the latter There has been a significant growth in 8 countries (Argentina, Barbados, Colombia, Costa Rica, Dominica, Haiti, Jamaica and Mexico). It can be seen that with the restructuring of the global value chain and the introduction of industrial policies in various countries, the Latin American region as a whole

is making up for the loss. Its embedding in the global value chain is limited, but the functional differentiation of countries in the region in the adjustment of production and supply chains is obvious. Most countries in the Caribbean and Central America and Mexico, which are geographically close to the United States, have become the main beneficiaries of the current adjustment. By participating in the downstream links of production, it has improved its position in the global division of labor, and promoted the overall improvement of the region's participation in the global value chain and the backward movement of participation links. Most countries in South America continue to serve as raw material providers in the upstream of the industry during this round of adjustment. At the same time, It has also begun to undertake the downstream assembly links of some manufacturing industries, but the benefits have been relatively limited. The participation of some South American countries in the global value chain has even retreated. In particular, Bolivia, Venezuela and Argentina have been significantly marginalized in this round of adjustment, including The two major regional integration organizations, the Southern Common Market and the Pacific Alliance, including Brazil and Colombia, play a limited role in internal coordination and division of labor. Their South American member states have low participation in the global value chain. At the same time, Latin America is undergoing adjustments. It still mainly undertakes the transfer of industrial chains in a reactive and passive manner. Onshore and nearshore production caused by the short-chain global value chain and friendly shore production driven by supply chain resilience have played a certain role. This is reflected in the industry as terminal The manufacturing of consumer goods and capital goods has increased, and the recycling industry and education, health and other service industries have also received attention

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$\bar{y}$  Among the 26 industrial sectors in the UNCTAD-Eora global value chain database, this article focuses on the 1st to 23rd sectors and omits the 24th to 26th sectors, that is, private households, others, re-exports and re-imports. Department $\bar{y}$



In the emerging Chinese market, the number of Latin American import and export products has increased. Among them, the number of imported products

A set of product categories with an increase in the number of products of 56% and an increase in value by 64%

in Chapters 84 and 85 of the HS classification. This difference in changes shows that the differences between Latin America and emerging markets

Industrial connections have increased, and export risk resistance has been greatly improved, highlighted by the decline in exports of manufactured products.

Increase

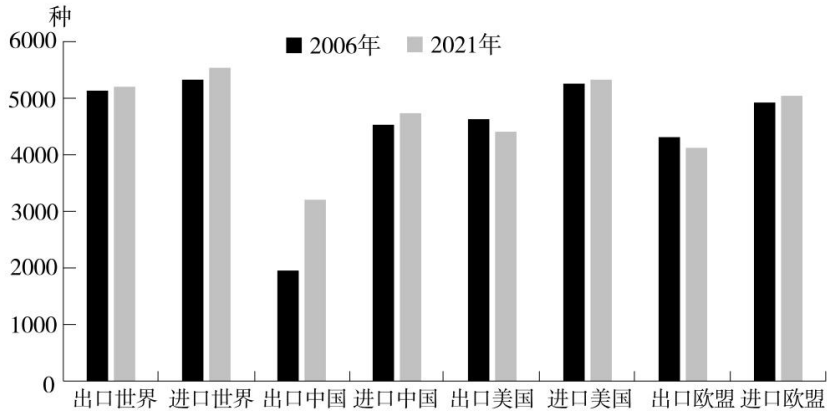


Figure 5 Number of types of Latin American trade products

Note: The number of product categories is based on the HS 6-digit product number.

Data source: Calculated based on Trade Map trade statistics data.

2 Trade product structure

Changes in value chain trade have had an impact on Latin America's trade structure. From 2006 to 2021, Latin America's

The significant changes in the import structure of the United States are reflected in the relatively rapid growth of intermediate products such as raw materials. Exports

Structural changes are reflected in the higher growth rate of agricultural products, raw materials and some manufactured products (see table

2) The expansion of exports of manufactured goods such as vehicles, machinery and equipment, and optical instruments reflects the growth of Latin America's export capabilities.

The substantial progress also shows that the region's status in the global industrial division of labor has improved.

Table 2 Top ten commodities with the highest import and export growth rates in Latin American countries (2006-2021)

(%)

Latin American imports			Latin American exports		
Year	name	Growth rate HS chapter	Year	name	growth rate
2006-2021	drug	56%	2006-2021	mineral sand	64%
2006-2021	fertilizer	56%	2006-2021	Oil nut	56%
2006-2021	steel	56%	2006-2021	vehicle	56%
2006-2021	38 Miscellaneous chemicals 0 67	56%	2006-2021	Nuclear reactors, boilers, machines, Mechanical equipment and parts pile	56%

ÿÿ	cereals	ÿ ÿÿ	71 Jewelry, Coins, Precious Metals, Jewelry 1 51	
ÿÿ	plastic	ÿ ÿÿ	ÿÿ	fruit
ÿÿ	Oil nut	ÿ ÿÿ	ÿÿ	cereals
ÿÿ	feed	ÿ ÿÿ	ÿÿ	meat
ÿÿ	meat	ÿ ÿÿ	ÿÿ	Optical Instruments
15 Grease, oil and wax products, etc. 0 29			ÿÿ	feed

Data source: Calculated based on Trade Map trade statistics data.

Consistent with Latin America's position in the global industrial chain and downstream of the supply chain, Latin America's manufacturing export capabilities

The improvement is concentrated in the technology-intensive sectors of China. Specifically, during the period 2006-2021, the technology-intensive sectors of China

Integrated manufactured products increased the most among Latin American manufacturing exports, from 40.5% to 48.8%. High-tech

The proportion of technology-intensive manufactured products dropped from 33.0% to 30.8%, but the proportion is still relatively high. Low-tech products

The export of intensive manufactured products remained stable, while the export of labor-intensive manufactured products declined to a certain extent, accounting for

The ratio dropped from 11.0% to 9.7% (see Figure 6). Therefore, it can be judged that although Latin America is mainly in a

It is the downstream link of production and processing. However, in recent years, it has mainly undertaken medium- and technology-intensive industries and has not engaged in labor

There are too many new trees in animal-intensive industries. On the one hand, this tendency of industrial transfer stems from Latin America itself.

The age structure of the labor force has begun to rise. Countries such as Cuba even have a significant aging trend, while regional

The labor supply is also relatively limited. On the other hand, it comes from the region's increasing influence on the US-Mexico-Canada Trade Agreement.

Waiting for the impact of the new generation of trade rules, and under the constraints of labor protection-related provisions, labor costs will decline.

There is limited room for reductions, and it is difficult to make more progress in the "pro-labor" manufacturing sector.

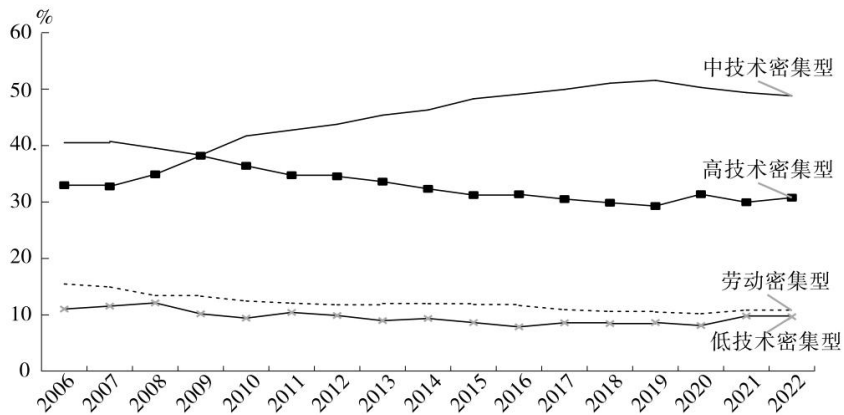


Figure 6 Latin American export product intensity distribution (2006-2022)

Data source: Calculated based on classification of Trade Map trade statistics data.



### 3 Trade flow structure

From 2006 to 2021, while Latin America's participation in the global value chain has increased, its regional The proportion of trade dropped from 19.3% to 14.5%. Therefore, Latin America's value chain trade mainly promotes the enhancement of regional foreign trade, and the internal industrial division of labor and coordination has even retreated. Latin America's trade flows have a high degree of concentration. In During the period examined in this article, its imports and exports mainly flowed to the three major economies of China, the United States and Europe, and its new trading partners were concentrated in Asia.

During the entire inspection period, the prominent features of Latin America's trade flow structure were the decline in the proportion of trade between the United States and Europe and the substantial increase in the proportion of China's trade. However, the restructuring of the global value chain, especially the industrial policies and outsourcing policies introduced by the United States and Europe, have made its trade flows have been adjusted in stages. Specifically, corresponding to the slight jump in Latin America's participation in the global value chain in 2016 and 2018, the proportion of the United States in Latin America's imports and exports simultaneously changed from decline to increase, and the increase in exports Relatively larger, the EU's proportion in Latin America's exports also reversed its downward trend and rebounded. China's proportion in Latin America's imports and exports further increased after these two points (see Figure 7). Combining Latin America and its three major trading partners From the changes in the types and structure of trade products, it can be judged that as Latin America further integrates into the global value chain and industrial chain, exports to the United States and the European Union are concentrated, the added value of exports has increased, and exports to China have increased in both quantity and quality. While the types of exports have become more diversified, the added value of exports has increased. After the accelerated adjustment of the global supply chain and industrial chain, China and the United States have not experienced changes in Latin America. Instead, they have started to synchronize. Growth. After Latin America undertook the transfer of the global industrial chain, it gained the ability to simultaneously expand its market share in China, the United States, and Europe, and its export capabilities are improving.

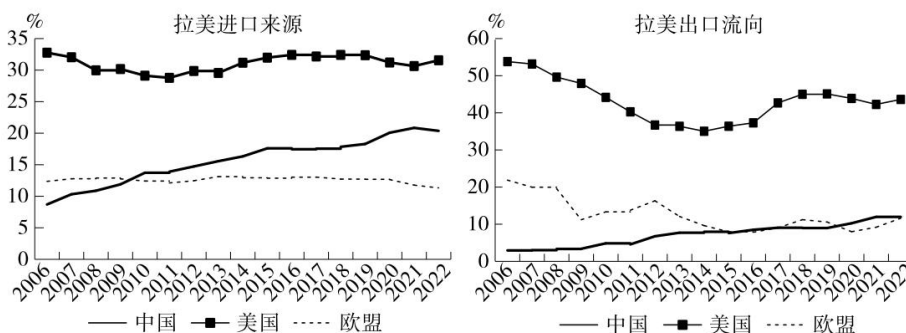


Figure 7 Latin American trade flows (2006-2022)

Data source: Calculated based on classification of Trade Map trade statistics data.

## (2) Conditions and constraints for Latin America's participation in global

value chains. Judging from the recent changes in Latin America's participation in global value chains, the region has responded to the "pan-security" value chain reconstruction policy. Since "onshore outsourcing" Judging from the changes in Latin American industries, it has outstanding geographical, institutional and rule "distance" advantages in undertaking the transfer of global industrial chains and supply chains in the short term. In particular, the global COVID-19 epidemic and global geopolitical tensions have raised concerns about the resilience of supply chains. Highlights its existing advantages. At the same time, Latin America also has mid- to long-term advantages in deeply integrating into the global value chain: First, endowment advantages. Most countries in the region have abundant energy and resource reserves, which can support their continued participation in the global value chain in the upstream of the industry. The second is industrial advantages. The regional commodity trade structure has undergone positive changes, and the factor allocation has tilted towards export-oriented industries such as export processing. The region has continued to become a region with greater global direct investment inflows in recent years, which will also be conducive to its further acceleration in the future. Integrate into the global industrial chain and supply chain. The third is green advantage. In the context of the carbon emission commitments of various countries, the demand for reducing "carbon footprints" is rising. This objectively promotes countries in the Western Hemisphere to shorten the supply chain and introduce policies similar to the US "Inflation Reduction Act". Policies to subsidize new energy and renewable energy will help some Latin American countries, represented by Mexico, to further integrate into the North American new energy supply chain and industrial chain.

However, Latin America's participation in the global value chain is also subject to three constraints. First, the effectiveness of external policies. Latin America's accelerated integration into the global value chain objectively benefits from the "onshore" and "nearshore" policies promoted by Western countries such as the United States and Europe. "Friendly" outsourcing policies, but such policies interfere with the global division of labor of multinational companies in the early stage and must be supplemented by corresponding resource tilts. However, affected by Latin America's own economy, the resource matching of the above policies is insufficient and inadequate. It has been shown that the policy effectiveness has been affected. The second is internal integration constraints. As of 2022, the intra-regional trade share of Latin America is only 15.1%, which is far lower current situation of value chain than that of Europe's 68.5% and North America (excluding Mexico)'s 30.6%, and 58.7% in Asia. Judging from the adjustment, although Latin America has formed a certain degree of heterogeneity in industrial division of labor, it has not yet been able to form a regional large-scale production network, thus weakening its integration advantages. 3. It is the constraint of governance capabilities. The international ranking of Latin American countries' business environment is low. Under extreme pressures such as the COVID-19 epidemic, Sino-US competition and the Ukrainian crisis, the existing political, economic and social "bottleneck" factors have not been reflected. However, social governance The predicament has increased the uncertainty of the regional business environment and policies, increased the risk of supply chain fluctuations, and reduced

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The Economic Commission for Latin America (CEPAL) released a report showing that Latin America attracted US\$224.58 billion in direct investment in 2022, a year-on-year increase of 55.2%, a record high, and the proportion of direct investment in the region's GDP rose to 4%. Latin America Of the direct investment attracted, 41% went to Brazil. Brazil contributed the largest increase in direct investment in the region and is also the fifth largest direct investment destination in the world. After Brazil, the countries ranking second to fourth in attracting direct investment are Mexico (17%), Chile (9%), and Colombia (8%). The United States and the European Union are the largest sources of direct investment in the region, accounting for 38% and 17% respectively.

UNCTAD online statistics [Entre/dataviewer/US IntraTrade](https://unctad.org/Trade/US/IntraTrade)  
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The region's original advantages

have been weakened. Therefore, Latin America has the potential to further integrate into the global value chain. The shift of industrial and supply chains to the region will continue in the short to medium term. However, the region faces internal and external constraints, which means it should carry out necessary industrial upgrading and policy adjustments, and increase opening up to the outside world, in order to ultimately strengthen its position in the global industrial division of labor.

#### Four conclusions and thoughts on China-Latin America cooperation

Since 2016, Latin America has begun to accelerate its integration into the global value chain. Its changing situation reflects the new trend of global industrial adjustment. In the world political and economic landscape where supply chain security continues to receive great attention, this adjustment will continue. Latin America is in Participation in the global value chain reflects the relative advantages and future trends of different sub-regional sectors. The Caribbean and Central America and Mexico have geographical advantages, which will promote their in-depth development in the lower reaches of the industrial chain. South American countries have energy resource endowment advantages, which will continue to play a role in the upstream of the industry, but has become a weak area in the global value chain layout. However, the market size and relative near-shore advantages enable it to further increase its participation in the global value chain and increase participation in the downstream industries close to the consumer terminal.

While the overall value chain participation in Latin America has increased, the region has not yet had a substitution impact on China. Its trade with China and Asia has continued to grow significantly in recent years, and Chinese companies have also continued to increase their investment in the region. This shows that In the process of industrial adjustment, Latin America, in addition to deepening its embedding in the nearby North American value chain and European value chain, is also increasing its connections with the Asian value chain centered on China. Against this background, China-Latin America economic and trade cooperation should Adapting to the trend of restructuring the global value chain and the new trend of industrial adjustment in Latin America, based on the construction needs of China's new dual cycle pattern, actively debugging strategies and tactics.

In terms of cooperation strategy, we should pay attention to the particularity of Latin America in the reconstruction of the global value chain. We should see that under the strong demands for "re-industrialization" of regional countries and the policy shift of supply chain security in Western countries, the region will surely become "in the world". The overlapping beneficiary of the triple adjustment of "onshore outsourcing", "near-shoring outsourcing" and "friendly onshore outsourcing". To this end, China should make a timely strategic layout based on the characteristics of the Latin American market, and on the one hand, maintain its position in the global value chain, industrial chain and supply chain. To avoid being separated from the development of global mainstream industries, on the other hand, it focuses on the share of the Latin American market and its spillover markets to ensure economic security and healthy

development of enterprises. In terms of cooperation tactics, it is necessary to explore the differences of different Latin American countries. Taking advantage of the time and space conditions formed by the constraints faced by the region in the reconstruction of the global value chain, carry out targeted industrial transfer,

Cooperation and policy coordination. In view of the characteristics of the Caribbean and Central America and Mexico regions that are close to developed markets, a follow-up strategy should be adopted in consumer industries, such as the home appliance industry, automobile industry, textile and clothing industry, software applications and game development, etc. With the adjustment of multinational companies in Western countries, regional subcontracting and assembly plants have been established in these two sub-regions to ensure market share. At the same time, both the Caribbean and Central America have a solid foundation in regional economic integration, and this The two major sub-regions are also the core areas for the United States to build free trade zones. China should speed up free trade negotiations with this region, promote the liberalization and facilitation of trade and investment, and reduce the costs for companies to follow. In view of the rich energy resources in South America, Due to the relatively high consumption level in emerging markets, China should appropriately increase localized development in the upstream link of industrial development to meet the needs of South American countries to increase the added value of exports. In the downstream link of industrial development, China should fully explore local export processing zones, etc. Policy dividends include increasing the local assembly, production and consumption of consumer products, and enhancing the industrial connections and value chain embedding between the region and China.

In the direction of cooperation, factors that may create China's substitutability should be eliminated through Latin America. Since developing countries and emerging economies have industrial heterogeneity and technological homogeneity in the division of labor in the global value chain, this makes China as a typical example The major manufacturing countries have been in the "OEM" position for a long time, and thus have substitutability. For this reason, in the future value chain cooperation with Latin America, China should take advantage of its first-mover advantage in the industry and actively increase its high-added services at both ends of the value chain. The development of value-added areas. In the upstream areas of the industry, investment in Chinese brand building and technology research and development should be increased, to promote the transformation from "OEM" to "contractor", and to enhance the upstream control capabilities of the industry. In the downstream areas of the industry y should pay attention to the trend of service specialization and independence, and professionally divide the different links such as training, sales, after-sales and maintenance, etc., to improve the service value and enhance the influence in the industry terminal link.

(Editor Huang Nian)