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Advancing Free Trade
for Asia-Pacific **Prosperity**

APEC REGIONAL TRENDS ANALYSIS

APEC Policy Support Unit | May 2020

- What Goes Around Comes Around: Pivoting to a Circular Economy
- Uncertainty Tests APEC's Resilience amid COVID-19

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KEY ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
FOMC	Federal Open Market Committee (United States)
FDI	foreign direct investment
GDP	gross domestic product
IMF	International Monetary Fund
NEER	nominal effective exchange rate
OECD	Organisation for Economic Co-operation and Development
PSU	Policy Support Unit (APEC)
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

KEY MESSAGES

I. What Goes Around Comes Around: Pivoting to a Circular Economy

- The COVID-19 pandemic has highlighted the world's interconnectedness, showing how a virus can quickly circle the globe and how policy decisions made years ago can affect us now. This applies to waste as well: the waste we throw away has a tendency of coming back in our air, water and food, directly affecting our livelihoods, economy and health.

- The traditional model of economic production follows a linear pattern: resources are gathered, processed and consumed; byproducts are disposed as waste and do not re-enter the productive chain. A more efficient system would ensure that consumed resources are brought back to a state of reusability, so that waste is minimised.

- One such system that minimises waste and optimises resource use is the circular economy model, where reuse, repurposing and recycling of materials are built into production and logistics. In this model, waste is an opportunity.

- Rethinking business models in terms of the circular economy presents opportunities for efficiency, innovation and sustainability, for example:
  - *Sharing platforms* facilitate access to and shared use of underutilised products.
  - *Product as a service* sells the usage of a product instead of the product itself.
  - *Circular supplies* represents a model for developing components that are reusable and recyclable at the end of a product's life.
  - *Product life extension* prolongs the useful life of a product through improved product design and long-term maintenance.
  - *Resource recovery* captures byproducts and waste in manufacturing such that they can be used in other production processes.

- Firms applying circular economy principles have shown their ability to address short-term supply shortages while reducing waste. During the COVID-19 pandemic, firms applied the circular supplies, product life extension, and resource recovery models to quickly produce urgently needed medical supplies such as face masks and personal protective equipment.

- Adopting circular economy principles on a larger scale will have global implications. Highly interlinked global supply chains will necessitate collaboration and cooperation across multiple actors in the supply chain. Likewise, specialisation will render new opportunities for businesses in the refurbishing, repairing and recycling industries.

- Regional cooperation, and APEC in particular, has an important role to play in facilitating the transition to a circular economy. Some areas that APEC can work on are encouraging the standardisation of processes, technologies and materials involved in the circular economy; disseminating information about the circular economy; and elevating circular economy-related discussions to a higher level.

II. Uncertainty Tests APEC's Resilience amid COVID-19

- Economic and trade growth in the APEC region has been slowing down in 2019, even before the onset of the COVID-19 pandemic. The region's GDP growth slowed down to 3.6 percent in 2019 from 4.2 percent in 2018, due to uncertainty arising largely from persistent trade and technology tensions.

- A trading environment weakened by tensions, tariff measures and other trade restrictions has resulted in significant contractions in the volume and value of merchandise trade. Growth in the volume of merchandise exports was substantially lower in 2019 at 0.6 percent compared to 4.3 percent in 2018, while the value of merchandise exports contracted by 1.9 percent in 2019 from a growth of 8.9 percent in 2018.

- The APEC region became the epicentre of the COVID-19 pandemic when it struck, infecting more than 5.4 million people worldwide as of 25 May 2020, almost half of that number from the APEC region.

- The COVID-19 pandemic is a health and economic crisis of unprecedented proportions, prompting economies across the globe to impose containment measures and bringing economic activity to a near-standstill. The severity of the pandemic as well as extreme uncertainty as to its duration and lingering economic effects have led to the projection of a global economic contraction of 3.0 percent in 2020.

- Mirroring the downward direction of the global economy, the APEC region is expected to contract by 2.7 percent in 2020, equivalent to an estimated output loss of USD 2.1 trillion. This is worse than the near-zero growth recorded amid the 2008–2009 global financial crisis.

- A global economic rebound is forecasted for 2021, with the APEC region growing by 6.3 percent. This rebound hinges on the containment of the pandemic by the second quarter and the effectiveness of economic stimulus measures to support economic recovery.

- Getting back on the path of economic recovery post-pandemic requires a coordinated approach that could only be achieved through regional cooperation. APEC as a region needs to bolster health systems, improve social protection, exercise prudent fiscal management, and maintain monetary stability to be able to deploy emergency measures during episodes of crisis.

- APEC also needs to enhance regional cooperation mechanisms to facilitate the free flow of information and the supply of essential products as well as to implement coordinated stimulus measures as needed. This has been emphasised by the APEC Ministers Responsible for Trade when they directed the Senior Officials to develop a coordinated strategy for collecting and sharing information on policy actions and economic measures implemented by APEC economies to respond to the challenges brought about by the pandemic.

- Achieving economic growth that is sustainable and inclusive remains paramount, but as the COVID-19 pandemic has taught the world, preparedness in the face of any crisis, pandemic or shock is equally important. Toward this end, regional cooperation remains crucial in boosting health and economic resilience to prepare for the next pandemic.

1 WHAT GOES AROUND COMES AROUND: PIVOTING TO A CIRCULAR ECONOMY [1]

1.1 INTRODUCTION

The Earth is a thermodynamically closed system where matter is cycled between the atmosphere, hydrosphere and lithosphere.[2] In such a system, what goes around comes around: the water we drink was once inside a trilobite, while the coal for our power plants once stood as mighty conifers. Even waste has a way of coming around.

The direct impact of waste on livelihoods and the economy are well known and self-evident, but the waste we throw away is also coming around, including in our food. For example, a discarded plastic bottle could end up in one of the garbage patches in the Pacific,[3] where it is consumed by marine animals and eventually enter the human food system. Chemical waste has a more palpable impact: mercury from industrial waste has made its way into fatty fish such as salmon and swordfish,[4] resulting in women being advised to limit their consumption of fatty fish during pregnancy.[5]

Indeed, producing waste in a closed system is not efficient. An efficient closed system ensures that consumed resources are brought back to a state of reusability: the water and food cycles are examples of how resources are conserved in the natural world. However, traditional models of human economic production do not follow a cyclical pattern but a linear one: resources are gathered, processed and consumed; byproducts are disposed as waste and do not re-enter the productive chain. This production model is unsustainable as it is impossible to produce an infinite number of goods with the finite amount of resources on the planet. So long as production continues to heavily rely on natural resources without

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[1] Prepared by Satvinderjit Kaur Singh, Jason Carlo O. Carranceja and Emmanuel A. San Andres, APEC Policy Support Unit (PSU).

[2] A thermodynamically closed system is one where matter is kept in the system but energy is allowed to enter or exit. An isolated system is one where both energy and matter are kept within the system. Earth is considered a closed system as matter is kept within the planet (except for occasional meteorite impacts or satellite launches, which are negligible in terms of mass relative to the Earth) while energy, in the form of heat from the Sun, is allowed to enter and exit. For a discussion of thermodynamic systems in the context of the Earth sciences, see Ian J. Smalley and Claudio Vita-Finzi, "The Concept of 'System' in the Earth Sciences, Particularly Geomorphology," *GSA Bulletin* 80, no. 8 (1 August 1969): 1591–4, https://doi.org/10.1130/0016-7606(1969)80[1591:TCOSIT]2.0.CO;2; Garth W. Paltridge, "Climate and Thermodynamic Systems of Maximum Dissipation," *Nature* 279 (1979): 630–1, https://www.nature.com/articles/279630a0.

[3] US Department of Commerce: National Oceanic and Atmospheric Administration, "Garbage Patches: What and Where Are Garbage Patches?" 11 July 2013, https://marinedebris.noaa.gov/info/patch.html.

[4] US Environmental Protection Agency, "Mercury Study Report to Congress Volume III: Fate and Transport of Mercury in the Environment" (December 1997), http://www.epa.gov/ttn/oarpg/t3/reports/volume3.pdf; Jane M. Hightower and Dan Moore, "Mercury Levels in High-End Consumers of Fish," *Environmental Health Perspectives* 111, no. 4 (1 April 2003): 604–8, https://doi.org/10.1289/ehp.5837.

[5] Xue Fei et al., "Maternal Fish Consumption, Mercury Levels, and Risk of Preterm Delivery," *Environmental Health Perspectives* 115, no. 1 (1 January 2007): 42–7, https://doi.org/10.1289/ehp.9329; Sharon K. Sagiv et al., "Prenatal Exposure to Mercury and Fish Consumption during Pregnancy and Attention-Deficit/Hyperactivity Disorder-Related Behavior in Children," *Archives of Pediatrics & Adolescent Medicine* 166, no. 12 (1 December 2012): 1123–31, https://doi.org/10.1001/archpediatrics.2012.1286.

considering their reusability and sustainability, natural resource depletion and waste accumulation will eventually constrain economic growth.

Recently, firms and economies have been contemplating a shift to a circular economy model that minimises or eliminates waste production.[6] A circular economy is a

> regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing and narrowing material and energy loops … through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.[7]

The system ensures that consumed resources are brought back to a state of reusability and can re-enter the productive chain, resulting in minimal resources ever leaving the system (see Table 1.1). Rather than thinking about how to utilise waste after generating it, a circular economy model reduces resource intensiveness and considers byproducts of production and consumption as potential resources, working out the logistics of making them economically productive at the outset.

Table 1.1 The 9R framework of the circular economy

		Strategy	Examples
R0	**Refuse**	Avoid the use of raw materials by abandoning the function of a product	Avoid packaging where possible
R1	**Rethink**	Make the use of a product more intensive	Shared use of products like vehicles, washing machines
R2	**Reduce**	Consume less raw materials or increase production efficiency	Buy fewer consumer products, build well-insulated houses to reduce energy consumption for heating
R3	**Reuse**	Use discarded products that are still in good condition and fulfil their original function	Buy secondhand goods, return packaging to retailer for reuse
R4	**Repair**	Repair a defective product so that it can be used for its original function	Repair defective part of an electronic product instead of buying a new product
R5	**Refurbish**	Redesign and restore an old product	Refurbish an electronic product by replacing the old parts with new ones
R6	**Remanufacture**	Reuse functional discarded parts to manufacture new product with the same function	Use functional parts of an old laptop to produce a new laptop
R7	**Repurpose**	Reuse functional discarded parts to manufacture a new product with a different function	Use functional part of a laptop to manufacture a digital fan
R8	**Recycle**	Process materials to attain the same or a lower quality of the material	Recycle PET bottles to attain PET pellets
R9	**Recover**	Incinerate leftover material and recover energy	Use heat from combustion to drive generators to produce electricity

Source: Adapted from Julian Kirchherr, Denise Reike and Marko Hekkert, "Conceptualizing the Circular Economy: An Analysis of 114 Definitions," *Resources, Conservation and Recycling* (December 2017), https://doi.org/10.1016/j.resconrec.2017.09.005.

[6] For a discussion of the circular economy in the context of APEC, see Satvinderjit Kaur Singh, "Circular Economy: Don't Let Waste Go to Waste" (Singapore: APEC, January 2020), https://www.apec.org/Publications/2020/01/Circular-Economy---Dont-Let-Waste-Go-to-Waste.

[7] Martin Geissdoerfer et al., "The Circular Economy – A New Sustainability Paradigm?" *Journal of Cleaner Production* 143 (February 2017): 757–68, https://doi.org/10.1016/j.jclepro.2016.12.048.

Rethinking business models in terms of the circular economy has presented opportunities for efficiency, innovation and sustainability. Firms applying a circular economy model can be categorised into five broad categories: sharing platforms, product as a service, circular supplies, product life extension, and resource recovery.[8]

1.2 BUSINESS MODELS FOR A CIRCULAR ECONOMY

Business models that assist the transition to a circular economy are practised on both the consumption and production sides. Models that optimise resource use on the consumers' end promote the concept of collaborative consumption, defined by Botsman and Rogers as 'traditional sharing, bartering, lending, trading, renting, gifting, and swapping, redefined through technology and peer communities'.[9] The concept of collaborative consumption is seen in firms that practice business models like sharing platforms and product as a service (PaaS).

On the production side, businesses have facilitated the transition to a circular economy by finding ways to make production more efficient and sustainable. According to the Organisation for Economic Co-operation and Development (OECD), three main strategies are useful in transforming production processes: [10]

- Closing material loops – using waste as a resource through product reuse and recycling
- Extending material loops – creating more durable products to reduce demand for new goods
- Narrowing material loops – improving the efficiency of resource utilisation to reduce generation of waste.

The concept of closing material loops can be seen in the practice of circular supplies, which involves developing products that are designed to be fed back into the production and consumption cycle. Extending material loops is reflected through product life extension, which involves creating more durable products with longer lifespans. Finally, narrowing material loops is implemented by businesses that find ways to minimise wastage in the production cycle by making use of manufacturing byproducts and waste.

1.2.1 Sharing platforms

Businesses engaged in sharing platforms promote the efficient use of existing resources by facilitating access to and shared use of underutilised products. Shared use allows individuals to access resources without the need to buy their own, hence reducing the demand to make more of such products while expanding their utilisation. Libraries are one of the most traditional examples of a sharing platform. Laundromats are another. Some

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[8] Peter Lacy, Justin Keeble and Robert McNamara, "Circular Advantage: Innovative Business Models and Technologies to Create Value in a World without Limits to Growth" (Accenture Strategy, 2014), https://www.accenture.com/t20150523t053139__w__/us-en/_acnmedia/accenture/conversion-assets/dotcom/documents/global/pdf/strategy_6/accenture-circular-advantage-innovative-business-models-technologies-value-growth.pdf; Robert Bark et al., "Supporting the Circular Economy Transition: The Role of the Financial Sector in the Netherlands" (Oliver Wyman, 2017), https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2017/sep/CircularEconomy_web.pdf.

[9] Rachel Botsman and Roo Rogers, *What's Mine Is Yours: The Rise of Collaborative Consumption* (New York: HarperCollins, 2010), 15.

[10] Andrew McCarthy, Rob Dellink and Ruben Bibas, "The Macroeconomics of the Circular Economy Transition: A Critical Review of Modelling Approaches" (OECD Environment Working Papers, 18 April 2018, https://doi.org/10.1787/af983f9a-en.

industries have adopted rentals as their business model. For example, Bike Santiago expands public transportation options through bike sharing, while co-living and co-working space providers like Hmlet and Gorilla Space create arrangements for people to share limited living and working spaces, reducing demand for real estate.

Sharing platforms have also leveraged information and communications technology (ICT) to facilitate sharing of physical resources and services. Ride-hailing platforms like Didi, Uber and Grab match a passenger with drivers or other passengers, allowing people to share transportation options. Rentzi has taken sharing further by providing an online platform for people to advertise any item they want to rent out, whether it be cars, clothes, kitchen appliances or hardware equipment.

1.2.2 Product as a service

Another business model that optimises consumption is one that offers a product as a service (PaaS). PaaS focuses on maximising the usage derived from a product rather than the number of physical units of a product sold. For example, instead of selling ownership of DVDs, light bulbs and plane engines, businesses sell access to the entertainment media, number of light hours and length of distance travelled derived from these products. This incentivises firms to build products that are more durable and flexible for future maintenance and upgrades. Unlike sharing platforms, clients of PaaS subscribe to a service from the seller, which means that they would have access to the services on demand.

PaaS contributes to the circular economy on both the consumer's and producer's end. On the consumer's side, PaaS could reduce demand for more physical goods as businesses find novel ways of fulfilling the demand. Netflix and Spotify digitalised their video and music content, increasing the spread of entertainment media but also eliminating the need for physical CDs and DVDs. Moreover, they provide a way to make media content non-rival, allowing people to simultaneously access them without depriving other subscribers of access to the same content.

PaaS also improves production as it incentivises businesses to develop longer-lasting products. This can extend the usable life of products, hence tempering the demand for more of such goods. For example, light bulb manufacturer Philips provides lighting-as-a-service to clients such as airports. Under this model, Philips sells lighting services to its clients by installing and operating proprietary lamps at its clients' facilities, while maintaining ownership over the light bulbs. This is a win-win solution for Philips and its clients: clients will no longer have to do their lighting maintenance themselves, while Philips can collect data on product usage and focus on extending the life cycle of its products.

1.2.3 Circular supplies

Businesses have implemented the idea of circular supplies by designing products that are recyclable and reusable. Waste can be repurposed; for example, empty pasta sauce bottles could be used as pen holders, while old fabric could be stitched into bags and purses. Some large companies have expressed interest in supporting initiatives focused on reuse. Since plastic is one of the most common and problematic forms of waste, companies have

focused efforts on reducing such waste.[11] Procter & Gamble and Unilever collaborated with TerraCycle to establish Loop, an online shopping platform that provides reusable packaging for products ranging from food to cosmetics. Customers make a one-time purchase of a reusable container for the product of their choice. This container is later returned to the manufacturers and subsequently treated, cleaned and refilled. The refilled containers can then be disseminated back to other customers.

A similar concept is practised in packaging-free stores. These stores typically sell products stored in huge containers with dispensers, and customers are expected to bring their own containers to procure the products. Packaging-free stores contribute to the circular economy as they mitigate the need for single-use packaging and empower consumers to purchase exactly how much they need, allowing them to reduce waste on their end.[12] Repurposing and recycling products have also proven valuable amid the shortages experienced due to COVID-19 (Box 1.1).

Box 1.1 COVID-19 and the circular economy

To contain the ongoing COVID-19 pandemic, many economies have imposed lockdowns that have led to the temporary closure of firms in sectors such as aviation, logistics and manufacturing. Meanwhile, some exporters of medical products such as face masks and other personal protective equipment (PPE) have imposed export bans and other restrictions to ensure domestic supply.[13] The constrained supply coupled with increased demand due to the pandemic has inadvertently led to shortages of critical medical supplies needed in the battle against COVID-19.

In this context, firms applying circular economy principles have shown their ability to address short-term supply shortages while reducing waste. Businesses are helping fill these shortages by adopting innovative and sustainable practices to produce PPE and other medical equipment. Moreover, the innovations that originate from the ongoing crisis can be applied to other economic sectors in the future.

Firms applying circular economy practices have been able to redirect their production resources toward producing necessary medical equipment. For example, some producers are using machines developed by Precious Plastic, an open-source hardware plastic recycling initiative, to turn recycled plastic into face shields and masks.[14] The machines are capable of producing PPE 75 times faster than 3D printers. Several European

[11] Laura Parker, "Beach Clean-up Study Shows Global Scope of Plastic Pollution," *National Geographic*, 10 October 2018, https://www.nationalgeographic.com/environment/2018/10/greenpeace-beach-cleanup-report-highlights-ocean-plastic-problem/.
[12] Elisa F. Beitzen-Heineke, Nazmiye Balta-Ozkan and Hendrik Reefke, "The Prospects of Zero-Packaging Grocery Stores to Improve the Social and Environmental Impacts of the Food Supply Chain," *Journal of Cleaner Production* 140 (1 January 2017): 1528–41, https://doi.org/10.1016/j.jclepro.2016.09.227.
[13] World Customs Organization, "List of National Legislation of Countries that Adopted Temporary Export Restrictions on Certain Categories of Critical Medical Supplies in Response to COVID-19," http://www.wcoomd.org/en/topics/facilitation/activities-and-programmes/natural-disaster/list-of-countries-coronavirus.aspx.
[14] India Block, "Recycled Plastic Turned into Face Shields for Coronavirus Pandemic," *Dezeen*, 8 April 2020, https://www.dezeen.com/2020/04/08/precious-plastic-coronavirus-recycled-face-shields-respirator-masks-handles/.

economies are now using these machines to supplement declining supplies. Since the machines expose plastics to temperatures over 200 degrees Celsius, the recycled plastics are sterilised in the process. This also allows the plastic from used equipment to be cleaned, shredded and recycled in the machines for future production. Similarly, Nike is redirecting recycled material meant for the production of Nike Air soles into the production of PPE.[15]

Other businesses have adopted innovative ways to adapt their production processes and embrace circular practices. A Minneapolis-based textile producer has shifted its production to making PPE gear with the use of upcycled scrap fabrics.[16] Batelle, a non-profit institute engaged in scientific research, developed a technology that can decontaminate N95 masks using vaporised hydrogen peroxide.[17] The technology received authorisation for use from the American Food and Drug Administration at the end of March 2020 and is now being used in several hospitals in the United States. The novel technology enables masks to be decontaminated 20 times before affecting its quality and has provided a safe, longer-lasting alternative to single-use masks. All these efforts will help bridge shortages during the current pandemic and are likely to continue to boost recycling efforts even after the pandemic has subsided.

Businesses will benefit from adopting similar innovations in their production processes. Raw material prices are expected to increase during a pandemic, and since raw material costs make up a large part of total costs, businesses stand to profit significantly from becoming more circular.[18] Moreover, businesses using reusable materials to manufacture PPE can benefit from the trade of scraps and reusable materials.

The current pandemic should not be viewed as a speed bump in businesses' and economies' pursuit of sustainability and circularity. Rather, it provides opportunities to use innovation to adapt to current resource constraints in a sustainable manner.

1.2.4 Product life extension

Product life extension is another strategy to support the transition to a circular economy. It entails efforts to prolong the useful life of an item to reduce the demand for a new product. Some industries have been doing this for a long time. For example, an automobile is typically a long-term, high-cost investment, which, if maintained properly, lasts for several decades. Some companies offer lifetime warranties and repair commitments to make their

[15] Sheena Butler-Young, "How Nike Retooled Its Supply Chain in Two Weeks to Make High-Tech Face Masks," *Footwear News*, 21 April 2020, https://footwearnews.com/2020/business/technology/nike-face-masks-production-coronavirus-1202970542/.

[16] "Airtex Group l Acme Made Shift Manufacturing to PPE," *Furniture Today*, 22 April 2020, https://www.furnituretoday.com/covid-19-and-home-furnishings-industry/airtex-grouplacme-made-shift-manufacturing-to-ppe/.

[17] Saabira Chaudhuri, "Coronavirus Prompts Hospitals to Find Ways to Reuse Masks Amid Shortages," *Wall Street Journal*, 31 March 2020, sec. Business, https://www.wsj.com/articles/coronavirus-prompts-hospitals-to-find-ways-to-reuse-masks-amid-shortages-11585647000.

[18] Astrid Wynne, "After the Crisis, Let's Use Technology to Move towards a Circular Economy," *Data Center Dynamics*, 30 March 2020, https://www.datacenterdynamics.com/en/opinions/after-crisis-lets-use-technology-move-towards-circular-economy/.

products last longer. Patagonia offers repair services for their products to encourage clients to repair old items instead of replacing them with new ones.

Building upgradable products is another way to promote product life extension. The electronics industry generates large amounts of electronic waste (e-waste), which is exacerbated by the fast turnover of gadgets due to obsolescence. To address this, companies such as LG and Google are investing in research on modular phones. The hardware of these phones would be upgradable and repairable, negating the need to replace the entire device, thereby reducing e-waste.

Products with longer lifespans can in turn aid the strengthening of the resale market, or the secondhand economy. Online thrift store thredUp has projected that the secondhand apparel market would double from USD 24 billion to USD 51 billion, and that as much as one-third of the clothes in closets in the US will be composed of secondhand apparel by 2033.[19] Given the projected high uptake of secondhand clothes, greater focus on quality fabrics can be both profitable for businesses and sustainable for the environment. Technology can also support trade in secondhand goods: e-commerce sites like MercadoLibre and Carousell are providing new avenues for people and businesses to trade secondhand items.

1.2.5 Resource recovery

Resource recovery reduces waste by utilising manufacturing byproducts from other production processes. Some companies have attempted to maximise resource recovery by adopting zero-waste manufacturing as an ethos for their processes. For example, Dignity Coconuts has observed that many firms that utilise coconuts typically just use the water or oil of a coconut and leave up to 80 percent of the fruit to waste.[20] This is extremely wasteful as the various parts of the coconut can be used for a myriad of things: old stems and leaves can be turned into fertiliser; the husks and fibres can be used for upholstery; and the wood of the coconut tree can be used for furniture and construction. To address this, Dignity Coconuts reached out to communities to train them on how to process the different parts of the coconut to make value-added products.

The concept of resource recovery does not have to be constrained to the same industry. For example, Nike captures waste in other sectors and incorporates it into their production processes: plastic waste from single-use packaging such as plastic bottles can be processed into polyester fabric, which can be used in textile manufacturing. In 2018, 75 percent of all shoes and apparels produced by Nike contained some form of recycled material.[21]

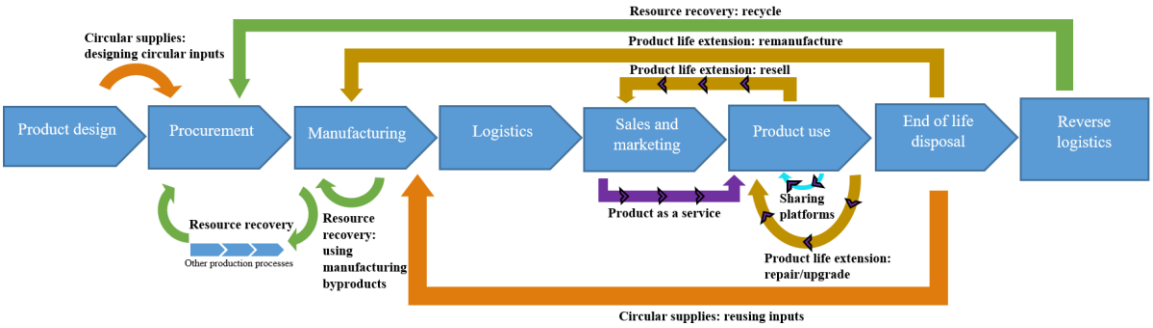
[19] thredUp, "2019 Fashion Resale Market and Trend Report," 2019, https://www.thredup.com/resale.
[20] Dignity Coconuts, "Dignity Coconuts," 2016, https://dignitycoconuts.com.
[21] Nike, "Nike's Latest Sustainable Innovations and Environmental Impact," Nike News, 2018, https://news.nike.com/news/sustainable-innovation-air-bag-manufacture.

1.3 CLOSING THE LOOP

The five business models fit along different parts of the value chain, absorbing byproducts in some parts of the value chain and reinserting them back into the economy, thereby contributing to the circularity of the value chain (Figure 1.1). The circular economy has great potential to stimulate the economy by providing new trading and business opportunities.

These opportunities are not just limited to the local context. While some models in the circular economy like sharing platforms allow for more efficient use of resources in a locale, other business opportunities like resource recovery may be more efficient if economies could trade production byproducts with other economies that have the specialisations to process them. Similarly, international trade can help facilitate other business models like product life extension in the sourcing of parts necessary to repair or upgrade products, as well as in supporting wider trade of secondhand goods. As such, there is scope to introduce policies that enable the uptake of business models that promote the circular economy at a regional level.

Figure 1.1 Integrating circular economy models



Source: Adapted from Mirjam Bani and Marieke Blom, "Rethinking the Road to the Circular Economy," (January 2020), https://think.ing.com/uploads/reports/Rethinking_the_road_to_the_circular_economy_FINAL_RB1.pdf.

1.4 POLICIES FOR AN INTERNATIONAL CIRCULAR ECONOMY

The circular economy is dependent on international trade, with some economies and the OECD even going as far as to consider trade a fundamental aspect of the circular economy.[22] There are two reasons for this: interconnectedness and economies of scale. In today's highly globalised and dependent world economy, global supply and value chains are deeply interlinked. A majority of products are made up of intermediate parts sourced from other economies.[23] According to the World Investment Report by the United Nations Conference on Trade and Development (UNCTAD), approximately 60 percent of global

[22] Confederation of Danish Industry et al., "Position Paper: Nordic Approach to Circular Economy" (October 2019), https://ek.fi/wp-content/uploads/Nordic-position-paper-circular-economy-10-2019-1.pdf; Shardul Agrawala and Shunta Yamaguchi, "International Trade and the Transition to a Circular Economy" (OECD, October 2018), https://www.oecd.org/environment/waste/policy-highlights-international-trade-and-the-transition-to-a-circular-economy.pdf.

[23] Deborah Kay Elms and Patrick Low, eds, *Global Value Chains in a Changing World* (Geneva: World Trade Organization, 2013).

trade in 2012 involved intermediate goods and services.[24] As a result, the capacity of a business or industry to embrace circularity will depend on the ability of its partners to abide by the same principles of circularity.

The complex interdependence of international supply chains can present upfront costs to firms embracing circular principles. However, this can be overcome through efficiency and gains in goodwill. An increasing number of multinational businesses are pledging only to work with suppliers that abide by social and environmental standards.[25] A study by EY finds supply chain sustainability to be a critical consideration for firms, with many businesses likely to transition to sustainable procurement within the next 10 years.[26] The global ramifications of this transition will be significant as the increased calls for sustainability will translate into opportunities for pursuing sustainable development in other economies.[27] As trade in sustainable goods and services grows, some economies have strengthened their standards to support these industries, requiring their trading partners to adopt similar standards as well. In light of the deep connections between trade networks and the shift in business standards and expectations toward sustainability, it is worthwhile for economies and businesses to consider how to incorporate circularity in their business models.

The second consideration is the need for scale. At various stages of the circular economy, there is a need for experts and technologies specialising in refurbishing, repurposing or recycling used goods, or recovering energy after all other options have been exhausted. At the economy level, the costs involved in building these capabilities may be significant due to the lack of scale and the specialisations needed.[28] Trade provides business opportunities by enabling economies to use the specialisations and innovations available in other economies and by providing them access to a larger market to benefit from economies of scale. For example, economies that are manufacturing hubs are more capable of efficiently using recycled goods in production processes.[29] Similarly, economies with more technologically savvy industries might be better able to repurpose a part of a used product in the development of another. The circular economy does not only provide global opportunities for trade in goods but also services. Economies with a robust supply of talents and skills, such as in the ICT sector, can assist digitally enabled businesses such as sharing platforms by providing the necessary ICT skills.

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[24] United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 2013: Global Value Chains: Investment and Trade for Development* (New York: UN, 2013).

[25] Verónica H. Villena and Dennis A. Gioia, "A More Sustainable Supply Chain," *Harvard Business Review*, 1 March 2020, https://hbr.org/2020/03/a-more-sustainable-supply-chain.

[26] EY, "The State of Sustainable Supply Chains: Building Responsible and Resilient Supply Chains" (EY, 2016), https://www.ey.com/Publication/vwLUAssets/EY-building-responsible-and-resilient-supply-chains/$FILE/EY-building-responsible-and-resilient-supply-chains.pdf.

[27] Marianne Kettunen, Susanna Gionfra and Misty Monteville, "EU Circular Economy and Trade: Improving Policy Coherence for Sustainable Development" (Brussels/London: Institute for European Environmental Policy, 2019), https://ieep.eu/uploads/articles/attachments/f560794d-c411-4895-8ae9-910c65548f33/EU%20trade,%20CE%20and%20sustainable%20development%20(IEEP%202019)%20FINAL.pdf?v=63741577228.

[28] Bark et al., "Supporting the Circular Economy Transition: The Role of the Financial Sector in the Netherlands."

[29] Kettunen, Gionfra and Monteville, "EU Circular Economy and Trade."

Regional cooperation and policy coordination can help economies and firms to capitalise on the opportunities in a circular economy. The remainder of this section discusses some of the policy solutions that arise from the discussion above.

1.4.1 Develop standards and definitions

An often-discussed policy gap that hinders the implementation of circular economy principles is the lack of international standards and definitions on the processes and materials involved.[30] The lack of globally accepted definitions of waste and reusable materials impedes the adoption of circularity in a global context as it hinders cooperation. There is a further gap in identifying and harmonising the processes necessary to transform waste into a secondary raw material of a certain quality. Regulations on the processing and trading of waste cannot be more urgent, given the newly imposed bans on the trade of waste by several economies owing to the import of poor-quality waste.

Similarly, economies aiming to improve circularity will benefit from adopting global recyclability standards and eco-labelling schemes that harmonise waste standards and treatment practices.[31] Such standards and labels verify the absence of hazardous materials and allow products to be recycled or reused anywhere. This will increase trust across economies and lead to more trade in intermediate and recycled products, hence supporting the development of a circular economy.

In addition to the need to benchmark the quality of waste for repurposing, there is a need to liberalise the trade of reusable materials as well as goods and innovations that promote circularity.[32] Numerous free trade agreements (FTAs) promote the liberalisation of environmental goods and services, but these may need to be revised from time to time given the level and pace of innovations in sustainability. APEC endorsed a list of 54 environmental goods and services in 2012 for trade liberalisation;[33] revisions to the list could be necessary to help keep up with the needs of a circular economy.

The APEC Sub-Committee on Standards and Conformance could collaborate with APEC fora such as the Ocean and Fisheries Working Group, the Energy Working Group and the Policy Partnership on Food Security to understand waste intensity and discuss standards in these industries. This will help to identify commonalities, and assist policy formation and trade in recyclable materials and waste. APEC could also discuss the development of regional certifications pertaining to quality assurance similar to APEC's Privacy Recognition for Processors (PRP) certification, which certifies a processor's ability to effectively implement privacy requirements.[34]

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[30] Kettunen, Gionfra and Monteville.
[31] Kettunen, Gionfra and Monteville.
[32] Kettunen, Gionfra and Monteville.
[33] APEC Committee on Trade and Investment, "APEC Cuts Environmental Goods Tariffs," 28 January 2016, https://www.apec.org/Press/News-Releases/2016/0128_EG.
[34] Infocomm Media Development Authority Singapore, "APEC Privacy Recognition for Processors (PRP) Certification," accessed 12 March 2020, http://www.imda.gov.sg/programme-listing/Privacy-Recognition-for-Processors-Certification.

1.4.2 Incentivise sustainable practices

To encourage adoption of circular practices, there is a need to develop policies that incentivise businesses to think about the sustainability of their product or service at all points along the supply chain and across the whole duration of the product life cycle. Policies that could encourage this thinking are the extended producer responsibility (EPR) scheme as well as sustainability certificates and labels. The EPR scheme places the responsibility on producers to manage the disposal or recycling of their products at the end of their lifespans. Under this scheme, manufacturers are required to contribute to the cost of collecting, recycling and disposing products at the end of their use. Such schemes create an incentive for better product designs.[35] For example, manufacturers of heavy and bulky goods like mattresses may consider innovative designs that are more lasting or lighter, making them easier to recycle. Some economies, France and Japan for example, have already introduced EPR schemes across a wide range of industries, from electronics to packaging, footwear and furniture. [36] Overall, this new degree of accountability incentivises manufacturers to take more serious steps in reducing their environmental impact.

The EPR scheme has proven to be effective in increasing recycling rates. Japan implemented an EPR scheme for packaging in 1995, and saw the rate of containers and packaging being recycled rise by 27 percent between 1997 and 2000.[37] EPR also reduced public and overall spending on waste management and increased product innovation. France reduced their public spending on waste treatment by 15 percent by 2015. Japanese PET bottle producers also reduced the use of materials that are difficult to recycle.[38]

Sustainability certificates or eco-labels incentivise businesses to comply with sustainability standards so that they can use them in their marketing campaigns. This is especially effective in markets where sustainability concerns are deepening among consumers, such as the tourism and cosmetic industries.[39] Recognising this, several companies have opened sustainable lines of products, among them, Nike Considered and Nissan's LEAF.

1.4.3 Reflect environmental costs in pricing

Environmentally conscious behaviour can also be encouraged through price signals and financial incentives to improve product designs. In a market economy, prices are supposed to reflect the full costs of consumption and production, but market prices often do not capture negative externalities (e.g., pollution or waste), leading to inefficiency. Making

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[35] McCarthy, Dellink and Bibas, "The Macroeconomics of the Circular Economy Transition."

[36] Nick Oettinger, "Why Extended Producer Responsibility Holds the Key to a Circular Economy," *Environment Journal* (blog), 30 April 2019, https://environmentjournal.online/articles/why-extended-producer-responsibility-holds-the-key-to-a-circular-economy/.

[37] Organisation for Economic Co-operation and Development (OECD), "The State of Play on Extended Producer Responsibility (EPR): Opportunities and Challenges" (*Global Forum on Environment: Promoting Sustainable Materials Management through Extended Producer Responsibility (EPR)*, Tokyo, Japan, 2001), https://doi.org/10.1787/9789264189867-en.

[38] OECD.

[39] Sara Bom et al., "A Step Forward on Sustainability in the Cosmetics Industry: A Review," *Journal of Cleaner Production* 225 (10 July 2019): 270–90, https://doi.org/10.1016/j.jclepro.2019.03.255; Fabian Weber, "Demand for Sustainable Tourism," in *Corporate Sustainability and Responsibility in Tourism: A Transformative Concept*, ed. Dagmar Lund-Durlacher et al. (Cham: Springer International Publishing, 2019), 265–81, https://doi.org/10.1007/978-3-030-15624-4_16.

consumers and producers feel the negative impacts of pollution and waste through price signals – that is, by raising the relative price of unsustainable goods – is therefore an efficiency-enhancing move.[40] It will also incentivise innovative activity that improves sustainability. For example, an increase in the price of hazardous materials such as mercury played a part in the evolution of televisions from liquid crystal displays (LCDs) to light-emitting diodes (LEDs) that are less reliant on hazardous materials.[41]

Further, taxing unsustainable activities can be effective in encouraging green practices.[42] The taxes will drive producers to seek or develop lower-cost environmentally friendly solutions. The numerous taxes imposed on natural resource industries such as crude oil and natural gas are an example of this policy option.[43] The taxes affect the companies consuming the non-renewable resources as well, which could encourage them to change their product content or design.

For products that are especially damaging to the environment, a ban may be more effective. For example, the US and UK have banned the sale of cosmetics containing microbeads due to their impact on the marine environment.[44] Several other economies are in the process of implementing similar bans.

APEC could hold discussions and conduct studies on the impacts of these policies and identify other ways to incentivise greater use of sustainable products. Incentives to develop greener alternatives could also be encouraged to allow for a seamless shift in production processes when bans or taxes are imposed on polluting materials.

1.4.4 Encourage collaboration

Collaboration between stakeholders along the value chain is key to the realisation of a circular economy.[45] As profits in the circular economy are defined by improving resource efficiency, economies are incentivised to find ways to reduce resource use, retain the value of goods and materials by using them for as long as possible, and minimise waste and other discarded byproducts in the production cycle. In such a setting, producers and suppliers would have to collaborate within and between supply chains to ensure optimal resource efficiency.[46]

The opportunity for collaboration between companies and industries is significant in this setting. For example, there needs to be an understanding on the use of waste streams between companies that exchange waste with one another. Cooperation will make it easier to determine the necessary infrastructure, regulate quality and maintain databases on

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[40] Mirjam Bani and Marieke Blom, "Rethinking the Road to the Circular Economy" (January 2020), https://think.ing.com/uploads/reports/Rethinking_the_road_to_the_circular_economy_FINAL_RB1.pdf.
[41] Oettinger, "Why Extended Producer Responsibility Holds the Key to a Circular Economy."
[42] Bani and Blom, "Rethinking the Road to the Circular Economy."
[43] United Nations, *United Nations Handbook on Selected Issues for Taxation of the Extractive Industries by Developing Countries* (New York: UN, 2019), https://doi.org/10.18356/4632a533-en.
[44] Michael Gove, "World Leading Microbeads Ban Comes into Force," 19 June 2018, https://www.gov.uk/government/news/world-leading-microbeads-ban-comes-into-force; US Food and Drug Administration, "The Microbead-Free Waters Act: FAQs," 4 February 2020, http://www.fda.gov/cosmetics/cosmetics-laws-regulations/microbead-free-waters-act-faqs.
[45] Bani and Blom, "Rethinking the Road to the Circular Economy."
[46] Bani and Blom.

material flows.[47] One of the earliest successful examples of industrial collaboration with a circular approach is the Kalundborg Symbiosis in Denmark, where trust and open communication were key to success.[48] Stakeholders could also collaborate to develop objectives that are cross-sectoral rather than industry-specific; for example, it would be more effective to work toward carbon-neutral cities rather than carbon-neutral cars.[49]

APEC provides a platform for the private sector and policymakers to collaborate toward a common goal. Discussions on best practices and lessons learnt from experiences with industrial collaboration could also be helpful in providing guidance to economies that are interested in developing such industrial symbioses.

1.4.5 Educate and disseminate knowledge

In order to mainstream the circular economy, there is a pressing need to disseminate knowledge about the concept and develop 'nudging' policies.[50] Several economies have launched green campaigns to prevent the use of single-use plastics, or to encourage residents to sort their waste and dispose it into the correct bins. Educational campaigns can also be developed to increase awareness about the circular economy or give people ideas on how to recycle or reuse a product for some other purpose within their household. The European Union has organised conferences on reducing plastic use, and developed platforms to discuss circular economy finance and innovation ideas.[51] Nudging policies aim to alter people's behaviours without limiting their options or significantly altering the financial incentives.[52] Some of these policies include placing green footprint stickers to point the way to a garbage bin or branding a clothes-washing detergent with a 30^{o} symbol to encourage washing at 30 degrees Celsius rather than 40 or 60.[53]

These efforts can be supported by introducing sustainability courses in the core curriculum of schools. In Finland, the Finnish Innovation Fund is cooperating with schools at all education levels to incorporate circular economy thinking and create professionals that will build a sustainable future.[54] In the Netherlands, sustainability courses have been included in the curriculum. Further, the GreenDeal Schools initiative provides schools with subsidies to make improvements that advance sustainability policies, like using green energy and maintaining better air quality.[55]

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[47] Het Groene Brein, "What Is Collaboration in the Value Chain?" *Kenniskaarten - Het Groene Brein* (blog), accessed 12 March 2020, https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/ce-collaboration-value-chain/.
[48] Kalundborg Symbiosis, "Kalundborg Symbiosis – The World's First Industrial Symbiosis," accessed 12 March 2020, http://www.symbiosis.dk/en/.
[49] Bani and Blom, "Rethinking the Road to the Circular Economy."
[50] Bani and Blom.
[51] Bark et al., "Supporting the Circular Economy Transition: The Role of the Financial Sector in the Netherlands."
[52] Katrin Recke, "The Potential of Nudging for Greening Economic Governance at EU and National Level," https://ec.europa.eu/environment/integration/green_semester/pdf/07_09_2015/4.%20AIM-%20Potential%20of%20Nudging%20for%20greening%20economic%20governance.pdf.
[53] Recke.
[54] The Finnish Innovation Fund Sitra, "Circular Economy Teaching for All Levels of Education," accessed 12 March 2020, https://www.sitra.fi/en/projects/circular-economy-teaching-levels-education/.
[55] Het Groene Brein, "What Can Primary and Secondary Education Do?" *Kenniskaarten - Het Groene Brein* (blog), accessed 30 April 2020, https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/what-can-primary-and-secondary-education-do/.

APEC, along with other international organisations, can play its part in disseminating knowledge about the circular economy and in encouraging people to adopt circular practices. In 2020, Malaysia as the APEC host economy placed the circular economy under 'Driving Innovative Sustainability', one of its priority pillars. This shows that APEC considers the circular economy to be an important factor in pursuing sustainable development in the region, and is actively seeking ways to improve literacy in and awareness of the circular economy.

1.5 CONCLUSION

We cannot rely on the Earth's natural resources to fuel our growth forever. Such resources are finite and, if not managed sustainably, will run out. Moreover, our production–consumption behaviours generate an ever-increasing amount of waste, contaminating our environment. The continued depletion of the resources on the planet and the increasing waste we generate threaten our future economic growth, and our current health and standards of living.

The circular economy provides one way to transition away from this unsustainable trend by optimising current material use, eliminating waste by design, and regenerating natural systems. A successful transition to the circular economy will need the support of concerted regional efforts to drive quality policy discussions and encourage the adoption of best practices. APEC, as a platform for regional cooperation and an incubator of ideas, can drive these efforts.

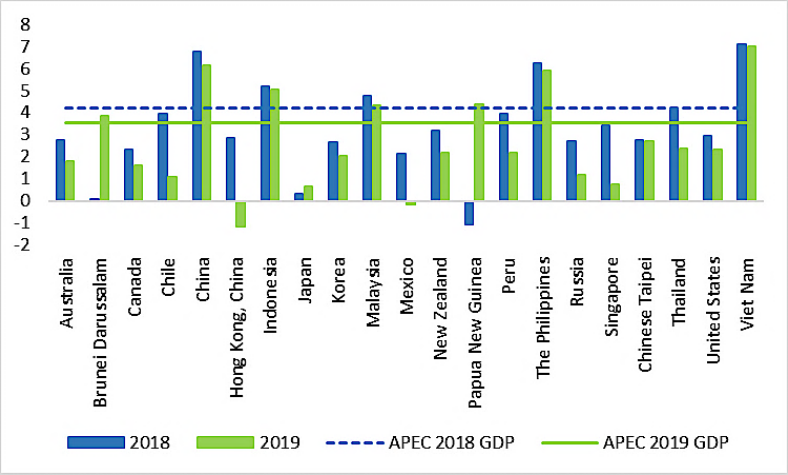
2 UNCERTAINTY TESTS APEC'S RESILIENCE AMID COVID-19[56]

2.1 APEC GDP GROWTH

In 2019, APEC economies had to contend with persistent uncertainty, primarily arising from trade policy pronouncements that have adversely affected trade relations and performance. Technology-related tensions and post-Brexit concerns also contributed to uncertainty, resulting in lacklustre economic activity in 2019 as seen in weaker APEC gross domestic product (GDP) growth of 3.6 percent compared to 4.2 percent in 2018 (Figure 2.1). The majority of APEC economies slowed down in 2019, showing the extent of the dampening impact of uncertainty on economic growth.

The moderation in APEC GDP growth in 2019 does not yet factor in the economic fallout from the COVID-19 pandemic, which has so far infected more 5.4 million people worldwide, with almost half of that number from the APEC region.[57] The pandemic is expected to translate to a contraction in APEC GDP for the whole year of 2020.

Figure 2.1 Real GDP growth (%), 2018 and 2019

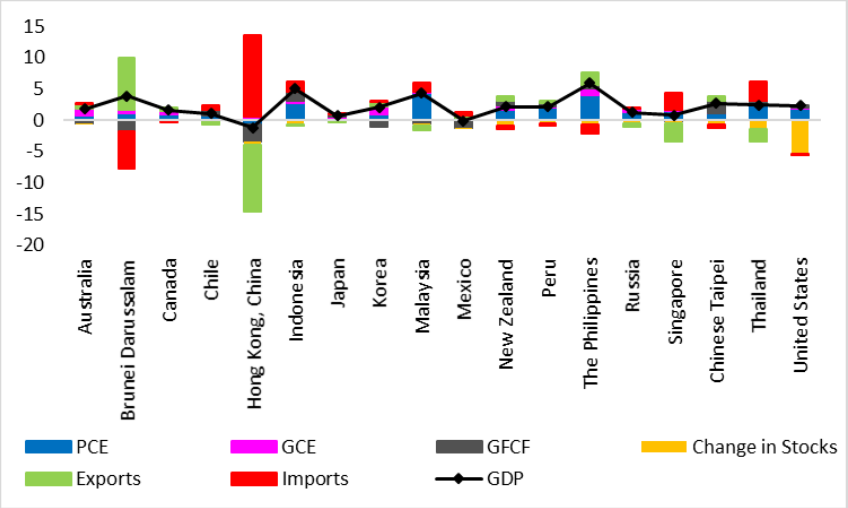


Note: 2019 GDP growth for Papua New Guinea uses estimates from the Bank of Papua New Guinea.
Source: Economy sources; IMF World Economic Outlook (April 2020); APEC PSU staff calculations.

The contribution of household consumption, the region's reliable growth driver, declined in most APEC economies along with trade, with some economies recording trade deficits due to a trading environment weakened by tensions and restrictions (Figure 2.2). Meanwhile, government spending and investments continue to support growth but at lower levels compared to a year ago.

[56] Prepared by Rhea C. Hernando, APEC Policy Support Unit (PSU).
[57] Data as of 25 May 2020, COVID-19 Dashboard by the Center for Systems Science and Engineering at Johns Hopkins University.

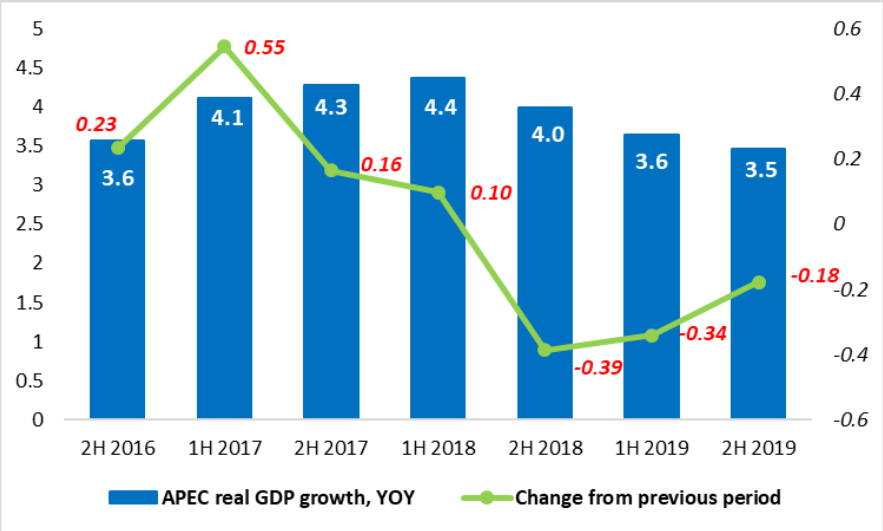
Figure 2.2 Contributions to real GDP growth (%), 2019



PCE=private consumption expenditure; GCE=government consumption expenditure; GFCF=gross fixed capital formation
Note: Data on GDP by expenditures not available for China and Papua New Guinea.
Source: Economy sources; APEC PSU staff calculations.

The rate of the region's economic expansion has continued to moderate from the second half of 2017 when trade-related investigations involving APEC members began, moving to negative territory in the second half of 2018, coinciding with trade tensions escalating with the imposition of tariff measures and countermeasures (Figure 2.3). It remains in negative territory as of the second half of 2019 and will likely see a further drop in the first half of 2020.

Figure 2.3 Semi-annual real GDP growth (%), 2017–2019

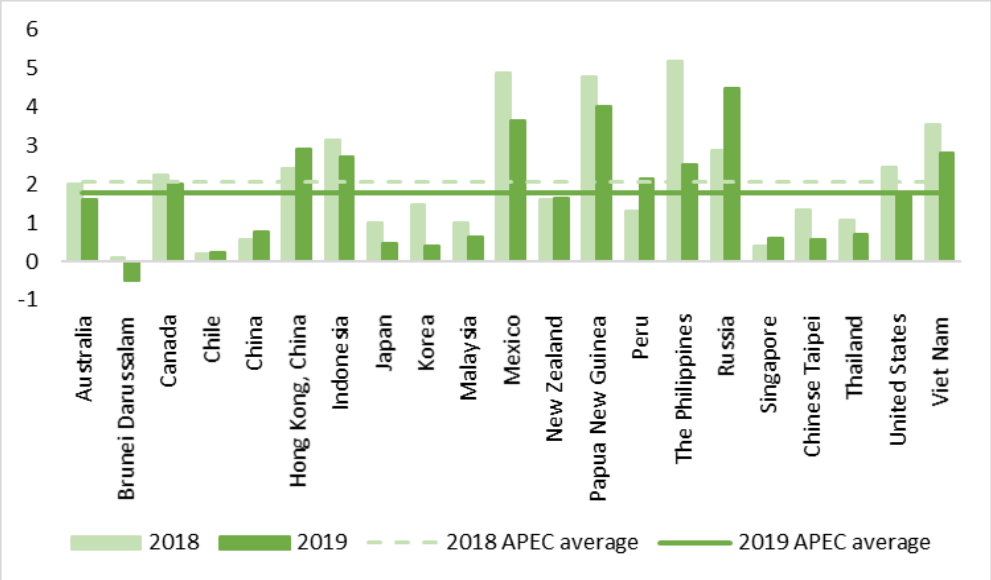


Note: The semi-annual weighted GDP growth rate does not include Papua New Guinea due to unavailability of semestral data.
Source: Economy sources; APEC PSU staff calculations.

2.2 INFLATION AND MONETARY POLICY

Inflation in the APEC region continued to decline, averaging 1.8 percent in 2019 from 2.1 percent in 2018, as prices of major commodities went down (Figure 2.4). Crude oil prices averaged USD 61.4/bbl[58] in 2019 from USD 68.3/bbl in 2018. Prices of some raw materials as well as metals, particularly aluminium and copper, also decreased by around 56 percent between 2018 and 2019.[59]

Figure 2.4 Inflation rate (%), 2018–2019



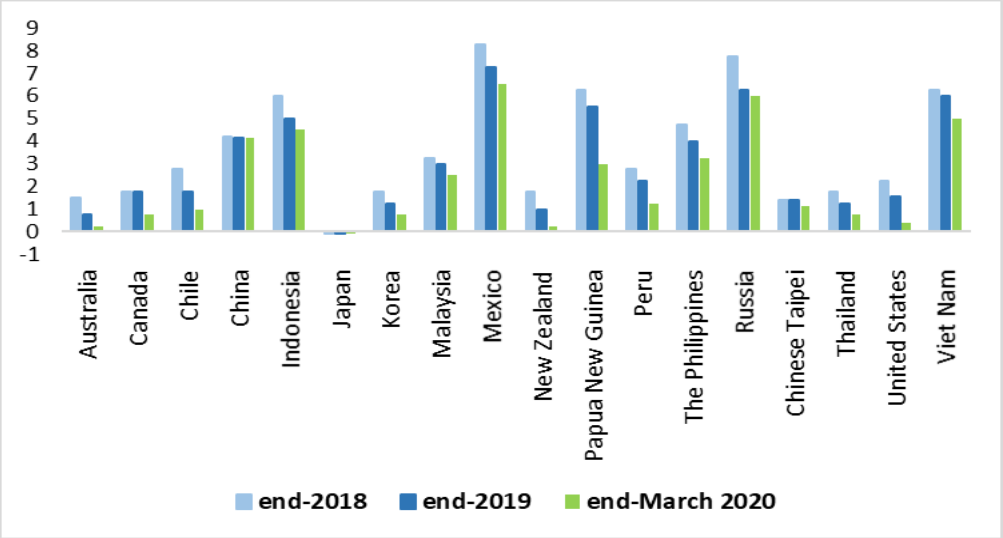
Source: Economy sources; APEC PSU staff calculations.

Muted inflation amid persistent uncertainty prompted the majority of APEC economies to ease their benchmark interest rates in 2019 while the rest maintained their policy stance in order to boost spending (Figure 2.5). Similarly, the Monetary Authority of Singapore signalled a more accommodative monetary policy setting when it adopted a zero percent per annum rate of appreciation of the S$NEER policy band with no change to its width as of its 30 March 2020 meeting.

In a series of unscheduled monetary policy meetings on 3 March and 15 March 2020, the US Federal Open Market Committee (FOMC) cut its target range for the federal funds rate by a cumulative 2 percentage points to 0.25 percent to counter evolving risks from COVID-19 that could influence the US economy's maximum employment and price stability objectives. All other APEC economies mirrored this easing stance, reducing monetary policy rates by 0.5–1 percent as of end-March 2020 to boost liquidity and market confidence amid the adverse impact of the pandemic (Figure 2.5).

[58] Average price of Brent, Dubai, and West Texas Intermediate, equally weighed.
[59] Commodity prices are sourced from the World Bank's Commodities Price Data.

Figure 2.5 Monetary policy rate (%), end-2018, end-2019 and end-March 2020



Note: The monetary policy framework in Brunei Darussalam is based on a currency board system, with the Brunei dollar anchored to the Singapore dollar at par. Hong Kong, China maintains a currency board system pegged against the US dollar. For Singapore, monetary policy is conducted through a trade-weighted exchange rate, which is allowed to fluctuate within a policy band. The operating targets for the S$NEER are expressed in the level, slope and width of the policy band which determine the direction of monetary policy.
Source: Economy sources.

2.3 TRADE PERFORMANCE

Continued trade tensions, aggravated by tariff measures and other actions that restrict the free flow of goods and services, have taken a toll on trade growth. Lower commodity prices, including export goods, as well as the uncertainty in trade policy could have also contributed to the overall lethargy in trade activity in 2019.

Growth in the volume of merchandise exports significantly decreased, at less than 1 percent in 2019 compared to the 4.3 percent growth recorded in 2018 (Figure 2.6). Growth in the volume of merchandise imports turned negative in 2019 after a 4.9 percent expansion in 2018. Meanwhile, growth in the value of merchandise exports and imports reversed to negative in 2019, contracting by 1.9 percent and 2.9 percent, respectively, from the level in 2018 (Figure 2.7).

Figure 2.6 Growth in the volume of merchandise trade (%)

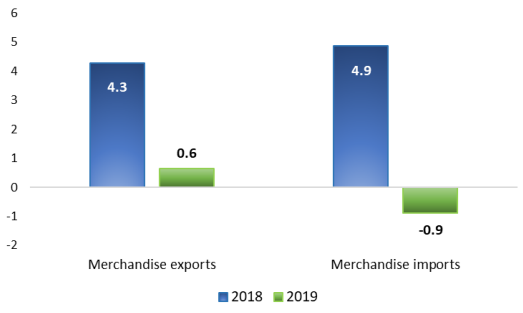
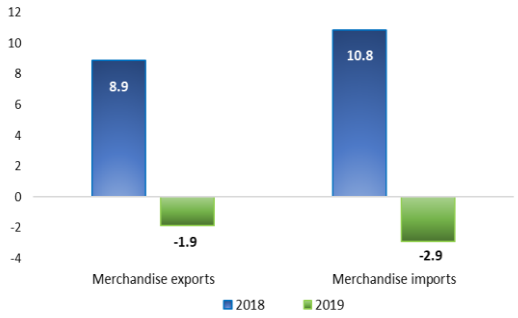


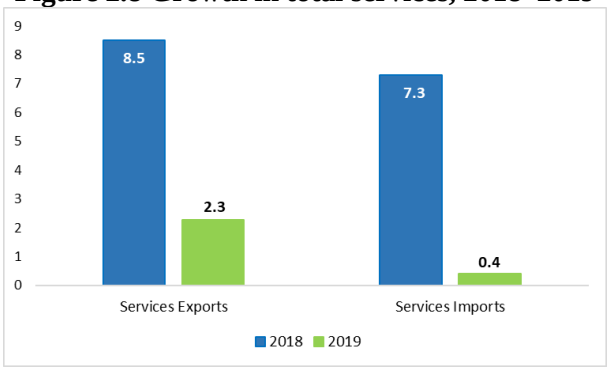
Figure 2.7 Growth in the value of merchandise trade (%)



Note: Due to unavailability of data, APEC average trade volume growth does not include Brunei Darussalam and Papua New Guinea, while APEC average trade value growth does not include Papua New Guinea.
Source: UNCTAD Statistics for trade volume; WTO for trade values; APEC PSU staff calculations.

Merchandise trade performance by the rest of the world (ROW), that is, all other non-APEC economies, moderated more in 2019 compared to the APEC region. For example, compared to APEC, the ROW's value of merchandise exports and imports contracted more in 2019, by as much as 3.8 percent and 2.8 percent, respectively (Table 2.1).

Figure 2.8 Growth in total services, 2018–2019



Source: WTO.

Table 2.1 Value and growth in merchandise trade, 2018–2019

	Value (in billion USD)			Growth (y-o-y, in %)	
	2017	2018	2019	2018	2019
Merchandise Exports					
World	17556	19321	18775	10.1	-2.8
APEC	8796	9577	9398	8.9	-1.9
Rest of the World (ROW)	8760	9744	9377	11.2	-3.8
Merchandise Imports					
World	17870	19700	19140	10.2	-2.8
APEC	8956	9925	9639	10.8	-2.9
ROW	8914	9775	9501	9.7	-2.8
APEC's share of the World (in %)					
Merchandise Exports	50.1	49.6	50.1		
Merchandise Imports	50.1	50.4	50.4		

Source: WTO.

Table 2.2 Value and growth in trade-in-services, 2018–2019

	Value (in billion USD)			Growth (y-o-y, in %)	
	2017	2018	2019	2018	2019
Services Exports					
World	5492.6	5982.9	6101.4	8.9	2.0
APEC	2084.0	2261.3	2312.7	8.5	2.3
Rest of the World (ROW)	3408.6	3721.5	3788.7	9.2	1.8
Services Imports					
World	5309.5	5714.2	5842.9	7.6	2.3
APEC	2153.4	2310.5	2319.7	7.3	0.4
ROW	3156.1	3403.8	3523.2	7.8	3.5
APEC's share of the World (%)					
Services Exports	37.9	37.8	37.9		
Services Imports	40.6	40.4	39.7		

Source: WTO.

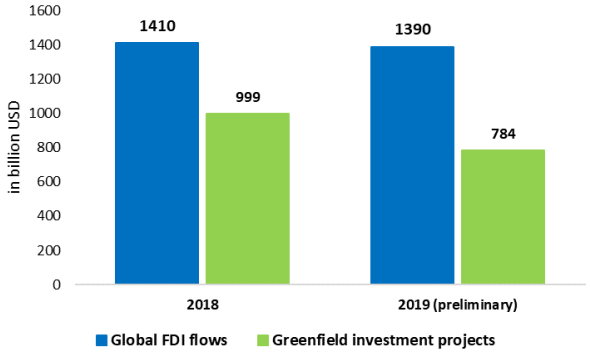
In contrast to merchandise trade, total growth in the APEC region's trade-in-services remained in positive territory in 2019, although at lower levels than in 2018 (Figure 2.8).

Together with the APEC region, the ROW also recorded continued growth in the value of services trade (Table 2.2). The growth observed in trade-in-services globally in 2019 compared to the contraction in trade-in-goods could be largely due to digital technologies that have facilitated access to the global marketplace and to automated service solutions with lower costs and barriers to participation. Other factors also play a role, including demographic trends and rising level of incomes.

2.4 INVESTMENT TRENDS

In terms of global inflows of foreign direct investment (FDI), a preliminary report from the United Nations Conference on Trade and Development (UNCTAD) shows a slight 1 percent decline in global FDI for 2019 to USD 1,390 billion compared to USD 1,410 billion in 2018. The value of announced greenfield investment projects, however, has decreased sharply, by 22 percent to USD 784 billion in 2019 from USD 999 billion in 2018 (Figure 2.9). In addition, the share of greenfield projects in global FDI significantly shrank to about 56 percent in 2019 from 71 percent in 2018. Greenfield investments serve as an indicator of future trends and a barometer of investor expectations.

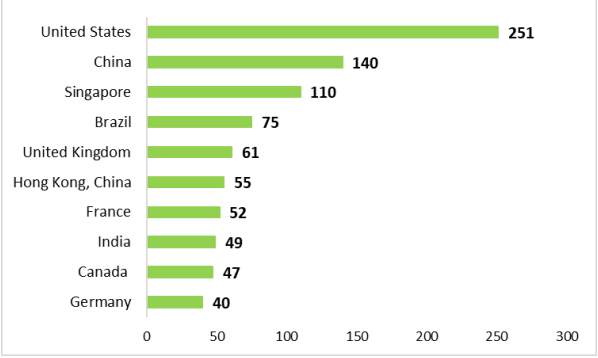
Figure 2.9 Global FDI and greenfield investments (USD billion), 2018–2019



Source: UNCTAD, *Investment Trends Monitor*, no. 33 (20 January 2020).

Half of the top 10 FDI recipients for 2019 were APEC economies, namely, the United States; China; Singapore; Hong Kong, China; and Canada (Figure 2.10). Taken in aggregate, these APEC economies account for an estimated 62 percent of global FDI in 2019.

Figure 2.10 Top 10 FDI hosts, 2019 (USD billion)

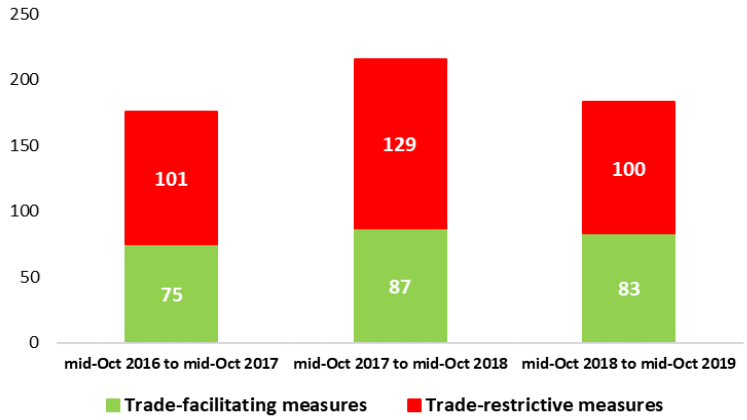


Source: UNCTAD, *Investment Trends Monitor*, no. 33 (20 January 2020).

2.5 TRADE AND INVESTMENT MEASURES

The decline in trade growth is due in large part to an increase in the number of trade-restrictive measures. During the period covering mid-October 2018 to mid-October 2019, measures that restrict trade outnumbered measures that facilitate trade (Figure 2.11). This trend has been going on for quite some time, accelerating during the second half of 2017 and tapering somewhat during the period covered by the latest World Trade Organization (WTO) report.

Figure 2.11 Trade and trade-related measures in APEC (actual number), 2016–2019



Source: WTO, "Overview of Developments in the International Trading Environment, Annual Report by the Director-General" (2017, 2018 and 2019).

Trade-restrictive measures mostly consist of the initiation of anti-dumping, safeguard and countervailing investigations, which together account for 80 percent of total trade-restrictive measures (Table 2.3). The imposition of import tariffs, export duties and other levies make up the remainder of the measures restricting trade.[60]

The onset of the COVID-19 pandemic has highlighted trade measures on goods used to combat the virus. Based on the list compiled by the WTO,[61] 10 APEC member economies have implemented trade and trade-related measures amid the COVID-19 pandemic, which can be generally categorised into: (1) temporary elimination of tariffs and sales taxes for all medical goods, including testing kits and some food products; (2) temporary export ban on either the raw materials needed for the production of medical goods or on final products such as personal protective equipment (PPE), surgical and sanitary masks, and ethyl alcohol; (3) deferment of custom duties, taxes and fees on medical products; and (4) temporary exclusion of certain medical and food products from duties, taxes and fees.

[60] For a complete listing of trade and trade-related measures implemented during the period mid-October 2018 to mid-October 2019, see Annex 1: https://www.apec.org/-/media/Files/AboutUs/PolicySupportUnit/2020/Annex-1-Trade-and-Trade-related-Measures-mid-Oct-2018-to-mid-Oct-2019.docx.

[61] The list, compiled by the WTO from official sources, is not exhaustive. See: https://www.wto.org/english/tratop_e/covid19_e/trade_related_goods_measure_e.htm.

Table 2.3 Trade and trade-related measures in APEC, mid-October 2018 to mid-October 2019

	Number of Measures
Trade-restrictive measures	
Initiation/Resumption of anti-dumping investigation	51
Initiation of countervailing investigation/duties	14
Initiation of safeguard investigation/imposition of safeguard measures	16
Increase/Imposition of import tariffs, export duties, levy rates and taxes	10
Reduction/Elimination of tax rebates	1
Imposition of export/import requirements, quotas, bans, restrictions	3
Other trade-restrictive administrative measures	5
Sub-total: Trade-restrictive measures	***100***
Trade-facilitating measures	
Termination of anti-dumping investigation/duties	33
Termination of countervailing investigation/duties	8
Termination of safeguard investigation/duties	5
Reduction/elimination of export duties/import tariffs and taxes	35
Increase in tax rebates	1
Elimination of import/export ban, quantitative and other restrictions	1
Other trade-facilitating administrative measures	0
Sub-total: Trade-facilitating measures	***83***
Total: Trade and trade-related measures	**183**

Source: WTO, "Overview of Developments in the International Trading Environment, Annual Report by the Director-General, mid-October 2018 to mid-October 2019" (2019).

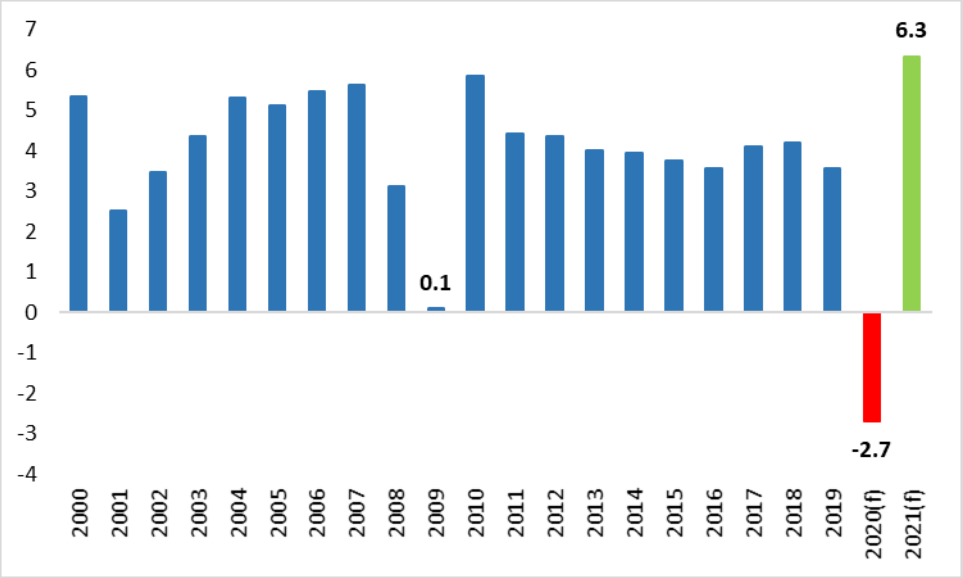
There were only six investment measures implemented by APEC economies who are also G20 members during the period mid-May 2019 to mid-October 2019. Of those, four were measures that could be classified as investor-friendly, including relaxing the rules on foreign exchange quota, and simplifying or clarifying certain procedures to facilitate the entry of FDI.[62]

2.6 NEAR-TERM OUTLOOK, RISKS AND OPPORTUNITIES

The APEC region became the epicentre of the COVID-19 pandemic when it struck in early 2020, infecting more than 2.5 million people in the region as of 25 May 2020. The COVID-19 pandemic, with its rising toll of fatalities, has led to some form of lockdown being imposed in many jurisdictions across the globe. Such lockdowns have brought global economic activity to a near-standstill, significantly reducing production and consumption. The magnitude of the economic fallout is expected to reach unprecedented proportions, with tremendous uncertainty as to the duration of the pandemic, which suggests an economic contraction in 2020. The International Monetary Fund (IMF), under an assumption of pandemic containment by the second quarter and no resurgence in the second half of 2020, projects a global economic contraction of 3.0 percent in 2020. If the pandemic persists over a prolonged period, additional reductions in global output by 3.0 percent in 2020 and 8.0 percent in 2021 could be expected.

[62] For a complete listing of investment measures implemented during the period mid-May 2019 to mid-October 2019, see Annex 2: https://www.apec.org/-/media/Files/AboutUs/PolicySupportUnit/2020/Annex-2-Investment-Measures-mid-May-2019-to-mid-Oct-2019.docx.

Figure 2.12 APEC GDP growth, actual (2000–2019) and projected (2020–2021) (%)



Source: Economy sources; IMF World Economic Outlook (April 2020); APEC PSU staff calculations.

Mirroring the projected contraction in global growth, the APEC region is also anticipated to record an economic contraction of 2.7 percent in 2020, equivalent to an estimated output loss of USD 2.1 trillion (Figure 2.12). This is worse than the near-zero growth recorded amid the 2008–2009 global financial crisis.

The sharp economic slowdown across the globe is highlighted by the significant reversal in GDP projections in a span of just six months. In particular, the APEC Regional Trends Analysis report released in November 2019 projected that the APEC region would continue to grow at relatively robust levels, higher than the rest of the world. However, as of this edition, an economic contraction is expected, with substantial reductions in the 6.2–6.7 percent range compared to the November 2019 forecast (Table 2.4).

Table 2.4 Comparing near-term GDP projections (%)

GDP Projections	as of ARTA-Nov 2019	as of ARTA-May 2020	Difference
2020			
World	3.4	-3.0	-6.4
APEC	3.5	-2.7	-6.2
ROW	3.3	-3.4	-6.7
2021			
World	3.6	5.8	2.2
APEC	3.6	6.3	2.7
ROW	3.5	5.1	1.6

ARTA=APEC Regional Trends Analysis; ROW=rest of the world
Source: Economy sources; IMF World Economic Outlook (April 2020); APEC PSU staff calculations.

Reflecting the significant downgrade in 2020 as the COVID-19 pandemic grounds global economic activity to a near-standstill and supply chains are severely disrupted, the WTO expects world trade to drop substantially, in the 13–32 percent range, in 2020. The wide range reflects the extreme uncertainty regarding the severity and duration of the pandemic. A steeper decline is anticipated for sectors with complex value chains, especially electronics and automotive, while services trade will be also directly affected. Similarly,

the IMF projects trade volume to fall by 11 percent in 2020, before rebounding to 8.4 percent in 2021.

Manufacturing activity is already affected as production stoppages were experienced in the first quarter of 2020 due to inadequate supply of key components as some factories in China stopped operations as early as late January in response to the pandemic. Latest available data on the purchasing manager's index (PMI) indicate a 6 percent contraction in the manufacturing sector for the APEC region as a whole from December 2019 to March 2020.

Estimates by the UNCTAD[63] point to a reduction in global FDI flows by around 30 to 40 percent for the period 2020–2021 from a combination of demand and supply shocks adversely affecting earnings and investment decisions. In particular, supply-side factors such as production stoppages and supply chain disruptions combined with demand shocks from containment measures and other movement restrictions are expected to result in a significant decline in global FDI flows.

The sharp pullback in demand coupled with storage constraints has also negatively affected the prices of oil futures contracts. On 20 April, the price of the West Texas Intermediate oil futures for the May 2020 contract collapsed to negative territory, plunging to as low as USD –38 per barrel for the first time in history, while the futures price of Brent crude oil fell to USD 15 per barrel. The contraction in oil futures prices was recorded amid an earlier announcement by OPEC that it would cut oil production by 9.7 million barrels a day, equivalent to about 10 percent of global output. This signals that reduced oil prices could be expected in the coming months, particularly since the duration of the pandemic is yet to be determined.

Lower oil prices typically have a direct impact on consumer spending. However, in these unusual times when some form of lockdown measure is being implemented across the world, severely scaling back tourism, travel and overall economic activity, reduced oil prices are not expected to boost consumption, at least in the immediate term. As long as uncertainty significantly and negatively feeds into consumer sentiments, demand will remain subdued and the contribution of lower oil prices to economic growth will be muted.

Downside risks have become significant and evidently dominant, owing largely to the tremendous uncertainty brought about by the COVID-19 pandemic. The magnitude of the impact to households and businesses, although yet to be quantified, is nevertheless expected to reach unparalleled levels. The duration of the pandemic remains highly uncertain, with crucial implications for the severity and length of the lockdowns and the impact on economic activity. The duration of the COVID-19 outbreak is also dependent on factors such as the effectiveness of containment measures and the capacity of health systems, which, in turn rest on economy-specific dynamics. And, while the development of treatments and vaccines could help in shortening the duration of the pandemic, this process takes time and costs money.

[63] United Nations Conference on Trade and Development (UNCTAD), "Impact of the COVID-19 Pandemic on Global FDI and GVCs," *Investment Trends Monitor* (Special Issue, March 2020).

The IMF forecasts a global economic rebound of 5.8 percent growth in 2021. Similarly, the APEC region is expected to get back on the recovery track in 2021 with a higher GDP growth of 6.3 percent.

The economic recovery will hinge on the effectiveness of pandemic containment measures, and of economic stimulus measures by governments and central banks to revive businesses, protect incomes and jobs, and fuel economic activity (see Box 2.1).

Box 2.1 Tackling the pandemic through regional cooperation

A health and economic crisis of unprecedented proportions requires unprecedented fiscal, monetary and macroeconomic support to get back on the path of economic recovery as swiftly as possible.

As the pandemic raged, APEC economies raced against the rapid spread of COVID-19 to preserve lives and protect livelihoods. Containment measures in the form of temporary closure of borders, varying forms of lockdown, and other restrictions to ensure physical distancing were implemented. Parallel to these are measures to counter the economic fallout from the pandemic.

Fiscal measures ranging from 1 to 20 percent of GDP were rolled out by all 21 APEC members, complemented by monetary policy measures that saw interest rates declining significantly while liquidity-enhancing mechanisms were deployed rapidly and massively. These measures were aimed at bolstering health systems to augment capacity and supplies while ensuring adequate compensation to health workers; providing direct aid via cash transfers, unemployment insurance and relief packages to households; and giving support to businesses, including micro, small and medium enterprises (MSMEs) through wage subsidies, tax deferrals, loan moratoriums and other forms of financial assistance.

APEC economies have implemented measures corresponding to their respective conditions and needs. However, getting back on the path of economic recovery requires not only a compassionate and coherent policy response, but also a coordinated approach hinged largely on regional cooperation.

Several important lessons and best practices could be shared among APEC economies to increase the region's resilience against any pandemic. This exchange of information and experiences is emphasised by the APEC Ministers Responsible for Trade in their latest statement,[64] which directs the Senior Officials to work together toward developing a strategy for collecting and sharing information on policy actions and economic measures taken to counter the adverse consequences of the pandemic.

All these crucial and credible information could be encapsulated in a pandemic preparedness policy toolkit that identifies policy options, provides planning guidance, and facilitates prevention and mitigation of a pandemic through the conduct of up-to-

[64] See: APEC, "Statement on COVID-19 by APEC Ministers Responsible for Trade," 5 May 2020, https://www.apec.org/Meeting-Papers/Sectoral-Ministerial-Meetings/Trade/2020_trade.

date research and surveillance. For example, a pandemic preparedness checklist could serve as a starting point for economies to discuss and potentially develop a regional pandemic policy toolkit.[65] The checklist would identify a range of actions that economies could consider in preparing for the next pandemic.[66] Central to this checklist is a multisectoral and coordinated approach with specific roles for the government, the private sector and the general community. In addition, credible and timely information is an important component of any pandemic preparedness policy toolkit. Building and enhancing an APEC-wide health database could help in generating informed and well-targeted policy measures.

APEC could also consider increasing its investment in healthcare access and capacity. The COVID-19 pandemic has shown how a public health crisis could quickly overwhelm existing health systems. Data covering the period 2000–2017 show that, on average, the APEC region's public health expenditures have stayed below 5 percent of GDP for almost two decades while household out-of-pocket health expenditures have doubled. And, for every 1,000 people in the region, there are only 4.1 hospital beds, 1.9 physicians, and 3.9 nurses and midwives.

Keeping open the supply chains for medical and food products especially amid a health shock could also be part of the APEC region's commitment going forward. APEC could also leverage technology to boost health initiatives and make global value chains more efficient and resilient, by making use of digital tools such as data analytics, algorithms, and cloud computing, among others.

The immediate policy action that the APEC region could implement is coordinated stimulus measures to reconnect supply chains and re-fuel economic activity by re-energising consumer demand, reviving businesses, especially MSMEs, and rebuilding jobs. These policy stimulus packages should be deployed in a manner that is swift, significant and coordinated. Only in this way could APEC as a regional forum remain resilient and relevant.

Source: Based on the APEC Policy Support Unit, "APEC in the Epicentre of COVID-19" (Policy Brief no. 31, Singapore: APEC, April 2020), https://www.apec.org/Publications/2020/04/APEC-in-the-Epicentre-of-COVID-19.

2.7 CONCLUSION

The world, particularly the APEC region, is facing a crisis that has affected individuals and businesses in all sectors and of various sizes. A crisis that is exceptional in its suddenness and severity should be countered with an arsenal of policy responses that is also exceptional in terms of swiftness, scale and significance. This kind of response could only be provided through global and regional coordination.

[65] See: Denis Hew, "Preparing for the Next Pandemic," blog, Asia-Pacific Economic Cooperation, 27 April 2020, http://www.apec.org/Press/Blogs/2020/0427_COVID.

[66] The draft pandemic preparedness checklist for APEC can be downloaded here: https://www.apec.org/-/media/Files/AboutUs/PolicySupportUnit/2020/Annex 3 Proposed APEC Pandemic Preparedness Checklist.pdf.

In this regard, APEC has an important role to play. Trust and cooperation within a regional platform are crucial in moving toward economic recovery. Coordinated policy responses could translate into: (1) the free flow of medical and food supplies along with the exchange of credible and updated information; (2) improved access to and capacity of health systems, with APEC economies committing to an appropriate level of public health expenditure, cognisant of fiscal space; (3) rebound of business and trade activity with substantial financial assistance across all sectors and sizes of enterprises; and (4) a decisive move toward digitalisation to catalyse economic activity in the region, keeping in mind that the pace and sequence of digital reforms should remain appropriate vis-à-vis economy-specific development conditions.

APEC 2020, a defining moment for APEC as a regional economic platform with the deadline for attaining its Bogor goals of free trade and investment,[67] is at hand. APEC's 21 member economies should come together in solidarity to recalibrate its regional priorities in light of the economic fallout from the COVID-19 pandemic.

The APEC Ministers Responsible for Trade took the first decisive step in tackling the pandemic through regional economic cooperation when they directed the Senior Officials of the 21 member economies to develop a coordinated approach for collecting and sharing information on responses to the pandemic. These responses include policy actions and measures implemented immediately at the onset of the COVID-19 outbreak, fiscal and monetary support to mitigate the adverse economic consequences of containment measures as well as the stimulus packages needed to support the economic recovery.[68] The exchange of information and experiences could help guide APEC in translating economy-specific learnings into best practices for the region as a whole.

The APEC post-2020 vision has become more important than ever. Achieving economic growth that is sustainable and inclusive remains paramount, but as the pandemic has taught the world, preparedness in the face of any crisis, pandemic or shock is equally important. This means bolstering health and social protection systems in the region, as well as exercising prudent fiscal management and maintaining monetary stability to be able to deploy substantial emergency measures during episodes of crisis. This also means enhancing regional cooperation mechanisms to facilitate the free flow of information and the supply of essential products, as well as to implement coordinated stimulus measures as needed. The new APEC vision, therefore, should aim to make the forum relevant by being reflective of the region's changing conditions and needs, including resilience against any crisis, shock or pandemic.

[67] In 1994, APEC leaders gathered in Bogor, Indonesia and committed to achieve free and open trade and investment by 2010 for industrialised economies and by 2020 for developing economies. APEC members agreed to pursue this goal by further reducing barriers to trade and investment and by promoting the free flow of goods, services and capital.

[68] See: APEC, "Statement on COVID-19 by APEC Ministers Responsible for Trade."