Changes in Trade Structure in Mekong River Basin Countries: Analysis of Competitiveness by Region and Industry

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1. Introduction

With accelerated globalization in Asian countries since the 1990s, the importance of economic development in border regions has increased. For example, the Tumen River Area Development in Northeast China and Northeast Asia, the Shanghai Cooperation Organization between Western China and Russia and Central Asian countries, and the Mekong Economic Development between Southern China and East Asia are among the representative regional development attempts in Asia.

In the context of these initiatives, an important policy issue is how to develop and link the region to development, and many studies have already been conducted hereon. However, many of these studies have only considered the national level in their economic analysis, although institutional features have been organized. For example, KIEP (2019) examined the current status of Mekong regional cooperation and relevant countries' participation strategies in the Mekong region, while Tran and Karikomi (2019) organized the development challenges of latecomers to the Association of Southeast Asian Nations (ASEAN) from the perspective of Asian dynamism and analyzed the impact of the current exchange of people, money, and goods in East Asia on ASEAN latecomers. The impact of the current exchange of people, money, and goods in East Asia on the Least Developed Countries (LDCs) in ASEAN is separately analyzed. Ishida and Umezaki (2020) analyzed the changes in trade in the Mekong region, focusing on road, air, and sea logistics in the five countries of the region. In addition, in a study analyzing trade structure by industry, Oki (2016) analyzed the current cross-border division of production in the Mekong region from the current status of trade in intermediate goods in Cambodia, Laos, Myanmar, and Vietnam (CLMV) and found that Vietnam, as an exporter of apparels and communications equipment to Western markets, was expanding its sourcing of components from China. His study shows that Vietnam is increasing its sourcing of components and materials from China.

While all of the previous studies have suggested meaningful policy recommendations, very few studies have analyzed more realistic economic changes at the country or regional level. Yasuda and Maeno (2021) examined the trade structure between Yunnan and Guangxi and the Mekong River Basin countries (five countries) at the industry level, and they found that the machinery-related industries in the southern China region had increased their share of exports, suggesting that these industries were beginning to be integrated into the international production network.

This study aims to analyze the trade structure of five countries and two regions in the Mekong River Basin at the

industrial level as part of a study on cross-border regional development; it is based on the results of previous analyses and extends the period of analysis to capture changes in the trade structure of the region based on changes in their competitiveness. In the next section, we review the geographical scope of the study and cooperation framework surrounding the region, and we confirm the characteristics of the economic situation based on Gross Domestic Product (GDP) per capita. In Section 3, we analyze the trade data to understand the changes in the region's trade structure. Section 4 concludes and discusses future research topics.

2. Cooperation framework for the Mekong River Basin

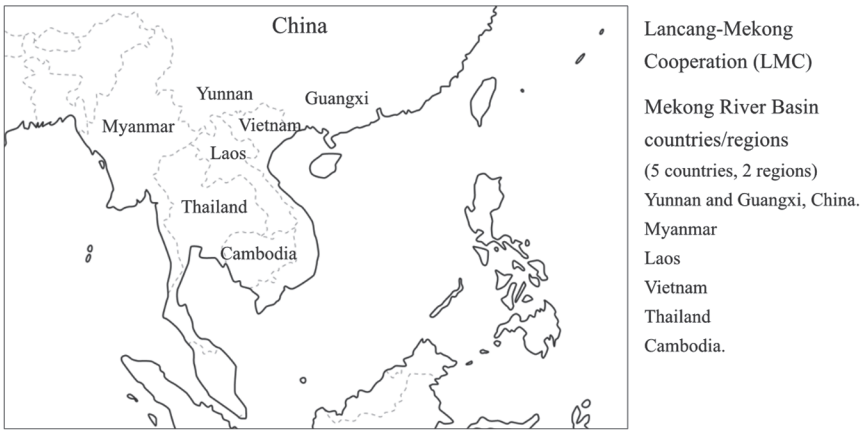
2.1 Geographical area

In this section, we first review the geographical scope and characteristics of the study area (see Figure 1).

China has approximately 22,000 kilometers of borderline and the largest number of bordering countries in the world. The east includes North Korea, Russia, Mongolia, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, Pakistan, India, Nepal, Bhutan, Myanmar, Laos, and Vietnam, a total of 14 countries. Near the borders of these countries are nine provinces and autonomous regions (hereinafter referred to as "border regions"), including Liaoning, Jilin, Heilongjiang, Inner Mongolia, Gansu, Xinjiang, Xizang, Yunnan, and Guangxi, which are characterized by the presence of many ethnic minorities who share the same language, culture, geography, and blood ties with neighboring countries.

The geographical area covered in this study essentially comprises the five countries in the Mekong River Basin (Myanmar, Laos, Vietnam, Cambodia, and Thailand) and two regions in southern China (Yunnan and Guangxi). The reasons for focusing on these five countries and two regions are discussed in the next subsection.

Figure 1: Geographical characteristics of the Mekong River Basin countries



Source: Created based on free map <https://www.freemap.jp/itemDownload/asia/kouiki_eastsouth/>, accessed on 21 September 2023.

2.2 Lancang-Mekong Cooperation (LMC)

In recent years, regional development along the Mekong River has attracted renewed attention. The Mekong River is the longest river in Southeast Asia, flowing from its headwaters in China's Xizang Plateau through China's

Yunnan Province, Myanmar, Laos, Thailand, Vietnam, and Cambodia to the South China Sea. Broadly, the Mekong River Basin encompasses the countries and regions concerned; however, it generally means the continental part of Southeast Asia excluding China. The countries of the Mekong River Basin have high potential for economic growth and abundant labor, making them a competitive region not only for foreign investment but also for development cooperation across the region.

Even before the countries of the Mekong River Basin joined ASEAN, regional cooperation for the development of the region had been active. Representative examples include the Greater Mekong Subregion (GMS) Development Program, Mekong River Commission (MRC), and ASEAN-Mekong River Basin Development Cooperation Initiative, which were launched in the 1990s. A representative example is the GMS Program of the Asian Development Bank (ADB) in 1992, which initiated the large-scale development of infrastructure in the region. With this program, infrastructure development in the region began in earnest. In addition, the MRC and ASEAN Mekong Basin Development Cooperation (AMBDC) were established in 1995, and the Mekong Institute (MI) in 1996. In the 2000s, regional cooperation led by countries such as India, Thailand, Japan, and the United States (U.S.) became active in the Mekong region. Regarding regional cooperation for the development of the Mekong region, problems such as confusion and inefficiency due to the haphazard creation of frameworks were identified, and coordination and collaboration for more effective cooperation were raised as issues (Yasuda & Maeno, 2021, p. 67).

Under these circumstances, China established the Lancang-Mekong Cooperation (LMC) in 2015 as a cooperation framework involving only the Mekong River Basin countries, and has been rapidly institutionalizing it since then. The areas of cooperation include infrastructure development for regional cooperation, the construction of special economic zones in border areas, water-resource development, and poverty alleviation. However, there has been considerable criticism that this is a move by foreign countries to increase their control over the region, and there has been opposition from multilateral organizations backed by, especially, Japan, the U.S., and Europe. For example, when China announced its policy to establish a new database to share information on rainfall and water levels with basin countries in 2020, the U.S. established the "Mekong-US Port Partnership" with Mekong River Basin countries in September that year, with the aim of preventing China from expanding its influence in Southeast Asia (Nihon Keizai Shimbun electronic edition, 8 September 2020). Participating in the partnership are the five countries of the Mekong River Basin, excluding China and now including the LMC. It should be noted that unlike the traditional GMS and MRC, which were led by international organizations and in which Japan and the U.S. had a great deal of influence, the LMC limited participation members to the countries of the Mekong River Basin in order to directly reflect the will of each country and appeal to each other's interests. In reality, there are different considerations among relevant countries; however, it is also true that China is steadily promoting projects in the Mekong region, which is the "link" in its strategy, consistent with its "One Belt, One Road" concept. This can be seen, for example, in the newly established free trade test zones in Yunnan and Guangxi in 2019 and the Lao-China high-speed railway opened in December 2021.

In light of these policy initiatives, it is important to analyze the trade structure of the five Mekong River Basin countries and two regions of Yunnan and Guangxi. According to Tran and Karikomi (2019), the Mekong River Basin countries of Vietnam, Cambodia, and Laos have been sequentially catching up in industrialization as latecomers in Asia, and this trend is expected to continue. The purpose of this study is to examine how Yunnan and

Guangxi, which are China's border regions but also part of the Mekong River Basin, are participating in this trend and what spillover effects they are generating based on their industrial competitiveness. In the following subsections, we examine the economic situation of these countries and regions in terms of GDP per capita.

2.3 Economic situation in the Mekong River Basin countries and regions

To assess the average standard of living of a country's people and how it has changed, it is necessary to consider not the GDP of the country as a whole but the GDP per capita and its evolution. Therefore, the evolution of GDP per capita in the countries and regions of the Mekong River Basin from 2003 to 2021 is shown here (see Table 1). Three main features can be observed.

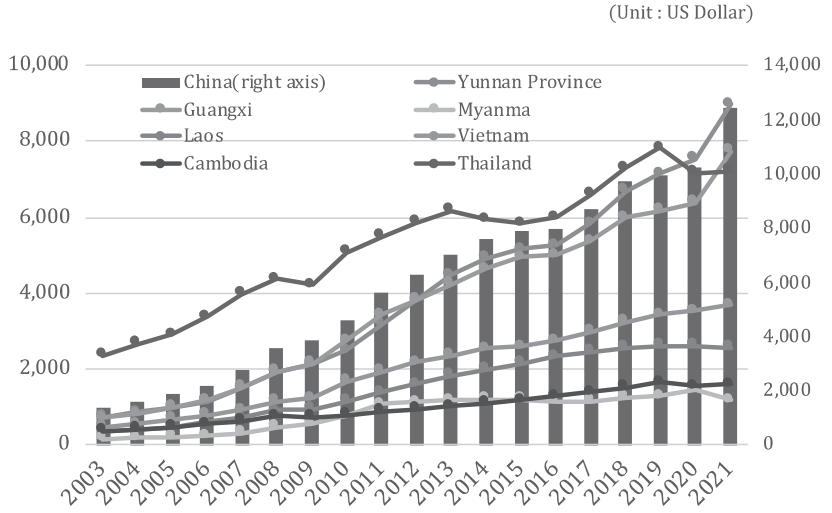
Table 1: GDP per capita in the Mekong River Basin countries and regions

Year	China	Yunnan	Guangxi	Myanma	Laos	Vietnam	Cambodia	Thailand
2003	1,393	727	696	161	363	481	362	2,359
2004	1,619	858	817	193	418	547	409	2,660
2005	1,873	960	980	216	476	687	474	2,894
2006	2,205	1,145	1,174	241	591	784	540	3,370
2007	2,783	1,479	1,510	314	710	906	632	3,973
2008	3,548	1,907	1,930	461	901	1,149	746	4,380
2009	3,881	2,106	2,144	586	949	1,217	738	4,213
2010	4,567	2,483	2,741	747	1,141	1,673	786	5,076
2011	5,602	3,191	3,426	1,061	1,378	1,942	882	5,492
2012	6,290	3,796	3,815	1,134	1,582	2,178	951	5,861
2013	7,015	4,462	4,249	1,168	1,832	2,355	1,013	6,168
2014	7,601	4,913	4,637	1,210	2,000	2,545	1,093	5,952
2015	7,928	5,151	4,938	1,197	2,140	2,582	1,163	5,840
2016	7,993	5,269	4,996	1,137	2,324	2,746	1,270	5,993
2017	8,676	5,834	5,370	1,151	2,455	2,974	1,385	6,594
2018	9,714	6,709	5,996	1,250	2,569	3,231	1,512	7,299
2019	9,965	7,141	6,179	1,271	2,614	3,425	1,643	7,814
2020	10,237	7,539	6,390	1,451	2,609	3,526	1,548	7,159
2021	12,420	8,977	7,758	1,187	2,551	3,694	1,591	7,233

Sources: Yunnan and Guangxi from the National Bureau of Statistics of China <http://www.stats.gov.cn/> (Renminbi to U.S. dollar conversion is calculated using the renminbi exchange rate of the National Bureau of Statistics of China); China, Cambodia, Laos, Myanmar, Thailand, and Vietnam from the KOSIS National Statistics Portal <http://kostat.go.kr/portal/korea/index.action>, accessed on 22 July 2023.

First, overall, GDP per capita is increasing in all the countries and regions, with Yunnan, Guangxi, and Thailand showing particularly significant growth, especially from 2009 onward (see Figure 2). Second, among the target countries and regions, Myanmar, Laos, Vietnam, and Cambodia can be confirmed to have relatively low levels compared to those of the other countries and regions when considering the period from 2021 onward. Among them, Vietnam's growth rate is high but less than USD 4,000, which is less than half the level of Yunnan, Guangxi, and Thailand. In addition, Yunnan's and Guangxi's GDPs per capita in 2021 are USD 8,977 and USD 7,758, respectively, which are the highest levels in the Mekong River Basin but still low compared to China's overall GDP per capita, which is approximately 70% higher in the same period.

Figure 2: GDP per capita in the Mekong River Basin countries and regions



Sources: Same as Table 1.

Based on the above characteristics, it can be confirmed that the economic levels of Yunnan, Guangxi, and Thailand are high among those of the five countries and two regions analyzed, and Vietnam is catching up with these countries and regions at a very fast pace and experiencing rapid economic growth.

Using GDP per capita as an indicator of a country's or region's wealth, it is clear that countries and regions in the Mekong River Basin are at different stages of development. These different stages of development may lead to the existence of complementary economic resources in geographical proximity. In addition, we analyze trade data to determine whether the Asian dynamism[1)] captured by Tran and Karikomi (2019) based on changes in competitiveness by industry is also evident in the five Mekong countries and two regions.

3. Analysis with trade data

In this section, we examine the characteristics of exports and imports from Yunnan and Guangxi to the Mekong River Basin countries and identify the characteristics of the trade structure in the region based on changes in competitiveness by industry. To conduct regional-level analysis, trade data by province and industry in China are required; however, such data are not publicly available for Yunnan and Guangxi. Therefore, we use data (HS 2-digit) from the trade statistics (K-stat) of the Korea International Trade Association (KITA). It should be noted that the KITA trade statistics clearly indicate that the data source is the General Administration of Customs of the People's Republic of China (GAC).

3.1 Trade between Yunnan and Guangxi and the Mekong River Basin countries

Table 2 shows related countries' shares in imports and exports by Yunnan from 2015 to 2021.

The scale of Yunnan's trade is small in terms of its share of China's total foreign trade: its share of exports rises from 0.5% in 2015 to 0.8% in 2021, and its share of imports rises to less than 1%. Meanwhile, the value of its trade is rising steadily, with Vietnam, the U.S., Myanmar, and Hong Kong topping the export rankings by country.

Table 2: Exports and imports from Yunnan and the Mekong River Basin countries (2015-2021)

Top exports in 2022 (million dollars)			Export								Import							
			2015	2016	2017	2018	2019	2020年	2021年	average	2015	2016	2017	2018	2019	2020年	2021年	average
Top countries		Trade amount (nationwide)	2,280,437	2,134,872	2,279,162	2,488,544	2,497,948	2,596,880	3,367,037	2,520,697	1,601,598	1,522,886	1,790,000	2,117,143	2,068,554	2,059,992	2,678,836	1,977,001
		Yunnan/nation wide	0.5%	0.4%	0.4%	0.4%	0.6%	0.9%	0.8%	0.6%	0.4%	0.4%	0.5%	0.6%	0.9%	0.8%	0.8%	0.7%
Excluding LMC	No	Trade amount (Yunnan) million USD	10,489	8,791	9,582	9,898	15,083	22,606	27,360	14,830	7,185	6,603	9,496	13,600	18,622	17,293	21,124	13,418
1	2	America	4.5%	2.8%	2.3%	2.3%	3.5%	10.8%	9.7%	5.1%	14.1%	8.2%	4.3%	0.8%	0.3%	1.3%	2.2%	4.5%
2	4	Hong Kong	11.1%	22.0%	20.5%	16.6%	17.3%	12.6%	9.1%	15.6%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%
3	5	Malaysia	3.1%	3.9%	2.2%	2.3%	1.7%	2.1%	4.6%	2.8%	0.2%	0.2%	0.5%	0.5%	0.1%	0.1%	0.3%	0.3%
4	6	India	5.8%	3.6%	4.5%	6.8%	4.4%	3.4%	4.8%	4.8%	0.3%	0.4%	0.6%	0.2%	0.2%	0.4%	0.4%	0.4%
5	8	Singapore	1.9%	0.7%	0.4%	0.6%	1.3%	2.4%	3.3%	1.5%	0.5%	0.5%	0.3%	0.3%	0.1%	0.1%	0.1%	0.3%
6	9	South Korea	2.4%	1.7%	1.3%	1.4%	0.9%	1.3%	2.1%	1.6%	0.2%	0.2%	0.2%	0.6%	0.1%	0.3%	0.2%	0.2%
7	10	Brazil	2.5%	0.8%	0.6%	1.3%	1.2%	0.9%	2.7%	1.4%	2.3%	1.8%	1.7%	0.8%	3.4%	4.1%	5.4%	2.8%
8	11	Indonesia	5.0%	4.6%	5.7%	4.2%	2.9%	1.8%	2.1%	3.8%	0.0%	0.0%	0.3%	0.0%	0.1%	0.5%	1.0%	0.3%
9	12	Philippines	0.9%	1.0%	0.8%	0.6%	1.0%	1.1%	1.3%	1.0%	0.0%	0.0%	0.2%	0.1%	0.1%	0.0%	0.1%	0.1%
10	13	Australia	1.4%	1.3%	1.5%	1.5%	1.8%	2.1%	1.9%	1.6%	3.0%	2.9%	3.9%	2.0%	1.6%	1.5%	1.9%	2.4%
11	14	Japan	1.8%	2.0%	1.9%	2.1%	1.2%	1.7%	2.0%	1.8%	0.4%	0.5%	0.5%	0.4%	0.4%	0.3%	1.7%	0.6%
12	15	Bangladesh	0.9%	1.3%	0.5%	1.2%	0.4%	0.4%	0.4%	0.7%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Top country subtotal			41.2%	45.7%	42.3%	40.9%	37.5%	40.7%	44.0%	41.7%	21.3%	14.9%	12.7%	6.0%	6.3%	8.8%	13.4%	11.9%
Top country subtotal (excluding Hong Kong)			30.1%	23.7%	21.8%	24.3%	20.2%	28.0%	34.9%	26.2%	21.2%	14.8%	12.6%	6.0%	6.2%	8.8%	13.4%	11.8%
1	1	Vietnam	13.4%	14.3%	19.8%	21.7%	18.5%	16.9%	14.6%	17.0%	1.5%	2.6%	3.6%	1.5%	9.1%	7.2%	5.9%	4.5%
2	3	Myanmar	11.6%	10.5%	10.4%	10.3%	22.2%	16.5%	9.4%	13.0%	39.2%	43.0%	29.0%	18.8%	25.6%	25.4%	21.8%	28.9%
3	7	Thailand	11.8%	11.4%	8.6%	6.6%	5.9%	4.6%	4.3%	7.6%	3.6%	2.5%	2.5%	3.0%	3.7%	3.3%	3.9%	3.2%
4	17	Laos	4.1%	2.6%	4.4%	4.5%	2.7%	1.1%	1.2%	3.0%	4.3%	5.4%	4.2%	3.1%	4.6%	5.1%	4.7%	4.5%
5	28	Cambodia	0.9%	0.3%	0.1%	0.1%	0.2%	0.3%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
LMC related countries subtotal			41.9%	39.2%	43.4%	43.2%	49.5%	39.4%	29.8%	40.9%	48.5%	53.5%	39.3%	26.3%	43.0%	41.0%	36.2%	41.1%

Note: Rankings are based on the top exports in Yunnan and Guangxi in 2022.

Source: Based on Korea International Trade Association <https://www.kita.net/>, accessed on 1 July 2023.

In particular, the share of exports to the Mekong River Basin countries is 49.5% in most years (2019) and 40.9% on average from 2015 to 2019, while the share of imports is 41.1%. This indicates that the Mekong River Basin countries are important trading partners for Yunnan, although the scale of trade is not large from the perspective of China as a whole. Among them, exports to Vietnam and Myanmar, which border the province, are the largest.

Next, we examine the imports and exports of Guangxi and the Mekong River Basin countries. As shown in Table 3, like Yunnan, Guangxi's share of China's total imports and exports is small (less than 2%), although the total value of exports and imports is increasing, and the share of exports to the Mekong River Basin countries, in particular, is growing rapidly. The share of exports to Vietnam, the largest export partner, increased rapidly from 17.1% in 2015 to 48.4% in 2021, while the shares of exports to Hong Kong (the second largest exporter) and the U.S. (the third largest exporter) decreased from 25.5% (2015) to 23.7% (2021) and from 10.5% to 5.4%, respectively.

The increase in trade with the Mekong countries is due to these countries' and regions' status as emerging markets, which has been accelerated by the development of road infrastructure in the Mekong and China plus one, which has become more prominent since 2010. This is partly due to rising wages in China and trade tensions between China and the U.S., and partly due to the accelerated relocation of production to neighboring countries, not only by foreign companies in China, but also by local Chinese companies. In particular, the fact that Vietnam has become Yunnan's and Guangxi's largest export partner can be attributed to the fact that the country, as an exporter of apparel and telecommunications equipment to Western markets, has expanded its sourcing of components from China, as revealed in Ohki (2016). In short, Vietnam is increasingly importing related products from neighboring Yunnan and Guangxi, which appear to have complementary economic resources due to their geographical proximity.

Therefore, the following subsections examine the region's competitiveness through an analysis of data by industry.

3.2 Analysis by trade specialization coefficient

In this section, we examine the competitive and complementary relationships between Yunnan and Guangxi and the five Mekong River Basin countries in terms of trade specialization coefficients and analyze them by industry. The trade specialization coefficient is expressed by the following equation:

$$c_i = \left(\sum_j X_{ij} - \sum_j M_{ij}\right) / \left(\sum_j X_{ij} + \sum_j M_{ij}\right),$$

where c_i is the trade specialization coefficient of good i in a country (province/autonomous region in China), X_{ij} is the export value of item i from the country (province/ autonomous region in China) to country j (Mekong River Basin country or the world), and M_{ij} is the import value of item i from country j (Mekong River Basin country or the world) to the country (province/ autonomous region in China).

As shown in the formula above, the trade specialization coefficient is the ratio of the excess value of the exports (imports) of an item to the total value of the exports and imports of that item. The trade specialization coefficient assumes values from -1 to +1 and is used as an indicator of competitiveness. It is close to +1 when Yunnan's and Guangxi's exports are more advanced than those of the Mekong River Basin countries or the rest of the world, and close to -1 when the products of the Mekong River Basin countries or the rest of the world are more advanced.

Table 3: Imports and exports of Guangxi and the Mekong River Basin countries (2015-2021)

Top exports in 2022 (million dollars)			Export								Import							
			2015	2016	2017	2018	2019	2020年	2021年	average	2015	2016	2017	2018	2019	2020年	2021年	average
Top countries		Trade amount (nationwide)	2,280,437	2,134,872	2,279,162	2,488,544	2,497,948	2,596,880	3,367,037	2,520,697	1,601,598	1,522,886	1,790,000	2,117,143	2,068,554	2,059,992	2,678,836	1,977,001
		Guangxi/nation wide	0.7%	0.6%	0.6%	0.7%	1.5%	1.5%	1.4%	1.0%	1.8%	1.5%	1.7%	1.6%	1.5%	1.5%	1.7%	1.6%
Excluding LMC	No	Trade amount (Guangxi) million USD	14,997	12,013	14,089	17,382	37,777	39,414	45,470	25,877	28,410	22,587	29,982	34,801	30,412	31,110	46,058	31,908
1	2	Hong Kong	25.5%	13.6%	26.7%	32.4%	19.0%	21.1%	23.7%	23.2%	2.2%	0.1%	0.5%	2.1%	3.5%	3.4%	1.3%	1.9%
2	3	America	10.5%	1.4%	15.1%	12.9%	6.9%	5.5%	5.4%	8.2%	7.2%	7.1%	6.5%	4.2%	1.0%	1.6%	3.0%	4.4%
3	5	Malaysia	1.1%	1.4%	1.3%	2.4%	2.1%	2.4%	2.8%	1.9%	2.1%	1.3%	1.8%	2.7%	1.4%	1.1%	1.4%	1.7%
4	6	Philippines	1.5%	2.0%	1.9%	1.6%	0.4%	0.5%	0.5%	1.2%	1.5%	1.2%	1.2%	0.8%	0.8%	0.7%	0.8%	1.0%
5	7	India	1.7%	0.7%	2.1%	2.3%	1.2%	1.0%	1.0%	1.4%	0.2%	0.2%	0.3%	0.4%	0.5%	0.4%	0.3%	0.3%
6	8	Mexico	0.6%	1.6%	0.9%	0.7%	0.5%	0.4%	0.8%	0.8%	0.7%	0.6%	1.0%	0.5%	0.8%	1.0%	1.5%	0.9%
7	9	Indonesia	1.1%	5.0%	2.3%	2.8%	1.4%	0.7%	1.0%	2.0%	2.0%	2.6%	2.5%	3.1%	1.9%	1.7%	2.1%	2.3%
8	10	Singapore	12.2%	3.5%	4.0%	5.4%	2.1%	1.3%	0.9%	4.2%	0.8%	0.8%	0.8%	0.6%	0.4%	0.4%	0.2%	0.6%
9	11	Japan	3.1%	2.4%	3.0%	2.5%	1.1%	1.1%	0.8%	2.0%	1.2%	1.9%	1.4%	1.2%	1.8%	2.2%	2.0%	1.7%
10	12	South Korea	2.0%	0.5%	2.1%	1.8%	0.9%	1.0%	0.6%	1.3%	0.9%	1.1%	1.3%	1.3%	1.2%	2.1%	2.0%	1.4%
11	13	Russia	0.4%	3.0%	0.6%	0.7%	0.3%	0.3%	0.3%	0.8%	1.2%	1.1%	0.7%	2.2%	0.4%	0.6%	0.4%	0.9%
12	14	Australia	1.9%	0.0%	3.8%	2.6%	1.1%	1.0%	0.8%	1.6%	7.9%	11.7%	11.8%	12.1%	5.6%	6.6%	6.4%	8.9%
Top country subtotal			61.6%	35.3%	63.7%	68.1%	37.0%	36.5%	38.8%	48.7%	27.9%	29.8%	29.9%	31.3%	19.3%	21.7%	21.4%	25.9%
Top country subtotal (excluding Hong Kong)			36.1%	21.7%	37.0%	35.7%	18.0%	15.3%	15.1%	25.6%	25.8%	29.7%	29.3%	29.2%	15.8%	18.4%	20.1%	24.0%
1	1	Vietnam	17.1%	2.1%	13.3%	10.3%	46.3%	49.3%	48.4%	26.7%	2.6%	4.1%	4.9%	2.5%	26.3%	19.4%	19.3%	11.3%
2	4	Thailand	1.9%	0.3%	1.7%	1.7%	1.2%	1.7%	1.9%	1.5%	5.0%	7.1%	1.6%	1.7%	13.7%	15.5%	14.8%	8.5%
3	26	Cambodia	0.2%	0.3%	0.5%	0.4%	0.2%	0.2%	0.3%	0.3%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
4	33	Myanmar	0.2%	0.1%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
5	64	Laos	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%	0.2%	0.0%	0.2%	0.2%	0.1%
LMC related countries subtotal			19.5%	2.8%	15.9%	12.7%	48.0%	51.5%	51.0%	28.8%	8.5%	11.6%	6.7%	4.4%	40.1%	35.2%	34.4%	20.1%

Source: Same as Table 2.

When the value is close to 0, it means that there are both exports and imports, which can be considered as a horizontal division of labor.

This section presents the results of the analysis using the trade data by industry. Mainly, Yunnan and Guangxi were classified into five categories: (1) “advantaged industries” (trade specialization coefficient of 0.6 to 1); (2) “slightly advantaged industries” (0.2 to 0.6); (3) “advantaged industries in the partner country” (-0.6 to -1); (4) “slightly advantaged industries in the partner country” (-0.6 to -0.2); and (5) “industries where advantages are difficult to discern” (-0.2 to 0.2) (see Table 4). The trade specialization coefficients were calculated for each of the HS2-digit classified items at the provincial level, after summing up the classification by industry[2)]. Each of the analysis periods covers four years, from 2008 to 2011 and from 2018 to 2021.

Table 4: Classification of analysis results

Advantaged industries	0.6 ～ 1
Slightly advantaged industries	0.2 ～ 0.6
Advantaged industries in the partner country	−1 ～ −0.6
Slightly advantaged industries in the partner country	−0.6 ～ −0.2
Industries where advantages are difficult to discern	−0.2 ～ −0.2

The trade specialization coefficients for Yunnan and Guangxi with respect to the Mekong River Basin countries are shown in Table 5. In terms of trade with the world, Yunnan’s “advantaged industries” are leather and textiles, steel and metals, chemicals and rubber, and machinery and electrical equipment, while its “slightly advantaged industries” are agricultural and forestry and fisheries products as well as transport and precision equipment. The world’s “advantaged industries” include those in mineral resources. For Guangxi, the “advantaged industries” comprise leather and textiles, chemicals and rubber, machinery and electrical equipment, and transport and precision equipment, while the “slightly advantaged industries” comprise steel and metals. The same phenomenon can be seen in Laos, where agricultural, forestry and fisheries products as well as and mineral resources are particularly weak in terms of competitiveness with the rest of the world.

In terms of trade with the five Mekong River Basin countries, Yunnan’s “advantaged industries” are agricultural, forestry and fishery products (with Vietnam and Cambodia), leather and textiles (with Myanmar and Thailand), mineral resources (with Cambodia and Thailand), steel and metals (with Laos, Cambodia, Thailand), and chemicals and rubber (with Vietnam, Cambodia, Thailand). “Slightly advantaged industries” include leather and textiles (with Cambodia), mineral resources (with Thailand), steel and metals (with Myanmar and Vietnam), machinery and electrical equipment (with Vietnam), and transport and precision equipment (with Myanmar and Laos). The “industries where advantages are difficult to discern” include agricultural, forestry and fisheries products (with Myanmar and Thailand), leather and textiles (with Vietnam), minerals resources (with Vietnam), chemicals and rubber (with Myanmar), machinery and electrical equipment (with Laos), and transport and precision equipment (with Vietnam).

In terms of trade with the five Mekong River Basin countries in the Guangxi region, the “advantaged industries” are leather and textiles (with the five countries), mineral resources (with Cambodia and Thailand), steel and metals (with the five countries), chemicals and rubber (with Myanmar, Vietnam, and Cambodia), and machinery and

Table 5: Industry and trade specialization coefficients for Yunnan and Guangxi to the Mekong River Basin countries

Region/Industry/Year			World	Myanma	Laos	Vietnam	Cambodia	Thailand	Region/Industry/Year		World	Myanma	Laos	Vietnam	Cambodia	Thailand
Yunnan	Agricultural, forestry and fisheries products	2008	0.38	-0.7	-0.9	0.8	1.0	0.8	Guangxi	2008	-0.5	1.0	-0.9	0.2	-0.4	-0.5
		2009	0.33	-0.5	-0.7	0.8	0.5	0.9		2009	-0.5		-1.0	0.4	-0.3	-0.7
		2010	0.15	-0.6	-0.4	0.8	1.0	1.0		2010	-0.5	0.1	-1.0	0.3	-0.2	-0.8
		2011	0.27	-0.3	-0.5	0.7	1.0	0.8		2011	-0.6	0.9	-1.0	0.5	0.9	-0.6
		average	0.28	-0.5	-0.6	0.8	0.9	0.9		average	-0.6	0.6	-1.0	0.4	0.0	-0.7
		2018	0.62	-0.1	-0.8	1.0	1.0	0.2		2018	-0.7	0.8	-1.0	0.2	0.6	-0.7
		2019	0.49	0.1	-0.8	0.9	1.0	0.0		2019	-0.4	-0.2	-1.0	0.5	0.6	-1.0
		2020	0.46	0.1	-0.8	0.9	1.0	0.1		2020	-0.5	0.0	-1.0	0.4	0.1	-1.0
		2021	0.22	0.1	-0.6	0.9	1.0	-0.3		2021	-0.6	-0.7	-1.0	0.4	-0.2	-1.0
		average	0.45	0.0	-0.8	0.9	1.0	-0.0		average	-0.6	-0.0	-1.0	0.4	0.3	-0.9
	Leather/textiles	2008	-0.34	-0.5	-0.8	0.6	1.0	1.0		2008	0.5	1.0	-1.0	-0.4	-0.2	0.3
		2009	0.05	-0.6	0.2	0.6	1.0	1.0		2009	0.7	1.0	1.0	0.4	-0.3	0.5
		2010	0.27	-0.6	0.2	0.8	-0.8	1.0		2010	0.5	0.7	-0.8	0.6	-0.7	0.2
		2011	0.04	-0.5	-0.8	0.8	0.4	0.8		2011	0.5	0.7	-0.9	0.7	-0.0	0.3
		average	0.00	-0.6	-0.3	0.7	0.4	0.9		average	0.6	0.8	-0.4	0.3	-0.3	0.3
		2018	0.08	0.4	-0.3	-1.0	-0.9	0.5		2018	0.4	1.0	1.0	0.4	1.0	0.2
		2019	0.73	0.8	-0.5	-0.0	1.0	0.4		2019	0.9	1.0	1.0	1.0	1.0	0.6
		2020	0.87	0.8	-0.2	0.4	1.0	0.9		2020	0.9	1.0	1.0	1.0	0.9	0.7
		2021	0.88	0.5	-0.6	0.6	1.0	0.9		2021	0.8	1.0	0.6	1.0	0.9	0.8
		average	0.64	0.6	-0.4	-0.0	0.5	0.7		average	0.7	1.0	0.9	0.8	1.0	0.6
	Mineral resources	2008	-0.86	-0.5	-0.5	0.4		-0.7		2008	-0.8	1.0	-1.0	-0.6	1.0	-0.7
		2009	-0.76	-0.7	-0.7	0.5	-1.0	-0.4		2009	-0.9	0.9	1.0	-0.7	1.0	-0.3
		2010	-0.73	-0.8	-0.1	0.6		-1.0		2010	-0.9	0.9	-1.0	-0.8	0.6	-0.8
		2011	-0.79	-0.8	-0.8	0.4		-0.9		2011	-0.9	0.5		-0.9	0.9	-0.5
		average	-0.78	-0.7	-0.5	0.4	-1.0	-0.7		average	-0.9	0.8	-0.3	-0.8	0.9	-0.6
		2018	-0.93	-0.9	0.0	0.3	1.0	-0.5		2018	-0.8	-0.9	-1.0	0.6	1.0	0.2
		2019	-0.95	-0.9	-0.8	0.1	1.0	0.8		2019	-0.9	-0.6	-0.6	0.2	1.0	0.3
		2020	-0.95	-0.9	-0.9	0.1		1.0		2020	-1.0	-0.6	-1.0	-0.8	1.0	0.9
		2021	-0.97	-0.9	-1.0	-0.2	1.0	0.9		2021	-1.0	-0.5	-1.0	-0.1	1.0	0.5
		average	-0.95	-0.9	-0.7	0.1	1.0	0.6		average	-0.9	-0.7	-0.9	-0.0	1.0	0.5
	Steel/metals	2008	0.72	1.0	0.9	1.0	1.0	1.0		2008	0.9	1.0	0.4	1.0	1.0	1.0
		2009	0.44	0.9	0.7	0.9	-0.3	1.0		2009	0.5	1.0	1.0	1.0	1.0	0.7
		2010	-0.09	0.9	0.7	0.2		1.0		2010	0.6	0.9	0.9	0.9	1.0	1.0
		2011	0.03	0.7	0.5	0.3	1.0	-0.4		2011	0.4	1.0	1.0	0.9	1.0	1.0
		average	0.28	0.9	0.7	0.6	0.6	0.6		average	0.6	1.0	0.8	1.0	1.0	0.9
		2018	0.72	0.6	1.0	0.2	1.0	0.9		2018	0.1	0.9	1.0	1.0	1.0	0.9
		2019	0.79	0.6	1.0	0.4	1.0	1.0		2019	0.5	1.0	1.0	1.0	1.0	1.0
		2020	0.76	0.5	0.7	0.6	1.0	1.0		2020	0.6	1.0	1.0	1.0	1.0	0.9
		2021	0.76	0.1	-0.0	0.8	1.0	1.0		2021	0.5	0.2	0.9	1.0	1.0	0.7
		average	0.76	0.5	0.7	0.5	1.0	1.0		average	0.4	0.8	1.0	1.0	1.0	0.9
	Chemicals/rubber	2008	0.72	-0.1	-0.2	0.5	1.0	1.0		2008	0.7	1.0	1.0	0.8	1.0	0.5
		2009	0.65	0.4	-0.1	0.8	1.0	0.2		2009	0.6	1.0	1.0	0.3	1.0	0.5
		2010	0.63	0.1	-0.4	0.9	1.0	-0.3		2010	0.6	1.0	1.0	0.0	1.0	0.5
		2011	0.60	0.2	-0.5	0.9	1.0	-0.5		2011	0.7	-0.2	1.0	0.8	0.9	0.7
		average	0.65	0.1	-0.3	0.8	1.0	0.1		average	0.6	0.7	1.0	0.5	1.0	0.5
		2018	0.66	0.1	-0.3	0.8	1.0	0.7		2018	0.5	1.0	-0.5	0.3	1.0	0.6
		2019	0.55	0.2	-0.8	0.9	1.0	0.6		2019	0.7	0.9	0.9	0.9	1.0	0.5
		2020	0.45	-0.1	-0.8	0.7	1.0	0.8		2020	0.6	1.0	1.0	0.9	1.0	0.2
		2021	0.60	-0.4	-0.8	0.9	1.0	0.7		2021	0.6	1.0	0.6	0.8	1.0	0.4
		average	0.56	-0.1	-0.7	0.8	1.0	0.7		average	0.6	1.0	0.5	0.7	1.0	0.4
	Machinery/electrical equipment	2008	0.95	0.8	0.9	0.8	1.0	-0.4		2008	1.0	-0.7	-0.7	0.8	-0.3	1.0
		2009	-1.00	-0.8	0.9	-0.6		-0.3		2009	1.0			0.6	1.0	0.8
		2010	-0.50	0.6	-0.1	1.0	-0.4	0.4		2010	1.0	-1.0	1.0	0.5	1.0	1.0
		2011		-0.8	-0.5	0.3		0.1		2011	-0.3			0.9	1.0	0.8
		average	-0.18	-0.0	0.3	0.4	0.3	-0.1		average	0.7	-0.8	0.2	0.7	0.7	0.9
		2018	0.29	-0.7	0.7	1.0	-1.0	-0.9		2018	0.9	1.0	-1.0	0.4	1.0	1.0
		2019	0.54	0.1	-1.0	0.3		-1.0		2019	1.0			0.9	1.0	1.0
		2020	0.60	-0.7	1.0	0.3	0.0	-0.5		2020	0.9	-0.4	0.4	0.4	1.0	0.7
		2021	0.99	0.1	-0.5	0.3		-1.0		2021	1.0			0.9	0.7	0.7
		average	0.61	-0.3	0.0	0.5	-0.5	-0.8		average	0.9	0.3	-0.3	0.6	0.9	0.8
	Transport/precision equipment	2008	1.00	0.8	0.9	0.3	1.0	0.4		2008	1.0		-0.7	1.0	1.0	-0.0
		2009	-0.96	-0.8	-0.5	-0.6		0.9		2009	1.0			0.9	1.0	-0.2
		2010	-0.50	0.8	0.7	-0.3	0.9	0.8		2010	1.0	-0.4	-0.7	0.5	1.0	-0.7
		2011		-0.8	-0.5	0.3		-1.0		2011	0.5			1.0	1.0	-0.0
		average	-0.16	0.0	0.2	-0.1	1.0	0.3		average	0.9	-0.4	-0.7	0.8	1.0	-0.2
		2018	0.83	1.0	0.7	0.3	-0.5	-0.4		2018	0.8	0.4	-1.0	1.0	1.0	-0.3
		2019	0.14	0.1	0.5	-0.9		-1.0		2019	1.0			0.9	1.0	1.0
		2020	0.08	-0.3	1.0	1.0	-1.0	0.9		2020	0.5	0.1	0.4	1.0	0.9	1.0
		2021	0.41	1.0	-0.6	-1.0		-1.0		2021	0.4			0.1	-0.3	1.0
		average	0.37	0.4	0.4	-0.2	-0.8	-0.4		average	0.7	0.2	-0.3	0.7	0.7	0.7

Source: Author's calculation using KITA K-stat database <https://www.kita.net/>, accessed on 22 July 2023.

electrical equipment, and transport and precision equipment (with Vietnam, Cambodia, and Thailand). "Slightly advantaged industries" are agricultural, forestry and fisheries products (with Vietnam and Cambodia), mineral resources (with Thailand), chemicals and rubber (with Laos and Thailand), and machinery and electrical equipment, and transport and precision equipment (with Myanmar). "industries where advantages are difficult to discern" are agricultural, forestry and fisheries products (with Myanmar), and mineral resources (with Vietnam).

The results of the above analysis reveal the following characteristics, although competitiveness by industry differs by partner country. Yunnan and Guangxi are less competitive with the rest of the world and Mekong River Basin countries in primary products such as mineral resources, and agricultural, forestry and fisheries products, while Yunnan and Guangxi are stronger in machinery-related industries such as machinery and electrical and transport and precision equipment. However, there have been some changes in the competitive relationship depending on the partner country and industry, which are discussed in the next subsection.

3.3 Changes in industry and competitiveness

Based on the results of the previous analysis, we classified the industries into three categories: "competitiveness," "increased competitiveness," and "competitive relationship;" categories were marked "○" when Yunnan and Guangxi corresponded to the relevant industry and "△" when a Mekong River Basin country corresponded to the relevant industry. The change in competitiveness was captured by comparing the average trade specialization coefficients from 2008 to 2011 with those from 2018 to 2021 (see Tables 6 and 7).

First, we summarize the changes in the competitiveness of Yunnan and the Mekong River Basin countries by country.

Yunnan's trade with the rest of the world, except for mineral resources, is competitive in all its industries, with increasing competitiveness in leather and textiles, steel and metals, machinery and electrical equipment, and transport and precision equipment. However, different trends were observed across countries. In trade with neighboring Myanmar, Yunnan's competitiveness in mineral resources is weak; however, its competitiveness in leather and textiles, steel and metals, and transport and precision equipment was confirmed, indicating a shift to a competitive relationship in agricultural and forestry and fisheries products. Meanwhile, Yunnan and Myanmar have a competitive relationship in chemicals and rubber. In the trade between Yunnan and Laos, Laos has increased its competitiveness in chemicals and rubber, Yunnan has increased its competitiveness in transport and precision equipment, and the two countries have a competitive relationship in machinery and electrical equipment.

In terms of the trade with Vietnam, Yunnan used to be competitive in leather and textiles and mineral resources; however, in recent years, Vietnam has become more competitive in these industries, indicating a shift to a competitive relationship. In addition, there is a competitive relationship in transport and precision equipment, indicating a horizontal division of labor. In terms of the trade with Cambodia, there is no particular industry in which Cambodia has a competitive advantage, and Yunnan has a competitive advantage in mineral resources. The results of the analysis are not necessarily valid because statistical data for Cambodia were not available at the time of the analysis. Trade with Thailand shows different characteristics from that with other countries. In machinery and electrical, and transport and precision equipment, Thailand's competitiveness is high, while Yunnan's competitiveness in mineral resources and the chemical and rubber industries is increasing. In agricultural, forestry and fisheries products, a competitive relationship is observed.

Table 6: Summary of analysis results in Yunnan and the Mekong River Basin countries

competitiveness by industry	Yunnan					
Competitive	World	Myanma	Laos	Vietnam	Cambodia	Thailand
Agricultural, forestry and fisheries products	○		△	○	○	
Leather/textiles	○	○	△		○	○
Mineral resources	△	△	△		○	○
Steel/metals	○	○	○	○	○	○
Chemicals/rubber	○		△	○	○	○
Machinery/electrical equipment	○			○		△
Transport/precision equipment	○	○	○			△
Increased competitiveness	World	Myanma	Laos	Vietnam	Cambodia	Thailand
Agricultural, forestry and fisheries products		○				△
Leather/textiles	○	○		△		
Mineral resources				△	○	○
Steel/metals	○				○	
Chemicals/rubber			△			○
Machinery/electrical equipment	○					△
Transport/precision equipment	○	○	○			△
Competitive relationship(horizontal division of labor)	World	Myanma	Laos	Vietnam	Cambodia	Thailand
Agricultural, forestry and fisheries products		○				△
Leather/textiles				○		
Mineral resources				△		
Steel/metals						
Chemicals/rubber		△				
Machinery/electrical equipment			△			
Transport/precision equipment				△		

○ (Yunnan falls under this category)

△ (Mekong River Basin countries fall under this category).

In particular, in chemicals and rubber (Myanmar and Laos), machinery and electrical equipment (Laos), and transport and precision equipment (Vietnam), the three countries bordering Yunnan have either become more competitive or changed to a competitive relationship, leading to a horizontal division of labor, which can be seen as a sign that all neighboring countries are beginning to enter a development path. The phenomenon of Asian dynamism (Tran and Karikomi, 2019, p. 6) seems to be emerging in the countries and regions of the Mekong River Basin.

For example, Thailand and Yunnan, which are first countries/regions, exert a kind of demonstration effect on Vietnam (transport and precision equipment), Laos (chemicals and rubber and machinery and electrical equipment), and Myanmar (chemicals and rubber), which are latecomer countries/regions, and induce development efforts (institutional reform, improvement of investment environment, etc.), and production factors such as capital, technology, and know-how accordingly accumulate in each country. This in turn leads to the accumulation of production factors such as capital, technology, and know-how within each country. Consequently, the factor endowments and trade structures in each country and region have changed, industrialization has progressed, and the structure of the international division of labor has become more sophisticated.

Next, we examine changes in the competitiveness of the Mekong River Basin countries in the Guangxi region by country.

In Guangxi's trade with the rest of the world, no industry was found to be associated with an increase in competitiveness or a change in competitive relationships, and it was confirmed that competitiveness was weak in primary products and mineral resources. By country, the competitiveness of machinery and electrical equipment with Myanmar has increased, while that of agricultural, forestry and fisheries products has changed to a competitive relationship. In trade between Guangxi and Laos, it was confirmed that Guangxi increased its competitiveness in leather and textiles and mineral resources. Laos had a competitive advantage in agricultural, forestry and fisheries products and mineral resources.

In trade with Vietnam, Guangxi's competitiveness increased in leather and textiles, mineral resources, and chemicals and rubber, with a shift to a competitive relationship in mineral resources. In trade with Cambodia, while Guangxi was competitive in all the industries, Cambodia's competitiveness increased in leather and textiles. One possible reason for this may be the improved access conditions from Thailand to the border areas (Cambodia, Laos, and Myanmar) due to the development of cross-border transportation infrastructure such as the East-West Economic Corridor and Southeast Economic Corridor in the ASEAN region since 2010 (Tran and Karikomi, 2019, p. 20).

In trade with Thailand, Guangxi's competitiveness in other industries, excluding agricultural, forestry and fisheries products, was strong, and among these, Guangxi's competitiveness in mineral resources and transport and precision equipment was confirmed to have increased. Guangxi's neighboring province is Guangdong, which has the largest trade volume in China, and it is well known that Guangxi was among the first regions to receive a large amount of foreign investment and to grow. It is well known that Guangdong Province was among the first provinces to receive a large amount of foreign investment and to grow, as a result. A more in-depth analysis using an input-output table is necessary to examine this issue, which is not covered in this study but will be discussed in the future.

Among the Mekong River Basin countries, Vietnam is becoming more competitive in labor-intensive industries such as leather and textiles, while it is shifting to a competitive relationship with Yunnan in transport and precision equipment and moving toward a horizontal division of labor, which is largely due to the large investments by Samsung Electronics of Korea. The investment did not come from Samsung Electronics alone; contributions came from other Korean companies in the electrical and electronics industry. The field research revealed that these companies, also known as cooperative companies in Korea, originally produced parts in mainland China and relocated their parts factories in China at the request of Samsung Electronics, which had entered Vietnam[3)]. In addition, these foreign-invested companies are concentrated in industrial parks in the northern part of Vietnam, suggesting that a cross-border supply chain with southern China is rapidly forming.

An analysis of Yunnan and Guangxi as part of a production network at the industry level would be inadequate. However, the fact that Yunnan, which has lagged behind other coastal regions in China in terms of economic growth, is competitive or becoming more competitive with its neighbors in transport equipment and precision instruments, machinery and electrical equipment, chemicals and rubber, and steel and metals suggests the importance of its economic role in the trade of China's border region and the Mekong River Basin countries. In other words, the results of this series of analyses indicate the importance of each country's economic role. In other

Table 7: Summary of analysis results in Guangxi and the Mekong River Basin countries

competitiveness by industry	Guangxi					
Competitive	World	Myanma	Laos	Vietnam	Cambodia	Thailand
Agricultural, forestry and fisheries products	△		△	○	○	△
Leather/textiles	○	○	○	○	○	○
Mineral resources	△	△	△		○	○
Steel/metals	○	○	○	○	○	○
Chemicals/rubber	○	○	○	○	○	○
Machinery/electrical equipment	○			○	○	○
Transport/precision equipment	○			○	○	○
Increased competitiveness	World	Myanma	Laos	Vietnam	Cambodia	Thailand
Agricultural, forestry and fisheries products		△			○	
Leather/textiles			○	○	△	
Mineral resources		△	○	○	○	○
Steel/metals						
Chemicals/rubber				○		
Machinery/electrical equipment		○				
Transport/precision equipment						○
Competitive relationship(horizontal division of labor)	World	Myanma	Laos	Vietnam	Cambodia	Thailand
Agricultural, forestry and fisheries products		△				
Leather/textiles						
Mineral resources				△		
Steel/metals						
Chemicals/rubber						
Machinery/electrical equipment						
Transport/precision equipment						

○ (Guangxi falls under this category)

△ (Mekong River Basin countries fall under this category).

words, the results suggest that the development and decline of industries and development of new industries are repeated in each country and region, and that industrial transfers between countries and regions occur through direct investment and technology transfer.

4. Conclusion

The purpose of this study is to analyze changes in the trade structure between Yunnan and Guangxi in China and the Mekong River Basin countries by analyzing the competitiveness of each industry as part of a study on cross-border regional development. The three main results of the analysis are as follows.

First, although Yunnan and Guangxi account for a small share of China's domestic trade, the scale of their trade is growing annually, and their close economic link with the Mekong River Basin countries is evident. This phenomenon is especially pronounced in neighboring Vietnam. Second, the results show that Yunnan and Guangxi have interdependent relationships with the Mekong River Basin countries in terms of their advantaged industries. For example, among the five countries and two regions analyzed, Myanmar, Laos, and Cambodia, which are

relatively behind in economic development, are competitive in primary products, while Yunnan, Guangxi, and Thailand are competitive in machinery and electrical as well as transport and precision equipment, respectively supported by complementary relationships among advantaged industries. Third, the industrial competitiveness between Yunnan and Guangxi and the Mekong Basin countries has changed over time, and some industries have shifted to competitive relationships, indicating a shift toward a horizontal division of labor.

Through the analysis of this study, we found that Guangxi, Thailand, Yunnan, and Vietnam were catching up and becoming part of the East Asian production network, experiencing the effects of industrial agglomeration on competitive advantage in machinery and electrical equipment, transport and precision equipment, while Myanmar, Laos, and Vietnam, which border Guangxi, were also becoming part of the network. Some industries are also becoming more competitive and changing into competitive relationships with other industries. This suggests that the wave of industrialization in China's coastal areas is spreading to the Mekong River Basin countries as well as to the border regions such as Yunnan and Guangxi, making them part of the production network in East Asia.

As is well known, the East Asian countries have continued to grow as manufacturing centers while increasing the depth and diversity of their industrial clusters, with China's coastal areas such as Guangdong Province forming the agglomerations for industries related to machinery and electrical as well as transport and precision equipment. It is no exaggeration to say that the international division of labor for these products was formed around China's export expansion. However, most of these industries have been built mainly in China's coastal regions, and the border regions such as Yunnan and Guangxi have been marginalized from the center of development, while their economic development has lagged behind that of China as a whole. However, with the development of road infrastructure in the Mekong River Basin and acceleration of China plus one, which has become prominent since 2010, these countries and regions have become emerging markets, and Vietnam is currently the economically attractive region. This is due to the fact that Vietnam, as an exporter of telecommunications equipment to the Western market, is expanding the procurement of components from China, and it appears that a cross-border supply chain is rapidly forming between the northern part of Vietnam and Yunnan and Guangxi. This movement is not limited to Vietnam, Thailand, a first country, has moved to neighboring countries of the latecomer countries (Cambodia, Laos, and Myanmar), Yunnan and Guangxi, the first regions, have moved to neighboring countries of the latecomer countries (Vietnam, Laos, and Myanmar), and Vietnam is now rapidly catching up with the first countries and regions. This suggests that the so-called Asian dynamism is emerging in the Mekong River Basin countries and regions. It also suggests that these countries and regions are being integrated into multinational corporations' supply chains, and the formation of trade bases in Yunnan and Guangxi will be an important factor in attracting more corporations and contributing to the economic development of the inland region and Mekong River Basin countries.

To create a spillover effect of industrialization from coastal areas such as Guangdong Province, which has achieved rapid economic development, it is necessary to further develop soft and hard infrastructure around the area and accelerate the free movement of labor and materials. In this study, we analyzed the trade structure of the five Mekong River Basin countries and two regions using detailed trade data by industry and region (Yunnan and Guangxi) to reveal the changes in competitiveness by industry. The impact of the LMC, which began in 2015, on neighboring countries and regions, as well as changes in trade and division of labor patterns in the region using a more detailed analysis by goods and an analysis of the factors behind such changes, will be the subject of a future study.

Notes

1) Tran and Karikomi (2019) describe Asian dynamism as follows: The repetition of industrial development and decline and development of new industries in each country, emergence of active international industrial transplantation through direct investment and technology transfer by multinational corporations, and such dynamic changes are forcing industrial adjustment in developed and first countries in the region (Tran and Karikomi, 2019, p.6).
2) The total of agricultural, forestry and fisheries products (HS01 to HS24), mineral resources (HS25 to HS27), chemicals and rubber (HS28 to HS40), chemicals and rubber (HS41 to HS67), steel and textiles (HS68 to HS83), machinery, transport equipment, and metals (HS84 to HS92), and others (HS93 to HS98) was used to calculate the trade specialization coefficients.
3) According to an interview with a partner company of Samsung Electronics Co., Ltd. conducted by the author in Seoul, Korea on October 17, 2022. In the case of this company, only the headquarters function remains in South Korea, and two manufacturing plants in the suburbs of Shanghai were transferred to northern Vietnam in 2018.

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