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Challenges and Opportunities for Asia-Pacific Regional Economic Cooperation in the post-Pandemic Era

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Challenges and Opportunities for Asia-Pacific Regional Economic Cooperation in the Post-Pandemic Era

The Asia-Pacific region, accounting for one-third of the world's population, over 60 percent of the global economy and close to half of global trade, has been the most dynamic growth belt in the world during the past three decades. In the past three years, the Asia Pacific region has experienced the severe impact of the COVID-19, including economic growth slowing down, and even the first negative growth in decades. As the haze of the Pandemic gradually dissipates, the Asia Pacific region is keen to pursue economic recovery through promoting regional economic cooperation and the Asia Pacific community.

At the same time, the Pandemic has also drawn Asia Pacific economies' attention to a series of hot topics, including but not limited to digital economy and innovative growth, Bio-Circular-Green (BCG) economic model and sustainable growth, financial innovation cooperation, as well as Asia Pacific regional economic integration process, including the Free Trade Area of the Asia-Pacific (FTAAP) agenda. Enormous opportunities exist in these areas for Asia Pacific economies to deepen regional cooperation in the post-Pandemic era, which is of paramount significance to the APEC Putrajaya Vision 2040 of building an open, dynamic, resilient and peaceful Asia Pacific community .

Part I Pathways of Industrial Cooperation in the Asia-Pacific Region in the Post-Pandemic Era

1. New opportunities for industrial cooperation in the Asia-Pacific

Humanity is facing profound changes unseen in a century, and the COVID-19 pandemic has accelerated the pace of transformation. There comes a planetary-scale process of changes in all the models of consumption, trade, merchandise,(material and immaterial)production, sociability, and education. ¹ The Asia-Pacific region has also entered an era of accelerated change, with the Pandemic-driven industrial transformation. Along with the many new changes in the post-Pandemic era, there are many new opportunities for industrial cooperation in the Asia-Pacific region.

¹ Luis Bonilla-Molina, Covid-19 on Route of the Fourth Industrial Revolution, Post-digital Science and Education (2020) 2:562-568 <https://doi.org/10.1007/s42438-020-00179-4>.

1.1 The new way of production and life has bred new markets for manufacturing and services

Firstly, the pace of digitalization is accelerating. COVID-19 has prompted acceleration of digital transformation in all economies, all industries, and all fields. While the trend toward digitalization predated the pandemic, digital applications accelerated as communities, businesses and workforce grappled with the COVID-19 crisis. It is said that “the COVID-19 pandemic has essentially accelerated U.S. digital health by about 10 years”.² Digital payments facilitated businesses’ much-needed access to liquidity. Households relied on multiple digital platforms to maintain communication and purchase day-to-day necessities. The governments used innovative digital technology to track viral contacts.³

Secondly, contactless business is getting popular. In the past few decades, Internet has made working from home possible. Through applications of advanced information and communication technologies (ICTs), artificial intelligence (AI), Internet of Things (IoT), big data, 3D printing, virtual and augmented reality (VR/AR), smart sensors and robots, drones, etc., various contactless services have been created and implemented. But not until the outbreak of the Covid-19 came the “contactless” age,⁴ when digital solutions became a necessity rather than an option. In the social distancing context as dictated by the Pandemic, parents and families had to equip their kids with computers, the Internet, access to platforms, and a ‘virtual pedagogy.’ Similarly, the workplace practice had to change.⁵ Thus, the cost and impact of the Pandemic were mitigated. Moreover, all these brought about changes in the market and new demands. It is believed that the pandemic will alert enterprises to the importance of make their businesses disruption-proof with 5G technologies and it is forecast that the Asia Pacific 5G digital factory market will be worth over US\$60 billion by 2030.⁶

Thirdly, the new industrial revolution is in full swing. COVID-19 serves as a catalyst for innovation and development in all industries and areas. The emergence, advancement, and convergence of a number of technologies such as additive manufacturing, Internet of Things (IoT), block-chain, advanced robotics and artificial intelligence, drive the Fourth Industrial Revolution forward promptly. The Fourth Industrial Revolution is not only capable of reducing costs, enhancing flexibility, increasing speed, and improving quality, but can possibly dampen the tensions

² Allison Marin, Telemedicine takes center stage in the era of COVID-19, <https://www.sciencemag.org/features/2020/11/telemedicine-takes-center-stage-era-covid-19>.

³ Denis Hew and Andre Wirjo, Time to rethink how to build a more resilient and inclusive Asia Pacific, <https://www.eastasiaforum.org/2020/12/25/time-to-rethink-how-to-build-a-more-resilient-and-inclusive-asia-pacific/>

⁴ Zhanjing Zeng, Po-Ju Chen & Alan A. Lew (2020) From high-touch to high-tech: COVID-19 drives robotics adoption, *Tourism Geographies*, 22:3, 724-734, DOI: 10.1080/14616688.2020.1762118.

⁵ Luis Bonilla-Molina, Covid-19 on Route of the Fourth Industrial Revolution, *Postdigital Science and Education* (2020) 2:562-568 <https://doi.org/10.1007/s42438-020-00179-4>.

⁶ The 5GAPAC Market Post-COVID Application Analysis, <https://www.abiresearch.com/press/asia-pacifics-5g-digital-factory-revenue-primed-for-a-post-covid-19-recovery-worth-us60-billion-in-2030/>, 17 Sep 2020.

inherent between these key operational priorities and, thereby, influence performance. Many industry verticals will be transformed through AI integration with enterprise, industrial, and consumer product and service ecosystems. It is destined to become an integral component of business operations including supply chains, sales, and marketing processes, product and service delivery, and support models.⁷

Fourthly, alongside ‘Factory Asia’, ‘Shop Asia’ has come on strongly as domestic demand is increasing across the region. Asia is also expanding its linkages with other economies across the world. The region’s rapid income catch-up has created a large middle class. Its increasing affluence means that Asia is now a key source of demand for goods and services produced regionally and globally. The region is no longer just producing goods for export to the rest of the world—it has become the largest consumer market for its own products and other global products.⁸

1.2 New industries and new forms of business are emerging

The Fourth Industrial Revolution(IR 4.0)with the digital economy at its center has introduced new technologies that might facilitate production activities, and created new industries and new forms of business. In the immediate and mid- to long-term, the need for various innovative and redefined digital platforms and new business models will be more conspicuous. All economies and all walks of life will be far more focused on technology and a digital economy. Greater emphasis has been placed on green and sustainable development. Health and green industries will develop greatly. The world going forward is fundamentally going to change.⁹

With the application of new technologies and the deepening of the new industrial revolution, historic change is presently under way in at least six industries in the Asia-Pacific region in three aspects, i.e. digitalization, intelligentization and health.

- The e-commerce penetration will be further entrenched and online sales will further increase.
- Online education and telecommuting habits will be retained after the Pandemic and become the new normal of education and work.
- Institutional capacity building will accelerate smart city building.
- Industrial Internet like smart factories will become a new source of power for innovation and development, and the risk-proofing capacity of supply chains will draw further attention.

⁷ Asia-Pacific Digital Transformation Market Study 2020-2025 - The COVID-19 Pandemic is Merely a Speed Bump in the Road , June 30, 2020 , Research and Markets, <https://www.globenewswire.com/news-release/2020/06/30/2055423/0/en/Asia-Pacific-Digital-Transformation-Market-Study-2020-2025-The-COVID-19-Pandemic-is-Merely-a-Speed-Bump-in-the-Road.html>.

⁸ Hoe Ee Khor and Suan Yong Foo, What lies ahead for global value chains in Asia? <https://www.eastasiaforum.org/2020/07/28/what-lies-ahead-for-global-value-chains-in-asia/>.

⁹ RYO SAEKI interviewed Patrick Winter(managing partner for the Asia-Pacific area at EY), Asia-Pacific to emerge as a post-COVID superpower: EY regional head–An ‘unprecedented opportunity’ to reshape world through an ESG lens, Nikkei, December 6, 2020.

- Smart supply chains will be widely and rapidly deployed in sectors of goods and services to dramatically reduce social cost. It is estimated that smart supply chains as a whole can increase enterprise revenue by 10%, and reduce procurement costs by 20% and supply chain costs by 50%.
- The field of big health industry, especially high-end medical equipment, internet medical treatment and gene industry, is gaining momentum for a boom.¹⁰

The emergence of all these new industries and new forms of business will provide boundless opportunities for industrial cooperation in the Asia-Pacific region in the post-Pandemic era.

1.3 Cooperation in the Asia-Pacific region has been further deepened

The Comprehensive and Progressive Trans-Pacific Partnership(CPTPP), which came into force in 2018, and the Regional Comprehensive Economic Partnership(RCEP), which was formally signed in 2021 and came into force in 2022, are regarded as two pathways to the realization of the FTAAP. The Asia-Pacific region has formed a “double cycle” pattern with the two major free trade agreements running side by side, which has met the actual needs of member economies for trade and investment liberalization and facilitation, as well as inclusive development.

According to the ASEAN press release, “the RCEP marks ASEAN’s biggest free trade pact to date, covering a market of 2.2 billion people with a combined size of US \$26.2 trillion or 30% of the world’s GDP.”¹¹ The APEC Putrajaya Vision 2040 identifies ‘trade and investment’, ‘innovation and digitalization’ as well as ‘strong, balanced, secure, sustainable and inclusive growth’ as the key drivers to achieving the vision of ‘an open, dynamic, resilient and peaceful Asia Pacific community’.¹² Aotearoa Plan of Action: A Plan for implementing the Putrajaya Vision 2040 adopted at APEC New Zealand 2021 is the conclusion of the discussions of the above priority agenda.¹³ Bangkok Goals on Bio-Circular-Green Economy has highlighted the importance of cooperation for green and sustainable economic development among member economies.¹⁴

All these show that the Asia-Pacific region has deepened economic cooperation against the headwinds of the Pandemic. It highlights the importance of trade and economic cooperation during the Pandemic and in the post-Pandemic era, and provides guidance for strengthening future regional economic cooperation. Different greatly in levels of economic development, the economies in the region complement each other in their industrial structure and comparative advantages. Thus, regional

¹⁰ Li Bin et al, Six Major Industries Will Face Opportunities for Vigorous Development after the Pandemic, Liaowang News Weekly, 2020-05-17 (in Chinese).

¹¹ Sara B. Potter, TWENTY-FIVE YEARS OF UPS AND DOWNS: ASIA PACIFIC ECONOMIES OVER TIME , December 3, 2020 , <https://insight.factset.com/twenty-five-years-of-ups-and-downs-asia-pacific-economies-over-time>.

¹² https://www.apec.org/Meeting-Papers/Leaders-Declarations/2020/2020_aelm/Annex-A.

¹³ http://mddb.apec.org/Documents/2021/AELM/AELM/21_aelm_dec_anx.pdf

¹⁴ http://mddb.apec.org/Documents/2022/AELM/AELM/22_aelm_dec_1.pdf

integration has become the general trend to improve economic efficiency, and cannot be stopped by the Pandemic.

2. The Asia-Pacific industrial cooperation faces new challenges

2.1 Increased downward trend in the global economy

The World Bank's latest report, *Falling Long-Term Growth Prospects*, provides a comprehensive assessment of the long-term potential output growth rates of the global economy, which can be considered as the "speed limit" of the global economy. The report describes a worrying trend: almost all of the economic forces that have driven progress and prosperity over the past three decades are receding, with average global potential GDP growth between 2022 and 2030 projected to fall by about one third from its level in the first decade of the century, to 2.2 per cent per year. The rate of decline in developing economies is similarly large: from 6 per cent per annum between 2000 and 2010 to 4 per cent per annum for the remainder of the decade. In the event of a global financial crisis or recession, the decline would be even greater. The report concludes that the "speed limit" of the global economy, that is, the maximum long-term growth rate without inflation, could fall to its lowest level in 30 years by 2030.¹⁵

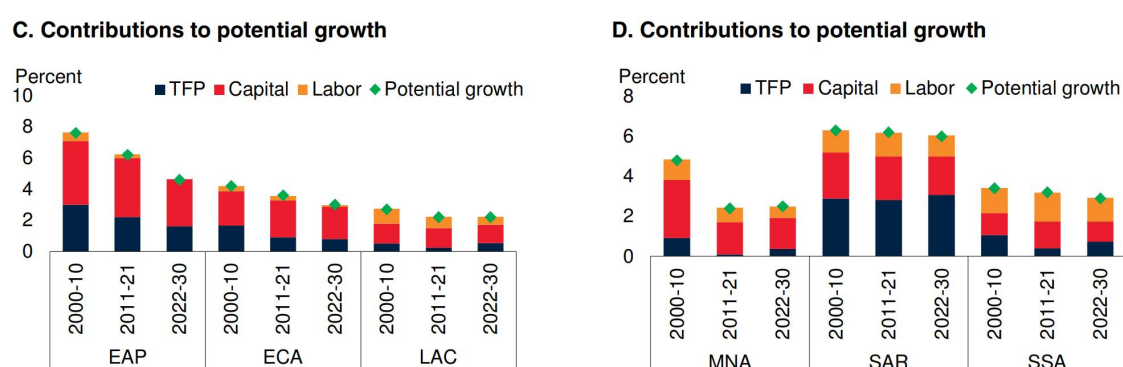


Figure 1.1: Potential growth

Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.

Source: World Bank, *Falling Long-Term Growth Prospects*.

Global trade growth has slowed, in part due to growing use of restrictive trade measures. Foreign direct investment inflows to emerging market and developing economies (EMDEs) have weakened since the early 2000s. The recovery in EMDE investment from the 2020 global recession is expected to be less robust than after the global recession of 2009.

¹⁵ The world bank. Global Economy's "Speed Limit" Set to Fall to Three-Decade Low.
<https://www.worldbank.org/en/news/press-release/2023/03/27/global-economy-s-speed-limit-set-to-fall-to-three-decade-low>. Last access date: 2023-07-10.

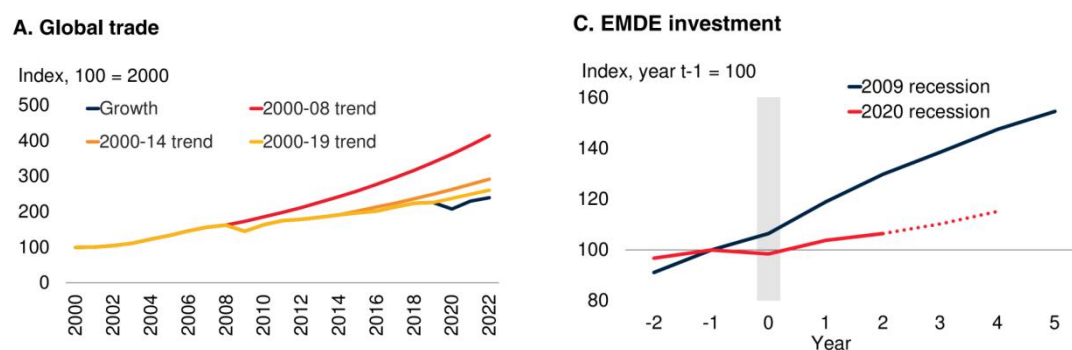


Figure 1.2: Global trade and foreign direct investment inflows to EMDEs

Source: World Bank, *Falling Long-Term Growth Prospects*.

2.2 Inequality in development has become more pronounced

Firstly, digitalization poses a new set of challenges, including data privacy, cybersecurity, online misinformation and competition-related issues, which have become increasingly prevalent as more people move into the digital world. A digital divide persists between and within economies, limiting the potential benefits of digitalization. With the caveat that risks remain around the digital divide despite action being taken through the Asia-Pacific Economic Cooperation (APEC) Internet and Digital Road-map, economies have to undertake critical structural reforms to maximize the opportunities of the digital economy and overcome the challenges.¹⁶

Furthermore, enhancing inclusion is another critical aspect that economies need to pay attention to. Despite decades of economic growth, improving living standards by enlarging the economic pie, the distribution of the pie is far from equitable, with negative ramifications for access to health, education and economic opportunities. The pandemic has exposed these inequalities as the poorest and most vulnerable, including women, youth and precarious workers, have been hit hardest.¹⁷ The new wave of protectionism triggered by the COVID-19 outbreak has an even greater impact on economies that do not have the production capacity to provide medical products to their people.

2.3 Trade is subject to enormous uncertainties

One of the global consequences of the Covid-19 pandemic is the enormous increase in the level of uncertainty. Trade is the hardest hit by this turbulence, given the integrated nature of global manufacturing and that trade is more volatile than output. Some study found that trade is more responsive to GDP during global downturns than in tranquil times. On the positive side, trade tends to rebound very rapidly when the

¹⁶ Denis Hew and Andre Wirjo, Time to rethink how to build a more resilient and inclusive Asia Pacific, <https://www.eastasiaforum.org/2020/12/25/time-to-rethink-how-to-build-a-more-resilient-and-inclusive-asia-pacific/>.

¹⁷ Denis Hew and Andre Wirjo, Time to rethink how to build a more resilient and inclusive Asia Pacific, <https://www.eastasiaforum.org/2020/12/25/time-to-rethink-how-to-build-a-more-resilient-and-inclusive-asia-pacific/>.

outlook brightens.¹⁸ The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) cautioned that the path towards a full trade recovery remains “highly uncertain”, with unfavourable macroeconomic conditions in many economies along with high unemployment, debt and deflation, and underlying structural challenges impeding a fast rebound.¹⁹

2.4 De-globalization is on the rise

Trade has long proven to be an engine for world economic growth and development, and in recent decades the economies of East Asia and the Pacific have been major beneficiaries of economic globalization. However, we are seeing a growing backlash against globalization.²⁰ The COVID-19 Pandemic has called into question several assumptions which have underpinned global trade for decades. By the time the dust settles, the world’s approach to trade could look quite different.²¹

Economic nationalism is gathering momentum in many economies.²² Slogans such as “Make It Yourself” became fashionable, and there are attempts to decouple or sever supply chains. There are even pessimists who think that the history of globalization has come to an end. The world trade landscape will become increasingly isolated, even when international cooperation is able to ensure increased production at lower costs for all goods.

2.5 Supply chain issues are highlighted

The division of labor in global value chains and industrial cooperation is based on free trade and investment. However, the supply disruptions of key products during the COVID-19 have to some extent undermined the confidence of economies in free trade and free investment, as well as their trust in other economies. Some economies turned to top-down industrial policies in an attempt to change the internationalization behavior of firms which are oriented to maximize profits. Laws, regulations and policy incentives were introduced to restrict free trade and free investment, multinational corporations were given incentives to pull back their overseas branches, thus, shrinking the layout of global value chains.

When policy makers find other economies are adopting industrial policies to protect the supply of key products, they tend to adjust targeted industrial policies in the interest of their own economies. However, this kind of policy-making game may end

¹⁸ Caroline Freund, “The Trade Response to Global Downturns: Historical Evidence.” Policy Research Working Paper 5015, World Bank, August 2009, <https://openknowledge.worldbank.org/bitstream/handle/10986/4208/WPS5015.pdf>.

¹⁹ COVID-19 hits trade in Asia-Pacific, but impact ‘less bad’ than elsewhere, 22 December 2020, <https://news.un.org/en/story/2020/12/1080632>

²⁰ Roberto Azevêdo, Reenergising the multilateral trading system, <https://www.eastasiaforum.org/2017/05/21/reenergising-the-multilateral-trading-system/>.

²¹ Stephen Olson, Managing supply chain risk in a post-COVID-19 world, <https://www.eastasiaforum.org/2020/05/06/managing-supply-chain-risk-in-a-post-covid-19-world/>.

²² Editorial Board, Securing supply chains and global production after COVID-19, <https://www.eastasiaforum.org/2020/06/08/securing-supply-chains-and-global-production-after-covid-19/>.

in a non-cooperative Nash equilibrium in the Asia-Pacific region, putting all economies in a prisoner's dilemma.

In order to avoid the worst-case scenario, Asia-Pacific economies should consider to enhance mutual trust including through the APEC platform, address the obstacles of global industrial development, and establish a secure mechanism to ensure both efficiency and resilience of supply chains.

3. Pathways toward industrial cooperation in the Asia-Pacific

3.1. Promoting digital economic development and industrial revolution through institutional innovation and practical cooperation

Digital connectivity and innovation are critical across our efforts towards an inclusive, resilient and sustainable recovery.²³ In fact, APEC has made significant progress in recent years in actively promoting safe and reliable information and communication technologies and improving the e-commerce environment. According to data released by the World Bank, the population (over 15 years old) who actually operate or receive digital payments in the APEC region increased from 1.1 billion to 1.5 billion during 2014-2017, and the proportion of this population increased from 50.7% to 65.9%. In addition, the number of secure servers per 1 million people of APEC member economies has increased exponentially from 754 in 2014 to over 17000 in 2019, accounting for more than 65% of the global total.²⁴ The increase in the number of people using digital payment not only indicates the improvement of financial inclusiveness and the rapid popularization of e-commerce in the Asia Pacific region, but also can directly or indirectly bring about positive effects in many aspects such as improving payment speed, reducing payment and reception costs and thereby improving efficiency, strengthening payment security and reducing related crimes, improving transparency and reducing corruption, as well as increasing the savings rate of residents.

digitalization will be the most significant aspect of the global value chain strategy in the post-COVID-19 era, suggesting the need for automated operational systems that leverage big data, Internet of Things(IoT), block-chain, robots, drones, and 3D printing.²⁵ To support this strategy, we should enhance infrastructure building to facilitate cross-border production and trade and enhancing connectivity to support digital technology.²⁶ The capacity and connectivity of digital infrastructure across borders is important. Virtual platforms or ‘digital supply networks’ will become more

²³ 28th APEC Economic Leaders' Meeting 2021 -Declaration,

https://mddb.apec.org/Documents/2021/AELM/AELM/21_aelm_dec.pdf

²⁴ World Bank, The Global Findex Database 2017, <https://globalfindex.worldbank.org/>

²⁵ Aamer Baiget al. (2020). The COVID-19 recovery will be digital: A plan for the first 90 days, McKinsey, <https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/The%20COVID%2019%20recovery%20will%20be%20digital%20A%20plan%20for%20the%20first%2090%20days/The-COVID-19-recovery-will-be-digital-A-plan-for-the-first-90-days-vF.pdf?shouldIndex=false>.

²⁶ Hoe Ee Khor and Suan Yong Foo, What lies ahead for global value chains in Asia?

important for matching providers and users and providing assurance to both parties. In this respect, accelerating progress on agreements on digital trade protocols and taxation is critical to support these transformations.

A contentious issue in cross-border data flow is the balance between free flow and regulations motivated by cybersecurity, privacy, consumer rights, regulatory oversight and digital industrial policy. Cross-border data flow is important not only for the establishment of efficient GVCs, but also for innovation and economic growth.²⁷ To reduce transaction costs, it is of great importance to tackle unnecessary policy impediments to value chain operations, such as a lack of alignment of standards and other regulatory barriers, while drawing up new rules to address developments in the digital economy²⁸. Asia Pacific regional cooperation institutions like APEC are good at aligning regulations and standards.²⁹ Rules and responsibilities will need to be renegotiated into a new global deal that fully accepts differences in political systems among members. Though this is a challenging undertaking, it is an option better than the so-called decoupling.³⁰

Governments should establish a rules-based, open global system to ensure free and safe flow of data by way of promoting institutional innovation. Rules on cross-border data flow have been established in various regional and bilateral frameworks, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Regional Comprehensive Economic Partnership, and Digital Economic Partnership Agreement, etc, which can be used as building blocks for an agreement under the World Trade Organization(WTO).

The Pacific Economic Cooperation Council already pointed the way for future cooperation in the Asia-Pacific region. One of its reports recommends multilateral actions that facilitate regional progress on seven issue areas, including information sharing, flow of essential products, moving beyond gross domestic product (GDP), facilitating e-commerce, restarting travel, minimizing disruption to supply chains, and contact tracing.³¹ Digital connectivity and innovation are critical in achieving an inclusive, resilient and sustainable recovery. It is of great significance to narrow the digital divide by promoting digital skills, encouraging the adoption of innovative working methods, expanding access to digital tools and infrastructure, thus ensuring MSMEs and start-ups are able to harness new and emerging technologies and digital eco-systems.³²

²⁷ Shujiro Urata, Reimagining global value chains after COVID-19, <https://www.eastasiaforum.org/2020/07/02/reimagining-global-value-chains-after-covid-19/>.

²⁸ Denis Hew and Andre Wirjo, Time to rethink how to build a more resilient and inclusive Asia Pacific, <https://www.eastasiaforum.org/2020/12/25/time-to-rethink-how-to-build-a-more-resilient-and-inclusive-asia-pacific/>.

²⁹ Christopher Findlay, Fukunari Kimura, Shandre Thangavelu, COVID-19 and the 'zoom' to new global value chains, <https://www.eastasiaforum.org/2020/04/05/covid-19-and-the-zoom-to-new-global-value-chains/>.

³⁰ Christian Bachheimer, Global value chains aren't going anywhere, <https://www.eastasiaforum.org/2020/07/17/global-value-chains-arent-going-anywhere/>.

³¹ <https://www.pecc.org/resources/covid-19/2659-state-of-the-region-report-impact-of-the-covid-19-crisis>

³² 28th APEC Economic Leaders' Meeting 2021 -Declaration, https://mddb.apec.org/Documents/2021/AELM/AELM/21_aelm_dec.pdf

3.2 Promoting non-binding principles for cooperation on supply chain security

The COVID-19 pandemic highlights the importance of diversity and resilience of supply chains. Economies and businesses will look to reduce their vulnerability to production and supply-side shocks, including widespread value chain disruptions brought about by the pandemic, even if this may create some inefficiencies and a moderately slower growth rate for a couple of years as factories, suppliers and workforce adapt to the changes. Increasing stocks of key products, enhancing local supply of key products and expanding supply sources of key products are considered to be the most cost-effective ways to secure supply and prevent supply disruptions. However, these measures may reduce the efficiency of the global industrial division of labour and increase the supply costs of intermediate products.

Increasing stockpiles of all critical products or setting up local supply organizations for all critical products is not a realistic option for small economies and most developing economies. Supply chain security is rather about being able to source the required products in the international market at reasonable prices whenever needed than being able to obtain the required products locally at critical times. Therefore, small economies and most developing economies depend on the openness and stability of global supply chains. When global supply chains are already highly developed, the supply chain security of virtually all economies depends to some extent on the openness and stability of global markets. It is noteworthy that re-shoring and friendly shoring tend to reduce the degree of supply chain diversification and make economies more vulnerable to macroeconomic shocks.

It is necessary to establish principles on the basis of consensus to balance unilateral actions to enhance local supply chain security with collective actions, so that the individual economies may give full consideration to externalities when formulating unilateral rules to ensure supply chain security.

3.3 Promoting industrial transformation through open regionalism, multilateralism and globalization.

The Pandemic presents an exceptional opportunity to learn about the potential and the limits of multilateral cooperation. For the world to function properly, the world needs open and free trade. We need to work together to create an open and free trading environment.³³ “Economically, we should work together to promote trade and investment liberalization and facilitation and make economic globalization more open, inclusive, balanced and beneficial to all.”³⁴

³³ RYO SAEKI interviews Patrick Winter(managing partner for the Asia-Pacific area at EY), Asia-Pacific to emerge as a post-COVID superpower: EY regional head–An ‘unprecedented opportunity’ to reshape world through an ESG lens , Nikkei, December 6, 2020, <https://asia.nikkei.com/Editor-s-Picks/Interview/Asia-Pacific-to-emerge-as-a-post-COVID-superpower-EY-regional-head>.

³⁴ Yang Jiechi, Work to Build a Community with a Shared Future for Mankind (in Chinese), <http://cpc.people.com.cn/n1/2017/1119/c64094-29654801.html>.

The Asia Pacific region has been a major beneficiary of the multilateral trading system, with APEC as the main forum for promoting trade and investment liberalization, business facilitation and regional economic integration.³⁵ Trade in goods and services involving APEC economies almost quintupled between 1994–2019, with an averaged annual increase of 6.7 per cent. In 2019, APEC economies collectively accounted for almost half of global trade while intra-APEC merchandise trade stood at 67.4 percent. For most of those 25 years, trade growth outpaced GDP growth, reflecting the significance of trade as an economic driver for the region.³⁶ To raise the level of regional economic cooperation, we should adhere to multilateralism and free trade, reduce tariffs, remove barriers and open markets to each other.

Ding Bergen, winner of the first Nobel economics prize, divided international economic integration into negative integration and positive integration. Negative integration refers to the realization of economic and trade liberalization by eliminating the original barriers, while positive integration refers to the establishment of new policies and institutions. On the one hand, we will achieve trade and investment facilitation by cutting tariffs and simplifying procedures. On the other hand, we should establish institutions and mechanisms to gradually improve the regional system of free flow of goods, capital, labor and technology.³⁷

There are many other regional and bilateral initiatives being pursued in the Asia Pacific region that can complement multilateral rules and act as building blocks for the global system. It's time to reignite the trade engine to support jobs, growth and development around the world. The Asia-Pacific region has a key role to play.³⁸ In the post-Pandemic era, mankind needs to embrace the new type of globalization to achieve balanced and inclusive development. APEC economies should foster a new vision of innovative, coordinated, green, open and shared development, seize the historic opportunity presented by the new round of scientific and technological revolution and industrial transformation, promote “green recovery” and create strong synergy for sustainable development.³⁹

Under the overall framework of APEC's comprehensive connectivity cooperation, the core goal of institutional connectivity is to strengthen the coordination of trade and investment facilitation policies and related measures at the border, across the border and behind the border, so as to reduce red tapes and lower transaction costs, simplify market management procedures, increase market efficiency as well as trade and investment activities, and create a friendly business environment. Compared to infrastructure and people-to-people connectivity, institutional connectivity involves a

³⁵ Denis Hew and Andre Wirjo, Time to rethink how to build a more resilient and inclusive Asia Pacific, <https://www.eastasiaforum.org/2020/12/25/time-to-rethink-how-to-build-a-more-resilient-and-inclusive-asia-pacific/>.

³⁶ Denis Hew and Andre Wirjo, Time to rethink how to build a more resilient and inclusive Asia Pacific, <https://www.eastasiaforum.org/2020/12/25/time-to-rethink-how-to-build-a-more-resilient-and-inclusive-asia-pacific/>.

³⁷ Jan Tinbergen: International Economic Integration, Elsevier, 1954, p.122, 145, 145-153.

³⁸ Roberto Azevêdo, Reenergising the multilateral trading system, <https://www.eastasiaforum.org/2017/05/21/reenergising-the-multilateral-trading-system/>.

³⁹ Liu Tia et al, The world looks forward to China's role in the face of challenges in the post-Pandemic era (in Chinese), http://www.xinhuanet.com/world/2020-10/04/c_1126573991.htm.

wider range of issues. The complexity and sensitivity of behind-the-border measures are relatively high, and the interest demands of APEC members in participating in institutional connectivity cooperation are more diversified. Therefore, more attention should be paid to cooperation in the area of institutional connectivity.

Supply chain connectivity is a traditional area of APEC to carry out institutional connectivity cooperation. As early as 2009, APEC formulated the Supply Chain Connectivity Framework Action Plan, which clearly identified the main problems and obstacles in the supply chain system of APEC(see Table 1), and proposed targeted improvement measures. In 2010 and 2017, the APEC Trade and Investment Committee adopted two stages of the APEC Supply Chain Connectivity Framework Action Plan(SCFAP), which formulated more comprehensive and specific action guidelines to eliminate barriers to the flow of goods and services in the Asia Pacific region and improve supply chain performance in terms of time, cost, and uncertainty.

Table 1.1 Major Choke-points Affecting the Performance of Supply Chains in the APEC Region

Choke-points	Main Problems
Transparency	Lack of transparency/awareness of the full scope of regulatory issues affecting logistics; lack of awareness and coordination among government agencies on policies affecting the logistics sector
Infrastructure	Inefficient or inadequate transport infrastructure; lack of cross-border physical linkages such as roads, bridges
Logistics capacity	Lack of capacity of local/regional logistics sub -providers
Clearance	Inefficient clearance of goods at the border; lack of coordination among border agencies
Documentation	Burdensome procedures for customs documentation and other procedures
Multi-modal connectivity	Underdeveloped multi-modal transport capabilities; inefficient air, land and multi-modal connectivity
Regulations and standards	Variations in cross-border standards and regulations for movements of goods, services and business travelers
Transit	Lack of regional cross-border customs-transit arrangements

Part II APEC Cooperation on Digital Economy and Innovation

The digital economy has become a new engine driving economic growth in the Asia-Pacific region and innovation and digitalization was taken as one of the three forces to promote an open, dynamic, resilient, and peaceful Asia-Pacific community in the APEC Putrajaya Vision 2040digitalization. Given the changes in the international political and economic environment and the digital gap, APEC has realized the urgency and significance of cooperation in digital economy and innovation.

1. APEC Policy Framework for Cooperation on Digital Economy and Innovation

Over the years, APEC has made the following arrangements for the policy framework of digital economic cooperation.

First, APEC has established basic principles for digital economic cooperation. In the early stage of digital economy development in the Asia-Pacific region, APEC seized the opportunity of e-commerce development and defined main principles for APEC members to promote digital economic cooperation. APEC released the APEC Blueprint for Action on Electronic Commerce in 1998, providing a framework for members to converge on e-commerce legislation and rule harmonization. In 2001, APEC proposed the Digital APEC Strategy, covering improving market structures, promoting infrastructure investment and technology development, strengthening human resource capacity building, and promoting entrepreneurship. This strategy has encouraged members to make full use of the ICT revolution, narrow the digital divide, and seize the opportunities of digital economy.

Second, APEC digital economic cooperation has expanded from its focus on e-commerce to broader areas with a series of action plans to identify the priority areas and specific directions of digital economic cooperation. In 2010, the 18th APEC Economic Leaders' Meeting formulated the Leaders' Growth Strategy. This strategy set innovation growth with the digital economy at the core as one of the five pillars of APEC's economic growth strategy. In 2017, APEC adopted the APEC Internet and Digital Economy Roadmap, listing a total of 11 key focus areas for digital economic cooperation, including development of digital infrastructure, promotion of interoperability, achievement of universal broadband access, development of holistic government policy frameworks for the internet and digital economy, promoting coherence and cooperation of regulatory approaches affecting the internet and digital economy, promoting innovation and adoption of enabling technologies and services, enhancing trust and security in the use of ICTs, facilitating the free flow of information and data for the development of the internet and digital economy, while respecting applicable domestic laws and regulations, improvement of baseline internet

and digital economy measurements, enhancing inclusiveness of internet and digital economy, and facilitation of e-commerce and advancing cooperation on digital trade.

Third, APEC designs the “post-2020” economic cooperation action plan. In 2020, the APEC Geelong Phi meeting formulated the APEC Putrajaya Vision 2040, which set the overall orientation and main framework for the digital economy cooperation process in the Asia-Pacific region. In 2021, at the APEC Economic Leaders’ Meeting in New Zealand, APEC advanced digital inclusion, infrastructure and green technologies, digital business and trade, and structural reforms and support for innovation as key areas for digital economy cooperation based on the APEC Internet and Digital Economy Road-map and the APEC Action Agenda on the Digital Economy.

Fourth, the Asia-Pacific digital economic cooperation is heading for practical actions. The 2023 Trade Ministers' Meeting underpinned that digital technology and innovation can play a greater role in promoting inclusive and sustainable growth. In addition, and formulated *Principles for the Interoperability of Electronic Invoicing Systems in the APEC Region*, for the purpose of promoting trade and investment by improving the interoperability of electronic invoices among member economies and applying digital technology. It is an important attempt to drive Asia-Pacific digital economic cooperation with practical cooperation projects.

2. New Developments in the Cooperation on APEC Digital Economy and Innovation

In recent years, regional cooperation in digital economy and innovation has also been accelerating (Figure 2.1) digital economic cooperation.

First, digital economic cooperation has expanded in scale and scope. From January 2006 to July 2021, APEC members have initiated more than 358 digital economic cooperation projects in 8 key areas, including ICT application and digital transformation, standards harmonization and regulatory cooperation, e-commerce and digital trade, Micro, Small and Medium Enterprises (MSMEs) development, digital literacy and digital human resource cultivation, digital infrastructure development, cross-border data flows and data privacy, and cybersecurity. 212 out of the 358 projects have been launched since January 2017, digital economic cooperation accounting for 59.2% of the total digital economic cooperation projects.

Second, in the digital cooperation projects, digital literacy has received special attention. In 2017, APEC developed and implemented the APEC Framework on Human Resources Development in the Digital Age to strengthen human resources development among members and ensure that labor supply meets the needs of the labor market in the digital age. From January 2006 to July 2021, 44 projects involved digital literacy and digital human resource development, accounting for 12.3% of the total number of digital economic cooperation projects. Out of the 23 new digital economic cooperation projects added in July 2021, 9 projects involved digital literacy

and digital human resource development accounting for 39.1% of the digital economic cooperation projects.

Third, digital economic cooperation focuses on the development of MSMEs. As the key engine of economic growth and innovation in APEC economies, MSMEs account for 97% of the total number of enterprises in the APEC region. Therefore, the development of MSMEs has always been the focus of digital economic cooperation among APEC economies. From January 2006 to July 2021, 46 of all the digital projects, accounting for 12.9%, involved MSMEs. With the rapid advancement of digital transformation in various industries, digital economic cooperation has helped Asia Pacific MSMEs participate in the international division of labor and global value chains, accede to capital and alternative financial solutions, and achieve innovation, hence promoted inclusive growth.

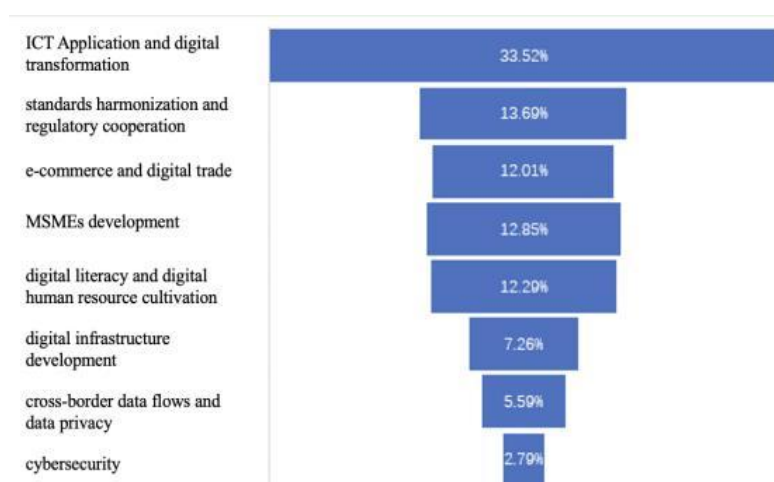


Figure 2.1 The scope of digital economic cooperation among APEC economies

Sources: APEC Project Database

3. New Trends in APEC Digital Economy and Innovation Cooperation

3.1 Trend of APEC Digital Trade

APEC economies as a whole claimed surplus in the trade of digital goods in 2021, with the export registering about US\$1010 billion (8.19% of the total exports) exceeding the US\$856 billion import (6.88% of the total imports of APEC members). Digital commodity trade has become one of the important export components of APEC. It was noteworthy that China's export and import trade volume of digital goods reached US\$483 billion and US\$154 billion respectively, making it the largest exporter of digital goods in APEC in 2021; In the same year, the export and import trade volume of digital goods in the United States was US\$98.4 billion and US\$250 billion respectively, making it the largest importer of digital goods. Other APEC economies have relatively small trade in digital goods.

Digital trade in services of APEC members has grown steadily, and its dominant

position in service trade has gradually emerged. It has always maintained a high contribution rate of service import and export, and accounts for a large proportion of the global service trade market. In 2020, APEC's total trade in digital services amounted to US\$146 million, an increase of 1.9 times compared with 2005. On the whole, there is a significant gap in the level of trade in digital services among APEC members, and a small number of members have a large scale of trade. In 2020, the United States, China and Japan ranked the top three in terms of trade in digital service among APEC members.⁴⁰

3.2 Current Situation and Trend of APEC "Digital Divide"

The COVID-19 Pandemic has accelerated the adoption of digital services and technologies by consumers and businesses around the world, according to the 2020 McKinsey Consumer and Business Survey. The Asia-Pacific region is also striving to respond to the impact of the COVID-19 Pandemic with the help of digital applications, digital services, generated data, and digital infrastructure, so as to achieve economic recovery as soon as possible. During the outbreak, for example, the governments of Korea and Singapore made effective use of digital technology to contain the spread of the virus. The digital divide between APEC economies is mainly reflected in the following three aspects:

First, global digital competitiveness shows the digital gap of the Asia-Pacific region . According to the *World Digital Competitiveness Ranking 2022 Report* released by International Institute for Management Development (IMD), 18 of the APEC members ranked among the top 63 in the world in terms of digital competitiveness in 2020. However, the rankings also demonstrated a digital divide among APEC members that should not be underestimated. From 2018 to 2022, the United States ranked first in the global digital competitiveness ranking, while Korea and Hong Kong, China, ranked eighth and ninth respectively in the digital competitiveness ranking in 2022. The digital competitiveness of APEC members such as Mexico, Peru, Indonesia and the Philippines ranks relatively low. Limited by the shortage of funds, the economies with low digital competitiveness have insufficient investment in digital infrastructure, resulting in a low degree of informatization, high cost of broadband service network use, and a serious shortage of cross-border e-commerce platforms and complete logistics supply chain foundations, in sharp contrast to the United States and Singapore, where the digital economy is developing rapidly.

Second, the use of fixed-line and mobile phones shows the gap. According to ITU statistics, in 2021, there were more than 40 fixed-line subscribers per 100 residents in Hong Kong, China, Chinese Taipei, Japan and Korea, while there were fewer fixed-line subscribers per 100 residents in Thailand, the Philippines and Indonesia. In terms of mobile phone subscribers, Hong Kong, China, Thailand, and Russia all had more than 150 subscribers per 100 residents, and Hong Kong, China was by far

⁴⁰ Source: <https://unctadstat.unctad.org/EN/>. The import data of some economies are missing, and the total trade volume is calculated by excluding the sample of economies with missing data. <https://unctadstat.unctad.org/EN/>

leading other APEC members in this aspect. Users in Thailand and the Philippines mostly prefer mobile phones instead of fixed phones, while users in Hong Kong, China, Japan and Korea have a greater number of contracts on fixed-line and cellular phones.

Third, fixed-line and mobile broadband subscription shows the gap. According to the statistics of the International Telecommunication Union (ITU), Korea, Canada, Hong Kong, China, Australia, the United States, Japan and China among other APEC members had over 30 fixed-line broadband subscribers per 100 residents in 2021, while Japan, Singapore, the United States, Brunei and Hong Kong, China had more than 130 mobile broadband subscribers per 100 residents. There is a big gap in the level of development among economies, where the developing members have a long way to go to catch up with the developed members. That means the Asia-Pacific region has great potential for the development of fixed and mobile broadband.

3.3 APEC Members' Differences in Digital Economic Cooperation

Along with the gradual improvement of global information infrastructure, many APEC economies are increasingly willing to cooperate in the area of the digital economy and have introduced corresponding policies. However, developed economies and developing economies are different in pursuit of digital economic cooperation. The developed economies are keen on digital governance issues such as data privacy protection and cybersecurity. They tend to advance cooperation in emerging technology areas.

In comparison, the developing economies tend to focus on information infrastructure construction and e-commerce cooperation, although they never lose sight of cooperation in frontier areas of the digital economy such as data security and emerging technologies.

3.4 The Trends of APEC Digital Economic Cooperation

In general, APEC economies always take a proactive attitude toward digital economic cooperation, and they choose digital economic cooperation as a key pathway to innovation growth. The scope of digital economic cooperation has been expanding and the focus of cooperation is shifting from traditional digital economic cooperation areas such as digital infrastructure construction and e-commerce to deeper areas such as data protection, regulatory cooperation, and increasing the participation of vulnerable groups.

First, the consistency of digital regulations would be strengthened. APEC promotes regulatory consistency based on the principles of non-discrimination, comprehensiveness, transparency, accountability, and effectiveness to achieve smooth coordination between regulations of different systems and promote the optimal allocation of production factors in the Asia-Pacific region. In 2011, the 19th APEC Economic Leaders' Meeting proposed cooperation on regulation for the first time and adopted the APEC on Strengthening the Implementation of Good Regulatory

Practices to promote regulatory consistency among members. In 2014, APEC issued the *APEC Connectivity Blueprint 2015-2025*, which made regulatory cooperation a key element of the mechanism of connectivity cooperation and advocated that members actively share their practices and experience on digital trade. Since 2017, APEC has launched several regulatory cooperation projects for cybersecurity standards, block-chain standards, APEC Online Dispute Resolution mechanism, product standards, and online platform regulatory mechanisms. These projects would help remove the technical trade barriers such as technical regulations, standards, and conformity assessment procedures.

Second, cooperation to strengthen the participation of disadvantaged groups would be also strengthened. With the goal of achieving sustainable, innovative, and inclusive growth, APEC has been working to enhance the participation of disadvantaged groups such as MSMEs, women, disabled people, and the poor in social and economic activities through cooperation in digital technology. In October 2020, the 26th APEC SME Ministerial Meeting proposed that revitalizing MSMEs through digitalization, innovation, and technology should be a key direction for future work. Moreover, this meeting also pointed out that we should remove barriers to digital trade and e-commerce and develop the digital potential of MSMEs by expanding the use of digital tools, providing digital skill-training activities, and enhancing the use of ICT in business development and cross-border commerce. In November 2020, the APEC Digital Economy Steering Group (DESG) adopted the Work Program for the Implementation of the APEC Internet and Digital Economy Road map, which proposed we should improve women's workplace adaptation in the era of digital economy by developing tools for business management, marketing strategies, and digital media marketing guidelines. In addition, this road map also aimed to improve the living standards of disadvantaged groups through the effective use of ICT and encourage greater participation in the digital economy by women, MSMEs, rural residents and disabled people.

4. New Challenges for APEC Digital Economy and Innovation Cooperation

Currently, uncertainty faced by the global economy has significantly increased due to a new round of technological revolution and industrial change and the outbreak of the Covid-19 Pandemic. Moreover, the traditional mode of economic operation has been impacted by the digital economy while the digital economy has stimulated new business models and new demand, which may give rise to the digital divide. Specifically, the new challenges faced by the APEC digital economy and innovation growth cooperation are as follows.

First, trade protectionism is on the rise. According to the Global Trade Alert database, the number of trade protectionism measures implemented by major economies per year has significantly increased between January 2009 and July 2021 and reached around 2,000 in 2018 and 2020.

Second, digital divide is prominent. The economic development of APEC members is

quite different, and there is an obvious "digital divide" in the degree of Internet popularization and application among regions and cities. Since the outbreak of the Pandemic, coupled with the imbalance of information infrastructure among members, the problem of "digital divide" has become increasingly prominent. Although APEC has made some achievements in narrowing the "digital divide", according to the data released by APEC in 2020, there are still more than 1 billion people in the Asia-Pacific region who do not have access to the Internet. There is still a gap in digital information infrastructure and network coverage among members, such as Korea, the United States, Japan, etc., whose 5G coverage has exceeded 75%, while Indonesia have just planned to open 5G network services in 2025. In addition, some members are faced with problems such as unaffordable Internet subscription fees and slow Internet speed. If the "digital divide" continues to deepen and vulnerable groups are marginalized, digital information technology will not be able to promote inclusive development. In the future, APEC members will face greater challenges in social system security, employment security and corporate social responsibility. Moreover, urban and rural residents in Asia Pacific have different access to information infrastructure. Compared to urban areas, rural areas face more serious problems of inadequate information infrastructure and lack of digital skills. There is also a gap in the development of industries with different levels of information technology. In average, the more digitalized industries would grow two to three times faster than in the less digitalized industries, which makes the digital divide even greater.

Third, the training of talents for the digital economy cannot keep pace with industrial development. As industries are increasingly digitalized and AI application ever expanded, some low-skilled occupations are likely to be replaced and the global demand for labor, especially for white-collar and blue-collar skilled workers will decrease by 7 million, while AI is expected to reach an economic scale of \$13 trillion in the next decade. In addition, the skills gap and mismatch will become prominent as the demand for digital talents exceeds the supply. During 2016-2019, the recruitment rate for digital talents continued to rise across Asia-Pacific economies, with an average increase of 2.6 times. The demand for digital talents has been further expanded due to the impact of the Covid-19 Pandemic, with the average hiring rate for digital talents in March 2020 increasing by 1.4 times compared to the same period of the previous year. In developing economies such as China, Indonesia, and Mexico, the growth in demand for digital talents far outpaces the growth in supply.

5. Digital economic cooperation as a means to enhance inclusive development in the Asia-Pacific region.

First, we should strengthen cooperation in digital industrialization and industrial digitalization. Internet plus, artificial intelligence, cloud computing, mobile Internet and so on, are the digital areas with the fastest pace of technological innovation and the most extensive impact on economic development, which are conducive to the digital penetration into other industries and enhance the innovation level of various industries. APEC members should promote industry-university-research cooperation

and intellectual property protection, improve the innovation environment of small and medium-sized enterprises, enhance their innovation capabilities, promote the digital transformation of traditional industries, accelerate the integration and development of digital industries and other industries, and constantly strengthen the effectiveness of digital economy in promoting innovation and growth. At the same time, the development of digital economy with digital industrialization or industrial digitalization as its main content has some completely different characteristics from the development of industrial economy, and the degree and focus of digital economy development among APEC members are also quite different. Therefore, APEC should continue to promote the implementation of the APEC Internet and Digital Economy Roadmap, and strengthen coordination among its members in formulating a digital economy policy framework and promoting the consistency of Internet and digital economy regulation.

Second, we should promote digital economic cooperation for the development of Internet, blue economy, and green economy. Internet economy, blue economy and green economy are the three pillars for APEC to promote innovative economic growth. Under the guidance of this new vision, APEC should continue to promote the construction of digital infrastructure in the Asia-Pacific region, enhance the digital technology capacity of its members, and strengthen experience exchanges and mutual learning among its members in the field of new Internet models and new business forms such as platform economy and sharing economy. APEC members should also strengthen cooperative research on the integration of digital technology development such as mobile Internet, big data, cloud computing and artificial intelligence with modern manufacturing industry, promote the development of industrial Internet and Internet finance among members, and strive to incorporate new areas of digital economy such as Internet of Things, artificial intelligence and big data into APEC cooperation topics as soon as possible. At the same time, APEC should also deepen the digital cooperation among its members in marine environmental protection, marine transportation, marine disaster prevention and marine fishery economy, so as to promote the development of blue economy. The APEC Economic Committee and the Special Steering Group on Digital Economy should accelerate the study of the supporting role of digital economy for green economy, encourage and support members to accelerate industrial digital transformation, improve production efficiency, reduce emissions and pollution, and achieve green development.

Third, we should strengthen the inclusive development of the digital economy. The development of digital economy helps to enhance the inclusiveness of economic growth. The digital economy represented by cloud computing enables individuals and small and medium-sized enterprises to obtain the computing, storage and network services they need at a very low cost, instead of purchasing expensive hardware and software products and network equipment. Internet finance can use big data to analyze the credit level of social and economic individuals, so that more individuals and small and medium-sized enterprises can obtain financial credit services suitable for their respective risk characteristics. Women and people with disabilities can gain

more opportunities to participate in economic activities through e-commerce. APEC should further strengthen inter-governmental cooperation and give support to SMEs to participate in digital economy innovation activities, including improving the financing environment for SMEs to innovate, reducing the uncertainty and risk of financing for innovative SMEs, encouraging SMEs to increase R & D investment, and promoting innovation, and providing technical, talent, information, financial and legal services for the technological innovation of small and medium-sized enterprises. At the same time, we will continue to promote the implementation of the *APEC Initiative of Cooperation to Promote Internet Economy*, actively organize digital economy entrepreneurship, digital skills training and upgrading, and encourage young and female entrepreneurs to start businesses and innovate. In addition, APEC should make full use of the inclusive nature of the Internet economy, expand broadband access for women, youth, the disabled and the poor, and create convenient conditions and a friendly environment for them to participate in digital economic activities.

Fourth, explore a new model of smart city construction to promote urbanization. In 2013, APEC listed urbanization as a new area to promote economic growth in the Asia-Pacific region, and the APEC Economic Leaders' Meeting held in Beijing in 2014 identified it as one of the five pillars of APEC cooperation on innovation and growth. APEC developed members mainly face the problem of urban construction transformation, while developing members pay more attention to urbanization. However, both developed and developing members of APEC have problems such as lack of planning for urban construction, old infrastructure, and serious environmental pollution. APEC should strengthen cooperation in urbanization, implement the *APEC Urbanization Partnership Cooperation Initiative*, encourage members with a high level of digital economy development to build green, low-carbon, efficient and inclusive smart cities characterized by digital public services and digital city governance, and share experience for cooperative research to explore the path of smart city construction. At the same time, APEC should encourage members to use digital technology to optimize the efficiency of existing urban infrastructure, develop e-government, improve the efficiency of public sector services, and further explore how to make full use of digital technology for rational planning and design in urbanization construction, form a complete set of programs, and popularize them to all members.

Part III Research on APEC Bio-Circular-Green (BCG) Economy Model

Climate change has become an important global issue. To minimize the impact of the climate change and to promote sustainable economic development in the post-Pandemic era, Thailand, as the host economy of APEC 2022, proposed and promoted the Bio-Circular-Green Economy Model, which is an economic model that aims to create value for all levels of society through the more efficient use of natural assets in order to safeguard economic and social development, with sustainable development as its goal. The BCG economy model is based on the development of the Bio Economy, Circular Economy and Green Economy, with a focus on four strategic areas - agriculture and food, health and healthcare, energy materials and biochemistry, tourism and the creative economy. As one of the key strategic areas of the BCG economy model, the APEC Energy Working Group has proposed the "Bio-Circular Economy Model: Energy Transition for Sustainable and Inclusive Growth" to promote energy transition and low-carbon development in the APEC region and to help achieve the goals of APEC energy cooperation.

1. The proposal and background of APEC Bio-Circular-Green (BCG) Economy Model

1.1 Global background

It becomes a global necessity to transition from fossil fuels to renewable energy resources that are sustainable, environmentally friendly, and always available, has become . With rising challenges of climate change and global warming due to anthropogenic activities, all economies are brought into a common cause to mitigate climate change and adapt to its effects, as requested by the international norms such as the 2015 Paris Agreement and the 2030 Agenda for Sustainable Development. Hence, the APEC region has assumed a sense of urgency to seek the transition to clean, affordable, reliable, and sustainable energy in its aspiration to achieve sustainable and inclusive growth.

The implementation of the bio-circular-green economy model will create significant social, economic and environmental benefits and will serve as an essential avenue toward sustainable development. Sustainable development is an overarching concept and an ambitious goal that encompasses economic, social and environmental protection, and a bio-cycle green economy strategy can be considered as a practical policy framework for achieving this goal. At the same time, the effective implementation of a bio-cycle green economy strategy will make a significant contribution to achieving food security, accelerating sustainable agricultural development, eradicating poverty, improving health care, reducing environmental pollution and promoting a new energy transition on a global scale.

What is the APEC BCG Economy Model?

The BCG concept encompasses different related terms, which are: “Bio-economy”, “Circular economy”, and “Green economy”.

The bio economy refers to the “production and use of renewable biological resources as well as economic activities at micro and macro scale, related to the invention, development, production and use of biological products and processes.” This includes the production of food and non-food agricultural crops, and the technological processes that turn them into food, feed, bio-based products, agrofuels, and bioenergy.

The circular economy refers to the “production and consumption of goods through closed loop material flows that internalize environmental externalities linked to virgin resource extraction and the generation of waste including pollution.” In a circular economy, resource use is improved by minimizing the extraction of natural resources, maximizing waste prevention and mitigation, and optimizing the environmental, social, material, and economic values throughout the life cycles of materials, components, and products.

The green economy refers to the “production, distribution and consumption of goods and services that result in improved human well-being over the long term, while not exposing future generations to significant environmental risks or ecological scarcities...” In other words, it can be understood as an economy in which emphasizes on producing lower carbon emissions and on resourcefully accommodating all social groups. It aims to reduce pollution and carbon emissions by increasing the efficiency of resources and energy consumption. The green economy also aspires to growth in income and job opportunities that must be driven by public and private investments.

Thus, the BCG concept can be defined as a model of production, consumption, distribution, processing, and reuse of resources in an efficient and sustainable way in order to achieve prosperity for all and raise the economic level while preserving the environment from pollution and not exposing future generations to significant environmental risks or ecological scarcities.

Sustainable energy transition is a critical component of current and future sustainable development, addressing sustainable energy transition solutions are critical. Efficient use of clean energy, along with minimizing the environmental consequences of energy use are one of the very important ways to facilitate the transition toward a sustainable energy system. Improving energy conversion and efficiency within an energy system as well as the household sector is crucial for sustainable growth. Energy efficiency can help to balance the power supply and decreasing energy consumption.

1.2 APEC background

APEC Economies, accounting for 54% of the global trade in 2018, plays a significant role in shaping the global energy sector. APEC's total primary energy supply (TPES), which is consistently dominated by fossil fuels, mainly coal, accounts for more than half of the world's TPES. The rapid increase in economic growth has accelerated the energy consumption in APEC economies, which has significantly affected the environmental quality. The electricity demand and generation of APEC economies has been on the rise, with electricity consumption increasing 5.8% from 2010 to 2018.

In the *Putrajaya Vision 2040*, APEC Economic Leaders committed to promoting "economic policies, cooperation, and growth which support global efforts to comprehensively address all environmental challenges, including climate change, extreme weather, and natural disasters, for a sustainable planet". APEC Leaders also agreed that a sustained recovery from COVID-19 should include addressing climate change and other significant environmental problems during the APEC Informal Leaders' Retreat in July 2021.

So far, APEC fora have adopted strategic plans and conducted several projects and initiatives to achieve balanced, inclusive, sustainable, innovative, and secure growth. For the past few years, there has been growing interest and discussion in APEC to pivot to a circular economy and promote innovative waste management. Cross-fora collaboration and alignment of work plans have been promoted to mobilize resources and ensure tangible outcomes. However, APEC's efforts to further advance the sustainability and green agenda requires a more holistic approach with a proper framework to effectively implement the commitments of our Leaders. There is room for APEC economies to address this gap and work together more comprehensively and systematically.

1.3 Development Process

At the 62nd APEC Energy Working Group meeting in October 2021, the theme for the next Energy Policy Dialogue was "Bio-Cycle-Green Economy Model: Energy Transition for Sustainable and Inclusive Growth". Subsequently, the official representatives of the Thai Energy Working Group revised and improved the policy dialogue document based on the suggestions and comments made during the meeting. In November of the same year, an in-depth exchange was held with the Asia Pacific Energy Research Centre and the APEC Sustainable Energy Centre on the definition of the APEC Bio-Cycle Green Economy Model, how to achieve APEC's energy targets through the model, and the application of the model, respectively.

In February 2022, the Thai government website officially released a statement by Prime Minister Prayuth on Thailand's upcoming hosting of the 2022 Asia-Pacific Economic Cooperation (APEC) Leaders' Informal Meeting. The statement said that under the theme "Open,Connect,Balance," APEC would emphasize the use of bioeconomy, circular economy and green economy concepts to promote the economic

recovery and balanced development of regions affected by the COVID-19. In March of the same year, APEC Energy Working Group Policy Dialogue Workshop on the Bio, Circular and Green Economy Model: Promoting Sustainable and Inclusive Growth through Energy Transition was organized, where representatives from APEC member economies and relevant scholars discussed and exchanged views on relevant issues. The final draft of the policy dialogue document was refined and submitted to the Ministry of Foreign Affairs of Thailand, taking into account the results of the discussions at the 63rd APEC Energy Working Group Meeting held in June.

2. Objective and contents of APEC Bio-Circular-Green (BCG) Economy Model

2.1 Objective

The objective of the policy dialogue is to arise concerns of climate change and to "Accelerate Energy Transition" among APEC economies while maintaining the economic growth and environmental sustainability by using Bio-Circular-Green Economy (BCG) Economy Model or similar approach as a key enabler for energy system integration to achieve APEC goals, reduce aggregate energy intensity by 45% by 2035, and double renewable energy share in the regional energy mix by 2030.

2.2 BCG Economy Model and SDGs

The implementation of the BCG Economy Model is important in seeking to achieve Sustainable Development Goals. Thus, in recent years, more attention is focused on the relationship between sustainability and the key concepts of the BCG Economy Model.

Bio economy: The bio economy summarizes all economic sectors that are involved in the production, processing and use of biological resources for the production of food and feed, the provision of biomass as resources and the production of bio-based chemicals and materials and bioenergy. The circular economy is a model of sustainable production and consumption, and it is fundamentally different from the linear economy model while the green economy can be understood as low carbon, resource efficient and socially inclusive. In a green economy, growth in employment and income are driven by public and private investment into such economic activities, infrastructure and assets that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services.

Sustainable bioeconomy is synonymous with achieving the sustainable development goals (SDGs). Adopting, developing, and implementing bioeconomy offers a significant opportunity to achieve the SDGs at the global level. To sustainably meet the global demand, it is crucial to understand the knowledge-intensive use of biological resources.

To end extreme poverty by 2030 as envisaged under SDG 1 (No poverty), a very clear

understanding of rural poverty and the pathways to move out of the extreme poverty trap is required. In this regard, the relationship of agriculture to the environmental crisis needs to be understood. Most of the planetary boundaries today are threatened by unsustainable agricultural practices. In the field of biofuels, sustainable development goals overlap with the bioeconomy. Given all the challenges of food systems, any large-scale biofuel application is likely to be in deep competition with food or other ecosystem services. However, there may also be applications of the bioeconomy that do not compete with food supply and ecosystem services, such as SDG 7 on access to renewable energy services, which the bioeconomy can explore and contribute to. The bioeconomy can also contribute to human health by providing important solutions for disease and healthy ecosystem services.

Solutions to sustainability problems and challenges would critically require knowledge from scientific research and appropriate technologies. To meet the challenges in achieving the complex and intricately intertwined SDGs, a range of disciplines and expertise needs to be taken into consideration to develop the region-specific bioeconomic agenda accommodating the local context, the microclimate, and micro ecological conditions.

Advancements in emerging technologies, such as biotechnology, the innovative development of products, processes, and systems considering environmental benefits offers numerous possibilities that can lead to achieving SDG-9 (Industry and innovation), SDG-14 (Life below water), and SDG-15 (Sustainable use of land biodiversity). The recovery of degraded resources like soils, treatment of wastewater and input it to the production process by bioremediation will meet the SDG-6 (Clean water and sanitation), and SDG-15 (Prevention of soil degradation). Moreover, reindustrialization by using renewable resources and generation of bio-products and bio-services will enhance the generation of new sources of decent work and sustainable economic growth (SDG 8). However, the complex and interdisciplinary nature of emergent technologies would require a major reorientation and organization of R&D practices.

Access to clean water, energy and sustainable agricultural production systems are major challenges in developing economies, despite the availability of technologies. This indicates that the solution to these development challenges does not solely lie on the technology front, but also depends to a large extent on the governance framework. Factors influencing the relationship between knowledge, diffusion, and outcome in the spheres of agriculture, water and energy mostly revolve around resources, infrastructure, strength of institutions and quality of policies. Also, the human element, including cultural and individual behavior patterns, play a role even where knowledge is diffused, and services are available.

Circular Economy: The circular economy approach is a natural consequence of linear production limitation of limited natural resources, high pollution, and energy consumption rates. Wastes generated in the linear economy model through extraction and production of the goods and the post-consumption products come around to haunt

us as pollution as they eventually end up either in a landfill or are dispersed in ways that contaminate our environment.

As a new paradigm for economic development, the circular economy has significant environmental, economic, and social benefits at the global scale. The circular economy concept highlights the notion of replacing the ‘end-of-life’ in current production and consumption practices by reducing, reusing, and recycling products and materials in production, distribution, and consumption processes. Promoting circularity aims to accomplish sustainable development, and the circular economy has links to many of the 17 Sustainable Development Goals (SDGs).

Studies have shown that the strongest relationships and synergies between circular economy practices and SDG targets lie within SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG12 (Responsible Consumption and Production), and SDG 15 (Life on Land), which have high scores both for direct and for indirect contributions.

Green Economy: A green economy is defined as low carbon, resource-efficient and socially inclusive. In a green economy, growth in employment and income are driven by public and private investment into such economic activities, infrastructure and assets that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services.

These green investments need to be enabled and supported through targeted public expenditure, policy reforms and changes in taxation and regulation. UN Environment promotes a development path that understands natural capital as a critical economic asset and a source of public benefits, especially for poor people whose livelihoods depend on natural resources. The notion of green economy does not replace sustainable development, but creates a new focus on the economy, investment, capital and infrastructure, employment and skills and positive social and environmental outcomes across Asia and the Pacific.

The role of Green Economy, Sustainable Consumption and Production and Resource Efficiency for Sustainable Development: Sustainable Consumption and Production aims to improve production processes and consumption practices to reduce resource consumption, waste generation and emissions across the full life cycle of processes and products– while Resource Efficiency refers to the ways in which resources are used to deliver value to society and aims to reduce the amount of resources needed, and emissions and waste generated, per unit of product or service. The Green Economy provides a macro-economic approach to sustainable economic growth with a central focus on investments, employment, and skills.

The three main areas for the current work on Green Economy are:

- 1) Advocacy of macro-economic approach to sustainable economic growth through regional, sub-regional and national fora;
- 2) Demonstration of Green Economy approaches with a central focus on access to

green finance, technology, and investments;

3) Support to economies in terms of development and mainstreaming of macro-economic policies to support the transition to a Green Economy.

Multi-stakeholder partnerships for the promotion of a Green Economy are supported to accelerate and consolidate sustainable changes in both consumption and production patterns. In addition to governments and not-for-profit organizations, private sectors are also very important actors in promoting resource efficiency and green economy.

When Bio-Circular-Green economies are combined into an integral BCG economy model, as an effective way to achieve sustainable development goals in social, environment and economy aspects, the overall logic relationship between SDGs and BCG economy model can be depicted in the following framework, based on the above-mentioned.

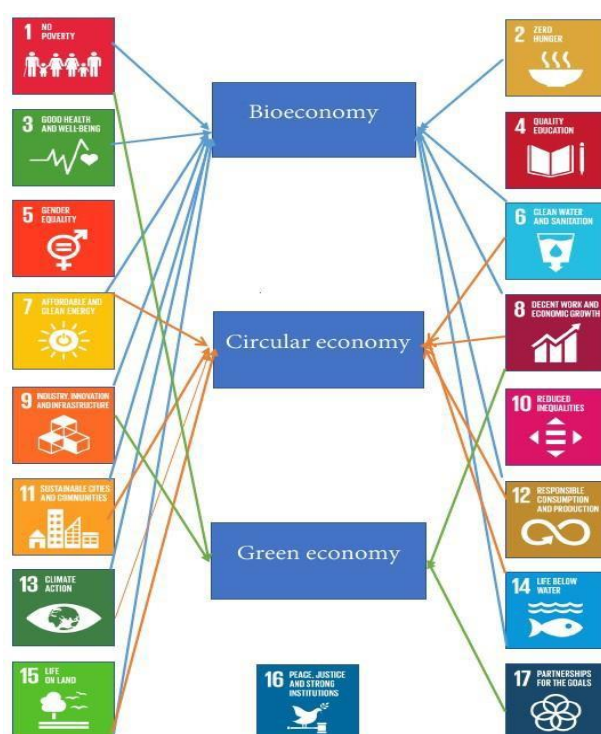


Figure 3.1 Overall logic relationship between SDGs and BCG Economy Model

2.3 Outcomes in APEC

In APEC Energy Working Group, a policy paper titled on "APEC Bio-Cycle-Green Economy Model: Energy Transition for Sustainable and Inclusive Growth" was prepared. In the paper, in which the contents of the policy paper were defined through bilateral and multilateral cooperation seminars, mainly including best practices, application areas and implementation initiatives of APEC economies, so as to promote energy transition and low carbon development in the APEC region, help achieve the

goals of APEC energy cooperation and promote sustainable and inclusive growth of APEC economies.

In APEC, some economies have taken actions to implement already. For example, Hong Kong, China will implement a waste charging program in 2023 to encourage waste reduction and recycling to use waste for energy and move away from reliance on landfill and municipal waste disposal by 2035. The Twelfth Malaysia Plan 2021 - 2025 (12MP), announced that Advancing Sustainability is one of the priorities focuses on promoting green growth, enhancing sustainability and security of energy and water resources to achieve the goal of carbon emissions reduction. A similar concept to BCG Model has been adopted in some parts of the Philippines including the EcoTown Framework Project which pursues “ecologically stable” and “economically resilient” local communities. Singapore plans to undertake in the next few years to lower the carbon footprint, seek green growth opportunities, create new jobs, transform the industry, and put sustainability into the center of development. Canada released its first national bio economy strategy, *Canada's Bio Economy Strategy - Harnessing Strengths for a Sustainable Future* to achieve effective management of natural resources by promoting the highest value for biomass and residues. China will increase its national autonomous contribution, adopt stronger policies and measures, strive to peak CO₂ emissions by 2030, and work towards achieving carbon neutrality by 2060.

3. Opportunities for Economies to implement the BCG Economy Model

In 2022, APEC Leaders endorsed the Bangkok Goals on the Bio-Circular-Green (BCG) Economy as a comprehensive framework to further APEC’s sustainability objectives and launched the APEC BCG Award to recognize the achievements of sustainability in APEC region.

The Bio-Circular-Green (BCG) economy model that integrates three economic approaches, where technology and innovation are used to create value, reduce waste, advance resource efficiency, and promote sustainable business models. It also calls for more holistic efforts to achieve more balanced, inclusive and sustainable growth. Therefore, the sustainable development advocated by BCG economy model is not only the goal of Thailand, but also the development direction of all APEC members. We should adhere to low-carbon transformation, strengthen experience sharing in energy conservation, emission reduction, development of Low-carbon economy and other fields, promote the harmonious coexistence of human and nature, and promote green development in Asia Pacific region.

The BCG Awards, launched in 2022 APEC Leaders’ Meeting, will encourage women, youth and MSMEs to participate in , the implementation of the Bangkok Goals on BCG Economy. Distinguished women, youth and MSMEs from economies have concretely implemented BCG economy approaches to advance sustainable and inclusive growth will be recognized and be served as examples and inspirations for the wider communities to learn from, replicate and apply in their own settings.

Part IV Trends of Financial Development and Cooperation of APEC

1. The progress of APEC financial cooperation

1.1 APEC's organizational mechanism for promoting financial cooperation

APEC has formed a pyramid structure consisting of economic leaders' meetings, ministerial meetings, senior officials' meetings, committees and working groups, and has established a relatively sound organizational and operational model, forming a top-down promotion model to deepen cooperation in various fields. APEC's cooperation in the financial sector is mainly carried out under the framework of the Finance Ministers' Process (FMP), which is promoted by the Finance Ministers' Meeting (FMM). At their first meeting in 1993, APEC Economic Leaders established the FMP, including the Finance Ministers' Meeting, the Finance and Central Bank Deputies Meeting, and the Senior Finance Officials' Meeting. Finance Ministers' Meetings (FMM) have met annually since 1994. The meeting aims to promote stronger, sustained, balanced and inclusive economic growth through a range of measures and approaches to provide financial services to a broader range of people. Prior to each Finance Ministers' Meeting (FMM), Finance and Central Bank Deputies and Senior Finance Officials gather to hold a pre-discussion on the contents of the Finance Ministers' Meeting, mainly discussing the regional economic and financial situation and considering the policy issues of the Finance Ministers' Meeting and progress reports on the activities of each initiative. During the two Finance Ministers' Meetings, the next Chairman-in-Office will hold two meetings of the working groups, which was upgraded to a meeting of senior finance officials starting from December 2006, to discuss the macroeconomic and financial situation, propose and review the policy issues for the Finance Ministers' Meeting, and report on the progress of the initiatives in preparation for the Finance Ministers' Meeting.

Under the leadership of the FMM, APEC has established the Asia-Pacific Forum on Financial Inclusion (APFIF), The Asia-Pacific Infrastructure Partnership (APIP), and The Asia-Pacific Financial Forum (APFF). These organizations serve as platforms for cooperation among the private sector, public sector, and international organizations to implement the policy recommendations endorsed by the FMM.

The Asia-Pacific Financial Inclusion Forum (APFIF) was established in 2010 as a part of the APEC Finance Ministers Meeting Mechanism (FMP) policy initiatives, housed at The APEC Business Advisory Council (ABAC), led by the Asian Development Bank (ADB), and supported by the Foundation for Development Cooperation (FDC) and the Asian Development Bank Institute (ADBI). As one of the many projects

undertaken by APEC over the years, its focus is to issue financial inclusion targets for the finance ministers' meeting mechanism based on specific priorities set by the APEC host of each year. A key feature of the APFIF initiative is the focus on financial inclusion and inclusiveness in the economy. As such, the Asia-Pacific Financial Inclusion Forum (APFIF) provides a capacity-building platform for regulators and the public sector in member economies to work with the private sector to promote access to financial services for vulnerable groups (including women, youth, the elderly and persons with disabilities) and MSMEs.

The Asia-Pacific Infrastructure Partnership (APIP), an initiative of the APEC Business Advisory Council (ABAC), was considered and established at the 2011 APEC Finance Ministers' Meeting to promote private sectors to be more engaged in regional infrastructure financing and to provide relevant infrastructure recommendations for finance ministers. The APIP provides a regional platform for governments, private sectors and international organizations to explore relevant issues affecting infrastructure PPPs and to seek practical solutions.

The Asia Pacific Financial Forum (APFF) was considered and adopted at the APEC Finance Ministers' Meeting in 2013, at the initiative of ABAC. APFF is an essential platform for public-private dialogue and cooperation in the financial sector under the APEC framework, aiming to promote the development of sound and integrated financial markets and services, and promote healthy and sustainable development of the financial sector. It covers key areas of financial markets that are critical to the development of economic and financial services in the Asia-Pacific region, including credit infrastructure, trade and supply chain finance, insurance and retirement income, capital markets, and financial market infrastructure, to accelerate the development of robust and integrated financial markets in the APEC region.

1.2 The main contents of APEC financial cooperation

Since APEC financial cooperation is mainly carried out under the Finance Ministers Meeting Mechanism (FMP) framework and promoted by the Finance Ministers Meeting (FMM), the achievements of the Committees, Working Groups and Forums are reflected in the joint statement of the FMM. The contents of joint statements of APEC Finance Ministers Meetings will show the contents and development trends of APEC financial cooperation. Word frequency may be used to gauge a word's relevance in a document or report since the importance of words rises according to the number of their occurrences in a document. In order to better understand the development of APEC financial cooperation, this report examines term frequencies of the APEC Finance Ministers' Meeting Joint Statements from 1994 to 2021 (see Figure 4.1)

A word cloud analysis of the APEC Finance Ministers' Meeting Joint Statements shows that infrastructure and fiscal issues are consistently mentioned. These two categories are among the most frequently cited concepts in almost all of the past statements. They are followed by the terms of growth, investment, regulation and

development. These frequently cited concepts point to the focus areas of APEC financial cooperation in the past three decades.

The word cloud analysis also shows how APEC financial cooperation has changed in tandem with a dynamic economic landscape. In the 1990s, concepts of international, capital, inflows and outflows, trade and exchange rates were more frequently mentioned in the Finance Ministers' Meetings; in the early 2000s, keywords such as risk, training, regulatory and standards were frequently used; In the 2010s, words such as public-private partnership (PPP), inclusive, sustainable as well as digital were frequently cited. Since the global outbreak of COVID-19 in 2020, the Finance Ministers' Meeting has focused on references to recovery around the COVID-19 episode, while inclusiveness, sustainable growth, and digitalization have been again frequently mentioned.



Figure 4.1 Word Cloud of APEC Finance Ministers' Meeting Joint Statements from 1994 to 2021

These evolving high-frequency terms indicate the priorities identified by APEC Finance Ministers' Meetings during the corresponding period and reflect APEC financial cooperation's focus areas for the past three decades. In the 1990s, APEC

focused on financial services cooperation in promoting trade liberalization and economic globalization; In the 2000s, APEC financial cooperation focused on controlling systematic financial risks and determining regional economic and financial rules. In the 2010s, APEC financial cooperation emphasized the promotion of economic, environmental sustainability as well as inclusiveness, and began to focus on the impact of the digital economy. In fact, digital was the most frequently mentioned term in the 2018 joint financial ministerial statement, with the theme of "Harnessing Inclusive Opportunities, Embracing the Digital Future", which explored the potential of digitalization for economic growth, inclusion, and sustainability in the Asia-Pacific region. The APEC leaders proposed the APEC Putrajaya Vision 2040 against the backdrop of an economic recovery that is a top priority for all economies, given that the outbreak of COVID-19 has hampered economic development in the APEC region. The vision is another ambitious development plan for APEC's coming 20 years after the Bogor Goals in 1994. In the Putrajaya Vision, "Sustainable and Inclusive Growth" and "Innovation and Digital" are listed as two critical economic drivers. APEC's financial cooperation will also evolve under the framework of the APEC Putrajaya Vision 2040 to promote the development of digital finance. The use of digital finance to promote financial inclusion and sustainable financial cooperation has become a critical element of regional financial cooperation in APEC.

It can be seen that financial cooperation under the APEC framework has always been centered on the pillars of trade and investment liberalization and facilitation, and regional economic and technical cooperation, featured with financial cooperation serving the needs of real economic development and economic cooperation, while taking into account the climatic environment, humanities and other factors in the APEC region.

1.3 The main achievements of APEC financial cooperation

Each year, the orientation of APEC's financial cooperation is determined by the theme of the APEC meeting and the priorities proposed by the APEC Finance Ministers' Meeting. Consequently, APEC makes achievements of financial cooperation for the year by addressing the development orientation and issues of regional financial cooperation.

At the 1997 APEC Finance Ministers' Meeting, Ministers agreed that Deputies would prepare the Voluntary Action Plan for Supporting Freer and Stable Capital Flows (VAP) for formulating appropriate good practice guidelines for monitoring capital flows in the APEC region. The objectives of the VAP include enhancing APEC economies' understanding of the benefits and risks associated with cross-border capital flows, developing a sound understanding of the policies needed to maximize the benefits and minimize the risks associated with cross-border capital flows, and encouraging the implementation of policies to promote robust and open economies in the APEC region.

The 1998 Finance Ministers' Meeting adopted the APEC Financial Regulators

Training Initiative (FRTI), which provided a sustainable, efficient, cost-effective training structure for junior and mid-level financial supervisory and regulatory agency staff.

The APEC Finance and Development Program (AFDP) Plan was launched in 2001 to promote financial development and financial stability in the APEC region.

In 2002, APEC welcomed the decision of the International Monetary Fund and the World Bank to include the FATF's Forty Anti-Money Laundering Recommendations and Eight Special Recommendations (FATF 40+8) in the area of preparing the Report on Compliance with Standards and Codes, dedicated to combating terrorist financing and money laundering.

On September 5, 2003, the APEC Finance Ministers' Meeting mechanism signed The Memorandum of Understanding (MOU) by 12 financial institutions dealing with SMEs, which aimed to provide necessary support for the development of MSMEs in APEC economies, especially in the areas of financing, corporate governance and entrepreneurship.

In 2003, APEC spearheaded an initiative to bolster the development of domestic securities markets, aiming to augment the efficiency of bond markets. This initiative encouraged the long-term, local currency-denominated debt instruments, derivatives, and asset-backed securities, among other financial products, and advancing the liberalization of financial services.

In 2005, the Jeju Declaration on Enhancing Regional Cooperation against the Challenges of Population Aging was adopted to address the challenges of population aging through a series of measures, including a sustainable pension system, broader savings products, and improved financial literacy.

In 2006, APEC ministers approved the Hanoi Medium-Term Agenda aimed at accelerating the achievement of Bogor Goals. This plan encompasses public finance management, corporate governance and development, capital market development, population aging, and macroeconomic development including fiscal and monetary policies.

In 2008, the Finance Ministers' Meeting welcomed the Generally Accepted Principles and Practices (Santiago Principles) developed by the International Working Group on Sovereign Wealth Funds. These principles will help promote a better understanding of sovereign wealth fund systems and operating practices, reduce protectionist pressures, and contribute to global financial stability.

In 2009, the Finance Ministers' Meeting welcomed the launch of the G20 Framework for Strong, Sustainable and Balanced Growth at the Group of 20 (G20) Finance Ministers and Central Bank Governors meeting in St. Andrews. Actions of APEC members will be crucial to robust, sustainable, and balanced global growth.

In 2010, the APEC Finance Ministers Meeting considered and adopted the Kyoto Report on Growth Strategy and Finance. It placed a strong emphasis on fostering

sound fiscal management, especially in light of the challenges that an aging population poses to public finance, as well as on bolstering infrastructure financing and enhancing access to finance for MSME businesses and households.

In accordance with the APEC Leaders' Growth Strategy adopted in 2010, APEC members will sustain economic recovery through the implementation of accommodative monetary and fiscal policies, strengthen multilateral cooperation, promote external sustainability, and adopt a series of policies conducive to reducing excessive imbalances and maintaining current account imbalances at sustainable levels. APEC will progress towards a more market-oriented exchange rate system that reflects underlying economic fundamentals, encourages balanced economic growth, and mitigates the risks of excessive capital flow volatility faced by some emerging economies.

In 2012, the Finance Ministers' Meeting adopted the APEC Guidebook on Financial and Economic Literacy in Basic Education to increase understanding of the topic of financial and economic literacy education.

In 2014, the Finance Ministers' Meeting adopted The Implementation Roadmap to Develop Successful Infrastructure Public-Private Partnership Projects in the APEC Region, emphasizing the viability of the PPP model in infrastructure investment and improving services to the real regional economy. Continued strong support for infrastructure development aiming to promote sustainable economic development in the Asia-Pacific region has become an important part of APEC connectivity.

In 2015, the Finance Ministers' Meeting deliberated and launched The Cebu Action Plan (CAP), with the goal of building an APEC community that is more financially integrated, transparent, resilient and connected. The Cebu Action Plan consists of four pillars: promoting financial integration, advancing fiscal reforms and transparency, enhancing financial resilience, and accelerating infrastructure development and financing.

In 2019, the APEC Finance Ministers' Meeting adopted the *APEC Financial Inclusion Capacity Building Package*, *An APEC Roadmap for a New Financial Services Data Ecosystem*, and *A Strategy for the digitalization of Trade and Supply Chain Finance* to promote financial inclusion and inclusive financial digital development in the context of the digital economy as a priority issue.

In 2020, the Finance Ministers' Meeting adopted the APEC Roadmap on Digital Inclusive Finance, reaffirming the importance of digitalization for promoting inclusive, sustainable, and innovative economic growth.

To implement the Putrajaya Vision 2040, the 2021 Leader's Declaration endorsed the Aotearoa Plan of Action. One of the objectives of this action plan is " pursue structural reforms and sound economic policies to promote innovation as well as improve productivity and dynamism. "Under this objective, individual and collective macroeconomic policy actions to be taken for its realization are stipulated. Individual

actions require each APEC economy to seek continued improvement in the resilience and sustainability of their fiscal and monetary policies. Collective actions call for APEC members to promote sound fiscal and monetary policies, and to collaborate across relevant APEC fora on macro-economic policies, by sharing information and best practice, promoting good regulatory practices and regulatory cooperation, improving fiscal sustainability and transparency.

In 2021, the Finance Ministers' Meeting adopted the New Strategy for Implementation of the Cebu Action Plan to emphasize the role that progress in the areas of the CAP can play in achieving the APEC Putrajaya Vision 2040 which was agreed upon by Economic Leaders in 2020. The New Strategy for the Implementation of the Cebu Action Plan reaffirms the high-level objective of promoting the four pillars with two additional aspects: first, taking actions to address the negative economic impact of the COVID-19 pandemic in order to achieve economic recovery in the APEC region and to address long-term challenges such as climate change to make growth more inclusive and sustainable. Second, actions that are consistent with one or more of the economic drivers of the APEC Putrajaya Vision 2040, namely "Trade and Investment," "Innovation and digitalization," and "Strong, Balanced, Secure, Sustainable and Inclusive Growth".

The 2022 Finance Ministers' Meeting Joint Statement noted the importance of safe, secure, accessible and sustainable fiscal finance for inclusive and sustainable economic growth.

2. Trends of financial cooperation in APEC

In the future, APEC financial cooperation will not only continue to promote trade and investment liberalization and facilitation, but will also place a greater emphasis on digitalization, inclusiveness, and sustainability.

2.1 Digital financial cooperation

In recent years, inclusiveness and sustainable growth have been achieved through the rapid digital transformation of finance, which is largely attributed to the pervasive adoption of digital technologies such as mobile phones and the internet. In the Asia-Pacific region, there are currently over 4.1 billion mobile phone users and 17 million internet users, whereas, in 1989, less than 1% of the population used mobile phones or the internet. By providing innovative financial services or products through digital technology and utilizing a wide range of technical components such as big data, artificial intelligence, and mobile internet, the technological advancement in the Asia-Pacific region has experienced unprecedented growth, bringing new applications to financial services such as savings, loans, risk management, and financial advice. China, the United States, Japan, and South Korea have become global leaders in financial technology innovation, as evidenced by the number of fintech patent applications submitted each year.

With the rapid advancement of the internet, mobile communication, and financial

technology, an increasing amount of personal data is being collected and applied in various aspects. In the financial industry, third-party data and data analysis services beyond credit reporting make it possible for many individuals lacking access to formal financial services to utilize them, thereby promoting financial inclusion. On the other hand, data abuse, data leaks, and privacy infringement continue to emerge, affecting public confidence in the digital economy and digital finance to some extent. Considering that most APEC economies do not have personal data protection laws or dedicated personal data protection regulatory agencies, the APFF regularly holds data regulation meetings and formulated "An APEC Roadmap for a New Financial Services Data Ecosystem " in 2019, providing a tool to promote consistency between APEC economies' laws, policies, regulations, and existing international agreed principles, frameworks, and good practices, and identifying areas where new minimum standards need to be established to achieve regional consistency.

APEC members have accelerated innovation and have different focal points for digital finance development

Innovation and digitalization are among the core pillars of *APEC Putrajaya Vision 2040* and a vital agenda of the Aotearoa Action Plan. Over the past decade, APEC members have flourished toward the digitalization of finance, applying fintech such as artificial intelligence, blockchain, cloud computing and big data in financial areas including payments, settlements, deposits, lending and capital raising, insurance, and investment management, etc. Each APEC member has a different focus in different areas of digital finance.

For example, the most active segment of Australia's digital finance sector is alternative lending, which has developed into a market exceeding \$600 million. What's more, the growth of the alternative lending market in Australia surpasses that in economies like South Korea and Japan. Since the majority of Australia's credit resources are held by the four largest banks, minor institutions cannot provide enough credit. At the same time, large banks have higher requirements for SMEs in lending and do not allow higher default rates. Large banks essentially turn a blind eye to the funding demands of SMEs and ordinary consumers since SMEs can't achieve their risk control criteria. Australia has seen a tremendous rise in alternative lending to SMEs due to the rapid development of digital finance and its excellent data application capabilities. Approximately 70% of alternative lending in Australia is made directly to SMEs. For example, Invoice Finance is an Australian fintech startup that provides an online marketplace for SMEs to sell their invoices to investors. Once investors decide to make purchases, SMEs can access the funds within 24 hours.

Given its open financial policies, relatively well-developed financial infrastructure, a large number of internet users, and the prevalence of smartphones, the initial development of digital finance in China is in the area of payments. The 2021 Global Findex database shows that 80% of adults in China, far more than in other developing economies, have already been doing shopping online and using smartphones for offline payments. In addition, China's traditional banking and financial services have accelerated their integration with fintech, especially since 2017 when the five largest state-owned banks started to partner with fintech companies in several financial areas. The banks and fintech companies is no longer in a disruptive or confrontational relationship, rather they complement one another as they each develop their own competitive edges. In addition to the five state-owned banks, some urban commercial banks, agricultural banks and other small and medium-sized banks have also made valuable explorations and practices to improve their core business capabilities, business efficiency, user experience and reduce risks and costs, and have achieved encouraging results. The development of digital finance in China has slowly evolved from following the footsteps of other developed economies and begin to lead the world. For example, Alipay has accessed more than 120,000 offline stores in 26 overseas economies, and WeChat Pay has landed in 13 overseas economies, covering more than 130,000 offline stores.

As the third largest economy in the Asia-Pacific region, Japan's Financial Services Agency has proactively responded to the growth of Bitcoin and other cryptocurrencies by becoming the first government in the world to mandate registration of cryptocurrency trading platforms. The most active area of digital finance in Japan is currently cryptocurrencies. The Japan Financial Agency's 2018 Report on the Status of Virtual Currency Trading in Japan shows that Japan is home to 30-40% of the world's bitcoin trading platforms and over 350 million (equivalent to 3% of Japan's total population) digital currency traders, with the Japanese yen accounting for 40%-60% of bitcoin transactions. While cash payments are still more popular than mobile payments in Japan, there is a trend towards payments via QR codes linked to bank accounts.

Digital financial inclusion becomes the main trend in Hong Kong, China. Digital finance is proliferating in Hong Kong, China, and some financial technologies such as open application programming interfaces (APIs), virtual banking and distributed bookkeeping have significantly improved the operational efficiency of the banking industry, enabling digital financial inclusion and a better customer experience. Open APIs permit banking and other sectors, such as leisure services, healthcare, and retail services, to integrate their systems and services more efficiently. Virtual banking will provide an additional boost to digital technology in financial inclusion and bring a new customer experience in mobile and digital banking. Virtual banking usually targets retail customers and covers individuals or small and medium-sized enterprises (SMEs). In May 2018, the Hong Kong Monetary Authority (HKMA) issued a revised version of the "Recognition of Virtual Banks" to promote the growth of virtual banking in Hong Kong, China and to cultivate digital financial inclusion and inclusiveness. With the success of the HKMA's proof of concept for distributed bookkeeping technology in 2017, seven banks in Hong Kong, China decided to commercialize the technology by creating a system called the Hong Kong Trade Finance Platform (HKTFP) to digitalize and share trade documents, automate processes, and reduce risk and fraud. In addition, other traditional financial services in Hong Kong, China are also undergoing digitalization. In the case of stored value payment instruments, for example, thirteen operators and three banks have issued this instrument since the license was issued in 2015. These operators and banks are actively expanding their coverage and introducing new services, including payment of cab fares, e-tickets, e-wallet management for family members, online shopping, remittances, insurance, QR code payments, etc. In the fourth quarter of 2017, the total value of stored value payment instruments exceeded HK\$38.7 billion, up 27.7% year-on-year.

The COVID-19 pandemic has exponentially accelerated the pace of financial digitalization, and APEC members have increased their efforts to implement digital technology solutions to meet citizens' needs and maintain economic operations to varying degrees during the crisis. Many governments have accelerated the development or adoption of electronic payments, including digital information-sharing platforms, e-commerce, and digital payment systems. For example, in 2021, Thailand extended the link between its PromptPay and Singapore's Paynow platforms for digital payments, allowing bank customers to transfer funds easily between the two economies. In addition, Thailand launched digital personal loan programs and digital factoring ecosystem development projects to promote economic growth. To enhance end-user services, the Philippine Central Bank collaborated with the Asian Development Bank to migrate Cantilan Bank's central banking system to the cloud via a two-phase digital transformation pilot program. India provided citizens with loan applications and bank payments through a digital platform.

In the post-Pandemic era, the strategic focus of most APEC members is on economic recovery and sustainable development. In this regard, the integration of digital technology and financial services is essential for the promoting of financial inclusion and economic growth while ensuring data security and privacy protection. The APEC Leaders' Declaration has identified digital transformation as a key aspect of economic recovery in the post-Pandemic era and has listed "innovation and digitalization" as one of the core pillars of the APEC Putrajaya Vision 2040. It is anticipated that future APEC financial cooperation will evolve around digital transformation, particularly expanding digital infrastructure and supporting the digitalization of MSMEs, in order to promote balanced, inclusive, sustainable, innovative, and secure economic growth in the Asia-Pacific region.

2.2 Inclusive Financial Cooperation

The concept of inclusive finance was first mentioned at the 2009 G20 Leaders Summit, where a declaration on inclusive finance was issued, promising to improve financial services for the poor. In the same year, the APEC Finance Ministers' Meeting strongly welcomed the expansion of the G20 agenda from resolving the global crisis to achieving a more balanced and sustainable growth pattern, and committed to pursuing inclusive and broad-based economic growth. Inclusive finance primarily focuses on providing financial services to under-served and vulnerable groups in society, with the ultimate goal of enabling them to access economic opportunities, improve their standard of living, and reduce poverty. Financial education, consumer protection, and financial inclusivity are the focal points of inclusive finance.

APEC launched the Financial Ministers' Process (FMP) primarily to promote financial inclusiveness, aimed at improving financial literacy and increasing access to financial services for disadvantaged groups in society, including enhancing opportunities for women to access financial services, improving financial awareness

and knowledge among impoverished households, and expanding access to finance for small and medium-sized enterprises. In 2015, the FMP initiated the Cebu Action Plan (CAP), which featured inclusive finance as a specific action under the plan. In 2017, the APEC Economic, Financial, and Social Inclusion Action Plan was approved by APEC Leaders with financial inclusiveness becoming a primary pillar of the action plan.

Recognizing the rapid pace of technological change, the FMP began developing capacity-building plans focused on financial innovation and consumer protection in 2018, aimed at sharing experiences and good practices among APEC economies. The FMP also conducted activities to enhance consumer digital financial knowledge and awareness, ensuring consumer protection while promoting financial innovation. APEC helped member economies collect relevant data to assist them in designing strategies, frameworks, and policies to promote financial inclusivity, including researching funding gaps for small and medium-sized enterprises, supporting policies for bank and non-bank financing, enhancing financial knowledge for entrepreneurs and small and medium-sized enterprises, and emphasizing the potential for market-based lending and small and medium-sized enterprise financing mechanisms based on blockchain and initial coin offerings (ICO). As of October 2019, 20 of the 21 APEC member economies had launched official Financial Literacy Programs (FLP) aimed at educating consumers about available financial tools and services to assist them in making informed savings and investment decisions. Fifteen APEC economies had developed domestic inclusive finance strategies with specific goals and action plans. In 2020, APEC launched a survey on retail investors and crypto assets in Malaysia, Vietnam, and the Philippines, helping APEC economies assess the feasibility of crypto assets as an investment and financing tool in the region. APEC will also conduct case studies in the Asia-Pacific region to assess limiting factors for financing issues among women and youth.

One of the ways to expand financial inclusion is through the digitalization of financial services. However, while digitalization brings benefits to inclusive finance, it also faces many challenges in the APEC region, including low utilization of financial technology, the high cost of physical infrastructure required to provide financial services, uncertainty in basic technology, lack of experience among regulatory authorities, businesses and consumers, and issues such as the inability to adapt institutional frameworks and financial education to current fintech developments. One of the key problems that APEC financial cooperation needs to address in the future is how to better achieve inclusive development in the digitalization process.

2.3 Sustainable Financial Cooperation

Sustainable development was first mentioned in 1993 in the Economic Vision Statement issued by APEC economic leaders, which provided the mandate for APEC's work on sustainable development. In the following year, Ministers adopted the Environmental Vision Statement and the APEC Framework of Principles for Integrating Economy and Development, and the APEC Economic Leaders' Action

Declaration, issued in Japan in 1995, reaffirmed the integration of environment and sustainable development into APEC activities. The 1997 Canadian Economic Leaders' Declaration stated: "Achieving sustainable development is at the heart of APEC's mandate". Although the Senior Environmental Officials Group has yet to meet formally since the 1997 Environment Ministers Meeting, as sustainable development is a cross-cutting issue, relevant initiatives have been implemented by relevant sectoral fora, specifically in the area of finance, mainly green finance.

Financial institutions, governments and international organizations all have different views on green finance. According to the German Development Institute (DIE), green finance should include three elements: green investment, financial services provided by public green policy implementation, and a green financial system that supports green investment. The International Finance Corporation (IFC) further subdivided the targets of green investment into carbon capture and storage, energy efficiency, environmental protection, renewable energy, green transportation, waste treatment and water resources. In the previous period, green finance was marked by banks conducting risky environmental assessments and issuing green loans. Diversified financial products, including green bonds, green indices, and green insurance, have developed rapidly in response to the increased emphasis on sustainable economic development. Meanwhile, the green financing capacity of financial institutions has gradually increased, and international cooperation in green finance has achieved leapfrog development. However, relative to the severe environmental challenges and the demand for green financing, the global supply of green financing is still insufficient, and the financial resources surrendered to the green sector still cannot meet the huge demand. Statistics show that less than 10% of bank loans are clearly defined as green loans, bonds with green labels account for less than 1% of the global bond market, and green infrastructure assets also make up less than 1% of global institutional investors' portfolios.

Green finance has grown rapidly in recent years as more and more institutional investors and funds incorporate various corporate social responsibility (CSR) and environmental, social and governance (ESG) into investment programs. With the push for the UN Sustainable Development Goals (SDG), ESG finance has become an important focus for financial industry associations, multilateral institutions, governments and regulators. At the 2020 Dialogue, APEC finance ministers welcomed ABAC's recommendations on ESG finance. ABAC called for an inclusive process for developing global standards, frameworks, principles and best practices. Ministers have agreed to establish the Sustainable Financial Development Network (SFND) platform to promote consistency in ESG financing approaches among member economies and to strengthen the role of the Asia-Pacific region in setting global standards.

3. Challenges to APEC Financial Cooperation

3.1 Increasing regional friction and weakening financial cooperation dynamics

As the international situation continues to change, inter-regional conflicts are gradually being triggered. Events such as the prevalence of trade protectionism and the Russia-Ukraine conflict have profound impacts on the world order and the development of the Asia-Pacific region. The Asia-Pacific region is the epicenter of global power struggles. The rising tensions in the Asia-Pacific region, the severe impact on economic activities, and the failure to adopt a leaders' joint statement at the 2018 APEC Economic Leaders' meeting for the first time will weaken the confidence of the APEC members to engage in cooperation and hinder the smooth implementation of economic and financial cooperation in the APEC region.

3.2 Increasing economic and financial risks caused by the COVID-19 pandemic

With the joint efforts of the international community, the prevention and treatment of the COVID-19 pandemic have been greatly improved, but the pandemic has caused economies around the world to adjust their own monetary, fiscal and trade policies, etc. to mitigate the impact of the pandemic. The pandemic has exacerbated financial market volatility. The financial market turmoil, and shortages of food, energy and other resources have accelerated global inflation, which in turn has had negative impacts on real economic activities. The global financial vulnerability has further given rise to risk aversion operations in global financial markets. Under these conditions, economies, as well as multinational corporations and multinational financial institutions, will re-evaluate and re-price their global investments and re-adjust their asset portfolios. According to data from APEC, the economy in the Asia-Pacific region shrunk by at least 3.7% in 2020, resulting in an output loss of US\$2.9 trillion. The overall recovery process in APEC economies has slowed down. The financial risks in APEC have been increasing.

3.3 Large gap in comprehensive strength and low efficiency in financial cooperation in

APEC

APEC members have different levels of economic development and different development paths. There are obvious gaps in comprehensive strength among APEC members. Since each member has different priorities in financial cooperation, the non-binding and voluntary mechanism design of APEC approach cannot guarantee the implementation of the cooperation consensus achieved in APEC. The non-binding principles, voluntary actions, openness and flexibility, and respect of diversity in the Asia-Pacific region are important reasons why APEC can maintain its vitality. However, in the process of promoting APEC cooperation, the problem of weak internal binding mechanism gradually arose. Developed APEC members with complete financial infrastructure put the focus of their cooperation mostly on financial

innovation, sustainable development and matching rule-making, while developing members focus on equality in economic and financial cooperation as well as improving the level of construction of their financial infrastructure to further enhance their domestic economies.

4. Possible pathways for promoting APEC financial cooperation

4.1 Promoting the use of digital innovation for inclusive and sustainable development of finance in APEC

While the COVID-19 pandemic poses serious challenges to financial cooperation, it also provides important development opportunities for the financial sector to accelerate digital transformation and promote financial inclusion and sustainability. As APEC members come from different income groups and are at different stages in economic, financial and technological development, delicate balancing actions and information sharing are required for APEC to gain a deeper understanding of what initiatives and policy reforms are appropriate and feasible to promote strong economic growth while ensuring a more equitable distribution of economic gains and inclusive and sustainable development. In the future, APEC needs to strengthen experience and model sharing in cross-border electronic payment, internet finance, digital assets and cybersecurity with the help of digital technology, so as to bring a strong engine for comprehensive financial innovation in the APEC region. It should also be noted that digital strategies must always consider the diverse economic environment of their members, not only to assure high-quality economic growth, but also to increase the economic participation of women, youth, the poor, and other socially vulnerable groups. Close attention should be paid to the relevance of digital innovation in a dynamic and uncertain global environment.

4.2 Strengthening regional financial regulatory cooperation in APEC

Firstly, it is essential to take advantage of the APEC platform to coordinate information exchange and dialogue among economies on the basis of extensive participation by APEC members. Secondly, it is necessary to establish a hierarchical framework for financial regulatory cooperation at various levels in order to address the disparities and meet the diverse needs among APEC members. On the one hand, it is needed to fully integrate available resources and mobilize members' enthusiasm to actively cooperate with other member economies. On the other hand, it is important to ensure the fairness of resource allocation in the region, and to broaden the ways of regulatory cooperation in economic, financial and fiscal policies. Finally, according to the actual situation of different financial development of member economies, a differentiated and hierarchical early financial risk warning mechanism should be established.

4.3 Boosting risk management capabilities and advancing regional monetary and fiscal policy cooperation

A pivotal underpinning for APEC's collaboration in fiscal and monetary policy lies in the members' possession of a diverse array of financial instruments for risk dispersion. These tools, particularly those mitigating exchange rate and interest rate risks, serve to enhance the efficacy of monetary policies and to curtail the risks associated with the introduction of new monetary policies and transmission mechanisms. Guided by the commitment to safeguard global economic growth and stable development, APEC members should champion principles of peace, development, freedom, democracy, and mutually beneficial cooperation, and actively foster regional cooperation in monetary and fiscal policies, exploring best practices and working towards the construction of a shared destiny within the Asia-Pacific community.

Part V New developments of APEC's FTAAP agenda- taking the RCEP as an example

Regardless of the challenges either from the global economic uncertainties or from the likely fragmentation of the world trade, FTAAP agenda of APEC need to be ensured remaining on course to achieve its original objectives. The 2014 Beijing Roadmap for APEC's Contribution to the Realization of the FTAAP specified a number of actions to be undertaken including: launching a collective strategic study on issues related to the realization of the FTAAP, enhancing APEC Information Sharing Mechanism on RTAs/FTAs, advancing capacity building activities via CBNi2, accelerating trade liberalization and facilitation efforts at, behind, and across the border, as well as strengthening engagement with the business sector via the ABAC and other direct routes, and intensify efforts to strengthen APEC public-private sector dialogues on the promotion of regional economic growth. At the same time, APEC leaders jointly determined the two possible pathways to realize the FTAAP, which are the RCEP and the CPTPP. Over the years, APEC members have made important progress by working together to promote convergence between the RECP and the CPTPP, as well as their common development.

1. Essentials and major features of the RCEP

When the Regional Comprehensive Economic Partnership Agreement(RCEP)was signed on 15 November 2020, APEC region has acquired a pathway to realize the FTAAP, and the linkage between APEC and ASEAN are further tightened. Tracing back to the launch of RCEP negotiations in 2012, the 8-year negotiations covered areas of tariff reduction, trade facilitation and opening up of services and investment. Over 90 percent of trade in goods among approving member states will be tariff-free, and all member states will significantly reduce restrictions on economic and trade cooperation, facilitate the flow of goods and factors of production, and improve production efficiency. The RCEP came into force on 1 January 2022, by 2 June 2023, RCEP has come into effect among all 15 members.

The RCEP covers about 47% of the world's population, about 32% of global GDP, about 29% of global trade and 32% of global investment. It is the largest free trade agreement in the world. The RCEP Inaugural Ministers' Meeting of September 17, 2022 shared the view that the RCEP could contribute to the region's post-pandemic recovery efforts and to creating a more resilient supply chain.

The RCEP, with ASEAN at the core, consolidates four ASEAN+1 free trade agreements with Australia, New Zealand, China, Japan and South Korea, bringing the three large Northeast Asian economies into the same binding regional trade agreement for the first time. With new liberalisation and trade rules, China, Japan and South

Korea may deepen their economic relationships. The three pillars of the RCEP agreements are market accession, rules, and cooperation. Specifically, the RCEP agreement spans 20 chapters with provisions across trade in goods and services, trade facilitation, rules of origin, investment and intellectual property. The removal of tariffs and customs duties is accompanied by common rules of origin for all tradable goods, which allow originating goods from one member to be considered as originating in a second member. That common rule of origin allows “cumulation”, whereby products originating in one economy can be further processed or added to products originating in another economy, just as if they originated in the second economy.

1.1 Trade in goods and service

The core of RCEP agreements for trade lies in liberalization in goods and services, which is reinforced by provisions to eliminate non-tariff barriers and promote “mutual understanding” between members about customs, technical standards and other regulatory barriers that might otherwise impose administrative or transaction costs on businesses.

Generally speaking, more than 90% of trade in goods in this region will eventually be tariff-free after the agreement enters into force and this means member economies will meet their commitments on free trade of goods in a relatively short period of time. China is committed to implement up to 86% - 90% of its products tariff-free. The final tariff-free items promised by China to the ten ASEAN economies, Australia and New Zealand will eventually account for 90%. With the exception of Lao, Cambodia and Myanmar, the top 3 least developed economies, the other ASEAN members, as well as Australia and New Zealand, have committed roughly the same as or slightly more than that of China's.

In the area of trade in services, the market access level of each member under the RCEP is significantly higher than that of their respective “10 + 1” FTAs and China has reached the highest level in the FTAs it has entered. For instance, China has promised 22 new services sectors market access on the basis of the 100 sectors China has pledged when entering into the WTO and to raise the market access level in 37 sectors. Besides, the RCEP also includes three annexes on financial services, telecommunication services and professional services, which provide more comprehensive and high-level commitments in the relevant areas with cooperative arrangements on mutual recognition of professional qualifications. The RCEP also include a chapter on temporary movement of natural persons aiming to facilitate entry permits, length of stay and visa issuance available for all types of trade and investment activities provided the conditions are met.

According to the assessment of value chain shifting brought by RCEP, lower value-add production in China will be shifted to lower labour-cost economies in Southeast Asia. But more sophisticated manufacturing and higher value-add exports from China should expand under the arrangement. There will be some big adjustments in production and trade over time, which tend to follow where comparative advantage lies across the region and that will boost incomes and economic growth. The trade

gains within the region is conservatively estimated to be in the order of US\$438 billion through to 2030 (Petri and Plummer, 2020). Overall, RCEP will bring about a significant net global benefit.

1.2 Trade facilitation

Regarding trade facilitation measures, the RCEP has greatly simplified customs clearance procedures by adopting efficient management tools such as pre-adjudication, pre-arrival processing and the use of information technology to facilitate customs procedures. The overall management level exceeds that of the Trade Facilitation Agreement (TFA) of WTO. The RCEP promotes the reduction of unnecessary technical barriers on standards recognition, technical regulations and conformity assessment procedures, and to encourage the standardization institution of all parties to strengthen the communications and cooperation on such issues. These measures will enhance the facilitation of intra-regional trade in goods, reduce trade costs and promote the integration of the regional markets.

1.3 Rules of origin (RoO)

According to the existing researches, prior to RCEP, ASEAN had been implementing seven sets of RoO: ATIGA and the six ASEAN+1 FTAs (including that of the ASEAN-Hong Kong, China FTA) and it is for this reason that the ‘noodle bowl’ effect is often mentioned when ASEAN’s FTAs are being discussed. Consolidating and streamlining these RoOs into a single set of rules would not only augur well for supply chains in the region but also encourage greater integration and intra-regional trade. Streamlined RoOs are a major value-added for the RCEP Agreement. The road to this streamlined RoOs, however, was rough, especially for the Sub-working Group on Rules of Origin (SWGRoO), which had to spend long hours and hold additional (inter-sessional) meetings to accomplish its task.

The definition of “RCEP country of origin”, the application of “full cumulation” and the acceptance of “declarations of origin by exporters or producers” (which the CP-TPP has), what constitutes “minimal operations and processes”, and “produced entirely” versus “produced exclusively” in the context of goods that are not wholly produced or obtained are amongst the issues that were hotly debated at the level of the SWGRoO as well as the transnational company(TNC).

Negotiation on the “product-specific rules” (PSRs) was another part of the RoO negotiations that was particularly difficult to conclude, mainly due to the perceived different approaches taken by negotiators on the rules for agriculture products vis-à-vis industrial goods and the way to operationalise the principle that PSRs should be “technically feasible, trade facilitating, and business friendly”. In addition, whilst there was a general agreement that RCEP rules should be more liberal than the ASEAN+1 FTA rules, some negotiators missed the context or the nuance of the term ‘more liberal’, e.g. a certain rule proposed for RCEP may on the surface be more restrictive than that of the ASEAN+1 FTA, but given that there are more participants or

economies to source inputs from compared to a bilateral FTA, then that proposed rule may not be restrictive after all. To accelerate negotiations of PSRs for 5,205 tariff lines (at the HS 6-digit level), a PSR Task Force (TF-PSR) that would negotiate PSRs in parallel with the SWGRoO had to be created. This TF-PSR was amongst the last few sectoral bodies under the TNC to complete its task.

1.4 Investment liberalization

The RCEP members are committed to a high level of investment liberalization. More importantly, the investment chapter includes comprehensive measures for investment protection, investment promotion and investment facilitation. Measures of investment protection, in particular, will significantly enhance the transparency, increase the investors' confidence and further attract investment from within and outside the region.

According to the existing researches, the chapter on investment goes beyond member economies' WTO obligations in several respects yet rejects an Investor State Dispute Settlement (ISDS) mechanism for resolving disputes. Foreign investors will receive most-favoured-nation access and national treatment. China and ASEAN have for the first time signed onto 'negative list' commitments on foreign investment in non-service sectors such as manufacturing and mining (Australian Department of Foreign Affairs and Trade, 2020). RCEP requires those Parties initially utilising positive listing (China, New Zealand and 6 ASEAN Member States – Cambodia, Lao PDR, Myanmar, Philippines, Thailand and Vietnam) to complete their transition to negative list of service schedules no later than 6 years after RCEP's entry into force and no later than 15 years in the case of Cambodia, Laos and Myanmar. The agreement also includes provisions that prevent 'performance requirements' in respect of local content and technology transfer in exchange for market access (Armstrong and Drysdale, 2022).

1.5 Intellectual property

As the chapter with the most contents and biggest coverage in the RCEP, the chapter on intellectual property claims the biggest coverage. RCEP consists of a preamble, 20 chapters, and 4 annexes to the market access commitment table. Among them, the chapter on IP includes 83 clauses, transitional arrangements, and two annexes for technical assistance. Such chapter incorporates most contents of IP in the free trade agreements that China has signed so far. The chapter covers copyright, trademarks, geographical indications, patents, designs, genetic resources, traditional knowledge and folklore, anti-unfair competition, IP enforcement, cooperation, transparency, technical assistance, so as to reduce impediments to trade and investment by promoting deeper economic integration and cooperation through effective and adequate creation, utilization, protection and enforcement of IP. The overall level of protection of intellectual property rights in the region has been enhanced, which helps to promote innovation cooperation and sustainable development in the region.

1.6 E-commerce

Provisions on e-commerce are in favor of a stable connectivity environment for enterprises in e-commerce, thus greatly reducing business costs and transaction costs. Specifically, the first comprehensive high-level plurilateral e-commerce rules outcome in the APEC, covering a wealth of relevant elements to promote e-commerce, mainly includes the promotion of paperless trade, the promotion of electronic authentication and electronic signature, the protection of e-commerce users' personal information, the protection of online consumer rights and interests and other rules. The member parties have reached important consensus on issues such as cross-border information transmission and storage. At the same time, it was stipulated that data flows and information storage could be retained for the purpose of safeguarding national security and public administration.

According to Armstrong and Drysdale (2022), RCEP sets out a framework for the digitalization of trade and addresses cyber security, consumer and privacy concerns in e-commerce. These provisions are similar to those in the CPTPP in that they commit members to the protection of personal data and maintain the current practice of refraining from imposing customs duties on electronic transmission between member states. Although the agreement nominally prohibits members from preventing cross-border data and information flows, there are strong national security and public policy carve-outs for doing so.

2. The RCEP benefits to member economies

With ASEAN at its core, the 15-member RCEP grouping is the first inclusive regional effort at a binding economic agreement. The non-binding and voluntary cooperation that has guided ASEAN integration until now has been a feature of cooperation in APEC as well. That mode of international cooperation has been replicated in the G20. Such a mode of cooperation builds confidence and consensus over time and encourages unilateral action in concert - or concerted unilateralism (Garnaut, 1996).

ASEAN has practiced open regionalism that involves regional cooperation that does not come at the expense of economies outside of the region. The multilateralization of preferential tariffs in the ASEAN Free Trade Agreement (Hill and Menon, 2014) combined with the cooperation process has led to ASEAN's successful integration into the global economy. The trade to GDP ratio for ASEAN is more than 100 per cent, down from a peak of around 130 per cent before the global financial crisis. Europe's trade to GDP ratio is around 64 per cent, while the ratio for North America is below 50 per cent. The outward oriented approach has set intra-regional trade in ASEAN at around 24 per cent, much lower than Europe at 60 per cent or North America at roughly 40 per cent (Pangestu and Armstrong, 2021).

The mode of cooperation in ASEAN has led to a sustainable integration process. There may be frustration about the slow pace of reform and integration within

ASEAN, but the region has made substantial progress in economic opening and reform. The nature of such integration process, which goes only as fast as domestic processes will allow with regional consensus and without supranational authority or hegemony, has promised a mostly sustainable regional integration process that suited the political economy and circumstance of Southeast Asia.

The existing studies show that among the RCEP members, ASEAN economies benefit the most at the macro-economic level, with substantial growth in real GDP, imports & exports and investment. It shows that China, Japan, South Korea, Australia and New Zealand enjoy significant increases in total economic well-being. RCEP's institutional setting within ASEAN will reinforce its inclusive character and encourage its multilateral orientation and role. More immediately, RCEP provides a mechanism for routine economic dialogue among ASEAN and its regional partners.

Some suggest that the tariff reductions summarized by the computable general equilibrium model at the industry level can lead to overestimation and "aggregation bias". Analyzing the changes in the aggregated trade balance at the specific product level, it is believed that the liberalization of RCEP's commodity trade will increase the trade deficit of ASEAN economies (Rashmi Banga et al., 2021). It should be pointed out that the partial equilibrium analysis method used in such studies ignores the effects of ASEAN economies' imports of intermediate goods and capital goods on their participation in the division of labor in the global value chain and their exports, and does not fully consider the expansionary effect of RCEP on trade between member economies and economies outside the region. China, Japan, the European Union, and the United States are the main trading partners of ASEAN, accounting for nearly half of ASEAN's foreign trade. After RCEP came into effect in 2022, although ASEAN's trade deficit with China has increased, the overall trade surplus of ASEAN with China, the United States, Japan, and Europe has significantly increased during the same period of time. From the perspective of changes in trade structure, ASEAN's trade deficit with China in intermediate and capital goods increased in 2022, but its trade surplus with the United States, Japan, and Europe in final consumer goods increased even more. This reflects that, benefited from RCEP cooperation, ASEAN economies can fully utilize the imported intermediate goods and technologies that suit their level of development to expand production and markets globally, thus obtaining greater economic benefits.

Also, the RCEP tariff reduction releases a huge trade creation effect, and enhances the economic welfare level of member economies. The researchers use a relative equilibrium model involving multiple economies and industries, combining input-output tables, current tariffs, the RCEP tariff cuts, and the relevant data of trade, the trade and welfare effects of RCEP were measured after 1,5,10,20 years of RCEP implementation and when all tariffs were reduced to zero among the RCEP members. The result show significant positive spillover to the RCEP members in the future.

Table 1 shows the results:⁴¹

Table 1 Welfare effects of the RCEP tariff elimination on member countries (%)

Members	Real wage	Welfare				
		Total	Volume of trade		Terms of trade	
			RCEP	RoW	RCEP	RoW
Australia	0.3	0.2	0.0	0.0	0.1	0.1
China	0.4	0.4	0.2	0.0	0.1	0.1
Japan	0.3	0.3	0.1	0.0	0.1	0.1
South Korea	2.4	3.3	4.5	-0.5	-0.4	-0.3
New Zealand	0.4	0.5	0.0	0.0	0.3	0.2
ASEAN member						
Brunei	0.5	0.6	0.0	0.0	0.5	0.1
Cambodia	11.9	8.5	5.1	-0.5	1.8	2.1
Indonesia	0.9	0.8	0.4	0.0	0.2	0.2
Malaysia	4.7	1.3	1.2	-0.1	0.1	0.1
Philippines	2.0	0.5	0.4	0.0	0.0	0.1
Singapore	3.5	3.8	0.0	0.0	1.7	2.1
Thailand	3.2	1.8	2.5	-0.2	-0.4	-0.1
Vietnam	5.6	15.6	10.2	-0.4	3.1	2.7

Sectoral contribution to the welfare changes in RCEP members (%)

3. Conclusion

According to the traditional customs union theory and the market integration theory, the formation of the Free Trade Area will provide each member economy with a big regional market beyond the limits of the single domestic market, increased levels of consumption will stimulate producers in all economies to increase investment, increase productive capacity, enhance comparative advantage and market competitiveness and deepen the international division of labour, thus contributing to overall economic growth. In this sense, the role of RCEP is obvious, as is the role of

⁴¹ Regional trade agreement burdens global carbon emissions mitigation, Kailan Tian, Yu Zhang, Yuze Li, Xi Ming, Shangrong Jiang, Hongbo Duan, Cuihong Yang & Shouyang Wang, Published: 20 January 2022
<https://www.nature.com/articles/s41467-022-28004-5>

CPTPP. The world economy is facing challenges of anti-globalization and weak recovery. Every step forward of the FTAAP agenda will undoubtedly provide new impetus for APEC regional cooperation and boost confidence in economic globalization.

Part VI Recommendations

The global environment has changed dramatically since the Covid-19 Pandemic. This report is trying to find out some practical solutions to meet the challenges for our region in the post-Pandemic era. Any win-win cooperation solution will be invaluable, worth our concerted efforts in the world of increasing uncertainties. The key to achieving the goal of cooperation lies in the rationality, wisdom and strong will from all stakeholders, who tend to work together to turn challenges into opportunities. Only in this way can our region become a more vibrant centre of growth to bring greater certainty to the world economic recovery. Based on the analyses in the above five chapters, this part briefly lists the following recommendations for further discussion:

-- The impact of Pandemic has further highlighted the need for economies in the region to unite and cooperate. It is imperative for economies to jointly and comprehensively implement APEC Putrajaya Vision 2040. APEC Putrajaya Vision 2040, dedicating to building an open, dynamic, resilient and peaceful Asia-Pacific community by 2040 for the prosperity of all our people and future generations, is the new guideline adopted by the APEC Economic Leaders in 2020 for the future Asia-Pacific regional cooperation after the Bogor Goal. It is important to take the new vision to chart the future of the Asia-Pacific region.

-- It is recommended to strengthen cooperation on industrial and supply chains and accelerate the regional economic integration by implementing FTAs/RTAs and promoting the work of FTAAP. In the face of the re-layout of the global industrial and supply chains, the importance of regional industrial and supply chain cooperation has further emerged, and an efficient and complementary division of labor system and industrial cooperation should be formed to foster a big regional market of greater openness. During the critical period, it's important for economies in the region to be recommitted to open regionalism, multilateralism and globalization, to hold the policy of free and open trade and investment, fight against trade protectionism, and carry forward trade and invest facilitation.

--It is also important to widen its horizon as has been ever done to take efforts to keep global industrial and supply chains stable and smooth, and inject strong dynamics into the global economy. It has been realized that compatibility between regional integration and globalization needs to be achieved. No single economy can produce the whole set of activities facilitated by the global value chains(GVCs). GVCs and their primary clusters are very sticky due to high fixed costs and immense economies of scale. A supply chain which is secure, stable, smooth, efficient, open, inclusive, and mutually beneficial is the surest path to security, and greater trade integration should be on every economies' agenda. There is a strong awareness that greater resilience to supply chain and demand shocks cannot be achieved by being entirely "self-sufficient".

--Member economies need to conduct deeper cooperation on new economic forms such as digital economy, green economy, BCG economy and digital finance to seize the opportunities in the latest round of technological revolution and industrial transformation and promote innovative inclusive and sustainable growth. The APEC Leaders' Declaration of 2020 has identified digital transformation as a key aspect of economic recovery in the post-Pandemic era and has listed "innovation and digitalization" as one of the core pillars of the APEC Putrajaya Vision 2040. It is imperative to address the digital divide so that it does not hinder inclusive development of the region. As for green economy in dealing with the worsening environmental problems and fighting against climate change, the goal of green and low-carbon development and a clean and beautiful Asia-Pacific region must be prioritized, which will definitely keep the latest industrial transformation on the right track. While promoting cooperation in new economic forms, further study and discussions should be carried out on how to avoid new gaps the new economic forms might bring about and their impacts on current economic and social system.