Global Value Chain Restructuring: Challenges, Opportunities and Strategies for China

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Abstract: *Global value chains (GVCs) have entered a new stage of restructuring characterized by trends towards localization, regionalization and diversification. These trends can be attributed to the evolution of the international division, irrational responses to crisis shocks, and trade protectionism. In this context, China's industrial and supply chain upgrades face both opportunities and challenges which require navigating the adverse effects of industrial re-shoring, unfair technology competition, and changes in the global industrial layout. Yet, such challenges may create pressures for China to accelerate innovation, overcome the low-end lock-up effect by creating regional value chains, and broaden international cooperation. China needs to explore an effective strategy to defuse risks and seize opportunities. On one hand, China should influence the restructuring of GVCs evolution and strengthen its supply chains by playing an active role in economic globalization and the international division. On the other hand, China should proactively respond to GVCs restructuring amid rising trade protectionism, defuse risks from trade protectionism by opening wider to the outside world, and strive to upgrade industrial and supply chains while enhancing the security and stability of their nation.*

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Adopted at the Fifth Plenum of the Nineteenth Communist Party of China (CPC) Central Committee, the *Proposals for Formulating the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035* called for "stepping up international industrial security cooperation to develop more innovative, secure and reliable industrial and supply chains with higher value added." This statement is an important new strategic objective for China's participation in the global value chains (GVCs) division in the new development stage of China's opening-up and development. It is also an essential requirement for forging a new development pattern in which domestic circulation holds sway and is reinforced by international circulation. In addition to its own conditions and choice of opening-up and development strategies, industrial supply chains are also influenced by an environment of opening-up and development, especially for the evolving international division. China's industrial and supply chain upgrades need to be discussed in the context of the ongoing GVCs restructuring. For example, what does drives GVCs into a stage of restructuring? What are the characteristics of this trend? What challenges does it pose to China's industrial and supply

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全球价值链重构趋势下中国面临的挑战、机遇及对策

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摘 要：当前，全球价值链进入亟待重构的新阶段，朝着本土化、区域化和多元化方向发展。这既有国际分工自然演进规律的作用，也有危机冲击期间“非理性”因素的作用，更有贸易保护主义措施的影响。在此背景下，中国亟待促进产业链供应链升级，既面临着挑战，也蕴含着重大机遇。其中，挑战主要包括产业回流、不正当技术竞争以及布局调整带来的不利影响，而机遇则主要表现为创新驱动的倒逼效应、依托区域价值链构建的“低端锁定”突破效应以及扩大国际合作等。化解风险，把握机遇，中国需要探寻有效的对策思路。一方面，对于全球价值链分工演进推动的重构，需要做到因势利导，在顺应乃至引领经济全球化和国际分工演进发展大势中，推动中国产业链供应链升级；另一方面，积极应对贸易保护主义推动的全球价值链重构，通过进一步扩大开放和实施高水平开放，化解部分国家实施贸易保护主义可能带来的风险，着力推动中国产业链供应链升级，保障中国产业链供应链安全稳定。

关键词：全球价值链；本土化；区域化；多元化

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党的十九届五中全会通过的《中共中央关于制定国民经济和社会发展第十四个五年规划和二〇三五年远景目标的建议》提出：“加强国际产业安全合作，形成具有更强创新力、更高附加值、更安全可靠的产业链供应链。”无疑，这是中国开放发展在面临发展阶段、环境和条件发生重大变化背景下，对中国参与全球价值链分工提出的新重要战略目标，做出的新战略部署，也是加快构建以国内大循环为主体、国内国际双循环相互促进的新发展格局的必然要求。当然，开放条件下的产业链供应链发展，不仅取决于自身条件和自身开放发展战略的选择，与此同时还会受到开放发展环境的影响，尤其是国际分工演进的深刻影响。目前，全球价值链正处于重构阶段，因此，促进中国产业链供应链升级需要置于这一大背景下做具体探讨。全球价值链为什么进入亟待重构的发展阶段？将呈现怎样的趋势特征？给中国产业链供应链升级带来怎样的挑战？其中又蕴含着哪些可能的机遇？中国如何在全球价值链重构中，“因势利导”地促进产业链供应链升级？对上述问题的回答，是当前理论和实践部门面临的重大课题。

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chain upgrades? What opportunities can be found? How can China upgrade industrial and supply chains by influencing GVCs restructuring? Addressing such questions are of great significance for China's academics and policymakers.

1. A New Stage of GVCs Restructuring

1.1 The Call of Restructuring GVCs from Developing Countries

Since the 1980s, the international division has experienced profound transformations amid international production segmentation, technological progress, and rapid advances in information and communication technologies (ICTs). The traditional mode with the boundary of final products has evolved into one divided by value-adding processes and stages. As a catchphrase among academics and policymakers, GVCs have become a dominant form of the international division. Rapid evolution of GVCs has expedited global economic development and led to decades of prosperity in the world economy, bringing human material civilization to an unprecedented level. As extensively shown in the literature, the GVCs division has brought about new opportunities to developing countries (Zhang, 2020; An and Zhang, 2020; Ma and Chen, 2020). With the right conditions and strategies, both developed and developing countries, such as China, will advance their development by opening up to the rest of the world. This is evidenced by China's achievements since the reform and opening-up were launched in 1978.

Notably, the GVCs have increased world economic prosperity, but also led to contradictions and problems. Among them, unequal opportunities and positions arising from the evolving GVCs division have posed a key barrier to the sustainability of economic globalization. "Unequal access to opportunities" finds expression in the fact that many developing countries, such as those in Africa, have yet to integrate into the GVCs division system due to constraints of their factor endowment, infrastructure and location. Such countries are increasingly marginalized in the international division. The so-called "unequal positions" are manifested in the rapid evolution of the GVCs division spearheaded by developed countries. Even if developing countries like China with the right conditions and strategies manage to integrate into the GVCs system, they tend to be trapped in low-value processes of the GVCs division with limited gains from trade. Considering those challenges, it has become a common aspiration among developing countries to reshape GVCs to broaden access to the international division and increase equality of the GVCs division.

1.2 The Call of Restructuring GVCs from Developed Countries

Both developing and developed countries call for reshaping GVCs but in opposing directions. Developed countries have dominated the GVCs division and benefited the most from economic globalization in recent decades. Yet, domestic contradictions and the rise of developing countries have prompted developed countries to call for reshaping GVCs. Evolving GVCs, especially in the international relocation of labor-intensive industries, have led to industrial hollowing out. As pointed out in the analysis of traditional international economic theories, international trade could be beneficial at the national level, but not all of interest groups would benefit. As the biggest beneficiary of economic globalization, developed countries have seen most of their gains from trade reaped by multinational companies and intellectual and political elites, leaving ordinary workers behind. In the developed world, governments scapegoat other countries for their domestic contradictions. In fact, uneven income distribution and social contradictions afflicting developed countries stem, in part, from technological progress and labor issues. In the developed world, interest groups blame economic globalization for the damages endured by ordinary workers, mistakenly ascribing job losses and falling marginal returns on labor to industrial relocation. The adverse effects of unequal interest distribution, though less obvious

一、全球价值链进入亟待重构新阶段

（一）源自发展中国家的重塑诉求

20世纪80年代以来，伴随国际生产分割技术进步以及信息通信技术的快速发展，国际分工形态发生了深刻变化，逐步从以最终产品为界限的传统模式，转向以价值增值环节和阶段为界限的新型模式，即理论界和实践部门所津津乐道的“全球价值链”成为国际分工的主导形式。客观而言，全球价值链分工的快速演进推动了经济全球化迅猛发展，世界经济也由此实现了持续几十年的繁荣发展，人类物质文明达到了前所未有的高度。许多研究表明，与传统国际分工模式相比，全球价值链分工的深度演进为发展中国家带来了新的发展机遇（张幼文，2020；安礼伟和张二震，2020；马涛和陈曦，2020）。只要条件具备、战略得当，不仅发达国家，像中国这样的发展中国家也能实现在开放中促发展，成为经济全球化的受益者。改革开放以来，中国开放发展取得举世瞩目的巨大成就，就是明证。

需要指出的是，过去几十年全球价值链虽然推动了世界经济的繁荣发展，但与此同时也积累了不少矛盾和问题。其中，全球价值链分工演进中“机会不均等”和“地位不平等”的突出矛盾不断积累，已经构成经济全球化可持续发展的重要障碍之一。所谓“机会不均等”主要表现为许多发展中国家，尤其是诸如非洲等地区的许多国家和地区，由于受到要素禀赋、基础设施、地缘状况等条件约束，未能融入全球价值链分工体系，在国际分工中不断被边缘化。而所谓“地位不平等”主要表现为以往全球价值链分工的快速演进，主要是由发达国家跨国公司推动和主导的，因此，即便像中国这样条件齐备、战略得当的发展中国家快速而全面地融入全球价值链分工体系，但仍然面临着分工地位不高、附加值创造能力较低、分工效益和利益有限等困境。因此，推动全球价值链重构，为更多国家和地区提供参与国际分工的机会，促进全球价值链分工朝着地位更加平等的方向发展，成为广大发展中国家的普遍诉求。

（二）源自发达国家的重塑诉求

实际上，不仅发展中国家有着对全球价值链重构的需求，发达国家同样有这种诉求。但需要指出但是，二者的重构需求方向截然不同。作为全球价值链分工的主要推动者和主要掌控者，发达国家在过去几十年经济全球化迅猛发展进程中，无疑是最大的受益者。但发达国家仍然对全球价值链有着重构需求，主要原因不外乎有二。一是转嫁国内矛盾的需要，二是抑制其他发展中国家崛起的需要。所谓转嫁国内矛盾的需要，主要是因为伴随全球价值链深度演进，尤其是劳动密集型产业和产品生产环节的国际梯度转移，发达国家内部呈现一定程度的产业空心化问题。因此，犹如传统国际经济理论分析指出的，从整个国家层面看国际贸易或许是有益的，但并非意味着所有利益集团都会从中受益。从其内部利益集团角度看，经济全球化的最大受益者，主要集中在发达国家跨国公司、知识精英以及政治精英等利益集团上，而作为普通劳动者则获益较少。这种利益分配的不均乃至日益积累和不断深化的矛盾，虽然最根本最深层次的原因仍然在于技术进步以及劳资矛盾，但将内部矛盾和矛头转向“对外”，往往成为发达国家政府的一贯伎俩。由此，在发达国家利益集团内部，广大劳动者利益受损被归咎于经济全球化带来的不利影响，被错误地认为是因为产业转移而导致失业增加，以及劳动要素边际报酬下降。利益分配失衡的影响和矛盾在经济繁荣时期还能得到一定程度掩饰，但一旦受到外部冲击或者经济变得不景气，则通常会以更加激烈的方式和更快的速度爆发。2008年全球金融危机爆发以来，全

during economic prosperity, may trigger a crisis when the economy suffers external shocks or downturns, as evidenced by the rising trade protectionism in the developed world led by the United States to re-shore the manufacturing industry since the global financial crisis erupted in 2008.

Another motivation behind developed countries' attempt to reshape GVCs is to contain the rise of developing countries. As discussed before, the GVCs division has brought economic opportunities to many developing countries. The US is the largest beneficiary of such division and trade interests, with gains from economic globalization far eclipsing China's. Judging by extensive research on value-added from trade, China is primarily engaged in low-value processes of GVCs that generate much less value compared with the US (Zhang, 2013; Luo and Zhang, 2014). China's trade surplus with the US is a natural result of the GVCs division involving multinational companies, including those from the US, instead of uneven gains from trade. The question is that what has driven the US to wage a trade war against China in disregard of the facts? One consensual view among researchers and policymakers is that the US is bent on preventing China's peaceful development (Wang, 2021). In other words, the US resorts to escalating trade frictions to reshape GVCs to serve its interests and repress China's peaceful rise. In March 2021, the US, together with the EU, Britain and Canada, declared unilateral sanctions against some Chinese individuals and entities under the pretext of alleged human rights issues in Xinjiang. Those sanctions are essentially part of a broader strategy to contain China's peaceful development. From this perspective, the rise of anti-globalization and trade protectionism sentiments are irrational economically and played up with political motivations. We should, therefore, be keenly aware that such demand for restructuring GVCs creates serious shocks, disruptions and segmentation effects to GVCs.

1.3 Superimposed Effects of the COVID-19 Pandemic

For three reasons, the COVID-19 pandemic has made a stronger case for reshaping GVCs that started after the global financial crisis in 2008. Firstly, COVID-19 provides a new reason for some countries to practice trade protectionism. Excessive control over the flow of goods and personnel disrupts supply chains and impedes GVCs restructuring. Secondly, the COVID-19 pandemic has prompted countries and multinational companies to reconsider supply chain distribution, which has been primarily driven by efficiency without sufficient consideration to the impact of public emergencies, natural disasters or pandemics. Foreseeably, both efficiency and security factors will underpin the restructuring of GVCs. Thirdly, the spread of COVID-19 has accelerated technology transformations and, in particular, expedited the application of digital technologies in industrial sectors. Factor endowment, technological progress and institutional change are the three key drivers of international division. From this perspective, COVID-19 may accelerate technological progress and exert a profound influence on GVCs restructuring.

In sum, GVCs have entered a new stage of restructuring driven by various factors. Such restructuring has profound implications for countries involved in the GVCs division, including China.

2. Key Trends in GVCs Restructuring

Given the above factors, we forecast the following trends in GVCs restructuring: Firstly, GVCs will shrink to some extent and become more localized; secondly, regionalization will hold sway in GVCs restructuring; thirdly, diversification will replace the snake and spider configurations in both the vertical and horizontal value chain division.

2.1 Localization

According to Jin (2020), a market economy should form a national market in addition to creating an integrated global market and economy beyond national borders. An important characteristic of the

球贸易保护主义尤其是美国等发达国家贸易保护主义抬头，企图以此促使制造业产业回流等，就是明证。

抑制其他发展中国家的崛起也是发达国家试图进行全球价值链重构的重要动因。如前所述，全球价值链分工为一些具备基本条件且采取开放发展战略的发展中国家带来发展机遇。从分工和贸易利益角度看，美国无疑是最大的受益者，中国虽然也是经济全球化受益者，但与美国相比，受益程度毕竟还存在相当差距。比如，从大量关于贸易增加值测算的研究结果看，全球价值链分工中中国的附加值创造能力还不够高，尤其是与美国相比，大多从事低附加值创造环节（张杰等，2013；罗长远和张军，2014）。即便是持续多年的中美贸易顺差，也并不代表利益分配的失衡，更多是全球价值链分工的必然结果，是包括美国在内的跨国公司布局全球价值链的结果。而美国依然置事实于不顾，发起对华经贸摩擦并不断升级。其根本的原因何在？对此，大量的理论和实证研究所持有的一致性观点认为，是抑制中国和平崛起的战略需要（王义桅，2021）。换言之，美国发动贸易摩擦并不断升级，意图在于推动全球价值链重构以抑制中国发展。美国有对全球价值链重构的需要，并采取发起贸易摩擦等手段，实际上并非出于分工和贸易利益调整的需要，而是抑制中国和平崛起的战略需要。2021年3月23日，美国联合欧盟、英国和加拿大以所谓新疆人权问题为借口，宣布对有关个人及实体实施单边制裁，本质上就是企图遏制中国和平崛起。从这一角度看，当前美国逆全球化思潮和贸易保护主义抬头，从经济效益层面看确实是非理性的，但却有其政治层面的理性因素。因此，必须清醒地认识到，这种价值链重构需求，对全球价值链产生了严重冲击、破坏和割裂效应。

（三）全球新冠疫情的叠加作用

如果说，全球价值链重构需求自2008年全球金融危机冲击之后开始显现并日益明显的话，那么自2020年开始全球新冠疫情的暴发、蔓延和反复，则更是进一步强化了这一需求，并加速了这一进程。之所以如此，主要是出于三个方面的原因。一是新冠疫情为部分国家实施贸易保护主义提供了新的借口。正确防疫本无可厚非，但是有些国家却借防疫之名行贸易保护主义之实，对货物和人员流动进行过度管控，从而造成产业链和供应链的断裂，影响着价值链的重构。二是受到全球新冠疫情暴发的影响，从宏观层面的国家到微观层面的跨国公司，开始重新思考全球价值链的布局问题。也就是说，以往全球价值链的布局主要是受到效率因素驱动，较少考虑由于突发事件、自然灾害或者重大疫情等暴发可能引发的产业链供应链断裂造成的安全隐患。也就是说，未来全球价值链的布局将不仅受到效率因素的驱动，同时也会受到安全因素的驱动，从而推动全球价值链重构。三是全球新冠疫情的持续蔓延加快了技术变迁，尤其是推动了数字化技术变革及其在产业领域中的运用。众所周知，要素禀赋、技术进步和制度变革是推动国际分工演进的三大重要因素，从这一角度看，新冠疫情可能引发和推动的技术进步，会对全球价值链重构产生重要影响。

总之，受到多种因素的影响和驱动，当前全球价值链进入了亟待重构的发展阶段。这种变化无疑给包括中国在内的融入全球价值链分工体系的国家带来了深刻影响。

二、全球价值链重构的主要发展趋势

受到上述因素的影响，概括起来，未来全球价值链重构可能出现如下趋势：一是全球价值链会在一定程度上收缩，呈现本土化发展趋势；二是全球价值链的构建将更加具有区域特征，即价值链的区域化将在全球

market economy is division, the deepening of which drives improvements in efficiency. That is, a market economy will endogenously drive the division to raise efficiency. Yet, the further evolution of division is subject to an increase in the frequency and cost of transaction. The division will increase further only when improvements in efficiency exceed increases in costs. This logic has been followed in the development of the GVCs division since the 1980s. Rapid development in production segmentation ICTs has increased efficiency in the division while reducing the costs of transportation as well as logistics and communication, enabling further development in the international division.

From a regional distribution perspective, the GVCs division is characterized by the clustering of industries and production stages with different factor densities in various countries and regions, as well as the clustering of those with the same or similar factor densities in countries or regions with similar factor endowments. While the former exists in the form of vertical division and is often referred to as the "snake configuration" in the GVCs division, the latter exists in the form of horizontal division and is often referred to as the "spider configuration" in GVCs division. These configurations jointly form a complex global production network. China's reform and opening-up program was unraveled in the context of fast-changing GVCs division. With the right conditions and strategies (Zhang, 2018), China has emerged as an important destination for the international relocation of industries and production processes and a key node in the GVCs division.

The global financial crisis of 2008, together with the COVID-19 pandemic, have upended global supply chains. Such supply chain disruptions have led some countries and regions to realize that their industrial, economic and social security is at stake unless access to supply chains is guaranteed. In the distribution of GVCs, security becomes a key consideration. Some countries have started to take concrete steps to re-shore industries and production stages back to their home soil, causing GVCs to shrink. For example, the United States vowed to revitalize manufacturing, and Japan issued loans to support "supply chain reforms". Policy initiatives to re-shore industrial activity will cause GVCs to regionalize and localize.

2.2 Regionalization

Regional production networks have played a pivotal role in the evolution of GVCs. Intra-regional correlation far exceeds inter-regional correlation for both forward and reverse supply chains. GVCs consist of three regional value chains in North America led by the United States, in Europe led by Germany, and in Asia led by China, Japan and South Korea. These regional value chains comprise GVCs system with an input and output correlation, and play a vital role in the formation of GVCs division systems.

According to traditional international economic theories on regional economic integration, technology progress has reduced the cost of transaction across geographical space, enabling the globalization of GVCs. Notably, technology is not the sole driver of GVCs evolution, and institutional factor is equally important. To some extent, institutional factor is even more important than technology in driving economic globalization and the division. Even if technology is ready, the international division would remain an empty talk without favorable institutional factors. The positive effect of technology progress is counteracted by adverse institutional factors, which impede the global division and prompt a shift to the regionalization of value chains.

A new round of economic globalization cannot occur without systems for trade and investment liberalization on a global scale. Yet, international trade rules and governance systems under the existing World Trade Organization (WTO) framework are obsolete and less potent in spurring economic globalization and the global division. On the other hand, barriers such as unilateralism by developed countries present huge challenges to WTO reform, significantly slowing its progress (Han, 2018). In this context, bilateral and regional trade agreements have become an inevitable choice for countries to reshape international trade rules in their favor outside the WTO system or in commitment to advancing

价值链中占据主导地位；三是无论从垂直分工还是水平分工的角度来看，价值链的分工将不再呈 以往简单的蛇形模式或者蛛网模式，而是呈现多元化发展形态。

（一）本土化发展趋势

金碚(2020)指出，市场经济在本质上不仅要求形成统一的全国市场，而且要冲破国家界限实现一体化的全球市场和全球经济。而市场经济的最重要特征之一就是分工，通过分工不断细化和深化，实现效率的提升。也可以说，为了提升效率，市场经济会内生地推动分工演进和发展。但是分工是否能够得以演进，还取决于分工细化后由于交易频率的提高而带来的交易成本相应上升。只有当分工的效率提升超过了因此而带来的成本上升时，分工深化和细化才能得以推进。20世纪80年代以来全球价值链分工的深度演进，遵循的正是上述基本理论逻辑。国际生产分割技术以及信息通信技术等快速发展，促使分工效率得以不断提升的同时，诸如交通、物流、通讯等交易成本也不断下降，从而使得国际分工朝着日益深化和细化方向发展成为可能。从区位布局角度看，全球价值链分工发展演变的一个重要特征就是，具有不同要素密集度特征的产业以及产品生产阶段，在地理空间上呈现出向不同国家和地区集聚，以及具有相同或类似要素密集度特征的产业以及产品生产阶段，在地理空间上向具有相似要素禀赋的国家和地区集聚。前者主要以“垂直分工”的形态存在，在全球价值链分工模式中通常被称为“蛇形模式”；后者主要以“水平分工”的形态存在，在全球价值链分工模式中通常被称为“蛛网模式”。这两种模式交织在一起构成了复杂的全球生产网络体系。中国改革开放的伟大事业正是在全球价值链分工快速演进背景下开展的，由于条件具备、战略得当(张二震，2018)，中国成为产业和产品生产环节国际梯度转移的重要承接地，并据此成为全球价值链分工的枢纽和核心之一。然而，2008年全球金融危机的爆发，尤其是2020年以来新冠疫情在全球的蔓延和反复，促使一些国家和地区意识到，产业链条中关键环节和阶段的缺失，可能带来严重的产业、经济乃至社会安全问题，由此，在关注效率因素的同时，安全因素逐步成为在布局全球价值链时需要考虑的重要因素。换言之，出于产业安全考虑，原有全球价值链布局可能会出现一定程度的收缩，即部分国家不仅有着强烈的意愿将相关产业和产品生产环节迁回本土，而且在实践中已经开始采取措施。美国的重振制造业计划、日本拨出巨额贷款用于“供应链改革”等一系列鼓励产业回流的政策举措，无疑将加速全球价值链的区域布局，并朝着本土化方向发展。

（二）区域化发展趋势

在以往的全球价值链分工演进过程中，虽然生产网络布局具有全球性特征，但区域生产网络在其中仍然扮演着极为重要的角色。无论是从价值链的前向关联度角度，还是从后向关联角度看，区域内关联程度显然都要高于与区域外关联程度。众所周知，当前全球价值链主要由三大区域价值链构成，即以美国为核心的北美区域价值链、以德国为核心的欧洲地区价值链以及以中日韩为核心的亚洲地区价值链。三大区域价值链之间通过投入产出关联，进一步构成了全球价值链分工体系。在全球价值链分工体系形成过程中，区域价值链扮演着重要角色。对此，传统国际经济理论中有关区域经济一体化的论述表明，地理区位上的接近可以有效降低交易成本，但伴随技术进步等，源自地理空间的交易成本约束日益弱化，从而价值链构建呈现的区域化特征将逐步让渡于全球化特征。需要指出的是，在推动全球价值链分工演进的因素中，技术并非是唯一的，制度因素同样发挥着极为关键的作用。甚至可以说，制度因素在推动经济全球化和国际分工演进方面，比技

the international division and cooperation. In response to the adverse effects of de-globalization and faltering WTO reform, the conclusion of bilateral and regional trade agreements will influence the reshaping of GVCs in important ways and steer the development of GVCs towards regionalization. Based on this assessment, North America, Europe and Asia will strengthen their positions as the "three poles" of GVCs.

2.3 Diversification

As noted previously, security concerns may lead to a shrinkage in GVCs through the local migration of value chains. However, efficiency remains a key factor in the distribution of value chains. Despite a certain level of evolution in the value chain division under the joint effects of security and efficiency, a complete localization of value chains is highly unlikely. Economic globalization is a natural and irreversible result of productivity improvement and technological progress. For multinational companies, it remains their strategic interest to pursue the division across national borders and integrate resources on a broader scale to maximize efficiency. In this sense, balancing security with development represents a development strategy at both the firm and national levels. It is neither wise to seek security at the expense of efficiency nor efficiency at the expense of security.

The choice of development model and strategy is subject to the relative weight or importance of those seemingly contradictory factors. If efficiency outweighs security, the trend towards globalization in the division will grow stronger, as reflected in the regional clustering of production processes and stages with similar factor densities. Such is the basic logic behind the previous round of evolution of GVCs. If security outweighs efficiency, GVCs will experience a shrinkage, which is the basic logic behind industrial re-shoring and involution of GVCs. A further examination of the security and stability of industrial and supply chains reveals that disruption to a certain stage of a production chain presents a risk of discontinuing the entire production process. The localization of industrial and supply chains is an option to address this problem but inevitably incurs an efficiency loss. From the perspective of the global industrial division, it would be inefficient for a country or region to develop production capabilities and technologies in each and every process and stage of an industrial chain even if it has the resources to do so. An alternative approach to safeguarding industrial and supply chain security and stability is to ensure the substitutability of various supply chain processes and stages. This is to say, substitute suppliers can be switched to in case a key supplier ceases to cooperate. Diversification, therefore, represents a trend in GVCs restructuring to maximize supply chain security and efficiency.

External emergencies such as the COVID-19 pandemic naturally draw attention to supply chain security at the national and firm levels. Yet as noted in *Manias, Panics, and Crashes: A History of Financial Crises* by Aliber, Robert Z., Kindleberger, Charles P., panic in a crisis situation would goad people into an irrational response (Charles and Robert, 2017). The reconsideration of GVCs regional distribution by countries and multinational companies could be a knee-jerk response to the recent trade war and pandemic crises. Whether the industrial and supply chain adjustments are long-term has yet to be seen. When rationality holds sway after an exogenous crisis ends, efficiency may once again become the norm and outweigh considerations over supply chain security. Leaving aside trade protectionism, whether localization and regionalization may guarantee supply chain security and stability is questionable.

With its success in combating COVID-19, China has reopened its economy and allowed its people to return to work. In many parts of the world, however, COVID-19 continues to spread while sending economies into lockdown. Even if countries manage to re-shore supply chains, exogenous shocks such as COVID-19 create shocks to their economies and prevent their workers from returning to work. That is, localization and regionalization cannot guarantee supply chain security. In this sense, GVCs restructuring may follow certain directions and trends with effects on China's industrial and supply chains. What is concerning is not the natural pattern in the evolution of division, including a knee-jerk response to an

术因素更加重要。即便在技术可行条件下，如果没有制度因素作用，开展全球分工和合作也只能成为空谈。当前虽然技术进步使得分工越来越具有全球化特征成为可能，但是制度因素的变化却起到了相反的作用，从而促使价值链分工的全球性特征向区域性特征演变。如前所述，前一轮经济全球化的繁荣发展，离不开贸易和投资自由化制度的全球推行所提供的保障作用。然而，当前ＷＴＯ框架的原有国际经贸规则和治理体系，一方面，由于未能与时俱进从而在推动经济全球化发展和全球分工演进方面的作用明显下降；另一方面，由于受到各种因素的影响包括发达国家单边主义行为，ＷＴＯ改革面临巨大困难，向前推动的速度相当缓慢（韩剑等，2018）。在这一背景下，无论是部分国家出于抛开ＷＴＯ而重新塑造对自己有利的国际经贸规则意图，还是部分国家出于继续推动国际分工与合作向前发展的努力，双边和区域性的贸易协定都成为一种必然选择和趋势。为应对逆全球化带来的不利影响和冲击，在ＷＴＯ改革举步维艰的情况下，各种双边和区域贸易协定的发展，必将对全球价值链重构产生重要影响，会推动全球价值链进一步朝着区域化方向发展。因此，基于这一判断，未来全球价值链中由北美价值链、欧洲价值链和亚洲价值链形成的“三足鼎立”发展格局可能会越发明显。

（三）多元化发展趋势

如前所述，基于安全性考虑，全球价值链可能会呈现出一定的收缩，即价值链的区域布局可能会出现本土化迁移现象，但分工的效率仍然是影响价值链布局的重要因素。也就是说，在两种因素的共同作用下，虽然价值链分工可能出现一定程度的内卷化趋势，但可以预期的是，实现完全的本土化绝无可能。况且，经济全球化发展是社会生产力和技术进步的必然结果和客观规律，这一点是不以人的意志为转移的。因此，分工突破国界而向外部拓展和深化，在尽可能大的范围整合和利用资源，以实现效率最大化，仍然是企业的战略需求。从上述意义看，统筹安全和发展不仅是企业层面需要慎重考虑的战略，更是国家层面需要考虑的重大战略。因此，一味地以安全为由而遭致效率损失，或者一味地为提升效率水平而不顾产业发展的安全问题，显然都是不可取的。为了解决好上述两个方面看似矛盾的问题，究竟要采取何种发展模式和策略，显然取决于两种力量的对比情况，或者说对两种因素的重视程度。如果更加注重效率而将安全因素置于次要地位，那么分工的全球化趋势就会加强，呈现出相同或相似要素密集度特征的环节和阶段在地理空间上相对集聚的现象。这正是全球价值链前一轮发展演变的基本逻辑。如果更加注重安全因素而将效率因素置于次要地位，那么全球价值链就会出现一定的“收缩”趋势。这正是全球价值链中产业回流和内卷化发展的基本逻辑。实际上，如果进一步理解所谓产业链供应链安全稳定问题，不难发现，其本质是一旦生产链条中某个环节遭到破坏，可能会导致整个生产过程难以继续运转的风险。为了避免这一问题，产业链供应链本土化虽然是其中一个选择，但会遭致效率损失。尤其是从全球产业分工角度看，任何一个国家和地区想要在各产业链的每一重要环节和阶段，都有自己配套生产能力和技术条件，即便能够达到和实现（对于部分大国来说），那也必然是无效率的，会带来严重的资源配置效率损失。因此，确保产业链供应链安全稳定的另一重要方式，就是尽可能保证产业链各个环节和阶段均具有可替代性，即便某个供应方出于某种原因而中断合作，也可以有其他供应方及时替补。因此，为化解产业链供应链安全隐患并尽可能实现效率最大化，未来全球价值链重构将会朝着多元化发展趋势演进。

当然，需要指出的是，虽然外部突发事件的冲击，比如全球新冠疫情的影响，引发国家和企业层面对全球产业链供应链安全问题的重视，但正如查尔斯·Ｐ．金德尔伯格、罗伯特·Ｚ．阿利伯在《疯狂、惊恐和崩溃——金融危机史》一书中分析指出，人们在遭遇危机冲击时往往会表现出过度恐慌，从而采取一些非理性举措（查

external shock. Instead, China should pay attention to the GVCs restructuring and evolution that are driven by trade protectionism and take effective countermeasures to cope with that.

3. The Urgent Needs of Upgrading China's Industrial and Supply Chains under GVCs Restructuring

In light of profound changes in domestic and international environments, China should give greater priority to upgrading its industrial and supply chains to keep pace with GVCs restructuring and requirements of a new stage of its economic development.

3.1 Intrinsic Requirements of Supply Chain Security and Stability

Under the assumptions of a pure and perfect market economy, an optimal choice for countries to maximize efficiency is to specialize based on their respective factor endowments and comparative advantages. Factor density varies among industries and production stages, as do gains from division and trade. However, at least all countries participating in the division and trade may benefit from trade and share common interests in the security and stability of supply chains. Such division will contribute to world economic prosperity and optimize the allocation of resources and factors. According to the comparative advantage theory, all countries, irrespective of their stage of development, may integrate into the international division based on their comparative advantages. It should be noted that this vision is subject to the assumptions of a perfect market economy at the scale of economic globalization free from exogenous shocks and contradictions such as trade frictions between countries over national interests or political and ideological disagreements. Yet, these ideal conditions are not consistent with the reality. When a market economy goes beyond national borders, those assumptions come under grave challenges. For instance, microscopic entities in a market economy organize production activities which do not always follow a market-based approach. For instance, "national interest" or "political threats" do, at times, stand in the way of business cooperation.

On the other hand, differences in factor density always exist in the inter-industry, intra-industry and intra-product division. Such differences require an increasing specificity and value addition of factors and assets in the production stages of technology- and knowledge-intensive industries and products, raising the threshold of industry access. As a result, the division at this level becomes increasingly monopolized and lacks competition (Dai and Jin, 2014). In labor- and resource-intensive industries, however, the increasing universality of factors and assets means limited value-added space, lowering industry access threshold, and increasing competition and substitutability in the division at this level. In case a conflict of interest emerges, a country with a stronger position in trade may cease to supply critical components and technologies to a weaker one in a trade friction, disrupting the latter's supply chains. Currently, China remains at the mid- and low-end processes of the GVCs division and lags far behind developed countries in the critical production processes and technologies of some industries. For this reason, the United States tries to suppress China's development by instigating trade frictions and, particularly, imposing technology embargoes. The world today is experiencing profound changes unseen in a century, including GVCs restructuring, which are accelerated by the COVID-19 pandemic. The international balance of power is also undergoing tectonic shifts, giving rise to uncertainties and instabilities. In this context, threats to China's industrial and supply chain will loom larger unless China manages to upgrade its industrial and supply chains.

3.2 Important Conditions for Fostering Domestic Supply Chains

Prior to the current and critical stage of GVCs restructuring, the international relocation of GVCs had been a normalcy. For instance, labor-intensive production processes and stages first relocated from the developed world led by the United States to the Four Asian Tigers before further moving to other

尔斯和罗伯特，2017）。因此，国家和跨国公司重新考虑全球价值链的区位布局问题，极有可能是过度恐慌和过度反应的结果，由此带来的产业链供应链调整是否具有长期性，值得进一步观察。或许，在外生危机冲击之后，当人们的“理性”因素逐步恢复到“正常”水平时，效率因素可能会重新回归主导地位，而所谓产业链供应链安全稳定又会退居次位。况且，即使排除贸易保护主义，产业链供应链能否依赖本土化、区域化来解决安全稳定等问题，实际上也是存在着很大疑问的。因为目前的实践已经表明，中国在防疫抗疫方面率先取得成功，较好地实现了复工复产，相比而言，世界上其他很多国家和地区仍然由于疫情原因，经济活动并不能很好正常开展。因此，即便促使产业链供应链回流和外迁，或者说实现了产业链供应链本土化、区域化，但在受到诸如类似外生冲击时，产业正常运转同样会受到冲击，同样不能复工复产。可见，以此来解决安全稳定问题的有效性是值得怀疑的。从上述意义看，对全球价值链重构可能呈现的几个演进方向和趋势，及其对中国产业链供应链产生的影响，我们需要担心的并非是分工演进的自然规律，以及外生冲击下的“一时冲动”，真正需要关注的是贸易保护主义推动的全球价值链重构及其演变方向，从而采取有效的应对措施。

三、全球价值链重构下中国产业链供应链亟待升级

面临国际国内环境的深刻变化，中国产业链供应链亟待升级。这不仅是顺应全球价值链重构的现实需要，也是中国经济发展进入新阶段的必然选择和必由之路。

（一）确保产业链供应链安全稳定的内在要求

在纯粹、完美的市场经济假定条件下，不同国家和地区，依据自身不同的要素禀赋优势，遵循比较优势的基本分工原理，进行专业化分工和生产，本是实现效率最大化的最优选择。尽管不同产业和产品生产环节，其要素密集度特征不同，从而根据要素稀缺性基本原理可知，获取的分工和贸易利益等也不会相同，但至少作为分工和贸易的参与国，都可以从中获益。在这种“互利共赢”的格局下，世界各国原本均可以各尽其职、各得其所，推动着经济全球化繁荣发展，实现资源和要素的最优化配置，实现世界财富的日益增长。此时，世界经济中的各国可以说是相安无事，也就不存在产业链供应链的安全和稳定问题，因为比较优势分工的基本原理意味着，对于任何国家和地区而言，不论处于何种发展阶段，总是能够找到自身的“比较优势”并据此融入国际分工体系。

但是需要指出的是，一方面，这种构想仅仅只是停留在完美市场经济假设条件在经济全球化层面的拓展和深化，并不存在着诸如国家间因为利益之争而产生的各种经贸摩擦，乃至政治和意识形态等方面可能引发的各种外生冲击和矛盾。遗憾的是，现实与理想条件并非总是一致，尤其是市场经济在“跨越”国家边界时，其各种完美的假定条件更是遭遇到了巨大挑战，包括市场经济中的微观主体有时并不能按照市场化的基本逻辑去配置生产经营活动，比如为了所谓“国家利益”或者由于“政治威胁”而不得不放弃与他国企业之间的合作。

另一方面，无论是产业间分工、产业内分工还是产品内分工，要素密集度特征差异总是存在的，并且这种差异性决定了技术密集型和知识密集型等高端要素密集型产业和产品生产环节，其要素和资产的专用性程度会越来越高，由此不仅使附加值创造的空间越来越大，而且使进入的“门槛”也越来越高，从而处于这一层次的分工也就越来越具有垄断性，竞争性不足（戴翔和金碚，2014）。相比较而言，劳动密集型和初级资源密集型产业和产品的生产环节，其要素和资产的通用性程度会越来越高，由此不仅使附加值创造的空间相对有

developing economies. Such international relocation is driven by cyclical changes in industries, products, the lifecycle of technologies, as well as the shifting factor endowments and comparative advantages of countries.

In this sense, the GVCs division is naturally characterized by what we call a "duckweed economy". In other words, it is an intrinsic requirement of multinational companies to optimize resource allocation by moving industrial activity and value-adding processes across countries and regions based on their comparative advantages. The "duckweed economy" exists for a reason. It is hard or impossible for an industry to take roots in a specific country or region and stay there indefinitely. Even without GVCs restructuring, the "duckweed economy" attributes of GVCs still pose supply chain security and stability problems, especially industrial hollowing out. Supply chain security and stability not only hinge upon the supply of intermediate inputs, but more importantly, are challenged by the migration of industries that lead to industrial hollowing out. These problems are exacerbated by globalization, regionalization and diversification of GVCs in the ongoing GVCs restructuring. The "duckweed economy" presents general challenges to supply chain security and stability.

Despite the supply chain security and stability issues in a "duckweed economy," supply chains may still take root under the condition of GVCs division. In their GVCs distribution, multinational companies have adopted a strategy to "retain the core and outsource the rest" (Yao, 2010). For the parent countries of multinational companies, keeping core industries and production stages in their home soil serves their national interest. A country must stay competitive to attract and retain industries, and such comparative advantages must keep pace with or lead evolving trends in industries and product life cycles. Leading manufacturing nations stay competitive because of their craftsmanship, innovation and technology progress in specific industries and production stages. Examples include aircraft manufacturing for the US, the automotive industry for Germany, precision machines for Japan, and clock manufacturing for Switzerland. With unique industrial heritages and competitiveness, those countries still manage to keep such industries and production stages in their home soil. In climbing up the GVCs ladder, China aims to gain a foothold in the mid- and high-end processes of GVCs through innovation and technology progress. Apart from being more innovative and technology-intensive, high-end industries and production stages are more difficult to move elsewhere due to factor density and asset specificity attributes. In comparison, mid- and low-end industries and production stages are more sensitive to the prices of primary factors with more universal factor inputs, making it easier for them to relocate across countries and regions. In the critical stage of GVCs restructuring, it is imperative for China to upgrade its industrial and supply chains to become more competitive.

3.3 Intrinsic Requirements for Optimizing GVC Development

The previous round of GVCs division was dominated by multinational companies from the developed world. Under the superimposed effects of various factors and especially the "Washington Consensus" led by developed countries, the GVCs division has not only advanced world economic prosperity but brought about such problems as unequal access to opportunities and unequal positions of countries involved in GVCs. A key direction for the evolution of the GVCs division (i.e. GVsC restructuring) is to enhance opportunities, inclusiveness, shared benefits, equilibrium and win-win results (Dai and Song, 2019). Indeed, this direction is more reflective for the interests of developing countries but does not stand for the aspirations of developed ones. Given those conflicting interests, developing countries will continue to face great pressures of unequal access to opportunities and unequal positions in integrating into the GVCs division dominated by multinational companies from the developed world. Moreover, in the absence of driving forces to represent their interests, more developing countries are likely to be further marginalized and lose opportunities to integrate into the international division vital to their economic development. In this sense, the emergence of such new forces is essential for steering the current GVCs restructuring in the interest of developing countries, ensuring more inclusiveness, more

限，而且还使进入的“门槛”也越来越低，从而处于这一层次的分工也就越来越具有竞争性，相互之间的替代性就比较高。正是利用了后者的这种差异性，一旦国家间出现了利益之争夺，在分工中处于相对有利地位的国家，便会以经贸摩擦的方式“断供”，在所谓关键零部件和核心技术上“卡脖子”。由于“断供”的正是具有较高垄断性和难以替代性的环节和阶段，从而极有可能导致处于不利分工地位的国家和地区面临产业正常运转困难，引发产业链供应链的安全和稳定问题。客观而言，目前中国在全球产业链分工格局中仍然处于中低端，在一些产业的关键生产领域与技术领域与发达国家相比，仍然存在较大差距。也正因如此，在中国和平崛起过程中，美国企图利用经贸摩擦尤其是科技排挤战等手段，遏制和打压中国发展。目前，世界正经历百年未有之大变局，全球新冠疫情的暴发和蔓延加速了这一进程，包括全球价值链重构的进程。在此过程中，国际力量正在发生深刻的对比性变化，各种不确定、不稳定因素增多。在此背景下，中国如果不能尽快实现产业链供应链优化升级，就会面临着威胁产业链供应链安全稳定的巨大隐忧。

（二）确保产业链供应链“扎根”国内的重要条件

实际上，即便排除当前全球价值链进入调整和重构的关键阶段不论，价值链在不同国家间进行国际梯度转移也是分工演进的正常现象。比如劳动密集型生产环节和阶段首先由美国等发达国家，向“亚洲四小龙”等国家和地区转移，然后再由后者不断向发展中国家和地区梯度转移等。这种国际梯度转移是产业、产品和技术生命周期变化以及各国要素禀赋等比较优势动态变化相结合的逻辑使然。从这一意义上说，全球价值链分工天然就具有“浮萍经济”的特征。也就是说，根据比较优势的变化而在不同国家和地区之间重新布局产业和产品价值增值环节，是跨国公司在全球范围内整合和优化配置资源的内在要求，因此“浮萍经济”现象具有一定的合理性，要想实现产业发展完全在某个特定国家和地区彻底“扎根”，可能面临一定的困难甚至可以说根本就难以成功。因此，即便在没有全球价值链调整和重构等问题出现时，全球价值链的“浮萍经济”本质特性，仍然有可能会引发产业链供应链的安全和稳定问题，特别是可能导致的产业空心化问题。也就是说，此时的产业链供应链安全稳定问题，不光是由于中间品“断供”而使得产业难以正常运转，更为严重的是，由于产业未能“扎根”从而导致产业整体漂移，出现国内或者地区内的产业空心化。显然，上述问题在当前全球价值链重构过程中，尤其是全球价值链呈现本土化、区域化、多元化等发展演变特征时，会更加凸显。由“浮萍经济”特性可能引发的产业链供应链安全稳定问题，可能更加具有一般性。

虽然全球价值链分工体系本身就具有“浮萍经济”的内在特性，从而容易引发产业链供应链安全稳定问题，但这并非意味着全球价值链分工条件下，产业链和供应链就不具备“扎根”条件。众所周知，“保留核心的，外包其余的”是跨国公司布局全球价值链的主要策略（姚战琪，2010）。从跨国公司所在母国的国家宏观层面看，“扎根”本质上意味着将“核心”产业和产品生产环节长期地置于国内，也就是说在“核心”产业和产品生产环节方面，一国或者地区如果能够长期具有比较优势，那么其产业发展就具备了“扎根”条件。这就需要一国或地区的比较优势动态变化，能够顺应乃至引领产业和产品生命周期的动态变化。目前，世界主要制造业强国之所以能够成为制造业强国，并且在其优势领域一直保持较强的国际竞争力，主要原因就在于能够在全球产业链供应链分工格局中，凭借其工匠精神、创新能力和技术进步，在特定产业或产品生产环节构筑其坚实的产业发展之基。典型的如美国的航空设备、德国的汽车制造、日本的精密机械、瑞士的钟表行业等，均是如此。其特有的工业文明构筑了相关产业领域的强大国际竞争力，在产业和产品生产环节的国际梯度转移过程

equal access to opportunities, and more equal positions.

In the previous round of GVCs development, China has made tremendous progress in its economic development by serving as a destination for international industrial relocation and technology diffusion and integrating into the GVCs division dominated by multinational companies from the developed world. General Secretary Xi Jinping also stated that China has achieved great economic development over the past decades under open conditions (Xi, 2018). Indeed, China remains at the mid- and low-end processes of the GVCs division relative to developed countries. Yet China has still emerged as a major pole in the GVCs division thanks to its economic heft, complete industrial sectors and auxiliary capabilities. In recent years, the world economic landscape has already shifted in favor of some developing countries in the South, and developed countries in the North as a share of the world economy have declined.

Without a doubt, China has played a pivotal role in driving this transition. While developed countries led by the US have turned their backs against globalization, China has chosen to stand on the right side of history by firmly advocating trade and investment liberalization and spearheading a new round of economic globalization. In the previous round of the GVCs division, China has played a passive role without much influence. To lead a new round of economic globalization in a new stage, China must step towards the mid-and high-end processes of the GVCs. Only in this manner will it be possible for China to create and lead an international division system and promote more inclusive development of GVCs under the concept of a shared future for humanity and the principles of consultation, contribution and shared benefits. In the critical stage of GVCs restructuring, China's industrial and supply chain upgrades serve not only China's interests but the interests of a new round of economic globalization.

4. Opportunities and Challenges for the Upgrading of China's Industrial and Supply Chains

GVCs restructuring creates huge challenges to China's integration into global industrial and supply chains. If developed countries continue to steer GVCs restructuring in their favor, China will be confronted with severe threats to the security and stability of its global industrial and supply chains while facing the prospect of being excluded outside of the GVCs division. Yet, developing countries also share an interest in optimizing GVCs. Among the various factors influencing GVCs restructuring, some are favorable to China and present strategic opportunities for China's industrial and supply chain upgrades.

4.1 Key Challenges

In summary, the upgrading of China's industrial and supply chains are faced with the challenges amid GVC restructuring noted below.

4.1.1 The shaking of industrial re-shoring on the foundation of industrial development

Under the GVCs division, China has achieved great industrial and manufacturing development by serving as a destination for industrial relocation and technology diffusion from the Western world. The world economy is experiencing a significant downward trend under the superimposed effects of sluggish economic growth and the COVID-19 pandemic. Amid GVCs restructuring, developed countries attempt to persuade their multinational companies to re-shore production activity back to their domestic soil, creating huge pressures on China's industrial development and, in particular, the upgrading of industrial and supply chains.

More importantly, this new round of industrial re-shoring is targeted at high-end processes and production stages. Unlike the previous re-shoring of labor-intensive industries or production stages, developed countries have set their eyes on re-shoring more advanced production processes and stages. For instance, General Electric (GE) chose Louisville City, Kentucky (United States) to replace China. For one thing, the duckweed effect of industrial relocation will intensify downward economic pressures

中，这些核心的产业或产品生产环节仍然能够“扎根”本土。尽快实现中国在全球产业链供应链分工格局中转型升级，本质上就是要依托创新驱动和技术进步攀升全球价值链中高端。实际上，产业链供应链的转型升级和迈向全球价值链中高端，不仅意味着在进入高端要素密集型产业和产品的生产环节后，越发具有创新和技术进步的空间。更为重要的是，犹如前文所述，由于此类的要素密集度特征以及资产专用性特征，区域梯度转移会更加困难。相比较而言，中低端领域的产业和产品生产环节，由于其对初级要素的价格等较为敏感且在要素使用上更加具有通用性特征，具有较高的替代性，因此，也就更加容易实现在不同国家和地区间的转移。从这一意义上说，在全球价值链重构的关键阶段，中国亟待实现产业链供应链的转型升级。

（三）推动全球价值链优化发展的内在需求

在前一轮发展过程中，全球价值链分工演进主要是由发达国家跨国公司主导和推动的。犹如前文分析指出，由于受到各种因素的叠加影响，尤其是在西方发达国家“华盛顿共识”思想和理念主导下，全球价值链分工虽然推动了世界经济的繁荣发展，但也带来了“机会不均等”和“地位不平等”的问题。因此，未来全球价值链分工演进的一个重要方向，或者说全球价值链重构的一个重要方向，就是推动其向更加开放、包容、普惠、平衡、共赢的方向发展（戴翔和宋婕，2019）。当然，这一发展方向反映的更多是发展中国家的利益诉求，并不代表发达国家的愿望。相反，在当前全球价值链已经进入亟待重构的关键发展阶段，发达国家对全球价值链重构的调整意愿和推动方向，在很大程度上与发展中国家的利益诉求是相背而行的。因此，对于广大发展中国家来说，继续融入发达国家跨国公司主导的全球价值链分工体系，不仅意味着要继续承受着“机会不均等”和“地位不平等”的巨大发展压力，而且在新一轮全球价值链重构过程中，如果缺乏新的推动力，无法代表发展中国家的利益诉求，那么更多发展中国家可能会被进一步边缘化，从而丧失融入国际分工实现开放发展的机遇。基于上述原因，无论是推动全球价值链优化发展尤其是向包容性方向发展，还是为了更好地应对当前全球价值链重构问题，都需要有能够代表发展中国家利益诉求，进而能够推动全球价值链朝着“机会更加均等”和“地位更加平等”方向发展的新生力量出现。

客观而言，在全球价值链的前一轮发展过程中，由于中国实施了改革开放政策，条件齐备且战略得当，积极承接西方产业和技术的扩散和转移，快速而全面地融入了发达国家跨国公司主导的全球价值链分工体系，抓住了经济全球化发展带来的战略机遇，实现了开放型经济的快速发展，取得了令世界瞩目的巨大发展成就。习近平总书记也曾坦言，过去几十年中国经济发展成就是在开放条件下取得的（习近平，2018）。虽然与发达国家相比，中国在全球产业链分工格局中总体上仍然处于中低端，这的确是不争的事实，但由于体量巨大、产业门类最为齐全、生产配套能力突出等，中国在全球价值链分工体系中已经成为重要的一极，同样是不争的事实。实际上，近年来世界经济格局出现的所谓“东升西降”“南升北降”的重大调整和变化，中国在其中无疑发挥了重要的引擎作用。当前，作为以往经济全球化主要推动者的诸如美国等发达国家，转而成为逆全球化的始作俑者，中国则选择站在历史正确的一边，成为贸易和投资自由化的坚定拥护者，成为推动新一轮经济全球化发展的重要力量。从中国融入前一轮全球价值链分工体系的具体实践看，一直扮演着“被整合者”的角色，更多表现为一种被动式和跟随式发展，因而无力主导和推动全球价值链分工演进。进入新阶段后，要想顺应乃至引领新一轮经济全球化发展，从引领和推动国际分工演进角度看，中国毫无疑问不能继续扮演“被整合者”角色，而是必须迈向全球产业链供应链中高端，如此，才有可能在构建“以我为主导”的国际分工体系

arising from the transition period of structural adjustment, giving rise to the contradiction between economic growth and structural upgrade. In such cases, countries tend to slow the pace of structural upgrade to cope with economic slowdown. Industrial relocation is not just about the establishment of individual projects and enterprises from a static perspective.

From a dynamic perspective, industrial relocation generates broader effects on the development of supporting industries with technology and knowledge spillovers. For instance, production-related skills training and R&D programs not only contribute to the upgrade of investment projects by multinational companies at the firm level, but more importantly, create spillover effects on industrial and supply chain upgrades. Such effects become diminished due to industrial re-shoring as part of the localization trend. Developed countries aim to bring advanced industrial activities back to their home soil, creating competitive pressures on China's industrial and supply chain upgrades.

4.1.2 The restraint of technology competition on industrial development

The evolution of GVCs division is driven by factor endowment structure, institutional arrangement, and technology change. The three jointly push forward the evolution of GVCs division (Huang, *et al*., 2019). The previous round of GVCs development, for instance, was fueled by rapid technological progress such as the segmentation of international production and institutional assurance for trade and investment liberalization, which allowed industries and production processes and stages to scatter and concentrate across countries and regions based on their factor endowment advantages.

As a key aspect and trend of GVCs restructuring, regionalization is subject to the impact of other factors like technology transition. That is to say, technology transition also serves as a key driver of GVCs regionalization apart from the competition and complementarity of regional factor endowments. With the driving forces of the previous round of economic globalization approaching exhaustion, a new round of economic globalization will require new industrial and technology revolutions. To seize opportunities and vantage points in the new round of the GVCs division, countries have engaged in fierce competition in industrial and technological revolutions. Such competition is manifested not only in industrial planning and innovation policies enacted by various countries, but in unfair competition practices such as trade protectionism by some developed countries to suppress technology progress in other countries. A case in point is the trade war launched by the US against China. Countries should engage in the division to jointly propel technology progress and inject momentum into economic globalization. Yet vicious competition has, to some extent, impeded technology progress and stood in the way of a new round of economic globalization. Without doubt, it will create adverse impacts on the upgrading of China's industrial and supply chains.

4.1.3 The weakening of layout adjustment on growth momentum

Diversification is an important way to defuse industrial and supply chain risks. Yet, in reality, many developed countries have practiced trade protectionism in the name of industrial and supply chains. For China, both situations exist under the GVCs restructuring, and the influence of the latter could be even more significant. According to Wang (2020), the United States has reshaped GVCs with three objectives—all intended towards China. The first objective is, as mentioned before, to re-shore industries and decouple China from the United States-led division. The second objective is to implement near-shore outsourcing. For instance, the rules of origin in the United States-Mexico-Canada Agreement are a key instrument for the United States to achieve near-shore outsourcing. The third objective is "China diversification" which is achieved by relocating some value chain processes from China to other Asian countries and regions to form diversified modes such as "China+1" or "China+N." If the first objective is hard to be fully achieved and the second objective does not just affect China, the third objective is more likely to materialize and targeted at China. The diversification of industrial and supply chains will undoubtedly erode the synergy of industrial development. In particular,

过程中，以人类命运共同体先进理念为引领，以共商共建共享为基本遵循，推动全球价值链朝着包容性方向优化发展。也就是说，在全球价值链进入重构的关键阶段，中国尽快实现产业链供应链升级，不仅是中国的现实需要，也是新一轮经济全球化发展的现实需要。

四、全球价值链重构下中国产业链供应链升级面临的挑战和机遇

毫无疑问，全球价值链重构对中国融入全球产业链供应链带来了巨大挑战，尤其是一旦重构朝着发达国家意欲引领的方向发展，不仅会给中国全球产业链供应链带来严重的安全和稳定隐患，而且还可能将中国排除在全球价值链分工体系之外。当然，从另一方面看，推动全球价值链重构也有来自发展中国家的力量，或者说代表发展中国家的利益诉求，从而推动全球价值链朝着优化方向发展。影响全球价值链重构的因素众多，其中不乏存在一些利好中国的因素。因此，全球价值链重构下中国产业链供应链升级同样面临着重要的战略机遇。

（一）面临的主要挑战

概括而言，全球价值链重构下中国产业链供应链升级面临的挑战主要表现为如下几个方面：

1．产业回流动摇产业发展之基

全球价值链分工条件下，中国产业尤其是制造业规模的迅速扩张，乃至实现一定意义上的转型升级，应该说得益于以开放的姿态承接了西方发达国家的产业国际梯度转移和技术扩散。目前，由于受到全球经济增长动能不足以及新冠疫情等因素的叠加影响，世界经济下行趋势较为明显。与此同时，我国当前正处在转变经济发展方式、优化经济结构、转换经济增长动力的关键时期，显然，结构性调整的过渡阶段往往会伴随着经济增长下行压力的加大。而全球价值链重构背景下，本土化发展趋势下产业回流，尤其是发达国家企图诱使本国跨国公司将生产环节迁回国内，无疑会对中国产业发展特别是产业链供应链升级带来巨大的调整压力。更为重要的是，产业回流包括制造业回流，并不是以往的劳动密集型产业或者生产环节的回迁，而是高端环节和阶段的回迁。比如通用电气公司选择美国肯塔基州路易斯维尔市取代中国。这是因为，一方面，结构性调整的过渡期本身就会面临经济下行压力，如果加之产业外迁的“浮萍经济”效应叠加影响，会进一步加大经济下行压力，“稳增长”和“促升级”之间的矛盾就会更加凸显。在巨大的下行压力下，为更好地平衡“稳增长”和“促升级”之间的关系，往往会采取放缓“促升级”的步伐，以达到缓解经济下行压力的目的。另一方面，承接产业转移从静态看，似乎只是一个具体的项目或者企业落地，但是从动态角度看，带来的更多是一种产业配套发展效应、技术和知识溢出效应以及相关经济活动产生的长期动态效应。比如与生产相关的技能培训、研发活动等，不仅有助于跨国公司投资项目自身或者说企业自身的升级，进而在中观层面上表现为产业升级，更为重要的是还可以通过外溢等外部性促进产业链供应链升级。而这种效应显然在本土化发展趋势下因产业回流而弱化。更何况，相比较而言，发达国家推动的“产业回流”更多觊觎中高端环节，因此，对中国产业链供应链升级可能产生的抑制作用会更大。

2．技术之争抑制产业发展之速

众所周知，推动分工演进包括全球价值链分工演进的主要因素无非有三，一是要素禀赋结构，二是制度安排，三是技术变迁。三者共同作用推动着全球价值链分工演进（黄先海等，2019）。比如，全球价值链前一轮

diminishing cost advantage will restrain the effects of specialization, knowledge spillover, technology progress, economies of scale, and product heterogeneity, creating adverse effects on industrial and supply chain upgrade.

4.2 Key Opportunities

As stated, GVCs restricting brings about many challenges. It also presents numerous strategic opportunities to upgrade China's industrial and supply chains.

4.2.1 Opportunities for innovation-driven development

The ancient Chinese classic, *Book of Changes,* states, "*What if it should fail; tying it to a cluster of mulberry shoots*." We must stay alert of the potential of failure and tie our destinies to something as sturdy and resilient as mulberry shoots. China was passively involved in the previous round of GVCs evolution, playing a complementary role in the international division and creating little competition to developed countries. Though embedded in the GVCs division at low-end and low-value processes, China managed to gain from trade without extensive innovation. Most Chinese companies were satisfied with imitation and lacked motivation to innovate. In this stage, China's participation in the international division was confined to imitation and passive innovation with few home-grown innovations.

In a network of complementary rather than competitive division, China's industrial upgrade was restrained under the learning-by-doing and imitation effects, drawing little attention from incumbent powers. Back then, the security and stability of China's industrial development faced few challenges. Entering a new stage of high-quality development, China needs to upgrade its industrial and supply chains amid profound changes of domestic and international situations. As their relationship with China in the GVCs division system turns from complementary to competitive, developed countries have set their eyes on preventing China's industrial and supply chain upgrade. From slapping sanctions on ZTE to banning Huawei and threatening to withdraw US firms from China, the escalating China-US trade frictions remind us of the vital importance to modernize our industrial system and safeguard industrial and supply chain security. Trade frictions will create pressures for China to accelerate the implementation of an innovation-driven strategy and expedite industrial and supply chain upgrade.

4.2.2 Opportunities in escaping low-end lock-up through regional value chain development

As noted by Lin and Liu (2020), industrial and supply chain upgrades encompass four stages under the GVCs division (i.e. process upgrade, product upgrade, function upgrade and chain upgrade). Although the first two stages of upgrade are easier to accomplish, the latter two are more challenging. Not only are more demanding technical requirements involved in the latter two stages, but incumbent powers create barriers to keep their advantage vis-à-vis late-moving countries. For this reason, developing countries tend to be trapped in a "low-end lock-up" dilemma in integrating into the GVCs division dominated by multinational companies from the developed world.

Research indicates that embedding into GVCs creates a significantly restrictive effect on the R&D and innovation of Chinese companies, thereby impeding industrial and supply chain upgrades (Zhang and Zheng, 2017; Lyu *et al.*, 2018). While late-moving countries are less innovative and more dependent on foreign technology under the industrial division system, a more important reason for their failure to climb up the value chain ladder is the blockades imposed by incumbent powers that dominate GVCs. In any case, late-moving countries face the risk and dilemma of "low-end lock-up" in integrating into the low-end processes of the GVCs division system. An alternative approach is for developing countries to create regional value chains and foster leading companies to better participate in the GVCs division and escape the low-end lock-up effect. In this sense, the regionalization of GVCs presents a strategic opportunity for China's industrial and supply chain upgrades.

的快速发展，就是得益于国际生产分割等技术快速进步，以及贸易和投资自由化等提供的制度保障，从而产业和产品不同生产环节和阶段，依据不同国家和地区要素禀赋优势，呈现地理空间分散和集聚的特征。因此，作为全球价值链重构的重要内容和趋势之一，区域化发展不仅是未来一段时期内各主要国家的政策选择偏好，与此同时还会受到其他诸如技术变迁等因素的影响。也就是说，推动全球价值链重构朝着区域化方向发展，除了受到地区要素禀赋结构的竞争性和互补性因素影响外，以及诸如区域贸易协定等制度保障因素作用外，还会受到技术变迁的影响。况且，由于前一轮经济全球化的推动力已经基本衰竭，新一轮经济全球化发展将有赖于新一轮产业革命和技术革命。为了在新一轮全球价值链分工演进中抢抓发展机遇和抢占制高点，各主要国家在产业革命和技术革命方面展开了白热化竞争。这种白热化竞争不仅体现在各国制定的产业发展规划和技术创新政策支撑方面，还表现在一些不正当竞争方面，包括部分发达国家企图抑制其他国家技术进步而保持自身相对优势所采取的贸易保护主义措施。典型案例如当前美国对中国发起的技术排挤战等经贸摩擦。在技术进步日新月异情况下，各国之间更应进行分工协作推动技术进步，共同解决经济全球化动能不足问题。然而，诸如此类的技术竞争却在一定程度上阻碍了技术进步，阻碍了推动新一轮经济全球化发展动能的形成步伐，对中国产业链供应链升级无疑也会带来消极影响。

3. 布局调整弱化产业发展之力

多元化发展一方面固然是化解产业链供应链风险的一种重要方式，但是在实践中不乏有部分发达国家以产业链供应链安全问题之名，实施贸易保护之实。尤其对于中国来说，在全球价值链重构背景下，上述两种情况均存在，并且后者的影响可能更甚。王鹏权（2020）认为，美国重塑全球价值链的三重目标，基本上均是针对中国。第一重目标就是前文分析指出的通过产业回流，妄图实现与中国产业分工的“脱钩”；第二重目标就是实施近岸外包，比如《美墨加协议》中的原产地规则就是美国推动并企图实现这一目标的重要手段之一；第三重目标就是“中国多元化”（China Diversification），即将部分价值链环节从中国迁移到其他亚洲国家和地区，实现“中国+1”甚至“中国+N”的多元化模式。如果说第一重目标很难完全实现，并且在价值链区域化发展趋势下，第二重目标的影响也并非只限于中国的话，那么第三重目标不仅实现的概率非常之高，而且所产生的影响对中国而言有很强的针对性。产业链供应链多元化发展趋势，无疑会对产业协同发展之力产生弱化效应。特别是，在成本优势逐步丧失情况下，产业集聚等所产生的分工细化效应、知识溢出效应、技术进步效应、规模经济效应、产品异质性效应等，都将受到一定程度的抑制，对产业链供应链升级带来不利影响。

（二）面临的主要机遇

当然，凡事皆有两面，全球价值链重构对中国产业链供应链升级带来的并非全然是挑战，其中同样也蕴含着重要战略机遇。概括起来，主要体现在以下几方面：

1. 加快实施创新驱动发展机遇

《周易》曾有语曰：“其亡其亡，系于苞桑。”只有心中时常念着其将灭亡、其将灭亡，最终才能稳固柔韧如苞桑。在全球价值链的前一轮深度演进过程中，中国以“被整合者”的身份和角色嵌入其中，与发达国家之间的分工主要是一种互补关系，竞争关系不明显，并且主要以“低端嵌入”的方式融入全球价值链分工体系。虽然在全球价值链分工体系中主要从事低附加值环节和阶段的生产，但是作为一种跟随式和被动式发展，在不

4.2.3 Opportunities for broadening international cooperation

As discussed before, GVCs diversification may affect the development of China's domestic industries. Incumbent powers aim to diversify away from China by moving supply chains elsewhere and the majority of such supply chains are related to mature industries in which China is already competitive. It should be noted, however, that China has lost comparative advantages in some industries and production stages. Allowing those industrial and supply chains to relocate will make room for more advanced industries. Moreover, such relocation expands China's circle of influence in host countries and regions and increases correlation at industrial and supply chain levels. Over the past decades, China's economic growth was achieved under opening-up conditions. In this sense, a broader circle of influence and a higher level of industrial and supply chain correlation are both manifestations of broader openness for China to integrate resources globally and employ high-end and advanced production factors for industrial and supply chain upgrade. From a dialectic point of view, GVCs evolution towards "China+1" or "China+N" modes offer a key pathway for coping with industrial and supply chain insecurity and instability risks.

5. Conclusions and Policy Implications

The restructuring of GVCs is driven by major countries and also represents a natural trend. It may result from the natural evolution of the international division or the policy options of major countries, including potential trade protectionism. As mentioned before, there is no need to be pessimistic about GVCs restructuring. Instead, we should follow and lead the transition of economic globalization and international division.

We should expedite China's industrial and supply chain upgrades amid GVCs restructuring. More importantly, we should proactively cope with trade protectionism. While taking appropriate countermeasures against trade protectionism, China should also open up wider and at a higher level to overcome the adverse impact that may arise from trade protectionism by some countries. Specifically, consideration should be given to the following strategies in advancing China's industrial and supply chain upgrades under GVCs restructuring.

5.1 The Strengthening of Industrial and Supply Chains through Innovation in Science and Technology

Science and technology are the primary productive forces. Although progress in science and technology is made increasingly beyond national borders in today's era of globalization, countries compete in science and technology and carefully guard their critical technologies. As noted by General Secretary Xi Jinping (2018), "China must make great efforts to develop science and technology if it is to achieve national prosperity and rejuvenation," and "critical technologies cannot be acquired, bought or begged from others." To upgrade its industrial and supply chains, overtake leading nations in GVCs restructuring amid a new round of economic globalization, and occupy vantage points in certain processes and areas of the GVCs division, China must rely on progress in science and technology and achieve breakthroughs in the new wave of industrial and technological revolutions. It should strive to achieve the independence of critical technologies, including generic technologies, frontier technologies, modern engineering technologies, and disruptive innovations.

At the national level, China should enhance strategic national strengths in science and technology, ramp up fundamental research, attach importance to original innovation, optimize the distribution of academic disciplines and R&D resources, promote interdisciplinary integration, and improve the supply of generic fundamental technologies. At the firm level, decision-makers should strengthen firm innovation and facilitate the flow of innovation factors to firms as the primary innovators. At the level of institutional design, efforts should be made to improve the mechanism of innovation in science and

需要进行大量创新等活动条件下依然可以获取一定的分工和贸易利益，因而对于大部分企业来说也就缺乏创新的激励和动力。也就是说，这一时期参与国际分工实现的产业发展，虽然也有创新，但主要还是局限于跟随、模仿和被动式创新，自主创新很不够。况且，在互补而非竞争关系的分工网络下，诸如干中学、模仿创新等带来的一定程度产业升级，也不足以引起作为全球价值链主导者和控制者的发达国家及其跨国公司的足够关注，因此，产业发展缺乏安全稳定意识也属常理。但是当中国经济发展进入高质量发展的新阶段后，产业链供应链面临国际国内深刻变化而亟待攀升中高端时，在原有全球价值链分工体系中的互补关系将逐步向竞合关系演变，对中国产业链价值链升级进行堵截，便成为发达国家的重要目标。以“断供”中兴通讯到从全球价值链上“围堵”华为，再到威胁让美国公司撤出中国为表现的中美贸易摩擦，让我们深刻认识到，依托自主创新构建自主可控的现代化产业体系，保障产业链供应链安全，至关重要。这种变化不仅能够起到“警醒”作用，更能起到“倒逼”作用，从而有助于中国加快实施创新驱动发展战略，促进产业链供应链升级。

2．依托区域化发展突破“低端锁定”机遇

凌永辉和刘志彪(2020)指出，在全球价值链分工条件下，产业链供应链升级主要包括四个阶段，即工艺升级、产品升级、功能升级和链条升级。相对而言，实现前两个阶段的升级较为容易，而实现后两个阶段升级比较困难，不仅是因为迈入后两个阶段可能具备更高的技术要求，而且会面临来自价值链“链主”的堵截等主观因素。这正是发展中国家以“低端嵌入”方式融入发达国家跨国公司主导的全球价值链分工体系且容易陷入“低端锁定”困境的主要原因。现有研究表明，嵌入全球价值链对中国企业研发创新行为具有显著的抑制作用，进而阻碍了产业链供应链的升级(吕越等，2018)。究其本质，固然有产业分工格局中不同专业领域的创新能力、创新空间乃至依赖程度不同的原因，更有作为全球价值链主导者和控制者进行堵截的原因。但不论出于何种原因，以“低端嵌入”的方式融入全球价值链分工体系，的确面临着“低端锁定”的风险和困境。而以区域价值链为切入点，通过构建区域价值链并不断培育出众多“链主”企业，进而可以更好地参与全球价值链分工体系，不失为突破发达国家“低端锁定”的一条重要发展路径。因此，从这一意义上说，目前全球价值链重构朝着区域化方向发展，对于中国实现产业链供应链升级，不失为一个重要的战略机遇。

3．扩大国际合作的机遇

前文分析指出，全球价值链重构的多元化发展趋势，的确会在一定程度上弱化国内产业发展之力，但这种弱化显然是针对现有产业而言的。也就是说，从降低对中国依赖角度出发，向其他国家和地区转移的产业链供应链，大多是国内现有的成熟产业体系。因为只有基于先进技术的成熟产业体系，并且在全球产业链分工格局上形成了较强的国际竞争力，才能谈得上所谓对中国产业链供应链的依赖。显然，从这一角度看，成熟技术的成熟产业体系当然也包括已经失去比较优势的部分产业和产品生产环节。而这一部分产业链供应链向其他地区的转移，实际上还能够产生至少两个方面的积极作用。一是为国内产业链供应链转型升级腾出资源和空间；二是产业链供应链的向外转移，在全球生产网络背景下，实际上意味着中国与其他国家和地区开放合作范围的拓展，包括国家和地区层面上的“朋友圈”扩大，以及产业链供应链层面上的关联度提升。如果说过去几十年中国经济增长是在开放条件下取得的，以及未来中国经济高质量发展仍然需要在更加开放条件下实现的话，那么无论是“朋友圈”扩大还是产业关联度提升，实际上都是扩大开放的表现，更加有助于我们在全球范围内整合和利用资源，尤其是利用高端和先进生产要素，从而有助于产业链供应链的升级。何况，

technology, optimize the national planning, management and operation of scientific and technological research, integrate scientific research resources, and unleash the dynamism of talent innovation.

5.2 The Deepening of International Cooperation through Open Platforms

In spearheading GVCs restructuring and upgrading industrial and supply chains, China must continue to broaden and deepen economic openness. While opening up to the developed world, China should also broaden its cooperation with other parts of the developing world. In addition to opening up the manufacturing sector, steps should be taken to open up the service sector. We should facilitate the flow of goods and factors in addition to attaching great importance to institutional openness such as implementation of international rules. In achieving the aforementioned goals, we must make use of open platforms such as free trade experiment areas and free trade ports. These platforms will support China's experiment of institutional innovation and adoption of high-standard international trade rules to carry out pilot programs in various areas and upgrade industrial and supply chains through further reforms and opening up.

Aside from free-trade areas and ports, China's economic openness also requires other open platforms and vehicles such as the implementation of international free trade zones, steady progress in the Belt and Road Initiative (BRI), the Asian Infrastructure Investment Bank (AIIB), and import expositions. The institutional innovations involved in those efforts, including the drafting of important rules, will contribute to broadening the scope of economic openness and upgrading industrial and supply chains.

5.3 The Attraction of High-end Factors with a Sizeable Local Market

China's market heft holds the key to creating a new development pattern of domestic and international dual circulations. As the world's second-largest economy, China is home to a huge middle-income class with a large domestic market. Such local market heft creates economies of scale and demand-induced innovations, among other mechanisms as revealed by the traditional theory of home market effects. More importantly, growth in the home market under the GVCs division also creates a "reverse innovation" effect and induces the mid- and high-end value chain processes to move to China. Reverse innovation means that multinational companies would focus more on a growing local market as their target market and innovate to meet the needs of the local market before applying local innovations globally. This approach of innovation is referred to in academia as "reverse innovation" as opposed to traditional innovations designed to address demand in the home market of developed countries.

Under the GVCs division, the distribution of production processes and stages across countries and regions is subject to not only factor endowment but the size of local markets. A larger local market is more conducive to attracting high-end and high-value production processes and stages. High-end production processes and stages are intensive in high-end factors and should attract high-end factors. It can be learned from both the theory of home market effects and the unique mechanism of the GVCs division that the attraction and concentration of high-end factors may contribute to industrial and supply chain upgrades. China's advantage of domestic market heft can be brought into full play by deepening institutional reforms, smoothening domestic circulation, and unleashing domestic demand.

5.4 The Proactive Implementation of FTA Strategy to Overcome Low-end Lock-up

Regionalization is a key trend in the ongoing GVC restructuring, and the development of regional value chains takes place through various free-trade zones or free-trade agreements. China should seize the strategic opportunity of regionalization and upgrade its industrial and supply chains amid the proactive implementation of the free-trade zone strategy, which helps create regional value chains beyond the GVCs division dominated by developed countries. Free-trade agreements will reduce the tariff and non-tariff barriers and attract FDIs to a trading bloc. In terms of rules, agendas and intra-

全球价值链多元化发展下的“中国+1”乃至“中国+N”模式演变，辩证地看，对于中国来说，是化解产业链供应链不安全不稳定风险的一条重要路径。

五、思路与对策

应该说，全球价值链重构既有主观需要，也有客观规律。换言之，这一过程中，既有可能是国际分工自然演进的趋势和结果，也有可能是各主要国家主观政策选择导向的结果，包括可能的贸易保护主义措施。犹如前文分析指出，对于全球价值链分工演进推动的重构，我们无须过度担心，更不用抱着反对的心态和态度刻意抵挡，而是要做到因势利导，也就是说，要顺应乃至引领经济全球化和国际分工演进发展大势，在全球价值链重构背景下推动中国产业链供应链升级。更为重要的是，要积极应对贸易保护主义，即对于以贸易保护主义手段推动的全球价值链重构，我们一方面要有礼有节、适当反制，另一方面更需要从如何扩大开放和实施高水平开放角度，化解部分国家实施贸易保护主义可能带来的不利影响。具体而言，全球价值链重构下推动中国产业链供应升级，应着重考虑如下几个方面的对策思路，并尽快实现新突破。

（一）依托科技创新强化产业链供应链之基

科学技术是第一生产力。虽然在全球化条件下，科学技术已经越来越具有超越国界的趋势特征，但是只要有国家的存在，科技之争就会存在，真正关键的、核心的、前沿的科学技术是不会轻易实现跨国流动的。正如习近平（2018）指出，“中国要强盛、要复兴，就一定要大力发展科学技术”“关键核心技术是要不来、买不来、讨不来的”。中国实现产业链供应链升级，尤其是在全球价值链重构或者说新一轮经济全球化发展中，实现弯道超车从而在全球价值链分工体系中某些环节和领域占据制高点，必须要依赖于科技进步，依赖于在新一轮产业革命和技术革命中，率先在某些领域实现突破。要以关键共性技术、前沿引领技术、现代工程技术、颠覆性技术创新为突破口，走前人没走过的路，努力实现关键核心技术自主可控。为此，在国家宏观层面，要加强国家科技战略力量，加强基础研究，注重原始创新，优化学科布局和研发布局，推进学科交叉融合，完善共性基础技术供给体系；在企业微观层面，要努力提升企业技术创新能力，强化企业创新主体地位，促进各类创新要素向企业集聚；在制度设计层面，要完善科技创新体制机制，深入推进科技体制改革，完善国家科技治理体系，优化国家科技规划体系和运行机制，推动重点领域项目、基地、人才、资金一体化配置，激发人才创新活力。

（二）充分利用各种开放平台深化国际合作

顺应乃至主导全球价值链重构大趋势，促进中国产业链供应链升级，本身就是开放发展的问题，因此需要在更加开放的条件下进行。新阶段更加开放，从本质上看，实际上就是要求实施更高水平的开放，具体包括三个方面，一是扩大开放范围，二是拓展开放领域，三是深化开放层次。扩大开放范围要求我们在继续向发达国家开放同的同时，扩大与其他发展中国家和地区的合作；拓展开放领域要求我们在继续做好制造业领域对外开放的同时，有序扩大服务业对外开放；深化开放层次要求我们在继续做好商品和要素流动型开放的同时，更加注重规则等制度型开放。而要实现上述目标，关键在于要利用好各种开放平台。比如自由贸易试验区和自由贸易港建设等。利用好这些开放发展平台，有助于我们紧扣制度创新这一核心，进一步对接高标准国

regional division, China's current free-trade strategy is essentially different from traditional free-trade zones. With the global system of trade and economic rules evolving towards higher standards, free-trade agreements increasingly focus on intra-regional openness instead of traditional open borders. The implementation of a free-trade strategy will significantly improve China's intra-regional business environment, increase institutional openness, and help reform trade rules and other institutional systems.

The division is increasingly based on industrial and supply chains rather than the traditional boundary of final products. Increasing the openness across borders and within free trade regions will both facilitate the free flow of factors and products in a region, enhance the division and cooperation between trading partners, broaden intra-regional markets, and propel intra-regional industrial and supply chains. With its market heft and industrial, financial and technological strengths in Asia, China, one of the world's three regional value chains, has the capability and resources to move regional value chains towards inclusive development for mutual benefit and overcome the dominance of GVCs by developed countries.

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际经贸规则，在更广领域、更大范围、更深层次形成各具特色、各有侧重的试点格局，推动全面深化改革扩大开放，促进产业链供应链升级。当然，除了设立自贸区和自由贸易港等开放发展平台之外，新时代的开放发展还包括创新多样化的开放平台和载体，如加快实施国家间的自由贸易区战略、稳步推进"一带一路"建设以及亚洲基础设施投资银行建设、设立进口博览会等，这其中无疑都涉及重要的规则等制度创新，都会在扩大开放范围和拓展开放领域等方面，产生积极的推动作用，从而成为促进产业链供应链升级的重要平台。

（三）发挥本土市场规模优势集聚高端要素

发挥超大本土市场规模优势，是当前构建双循环新发展格局的关键所在。目前，中国已经成为全球第二大经济体，并且有着庞大的中等收入群体，因此已经具有相当的在位规模优势。发挥本土市场规模优势，不仅可以通过充分发挥规模经济效应、需求引致创新效应等传统母市场理论所揭示的作用机制，更为重要的是，在全球价值链分工条件下，伴随本土市场规模扩大，还能够产生所谓"逆向创新"效应，以及诱发价值链中高端向国内转移等重要作用机制。所谓逆向创新，主要是指伴随发展中国家本土市场规模扩大，跨国公司的生产经营活动在目标市场定位上，将会更加注重本土市场，从而基于本土市场进行创新并辐射全球的、与以往基于发达国家市场需求进行创新并辐射全球的战略模式完全相反，因为被学术界成为"逆向创新"。与此同时，在全球价值链分工条件下，不同生产环节和阶段在不同国家和地区的区位布局，不仅取决于要素禀赋情况，还取决于当地市场规模。更确切地说，本土市场规模越大，越有利于吸引更加高端的、高附加值创造的生产环节和阶段向本土市场转移。显然，高端生产环节和阶段通常而言属于高端要素密集型，因而本质上会吸引和集聚高端要素。由此可见，无论是基于传统的母市场理论，还是基于全球价值链分工条件下的特有作用机制，发挥本土市场规模优势，可以通过吸引和集聚高端要素，从而促进产业链供应链升级。当然，充分发挥本土市场规模优势，需要在深化体制机制改革、畅通国内大循环、充分释放内需等方面采取有力的对策举措。

（四）积极实施FTA战略突破价值链低端锁定

如前所述，当前全球价值链重构的另一重要趋势就是区域化发展，其中各种形式的自由贸易区或自由贸易协定，成为区域价值链发展的重要平台。中国应抓住这一重要的战略机遇，在积极推动和实施自由贸易区战略中，促进产业链供应链升级。实施自由贸易区战略有助于我们依托区域价值链构建，突破以往发达国家主导的全球价值链分工体系。众所周知，签订自贸易协定不仅可以降低成员方之间的关税和非关税壁垒，从而进一步提升自贸协定带来的贸易创造效应，而且也有助于吸引全球对外直接投资向区内流入，形成一系列动态效应。当然，更为重要的是，与传统自由贸易区相比，当前实施自由贸区战略无论是在规则议题方面，还是在区域内的分工合作方面，均已发生了本质变化。从规则议题方面看，当前全球经贸规则体系正朝着高标准方向发展，在此背景下，自贸协定的内容和议题已经远远超越了传统"边境开放"，涉及更多的则是边境后开放即所谓"境内开放"问题。因此，实施自由贸易区战略不仅有助于显著优化区域内的整体营商环境，而且有助于我们推动制度型开放，在开放倒逼改革中推动规则等制度体系的优化。从分工合作方面看，产业链供应链分工替代传统的以最终产品为界限的分工，成为国际分工的主导模式。因此，无论是进一步的"边境开放"，还是更好地推动"境内开放"，都将有助于促进区域内要素和产品的自由流动，加强区域内成员方之间的

分工合作，扩大区域内市场规模的扩容和升级，进而推动区域内产业链供应链发展和升级。鉴于中国在全球三大价值链中的亚洲区域价值链中已经具备体量、规模、产业、资金、技术等方面的优势，有能力、有条件推动区域价值链朝着更加包容和互利共赢方向发展，并据此突破长期以来全球价值链被发达国家主导和控制的不利局面。

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