Asia-Pacific
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APEC Regional Trends Analysis

APEC's Climate Change Challenge

Toward a Resilient Recovery: Policies Matter

APEC Policy Support Unit • November 2021

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KEY ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
ARTA	APEC Regional Trends Analysis
GDP	gross domestic product
ILO	International Labour Organization
IMF	International Monetary Fund
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
y-o-y	year-on-year

KEY MESSAGES

I. APEC's Climate Change Challenge

- Climate change is an existential threat not only for the APEC region, but for humanity as a whole. The discussion is no longer about how to prevent climate change; the question now is how to keep it within levels that will allow our species to survive on this planet in the long term.

- Climate change comes at a high cost. The losses from the increased frequency and severity of extreme weather are estimated at 7.3 percent of GDP, and the costs are higher for developing economies. Climate change also disproportionately impacts vulnerable populations, including the poor, women and girls, migrants, Indigenous Peoples, and people in rural and remote areas.

- Climate change does not have an upside. There are no net winners, only a lose–lose scenario. Without policy action to address climate change, the APEC region could see losses amount to 18 percent of GDP by mid-century.

- APEC economies lose from climate change, but they contribute to it too. Between 1990 and 2018, the region's greenhouse gas (GHG) emissions increased from 16.5 to 27.8 $GtCO_2$ equivalent. In 2018, the region pumped out 60 percent of the global GHG emissions, even as it accounted for 38 percent of the world's population and 55 percent of its economic output.

- APEC Leaders first mentioned climate change in their 1997 Declaration. Since then, the region has racked up achievements in reforestation, renewable energy, and trade in environmental goods. Moreover, 19 APEC economies have declared commitments to achieve net-zero carbon emissions by 2050 or 2060.

- But this is not nearly enough. If the APEC region is to contribute toward the Paris Agreement of keeping global warming to within 2°C above pre-industrial levels, it would need to collectively reduce net GHG emissions by 3.8 percent per year – an average of 893 $MtCO_2$ equivalent – between 2022 and 2030, and from 2031 further reduce net GHG emissions by 471 $MtCO_2$ equivalent until net zero is achieved by 2070.

- While climate change science can tell us how economies will be damaged by climate change and how much reduction in net emissions is needed to keep global warming to 1.5°C or 2°C, it cannot advise on the political and economic decisions that are needed to make this happen. That goes beyond the realm of scientists, to that of policymakers, who can change the incentive structures and the rules of the economy. There are five essentials to keep in mind:

  – Emphasise action, not just commitments, on climate change.
  – Recognise that tackling climate change requires a holistic approach across a range of areas and issues.

- Ensure that implementation of green policies includes addressing their negative side-effects.
- Prioritise the measurement and analysis of impacts to support effective policy decisions.
- Strengthen global and regional cooperation, because only then can we achieve the challenging targets that the science tells us we have to meet.

II. Toward a Resilient Recovery: Policies Matter

- APEC GDP rebounded to an 8.0 percent growth in the first half of 2021, following a 3.7 percent contraction in the first half of 2020. While coming from a low base, stronger consumption and investment along with sustained government spending fuelled economic activity for the period January–June 2021.

- However, growth among member economies continues to diverge. Some economies were able to rebound relatively fast; for others, their economic recovery remains fragile, hinged largely on vaccine access and rollout.

- In line with strengthening economic activity, APEC saw a broad-based surge in trade, with both the volume and value of merchandise trade recording double-digit growth.

- In the near term, APEC GDP is expected to expand by 6.0 percent in 2021 after declining by 1.8 percent in 2020. Growth is projected to settle at 4.9 percent in 2022 with the anticipated winding down of fiscal and monetary support measures, moderating to 3.2 percent in the medium term.

- Substantial uncertainty surrounds the growth projections, with the Delta variant and virus mutations posing as the biggest threat to economic recovery. The Delta variant has already slowed down economic momentum, with a downgrade in the growth forecast for APEC in 2021, from 6.4 percent in the August 2021 update of the APEC Regional Trends Analysis to the current projection of 6.0 percent.

- Vaccines remain the most effective antidote to the spread of COVID-19 and the emergence of new variants that could prove more dangerous. Economies need to speed up vaccination rollouts and ensure that access to vaccines, therapeutics and related medical supplies are equitable so that no one is left behind in the journey toward recovery.

- Other factors that could weigh on growth include stubborn inflation and a steady climb in global commodity prices. These could trigger an increase in monetary policy rates, squeezing liquidity and credit. The scaling back or withdrawal of massive fiscal support is inevitable, particularly in light of rising government debt from mitigating the fallout from the pandemic. The tightening of monetary, financial and fiscal conditions could dampen consumption and investment activity, putting the economic recovery on fragile ground.

- The pandemic has exacerbated existing economic and social divisions, while also giving rise to a vaccine divide. The unequal access to vaccines needs to be addressed to avoid a two-track recovery, with some able to revive economic activity at a faster and more durable pace while other economies continue to grapple with resurgent infections amid tighter fiscal conditions.

- APEC, along with the global economy, is in uncharted territory, where recovery is underway even amid an ongoing pandemic. There are many hard-earned lessons from the pandemic, central of which is that economic, trade and health policies are intertwined – and that good policies matter.

- These policies are crucial to the delivery of three key priorities: vaccinate as many people as soon as possible; facilitate the flow of medical and food products; and mitigate the economic, social and vaccine divide.

- APEC economies are coming together to commit to good policies to facilitate the free and rapid flow of essential goods such as vaccines, medical supplies, and food and agricultural products in the immediate term. At the same time, the APEC region is looking beyond the pandemic, by discussing and coordinating economic response and recovery initiatives to boost resilience and ensure more inclusive policies while also taking decisive strides to shift toward digital economies.

1 APEC'S CLIMATE CHANGE CHALLENGE[1]

Arctic temperatures and blizzards in Texas. Billowing clouds of orange dust over Beijing. Stifling tropical heat in Moscow. Extreme flooding in New South Wales. Massive monsoon rains over Singapore; drought in Santiago. Hurricanes, typhoons and cyclones; heatwaves and wildfires.

And these were just in 2021.

Climate change is an existential threat not only for the APEC region, but for humanity as a whole. The discussion is no longer about how to prevent climate change; the world has done too little too late for that. The question now is how to keep anthropogenic climate change – that is, climate change due to human activity – within levels that will allow our species to survive on this planet in the long term.

While climate change has happened before – warming after the last Ice Age led to the world as we know now – more recent changes in climate has been directly attributed to human activity starting from the Industrial Revolution, whose cumulative effects led to the gradual but accelerating warming of the planet over the last 50 years.[2] The burning of fossil fuels, such as coal, petroleum and natural gas, releases large quantities of carbon dioxide (CO_2), the most significant contributor to greenhouse gases (GHGs). While GHGs are essential to regulating the planet's temperatures, they can also become a threat if the rate of their accumulation is unsustainable. Since the Industrial Revolution, CO_2 concentrations in the atmosphere have increased by over 48 percent, resulting in a rapid increase in the global temperature.[3]

According to the Sixth Assessment Report published in 2021 by the Intergovernmental Panel on Climate Change (IPCC), Asia has seen an increase in surface temperature in recent years beyond the range measured in 1850–1990. This means heatwaves, wildfires, extreme weather events, and heavy precipitation will be more frequent and intense over much of Asia in the coming years.[4] Australia and New Zealand are already facing increased frequency of extreme fire weather days, and the intensity, frequency and duration of fires are projected to increase.[5] North and Central America have experienced larger temperature changes than the global mean, and climate changes are expected across all regions.[6] While Northwestern South America is expected to experience flooding due to

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[1] Prepared by Emmanuel A. San Andres, Andre Wirjo and Satvinderjit Kaur Singh. The excellent research assistance from Soomin Jun is gratefully acknowledged.
[2] Intergovernmental Panel on Climate Change (IPCC), "Climate Change 2014: Synthesis Report Summary for Policymakers" (IPCC, 2014), https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf
[3] National Aeronautics and Space Administration (NASA), "The Causes of Climate Change," NASA Global Climate Change: Vital Signs of the Planet, accessed 31 August 2021, https://climate.nasa.gov/causes/
[4] IPCC, "Sixth Assessment Report, Working Group I: Regional Fact Sheet – Asia," 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Asia.pdf
[5] IPCC, " Sixth Assessment Report, Working Group I: Regional Fact Sheet – Australasia," 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Australasia.pdf
[6] IPCC, "Sixth Assessment Report, Working Group I: Regional Fact Sheet – North and Central America," 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_North_and_Central_America.pdf

permafrost thawing, droughts and fire weather are on the horizon for Southwestern South America.[7]

Climate change comes at a high cost. According to the World Bank, the losses from the increased frequency and severity of extreme weather are expected to be approximately 7.3 percent of GDP in the case of weak policy action, and the costs are higher for developing economies.[8] Higher sea levels, extreme precipitation and increased likelihood of droughts affect land, rendering it economically unproductive and resulting in output losses. Health-related risks are amplified from climate change due to increased risks of transmitting vector- and water-borne diseases. Higher temperatures reduce productive capacity through reduction in both agricultural yields and labour productivity. Climate change has and will affect APEC economies' financial systems, supply chains and even consumer behaviour. The World Bank finds that physical and transition costs from climate change have already impacted equity and debt instrument payoffs and valuations, and the impacts of climate change on the financial systems of APEC economies will only accelerate.[9]

Climate change disproportionately impacts vulnerable populations, including the poor, women and girls, migrants, Indigenous Peoples, and people in rural and remote areas. Compared to men, women's mortality risk during disasters is 14 times higher, and the impacts are more pronounced for poor women who are more vulnerable to climate-sensitive health risks. In addition, women and girls are prone to facing indirect risks during disasters, including domestic violence and sexual assaults when placed in temporary shelters or camps following a disaster.[10] Indigenous Peoples and those living in rural and remote areas like mountains, deltaic regions and coastal regions are also more likely to suffer from more severe consequences of climate change such as sea level rise, desertification, landslides, fires and loss of biodiversity.[11] Moreover, the poor, who already have limited access to healthcare, social protection, and infrastructure, are more directly impacted by extreme weather effects, disease vectors and economic losses due to climate change.[12] But while the poor are disproportionately affected by climate change, it is the rich who disproportionately contribute to it through consumption: the richest 10 percent of the global population are responsible for 49 percent of carbon emissions, while the poorest 50 percent contribute just 7 percent of emissions.[13]

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[7] IPCC, "Sixth Assessment Report, Working Group I: Regional Fact Sheet – Central and South America," 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Central_and_South_America.pdf

[8] World Bank, "Climate Change in APEC: Assessing Risks, Preparing Financial Markets, and Mobilizing Institutional Investors" (Washington, DC: World Bank, 2020), https://openknowledge.worldbank.org/handle/10986/33423

[9] World Bank, "Climate Change in APEC."

[10] K. Uji, "The Health Impacts of Climate Change in Asia-Pacific," United Nations Development Programme (UNDP), 2012, https://cdn.who.int/media/docs/default-source/climate-change/the-health-impacts-of-climate-change-in-asia-pacific65a37137-3449-4936-a711-7fcaa7c1b4ae.pdf?sfvrsn=8358390a_1&download=true

[11] Inter-Agency Support Group on Indigenous People's Issues, "Collated Paper on Indigenous Peoples and Climate Change," 7 February 2008, https://www.un.org/esa/socdev/unpfii/documents/2016/egm/IASG-Collated-Paper-on-Indigenous-Peoples-and-Climate-Change.pdf

[12] African Development Bank et al., "Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation," 2002, https://www.oecd.org/env/cc/2502872.pdf

[13] Kartha, S., Kemp-Benedict, E., Ghosh, E., Nazareth, A. and Gore, T. "The Carbon Inequality Era: An assessment of the global distribution of consumption emissions among individuals from 1990 to 2015 and beyond" (Stockholm Environment Institute and Oxfam International, 2020), https://cdn.sei.org/wp-content/uploads/2020/09/research-report-carbon-inequality-era.pdf

Climate change does not have an upside. There are no net winners in climate change; there is only a lose–lose scenario. Estimates by Swiss Re – a reinsurance company in the business of mitigating risks – show that all economies stand to lose from climate change. Even in the best-case scenario, where climate change is kept at or below 2.0°C relative to pre-industrial levels (i.e., successful attainment of the Paris Agreement goal), APEC can expect GDP losses of 0.6 percent to 11.3 percent by 2050 relative to the no-climate change scenario (Table 1.1). To put this in perspective, GDP losses in APEC from the COVID-19 pandemic in 2020 was 1.9 percent.[14] On the other hand, in the business-as-usual scenario where climate change results in a temperature increase of 3.2°C, the region can expect GDP losses from 2.2 to 18.3 percent by the middle of this century.

Table 1.1 Impact of climate change on APEC GDP by 2050 – 4 scenarios

	Global temperature rise scenario											
	Below 2.0°C increase			2.0°C increase			2.6°C increase			3.2°C increase		
	Paris Agreement			Likely scenario with current pledges						Business as usual		
Unknown unknowns risk multiplier	**0**	**x5**	**x10**	**0**	**x5**	**x10**	**0**	**x5**	**x10**	**0**	**x5**	**x10**
Industrialised APEC	-0.4%	-1.7%	-3.2%	-0.9%	-3.8%	-7.3%	-1.0%	-4.1%	-7.8%	-1.2%	-5.3%	-10.1%
Developing APEC	-0.7%	-2.7%	-5.4%	-1.7%	-7.4%	-14.3%	-2.4%	-9.9%	-19.0%	-3.0%	-12.8%	-24.6%
APEC	-0.6%	-2.3%	-4.4%	-1.4%	-5.8%	-11.3%	-1.8%	-7.4%	-14.2%	-2.2%	-9.6%	-18.3%

Note:
Estimates are relative to a no-climate change scenario (i.e., 0°C increase). The 'unknown unknowns' risk multiplier accounts for possible unknown and non-linear relationships between temperature increases and economic activity. These unknown unknowns are especially important when considering risks related to temperature increases that have not yet been historically observed.
Industrialised APEC economies are Australia; Canada; Japan; New Zealand and the United States. Developing APEC economies are other APEC members not classified as industrialised.
Aggregates are weighted by GDP.
Source: Adapted from Swiss Re Institute, "The Economics of Climate Change: No Action Not an Option" (Zurich: Swiss Re Institute), 11, https://www.swissre.com/dam/jcr:e73ee7c3-7f83-4c17-a2b8-8ef23a8d3312/swiss-re-institute-expertise-publication-economics-of-climate-change.pdf

1.1 AN APEC PROBLEM

The APEC region suffers from more than 70 percent of global natural disasters, and disaster-related losses amount to USD 100 billion annually.[15] Because of its location – it rims the Pacific and straddles the Atlantic and Indian Oceans – and geographic diversity, the APEC region is heavily exposed to the impacts of climate change. But the APEC region is a key contributor to climate change too.

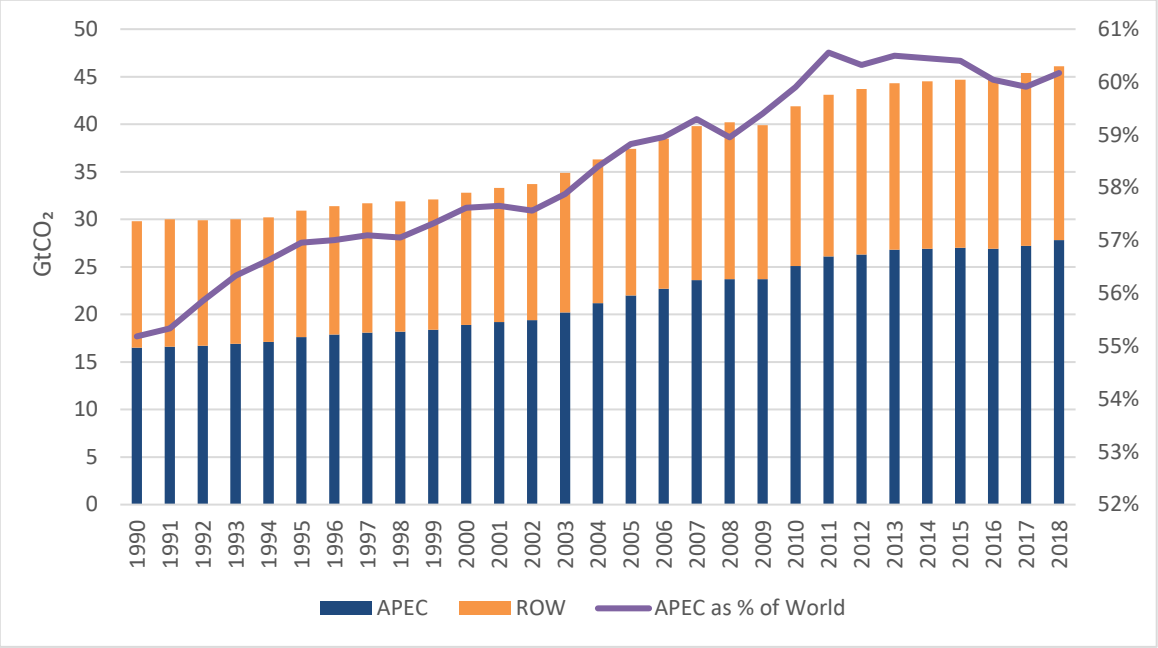
Between 1990 and 2018, the APEC region's GHG emissions increased from 16.5 to 27.8 gigatonnes of carbon dioxide ($GtCO_2$) equivalent, or an annual average growth of 1.9 percent (Figure 1.1). During the same period, GHG emissions in the rest of the world grew at an average rate of 1.1 percent annually. As a result, APEC's share of GHG emissions increased from 55 percent in 1990 to 60 percent in 2018.

In 2018, which is the latest year with complete cross-economy data on emissions, the APEC region pumped out 65 percent of global CO_2 emissions and 60 percent of global

[14] APEC, "APEC Regional Trends Analysis: Bolstering Supply Chains, Rebuilding Global Trade; Making Recovery Inclusive" (Singapore: APEC, May 2021), https://www.apec.org/Publications/2021/05/APEC-Regional-Trends-Analysis---May-2021
[15] World Bank, "Climate Change in APEC."

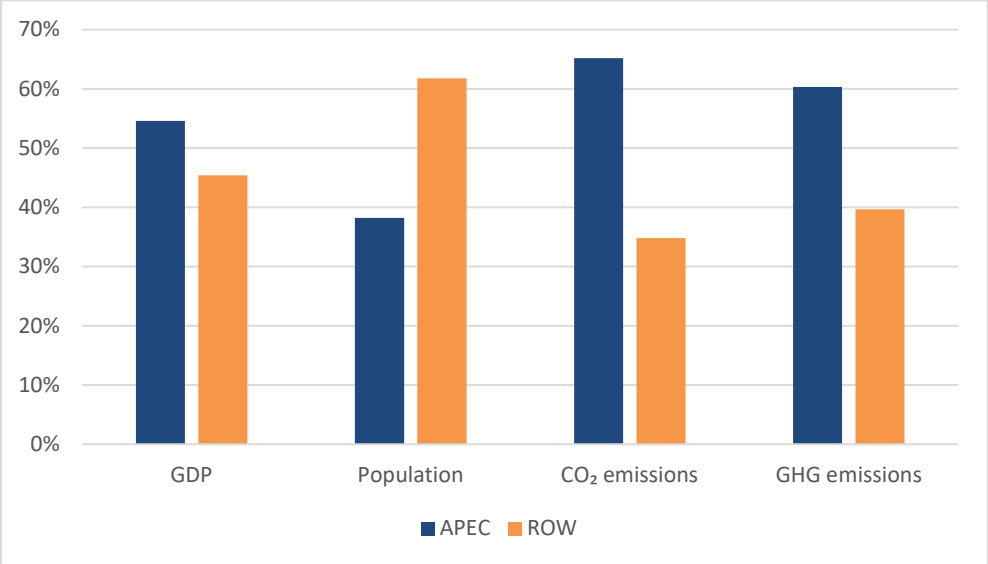
GHG emissions (Figure 1.2). In comparison, the region accounted for 38 percent of the global population and 55 percent of global economic output during the same year.

Figure 1.1 Total GHG emissions (CO_2 equivalent) in APEC and ROW, 1990–2018



GHG=greenhouse gas; ROW=Rest of the world (outside APEC).
Note: GHG emissions includes carbon dioxide (CO_2) and all anthropogenic sources of methane, nitrous oxide and fluorinated GHG.
Source: World Resources Institute, "CAIT Climate Data Explorer," accessed 15 August 2021, http://cait.wri.org/; APEC Policy Support Unit (PSU) calculations.

Figure 1.2 APEC CO_2 and GHG emissions in the global context, 2018



GDP=gross domestic product; GHG=greenhouse gas; ROW=Rest of the world (outside APEC).
Source: CAIT Climate Data Explorer; Global Carbon Budget; World Bank World Development Indicators (WDI); Directorate-General for Budget, Accounting and Statistics (Chinese Taipei); APEC PSU calculations.

Figure 1.3 GHG emissions (per capita), 1990–2018

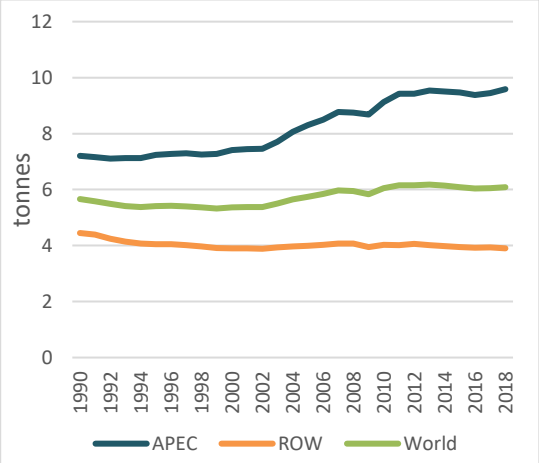
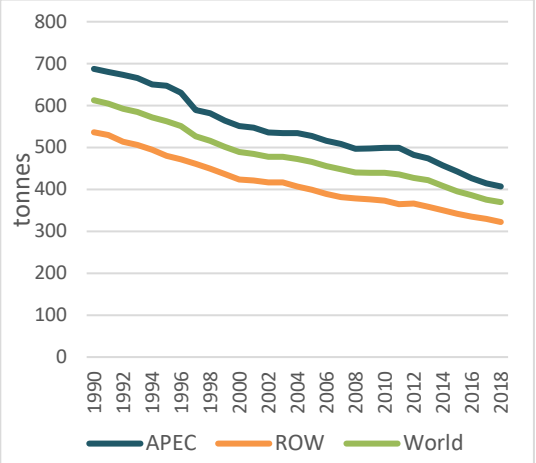


Figure 1.4 GHG emissions (per USD 1 million of real GDP), 1990–2018



GHG=greenhouse gas; ROW=Rest of the world (outside APEC).
Source: CAIT Climate Data Explorer; Global Carbon Budget; World Bank WDI; Directorate-General for Budget, Accounting and Statistics (Chinese Taipei); APEC PSU calculations.

Over the past 30 years, GHG emissions per person in the APEC region has been on an upward trend, even as the rest of the world has remained stable on this measure (Figure 1.3). On the other hand, GHG emissions per unit of GDP has been on the downward trend in the APEC region, albeit at a higher level than the rest of the world, reflecting the increased adoption of cleaner technologies in production activities (Figure 1.4). In 2018, six APEC economies were among the world's top 10 GHG emitters, and seven were in the top 10 CO_2 emitters globally.[16]

But what about 2020? In that year, the world was hit by the COVID-19 pandemic, which resulted in severe restrictions on transportation and movement as governments tried to contain the virus. As borders were shuttered and travel restrictions were imposed, APEC saw a 75 percent reduction in air traffic.[17] Meanwhile, remote working arrangements, restrictions on public transport, and closures of places of business meant people stayed home more and used land transportation less. According to estimates from the International Energy Agency (IEA), the massive global halt in transportation and economic activity, leading to the worst economic recession in modern history, resulted in a 6 percent decline in global energy-related CO_2 emissions in 2020, with the largest decline from transportation.[18] However, with the economic recovery later in 2020 came a similar recovery in emissions: by December 2020, CO_2 emissions were 2 percent higher than the pre-pandemic levels a year ago.

[16] Data up to 1990 are from the Carbon Dioxide Information Analysis Center, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee, United States. Data from 1990 are CAIT data, available at: Climate Watch, "GHG Emissions," https://www.climatewatchdata.org/ghg-emissions.
Data for Chinese Taipei: Environmental Protection Administration, "GHG Emission Reporting," https://ghgregistry.epa.gov.tw/ghgenglish/report.asp.
Data for Hong Kong, China: Environment Bureau, "Greenhouse Gas Emissions in Hong Kong," https://www.climateready.gov.hk/page.php?id=23&lang=1.
[17] APEC, "Passports, Tickets and Face Masks: COVID-19 and Cross-Border Mobility in the APEC Region" (Singapore: APEC, 2021), https://www.apec.org/Publications/2021/08/Passports-Tickets-and-Face-Masks
[18] International Energy Agency (IEA), "Global Energy Review: CO2 Emissions in 2020," 2 March 2021, https://www.iea.org/articles/global-energy-review-co2-emissions-in-2020, https://www.iea.org/articles/global-energy-review-co2-emissions-in-2020

1.2 AN APEC RESPONSE

The APEC Economic Leaders have laid down their commitment to protect the environment as early as 1993. The 1993 Leaders' Statement envisioned the development of a region in which:

> our environment is improved as we protect the quality of our air, water and green spaces and manage our energy sources and renewable resources to ensure sustainable growth and provide a more secure future for our people.[19]

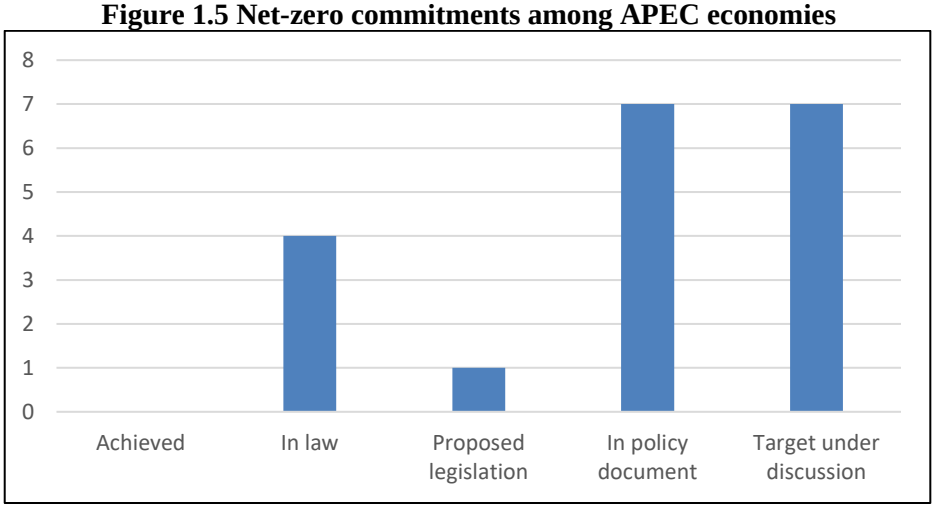
The first mention of climate change was in the 1997 Leaders' Declaration when APEC Leaders linked their Vision for the 21st Century to addressing climate change and recognised 'the importance of accelerating action on a global level to deal with emissions of greenhouse gases'.[20]

Since then, APEC Ministers have agreed to a range of goals to protect the environment, including increasing forest cover by 20 million hectares by 2020 and doubling the share of renewables in the APEC energy mix by 2030. In 2015, APEC Leaders also committed to the APEC Strategy for Strengthening Quality Growth. Its third pillar focused on environmental impact and pursuing climate change mitigation and adaptation efforts. The most recent call for action on climate change is detailed in the APEC Putrajaya Vision 2040. The Vision calls for growth that is strong, balanced, secure, sustainable and inclusive in the Asia-Pacific region by promoting economic policies that will tackle environmental challenges such as climate change, among others.[21]

Despite all these calls for action and commitments to address climate change, there has been less progress on the ground. According to data from Climate Action Tracker, an independent scientific analysis of government actions and pledges toward the Paris Agreement, only one APEC economy – the Philippines – declared commitments that are compatible with keeping warming below 2°C.[22] The commitments of all other APEC economies included in the tracker were either insufficient or critically insufficient to meet the target set in the Paris Agreement. On the other hand, 19 APEC economies have made net-zero commitments or are discussing making net-zero commitments as of October 2021 (Figure 1.5).

[19] APEC, "1993 Leaders' Declaration," 20 November 1993, https://www.apec.org/Meeting-Papers/Leaders-Declarations/1993/1993_aelm.aspx
[20] APEC, "1997 Leaders' Declaration," 25 November 1997, https://www.apec.org/Meeting-Papers/Leaders-Declarations/1997/1997_aelm
[21] APEC, "APEC Putrajaya Vision 2040" (Annex to the "APEC 2020 Leaders' Declaration," 20 November 2020), https://www.apec.org/Meeting-Papers/Leaders-Declarations/2020/2020_aelm/Annex-A
[22] Climate Action Tracker, accessed 15 August 2021, https://climateactiontracker.org/; *Philippine News Agency*, "Duterte OKs 75% Emissions Reduction PH Commitment by 2030," 16 April 2021, https://www.pna.gov.ph/articles/1137085.

Figure 1.5 Net-zero commitments among APEC economies



Note: No data available for Brunei Darussalam and the Philippines.
Source: Energy & Climate Intelligence Unit, "Net Zero Tracker," accessed 29 October 2021, https://eciu.net/netzerotracker; economy policy pronouncements.

However, there have been some positive results in the concrete goals that APEC has set for itself in forestry cover and renewable energy usage. The 2007 APEC Leaders' Declaration committed to increasing the region's forest cover by at least 20 million hectares for all types of forests by 2020. According to data from the Food and Agriculture Organization of the United Nations (FAO), APEC's forest cover increased by 22.7 million hectares between 2008 and 2020.[23] The goal of 20 million hectares was already achieved by 2018. As for renewable energy usage, APEC Leaders endorsed through their 2014 Declaration the APEC Energy Ministers' aspirational goal to double (from 2010 levels) the share of renewables in the APEC energy mix by 2030.[24] Data from Our World in Data and bp suggest that the region's renewable energy share has increased from 6.8 percent in 2010 to 10.5 percent in 2019.[25] This translates into a 54 percent increase over a span of nine years, assuring that the region is well on track to be able to achieve the goal of doubling the share of renewables by or even before 2030.

Additionally, APEC economies have made small improvements in environmental goods trade and sustainable finance. According to data from the International Monetary Fund (IMF), trade in environmental goods has increased from 4.0 percent of total merchandise trade in 2010 and to 5.2 percent in 2019. Green bonds issued to finance new or existing green projects have also risen from USD 57.3 billion in 2018 to USD 92.3 billion in 2020 in the region.[26] However, these bonds represented only 32.3 percent of global green bonds in 2020.

While significant targeted investments are needed to drive climate action, government spending on environment protection has not changed much over the years. On average,

[23] Food and Agriculture Organization of the United Nations (FAO), "Global Forest Resources Assessment," accessed 21 September 2021, https://www.fao.org/3/ca9825en/ca9825en.pdf
[24] APEC, "2014 Leaders' Declaration," 11 November 2014, https://www.apec.org/Meeting-Papers/Leaders-Declarations/2014/2014_aelm
[25] bp, "Statistical Review of World Energy," accessed 17 August 2021, http://www.bp.com/statisticalreview; H. Ritchie and M. Roser, "Energy," OurWorldInData.org, 2020, https://ourworldindata.org/energy
[26] International Monetary Fund (IMF), "Climate Change Dashboard," accessed 15 August 2021, https://climatedata.imf.org/
Data are unavailable for Brunei Darussalam; Papua New Guinea; the Philippines; Russia; and Viet Nam.

APEC economies spend only 0.68 percent of their GDP on environmental protection while member economies of the Organisation for Economic Co-operation and Development (OECD) spend over 0.76 percent of their GDP on the same.[27] Given APEC's relatively substantial contribution to climate change, public expenditure on environmental protection is considerably low. According to the International Renewable Energy Agency (IRENA), about USD 1.7 trillion would be needed for the world to implement the renewable energy targets set out in the nationally determined contributions (NDCs) ,[28] and a majority of the finance gap is in Asia, which will require an investment of USD 1.1 trillion between 2015 and 2030.[29]

While APEC's achievements and commitments on climate change are good, they are not nearly enough. Globally, on average, economies are required to increase emission reductions beyond their NDCs by 80 percent to meet the 2°C target. Current ambitions will reduce greenhouse gas emissions by 1 percent by 2030, a lowball target that will see the planet warm beyond 3°C or 4°C. According to the IPCC, the world needs to reduce anthropogenic CO_2 emissions by about 45 percent by 2030 (relative to 2010 levels) and reach net-zero by 2050 in order to limit global warming to 1.5°C, which at this point is the best we can hope for. To keep global warming below 2°C, CO_2 emissions need to decrease by about 25 percent (again, relative to 2010 levels) by 2030 and reach net zero by 2070.[30]

Given that we have already lost time between 2010 and 2021, the APEC region has a rather large gap to surmount to keep global warming to 2°C, let alone 1.5°C. If the region aims for the more ambitious – but least harmful to future economic growth and human welfare – target of 1.5°C global warming, then APEC will need to reduce GHG emissions by 7.1 percent per year between 2022 and 2030 (an average of 1.45 $GtCO_2$ equivalent per year), and from there reduce net GHG emissions by about 690 megatonnes of carbon dioxide ($MtCO_2$) equivalent per year until emissions reach net zero by 2050. Likewise, APEC will need to reduce CO_2 emissions by 7.0 percent per year between 2022 and 2030 (an average of 1.32 $GtCO_2$ per year), then reduce net CO_2 emissions by about 553 $MtCO_2$ per year until 2050 (Figure 1.6).

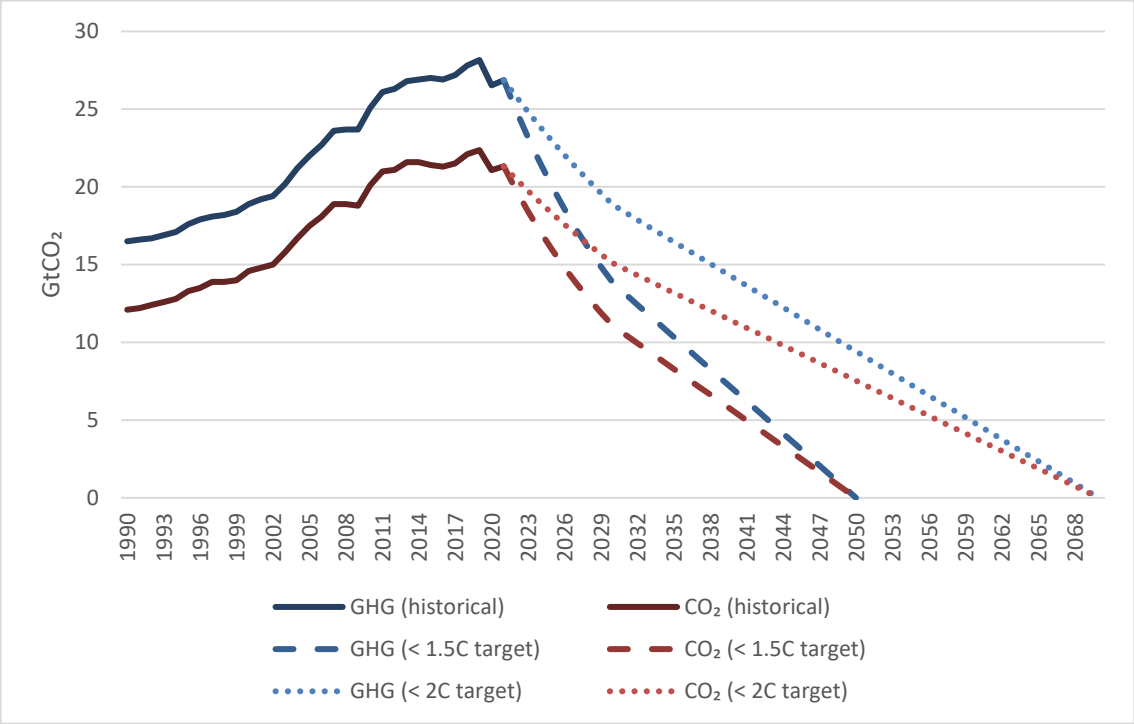
[27] Based on latest available data for 16 APEC economies and 37 OECD economies, respectively, with most of the data being from 2018 and 2019. Data are from: IMF, "Climate Change Dashboard," accessed 15 August 2021, https://climatedata.imf.org/. Data from Mexico are from: Economic Commission for Latin America and Caribbean (ECLAC), "Expenditure on Environmental Protection," accessed 15 August 2021, https://observatoriosocial.cepal.org/inversion/en/indicator/expenditure-environmental-protection

[28] Nationally determined contributions (NDCs) are the expressions of efforts to be made by economies in reducing emissions and adapting to the impact of climate change.

[29] International Renewable Energy Agency (IRENA), "Investment Needs," 26 August 2021, https://www.irena.org/financeinvestment/Investment-Needs

[30] IPCC, "Global Warming of 1.5°C. An IPCC Special Report" (IPCC, 2018), https://www.ipcc.ch/sr15/

Figure 1.6 Trajectory of APEC GHG and CO_2 emissions, by global warming target



GHG=greenhouse gas.
Note: Data are available for 1990–2018. Estimates for 2019 and 2021 assume annual average growth rates for 2010–2018, which are 1.3 percent for GHG emissions (in CO_2 equivalent) and 1.2 percent for CO_2 emissions. Estimates for 2020 assume a reduction of 5.8 percent based on International Energy Agency (IEA) estimates.[31]
Source: CAIT Climate Data Explorer; APEC PSU calculations.

The gap is relatively more surmountable if APEC is to aim for the 2°C goal. For this target, which still carries significant losses in GDP and human life, the region will need to reduce net GHG and CO_2 emissions by 3.8 percent per year between 2022 and 2030 (average of 893 $MtCO_2$ equivalent per year for GHG and 694 $MtCO_2$ for CO_2 emissions). From there, the region will need to reduce net GHG emissions by 471 $MtCO_2$ equivalent and net CO_2 emissions by 377 $MtCO_2$ until net zero is achieved by 2070 (Figure 1.6).

These reductions in GHG and CO_2 emissions – steep in 2022–2030 then relatively flatter from 2030 onwards – will need to happen even as the APEC region grows in population, output and affluence.

1.3 AN APEC SOLUTION

Climate changes poses a lot of questions. The 'What?' is clear: there is remarkable scientific consensus[32] on the causes and impacts of climate changes, as well as what needs to be done to address and mitigate it. While the highly complex climatic models churn out

[31] International Energy Agency (IEA), "Global Energy Review: CO2 Emissions in 2020," 2 March 2021, https://www.iea.org/articles/global-energy-review-co2-emissions-in-2020, https://www.iea.org/articles/global-energy-review-co2-emissions-in-2020
[32] NASA, "Facts: Scientific Consensus," NASA Global Climate Change: Vital Signs of the Planet, accessed 29 September 2021, https://climate.nasa.gov/scientific-consensus/

error margins, the predictions and estimates have eventually been proven by empirical fact.[33] The economic sciences can only dream of such consensus, precision and accuracy.

The 'When?' is pretty clear too. Science has told us when climate change started, when it accelerated, and when it was first observed. Indeed, the IPCC report notes that each of the last four decades has been successively warmer than any decade that preceded it since 1850.[34] As for when we need to act to address it, the first best answer is several decades ago. The second best answer is as soon as possible. The longer the global community waits to take action, the more binding the constraints and the fewer the available options we would have. Delaying also means that eventually we would have to take more drastic action over a shorter timeframe, which would only make the transition and adjustment period more acute.

However, while the 'What?' and 'When?' are clear, the 'How?' and 'Who?' are not. Climate change science can identify the sources of GHG emissions and the degree of reduction needed to hold global warming at bay, but it cannot say how this reduction needs to happen and who needs to bear the brunt of tackling it. Science can tell us how economies will be damaged by climate change (see Table 1.1) and how much reductions in net emissions are needed to keep global warming to 1.5°C or 2°C (see Figure 1.6), but it cannot advise on the political and economic decisions that are needed to make this happen. This is no longer the realm of scientists, but of policymakers who can change the incentive structures and the rules of the economy. This is the realm of diplomats who can ensure that regional cooperation contributes to addressing climate change. This is the realm of APEC.

Concerted action beyond commitments is needed. One silver lining from COVID-19 has been the renewed interest and urgency in the climate agenda, possibly in recognition of how intertwined the planet's inhabitants and the natural environment are. Historical evidence has shown a strong association between climatic conditions and epidemic diseases. Besides causing floods and landslides, the melting of ice and permafrost by rising temperatures could also release viruses that have been buried for such a long period of time that we are no longer immune to them. In response, both the public and private sectors have made a remarkable number of commitments to carbon neutrality and net-zero emissions, especially in the run-up to the 26th UN Climate Change Conference (COP26).[35] Although this is a step in the right direction, it is imperative to acknowledge that concerted action is needed to transition the world into a sustainable future. In other words, commitments need to be complemented by tangible actions and policies.

Adopt a holistic approach to tackling climate change. The risks and uncertainties brought about by climate change are wide-ranging and multi-directional. Likewise, responding to them requires fresh approaches to doing things, with the transition to the green economy being one such approach. After all, the climate challenge is an energy challenge, and solutions to enable economic growth with minimal emissions should be

[33] A. Buis, "Study Confirms Climate Models Are Getting Future Warming Projections Right," NASA Global Climate Change: Vital Signs of the Planet, 9 January 2020, https://climate.nasa.gov/news/2943/study-confirms-climate-models-are-getting-future-warming-projections-right/

[34] IPCC, *Climate Change 2021: The Physical Science Basis* (Contribution of Working Group I to the Sixth Assessment Report of the IPCC, Cambridge University Press, 2021), https://www.ipcc.ch/report/ar6/wg1/

[35] United Nations Environment Programme, "Updated Climate Commitments ahead of COP26 Summit Fall Far Short, but Net-zero Pledges Provide Hope," Press release, 26 October 2021, https://www.unep.org/news-and-stories/press-release/updated-climate-commitments-ahead-cop26-summit-fall-far-short-net

given due consideration.[36] Doing so, however, requires economies to first recognise that the green economy is not just a narrow sector or industry, focusing on recycling for example, and therefore entails extensive structural reforms in the way economies are run. There need to be holistic efforts, including: shifting public policies to promote investments and jobs that reduce GHG emissions; developing capacity-building programmes on sustainability for businesses, particularly micro, small and medium enterprises (MSMEs); and instilling in people the pivotal need to protect the environment. It is also important to recognise the value of complementary measures. For instance, a carbon tax would have to be supplemented with more stringent environmental measures and incentives to encourage the adoption and utilisation of environmentally friendly products such as solar cells, LED lights and electric vehicles.

Implement green policies while addressing negative side-effects. There are no magic bullets that can solve climate change without any trade-offs. Take the carbon tax. If done properly, it could hasten the move toward net zero by raising the cost of carbon emissions. However, it would also have negative impacts on sectors and industries whose nature involve extraction, as well as those that are heavily reliant on inputs and processes requiring fossil fuels. Job losses and corresponding unemployment in these sectors and industries would have ripple effects on the economy, potentially reducing support for such measures. Blunting the unintended impact of green measures should therefore be a key consideration of policymakers, especially where strong buy-in from the different segments of the society is crucial for success. Specifically, with potential job losses, efforts must be made to transition workers from the impacted sectors and industries into green jobs. Incentives and programmes that economies can consider include social protection as well as vocational training schemes, internships, professional conversion programmes and job attachments. Additionally, economies would need to look into the impact of green measures on poor households – such as on prices of basic goods and services – and address the equity and distributional implications of green policies.

Measure and analyse impacts. As the saying goes, 'If you can't measure it, you can't improve it'. A clear, well-elaborated measurement framework that is supported by reliable and regularly updated statistics is imperative for policymakers to plan and make informed decisions. In the context of climate change and the green economy, there is a need for globally comparable taxonomies of what is green and non-green, as well as widespread adoption of a standardised matrix to measure the carbon emissions and footprints of various activities. Using these, emissions reduction targets can be set and progress against them can be reported at regular intervals to monitor progress and finetune policies. Likewise, the effectiveness of policy measures on reducing GHG emissions needs to be analysed. What may sound good in theory may have little or negative environmental impact.[37] Policies, and the costs of implementing them, should be set against their demonstrated effectiveness in addressing climate change.

A related issue with regard to measurement is the process of data collection, which can be costly, time-consuming and difficult. Digital technology could offer some opportunities in this context. With improvements in digital technologies, policymakers should consider

[36] H. Lee and F. Birol, "Energy Is at the Heart of the Solution to the Climate Challenge," IPCC, 31 July 2020, https://www.ipcc.ch/2020/07/31/energy-climatechallenge/
[37] R. Calel, et al., "Do Carbon Offsets Offset Carbon?" CESifo Working Paper 9368, 2021, https://www.cesifo.org/en/publikationen/2021/working-paper/do-carbon-offsets-offset-carbon

utilising tools such as Internet of things (IoT) and non-traditional data sources such as big data and crowdsourcing to contribute toward accurate measurement.

The need for global and regional cooperation. The global climate is an international public good. No single economy can tackle climate change alone, but any single economy could scuttle efforts at addressing it. If any problem seeks a global and regional solution, this is it. Indeed, in many cases, creative approaches to tackling climate change also require economies to work with one another. For example, in economies where the ability to recycle products such as batteries are limited, operationalising the circular economy may involve sending such products to another economy for processing. There is also opportunity to increase global trade in renewable energy where economies with excess capacity can export and transmit them via cross-border energy grids. This calls for cooperation at the regional as well as the global level. As the above discussions have shown, potential areas of cooperation are broad and wide-ranging.

As the premier regional forum which counts some of the world's biggest GHG emitters as its members, APEC is the venue where issues relating to climate change and the green economy can be openly discussed and acted upon. Its multiple fora are well-placed to advance work in areas such as trade and investment in environmental goods and services, structural reforms, green skills and the future of work, adoption of digital technologies, and green finance.

Climate change is an APEC problem and an APEC priority. APEC can pull off a solution to climate change.

2 TOWARD A RESILIENT RECOVERY: POLICIES MATTER[38]

2.1 APEC GDP GROWTH

2.1.1 Economic, social and vaccine divide

The pandemic has exacerbated existing economic and social divisions, while also giving rise to another issue that could have far-reaching and long-lasting implications: the vaccine divide.

In its June 2021 update, the World Bank estimates that around 97 million people globally had been pushed into extreme poverty in 2020 because of the economic fallout from COVID-19.[39] Although this is lower than the January 2021 projection of 119–124 million, the latest estimate still represents a record high in global poverty levels.

Overall, there were around 732 million poor people in 2020, significantly higher than the pre-pandemic projection of 635 million. For 2021, the World Bank sees a slight decline in global poverty to 711 million – adding almost 100 million new poor – compared to the pre-pandemic forecast of 613 million. More glaring, the reduction in poverty is expected to come from high- and middle-income economies while it is projected to worsen among low-income economies with a 2.7 percent increase in poverty rate, much higher than the pre-pandemic pace of 0.2 percent.

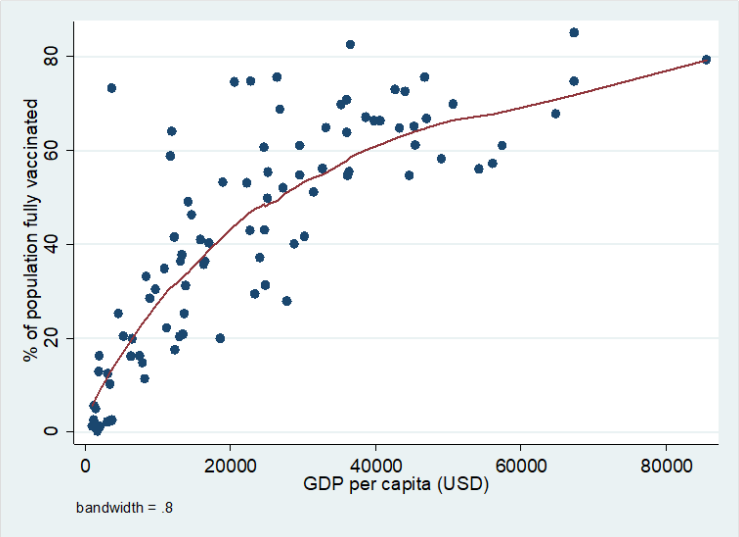
Parallel to the widening economic divergence are social fragilities arising from difficulties in accessing proper healthcare amid overwhelmed health systems; reduced quality of education as, with learning largely shifting online, students contend with issues of internet speed and reliability as well as lack of digital equipment; and more challenging financial and employment conditions as businesses and markets incur losses from lockdown measures. In particular, the start–stop reopening, marked by extended border closures, mobility restrictions and uncertainty in the scale and schedule of the implementation of COVID-19 measures, is adversely affecting micro, small and medium enterprises (MSMEs) and workers across sectors, including in agriculture, tourism, retail, food and beverage, and manufacturing.

Aggravating the disparity in economic and social conditions is the vaccine divide. Based on latest available data at end-October 2021, almost 7 billion doses of the COVID-19 vaccine have been administered globally. That translates to 49 percent of the global population having been inoculated with at least one dose. Yet, only 3.1 percent of people living in low-income economies have received at least one dose.[40] This is alarmingly below the target of a 40 percent vaccination rate in every economy across the world by end 2021 and 60 percent by the first half of 2022 set by the Task Force on COVID-19 Vaccines,

[38] Prepared by Rhea C. Hernando, APEC Policy Support Unit (PSU).
[39] See: D.G. Mahler et al., "Updated Estimates of the Impact of COVID-19 on Global Poverty: Turning the Corner on the Pandemic in 2021?" World Bank Blogs, 24 June 2021, https://blogs.worldbank.org/opendata/updated-estimates-impact-covid-19-global-poverty-turning-corner-pandemic-2021
[40] "Coronavirus (COVID-19) Vaccinations," Our World in Data, accessed 29 October 2021, https://ourworldindata.org/covid-vaccinations

Therapeutics and Diagnostics for developing economies.[41] A further look at global vaccine access vis-à-vis GDP per capita reveals that poorer economies indeed have less access to vaccines compared to higher income economies (Figure 2.1).

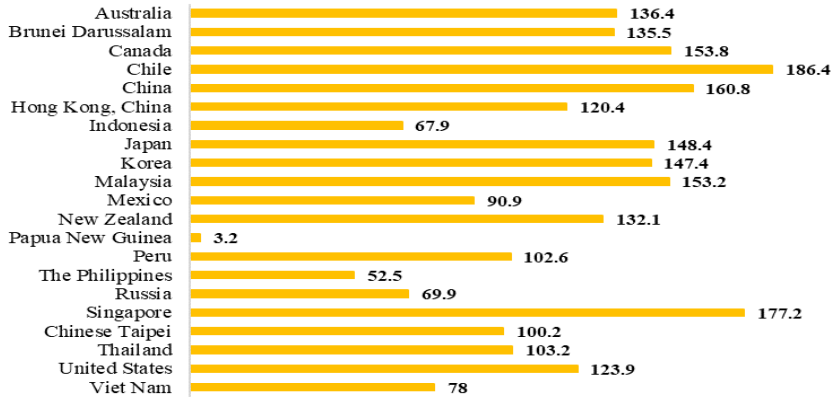
Figure 2.1 Global access to vaccines, by income (as of 15 October 2021)



Note: Trendline is generated using nonparametric locally weighted scatterplot smoothing.
Source: Our World in Data; APEC Policy Support Unit (PSU) calculations.

This stark inequality in access to vaccines, and consequently, vaccination coverage is evident in the APEC region. As of 29 October 2021, total vaccine doses varied within APEC, from as high as almost 190 doses per 100 persons to as low as 3.2 doses per 100 persons (Figure 2.2). Overall, 15 of the 21 APEC economies have vaccinated at least 40 percent of their population (Figure 2.3), with the rest coming in lower.

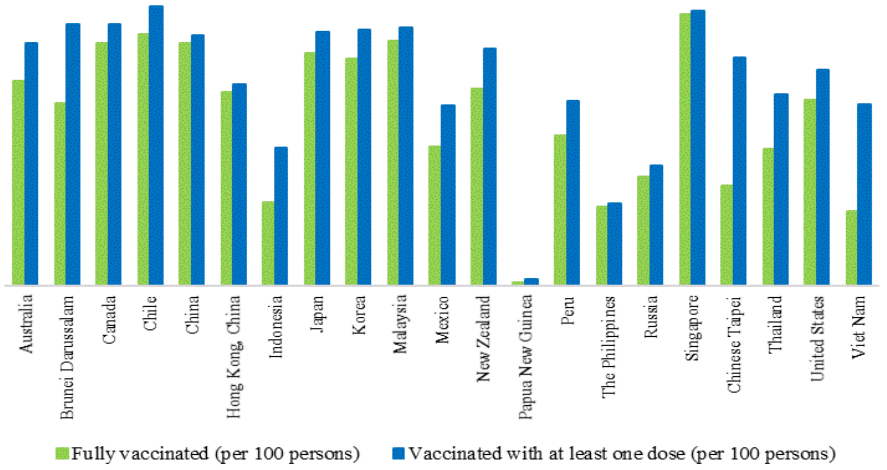
Figure 2.2 Total vaccine doses (per 100 persons) in APEC economies



Source: Our World in Data (as of 29 October 2021).

[41] World Bank Group, International Monetary Fund (IMF), World Health Organization (WHO), and World Trade Organization (WTO), "Joint Statement by the Heads of the World Bank Group, International Monetary Fund, World Health Organization, and World Trade Organization on the First Meeting of the Task Force on COVID-19 Vaccines, Therapeutics and Diagnostics for Developing Countries," IMF Press Release 21/201, 30 June 2021.

Figure 2.3 Vaccination coverage (per 100 persons) in APEC economies



Source: Our World in Data (as of 29 October 2021).

Unequal access to vaccines has already created dangerous new virus mutations that have proven to be highly contagious, quickly filling up isolation units and overwhelming hospitals and health workers. If left unaddressed, new variants could again emerge, with some potentially more transmissible or vaccine-resistant. This could result in a vicious cycle of addressing new variants with some form of lockdown measures that will potentially have lasting adverse economic and social repercussions, threatening the shared goal of an economic recovery that is sustainable, resilient and inclusive.

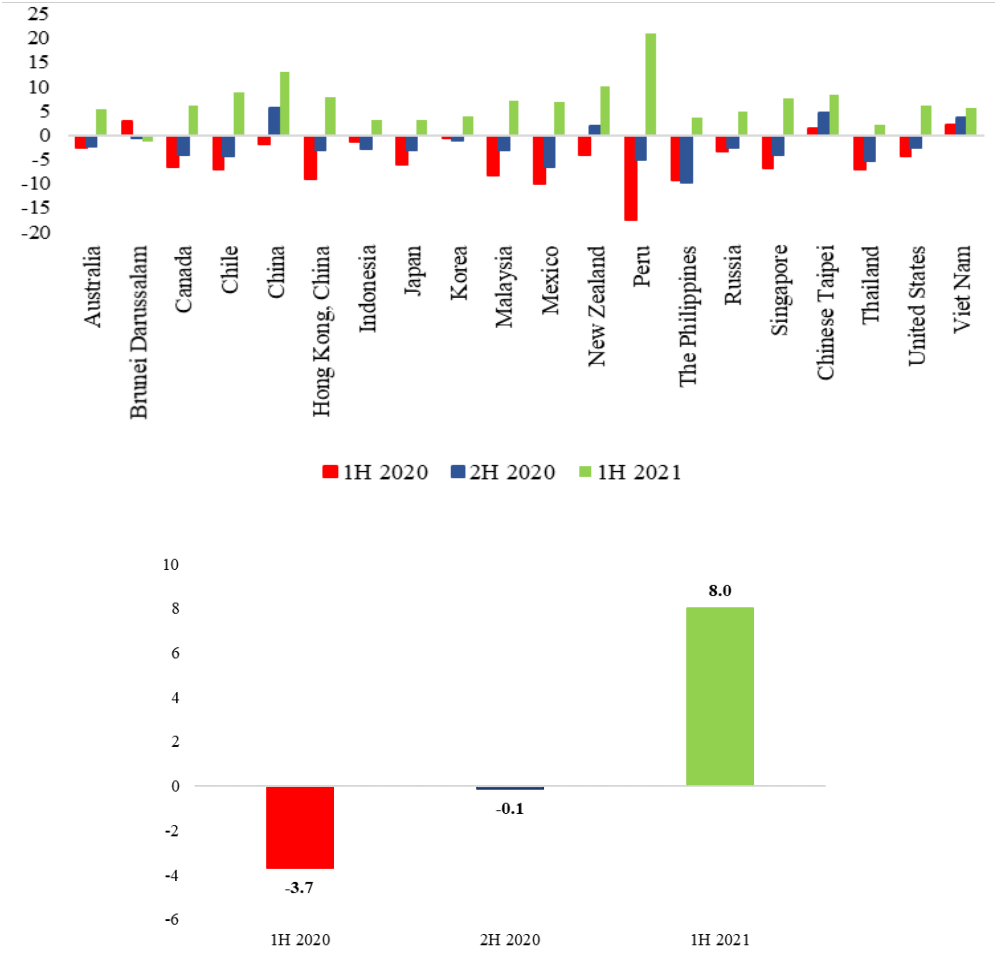
2.1.2 Tracking the path to recovery

The vaccine divide has already translated into varying speeds and strengths of economic growth among APEC economies in the first half of 2020, with some able to rebound at a faster pace while economic recovery for others is expected to be slow and fragile, hinged largely on vaccine access and rollout (Figure 2.4). As a whole, APEC expanded by 8.0 percent during the period January–June 2021 following a contraction of 3.7 percent in the same period in 2020.

On a quarterly basis, the APEC region started to rebound in the fourth quarter of 2020 following three consecutive quarters of contraction in Q1–Q3 2020. Economic activity continued to strengthen well into the first half of 2021, with GDP expanding by 6.2 percent in Q1 2021 and 10.1 percent in Q2 2021 (Figure 2.5).

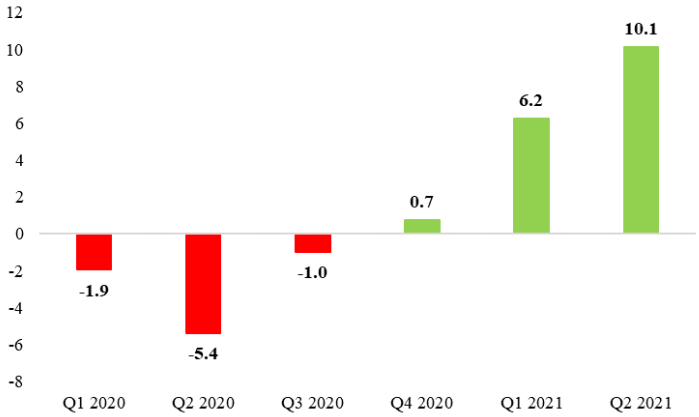
Growth in the region was propelled by a turnaround in investments and household consumption, which increased year-on-year by 13.0 percent and 6.5 percent, respectively (Figure 2.6) after declining in 2020. Private consumption in turn was boosted by continued fiscal support measures even as economies moved to gradually reopen businesses and borders amid increasing vaccination coverage. Government spending provided much-needed stable support from the onset of the pandemic through the first half of 2021, when it increased by 5.5 percent to continue to provide subsidies to households and businesses.

Figure 2.4 Real GDP growth in the APEC region (y-o-y, %), 1H 2020–1H 2021



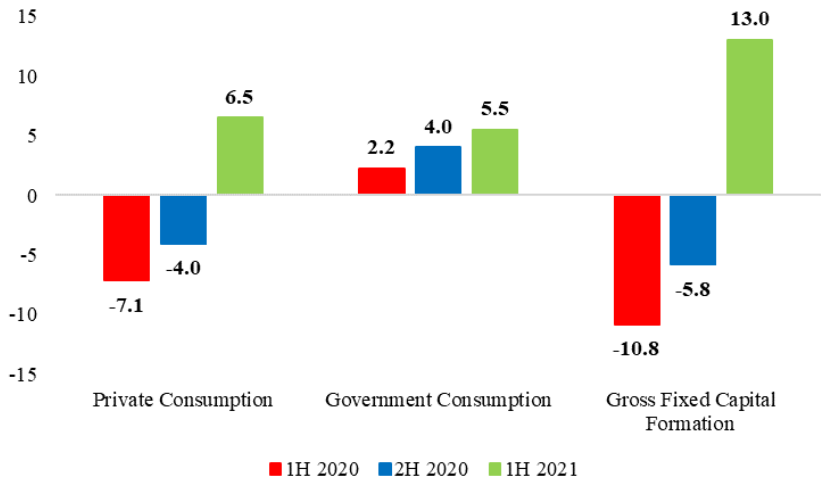
Note: The calculation for weighted APEC GDP growth excludes Papua New Guinea due to unavailability of data.
Source: Economy sources; APEC PSU calculations.

Figure 2.5 Real GDP growth in the APEC region (y-o-y, %), Q1 2020–Q2 2021



Note: The calculation for weighted APEC GDP growth excludes Papua New Guinea due to unavailability of data.
Source: Economy sources; APEC PSU calculations.

Figure 2.6 Growth in consumption and investments in the APEC region (y-o-y, %), 1H 2020–1H 2021

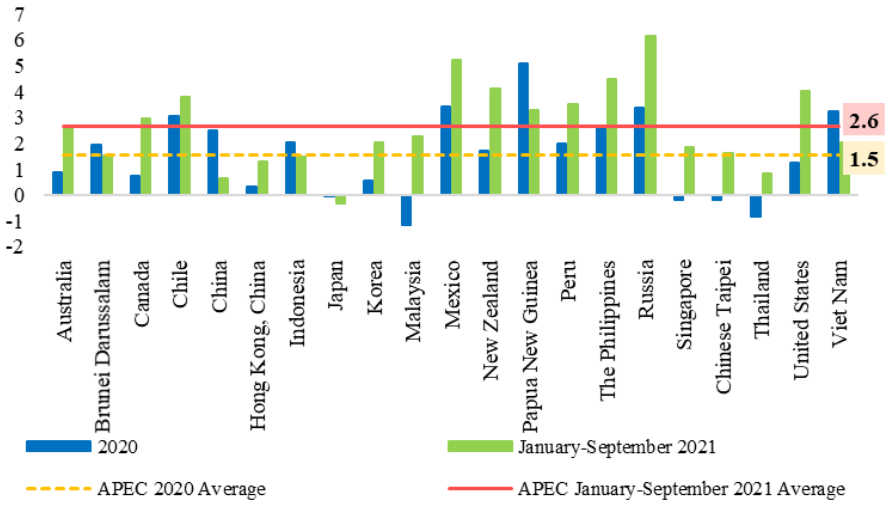


Source: Economy sources; APEC PSU calculations.

2.2 INFLATION AND MONETARY POLICY

The pick-up in demand amid supply shocks due to COVID-19-related production delays resulted in a higher inflation rate for APEC at 2.6 percent for the first nine months of 2021 after averaging 1.5 percent in 2020 (Figure 2.7).

Figure 2.7 APEC inflation rate (%), 2020 and January–September 2021



Note: Available data for Brunei Darussalam covers the period January-July 2021 and for Papua New Guinea, January-June 2021.
Source: Economy sources; APEC PSU calculations.

The rise in average APEC inflation is reflective of the substantial increase in the global prices of key commodities. Energy prices averaged higher for the period January–September 2021 compared to a year ago, with the Brent crude oil going up by as much as 62 percent to USD 67.40/barrel (bbl), while the West Texas Intermediate (WTI) crude oil went up to USD 64.80/bbl from USD 38.20/bbl. The index for natural gas increased by almost 150 percent during the same period. Food prices also rose during that period,

notably maize (67.2 percent), chicken (35 percent), sugar (37.8 percent) and wheat (22.5 percent). The price of cotton was higher by 35 percent; and metal prices followed the same upward movement, with iron ore rising by 76.8 percent and copper by 57.4 percent.[42]

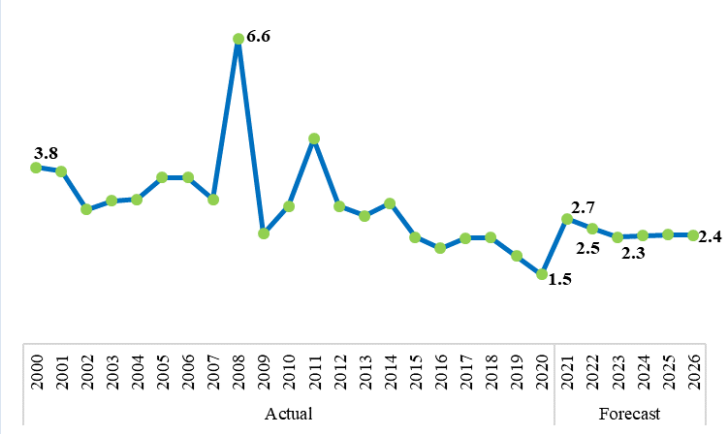
The increase in global commodity prices takes into account costly supply chain disruptions, including production shortages, higher shipping charges and longer delivery times. For example, the composite world container index (WCI) increased by 281 percent for the week of 21 October 2021 compared to a year ago, that is, to the equivalent of USD 7,191 per 40ft container, which is an almost threefold increase compared to the five-year average of USD 2,530 per 40ft container.[43] Supply-side factors combined with generally stronger demand as economic activity restarts and pent-up savings are released generate inflationary pressures that could pose a threat to economic recovery if left unaddressed (Box 2.1).

Box 2.1 Rising inflation: Cause and effect

The upward trend in inflation is due to a combination of demand and supply factors. Following a turnaround at end 2020, global demand continued to strengthen in line with the resurgence in economic activity during the first half of 2021, fuelled by fiscal support measures and pent-up savings. On the supply side, factory-related closures and staggered shifts among production and port workers amid the imposition of social distancing rules, rising infections and corresponding increase in the frequency and cost of deep cleaning in the workplace, among other COVID-19-induced challenges, have accumulated. These supply constraints cascaded into order fulfilment and port backlogs, misallocations of shipping containers, ground transportation issues, and delays in delivery. These supply and demand pressures have pushed up prices of global commodities.

After averaging at 1.5 percent in 2020, APEC inflation is projected to increase to 2.7 percent in 2021, before gradually declining to 2.5 percent in 2022 and 2.3 percent in 2023 (Figure 2.8).

Figure 2.8 APEC inflation rate (y-o-y, %), actual (2000–2020) and projections (2021–2026)



Source: International Monetary Fund (IMF) World Economic Outlook Database (October 2021).

[42] Data from the World Bank Commodities Price Data (released 4 October 2021), https://www.worldbank.org/en/research/commodity-markets.
[43] Drewry, "World Container Index–21 Oct," 21 October 2021, https://www.drewry.co.uk/supply-chain-advisors/supply-chain-expertise/world-container-index-assessed-by-drewry

In its Quarterly Review (20 September 2021), the Bank for International Settlements (BIS) finds that the rise in inflation is likely to be transitory, with sector-specific price changes largely contributing to inflation rather than generalised price co-movements.[44] This view is echoed by the Organisation for Economic Co-operation and Development (OECD) in its Economic Outlook (September 2021); it sees many temporary features in the current inflation trend, which could be attributed mostly to the expected adjustment of prices following temporary dips during the pandemic.[45] In the latest instalment of the World Economic Outlook (October 2021), the International Monetary Fund (IMF) also expects inflation to decline to pre-pandemic levels by mid-2022 after peaking in the final months of 2021.[46] However, monetary authorities need to be on guard since a prolonged rise in inflation could de-anchor inflation expectations, leading to spiralling price levels.

Rising inflation could have varying effects on economies. For example, commodity exporters could benefit from an increase in prices, particularly energy and agricultural products, while net importers will be worse off. In general, higher prices affect everyone because it could trigger a sudden tightening of interest rates and credit, which in turn will likely dampen consumption and economic activity, derailing efforts to put the global economy firmly on the recovery path.

Equally important, the increase in prices of essential goods, especially food, could have a debilitating effect on poor households whose consumption basket consists largely of food items (estimated at 40 percent). The impact of rising prices is particularly acute amid a pandemic that has seen loss of jobs and incomes, making it more difficult to put food on the table.

It is crucial for monetary authorities to communicate clearly the monetary conditions and corresponding policy actions to manage inflation expectations while also staying vigilant and flexible to act quickly if risks materialise. In addition, an integral part of anchoring inflation expectations is having a transparent fiscal policy, marked by calibrated and feasible expenditures that are matched by strong and sustainable revenues.

The upward trend in inflation prompted some economies to raise their monetary policy rates while the majority of APEC economies maintained their policy stance as of end September 2021 (Figure 2.9). External and domestic pressures also led the Monetary Authority of Singapore (MAS) to slightly raise the per annum rate of appreciation of the Singapore dollar's nominal effective exchange rate (S$NEER) policy band, but with no change to the width and the level at which it is centred.

Meanwhile, in its meeting on 21–22 September 2021, the US Federal Open Market Committee (FOMC) signalled that, once employment and inflation goals are achieved, it will scale back the massive support extended amid the pandemic, particularly by gradually moderating its purchases of government-backed securities to prevent overheating while continuing to support economic recovery.[47]

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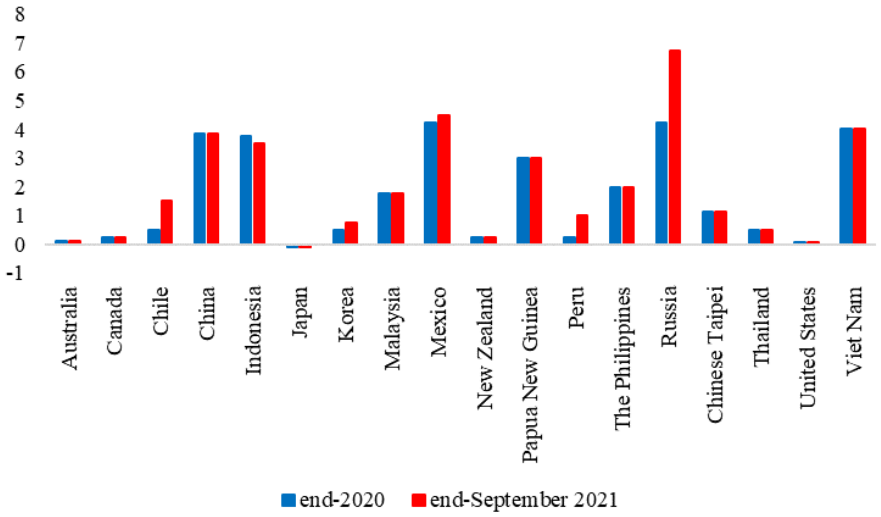
[44] Bank of International Settlements (BIS), "BIS Quarterly Review: International Banking and Financial Market Developments" (BIS, September 2021), https://www.bis.org/publ/qtrpdf/r_qt2109.htm

[45] OECD, "OECD Economic Outlook, Interim Report: Keeping the Recovery on Track" (Paris: OECD Publishing, September 2021), https://www.oecd-ilibrary.org/economics/oecd-economic-outlook/volume-2021/issue-1_490d4832-en;jsessionid=CrDsZYb62tvwK7anM3cWknDO.ip-10-240-5-174

[46] IMF, "World Economic Outlook: Recovery during a Pandemic" (IMF, October 2021), https://www.imf.org/en/Publications/WEO/Issues/2021/10/12/world-economic-outlook-october-2021

[47] US Federal Reserve, "Press Release," 22 September 2021, https://www.federalreserve.gov/monetarypolicy/files/monetary20210922a1.pdf

Figure 2.9 Monetary policy rate (%), end-2020 and end-September 2021



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 the 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.

2.3 TRADE PERFORMANCE

The combined effect of a rebound in economic activity and a low base since trade contracted in the first half of 2020 translated into a surge in APEC trade during the first six months of 2021. The increase in trade was broad-based, with manufactured goods, chemicals, machineries, clothing, footwear and sportswear expanding year-on-year while trade in COVID-19-associated goods such as pharmaceuticals, telecommunications equipment and computers has remained strong. Merchandise exports and imports recorded double-digit growth rates for both volume and value (Figures 2.10 and 2.11).

Figure 2.10 Growth in the volume of merchandise trade (y-o-y, %)

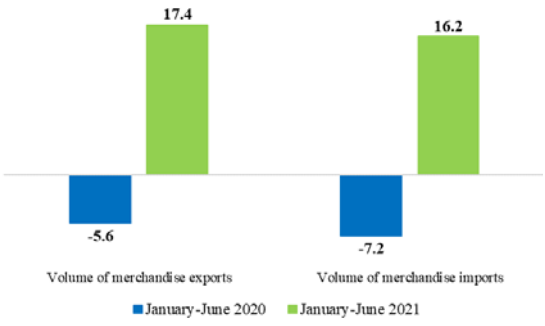
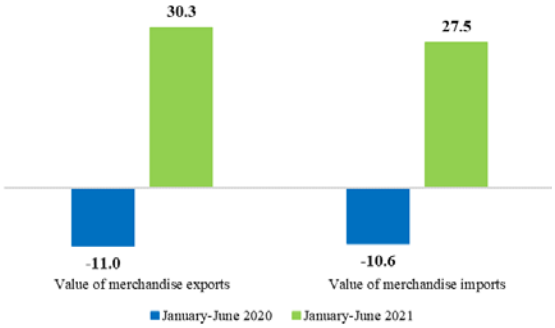


Figure 2.11 Growth in the value of merchandise trade (y-o-y, %)



Note: Due to unavailability of data, the average growth in trade volume for APEC does not include Papua New Guinea.
Source: United Nations Conference on Trade and Development (UNCTAD) Statistics for trade volume; World Trade Organization (WTO) for trade values; APEC PSU calculations.

The APEC region's trade performance so far in 2021 mirrors that of the rest of the world (ROW), which also posted double-digit growth in merchandise trade values (Table 2.1).

Table 2.1 Value and growth in merchandise trade, 1H 2020 and 1H 2021

	Value (in billion USD)			Growth (y-o-y, in %)	
	Jan-June 2020	Jan-June 2021		Jan-June 2020	Jan-June 2021
Merchandise Exports					
World	7993	10418		-14.1	30.3
APEC	4062	5292		-11.0	30.3
Rest of the World (ROW)	3931	5126		-17.1	30.4
Merchandise Imports					
World	8260	10569		-13.0	28.0
APEC	4218	5378		-10.6	27.5
ROW	4042	5191		-15.4	28.4
APEC's share of the World (in %)					
Merchandise Exports	50.8	50.8			
Merchandise Imports	51.1	50.9			

Source: WTO

Commercial services contracted anew in Q1 2021 based on latest available data (Figure 2.12), pulled down largely by transport and travel, which fell by almost 40 percent (Figure 2.13) compared to a year ago. The continued sizeable losses in transport and travel services reflect the negative impact of pandemic-related measures, including temporary border closures, health protocols and additional travel requirements and costs, such as COVID-19 testing and quarantining.

Figure 2.12 Growth in commercial services (y-o-y, %)

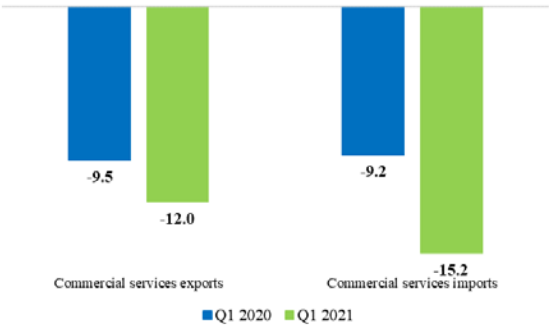
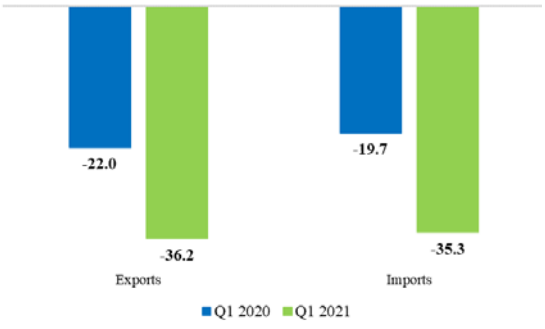


Figure 2.13 Growth in transport and travel services (y-o-y, %)



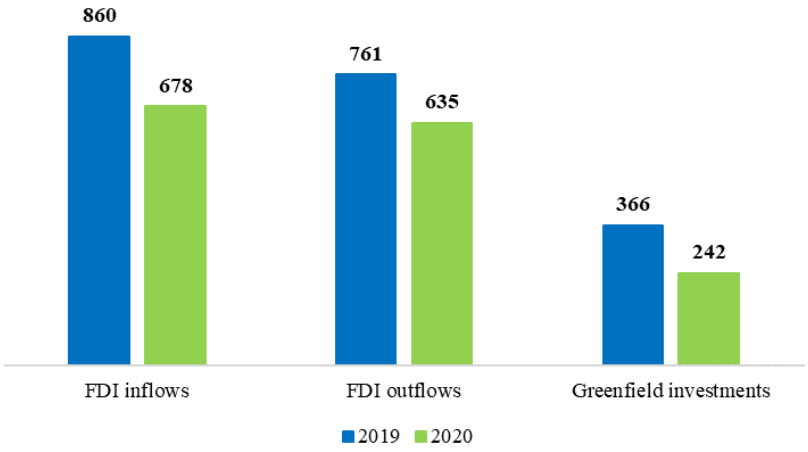
Source: WTO.

2.4 INVESTMENT TRENDS

Inflows of foreign direct investment (FDI) to the APEC region decreased to USD 678 billion in 2020, equivalent to a drop of 21.2 percent from the level in 2019, while FDI outflows were also lower by 16.6 percent (Figure 2.14). The decline in the region's FDI flows is in line with the fall in global FDI by 35 percent to USD 1.0 trillion in 2020 from USD 1.5 trillion in 2019.

As a share of the world, APEC's FDI inflows increased to 68 percent in 2020 from 56 percent in 2019; while the region's share of FDI outflows was higher at 85.8 percent from 62.4 percent.

Figure 2.14 APEC FDI and greenfield investments (USD billion), 2019 and 2020



FDI=foreign direct investment
Source: UNCTAD, "World Investment Report 2021: Investing in Sustainable Recovery" (New York: United Nations, 2021).

The same period saw the value of announced greenfield investments to the APEC region plunging to its lowest level in almost 20 years at USD 242 billion, or a 34 percent decline compared to USD 366 billion in 2019, similar to the 33 percent drop in world greenfield investments. The steep decline in greenfield projects in APEC is particularly concerning given the crucial role that they play in boosting infrastructure development and productive capacities while also paving the way for the enhancement of domestic technology and skills, made more urgent amid the ongoing pandemic when economies need all the support they can get to strengthen recovery.

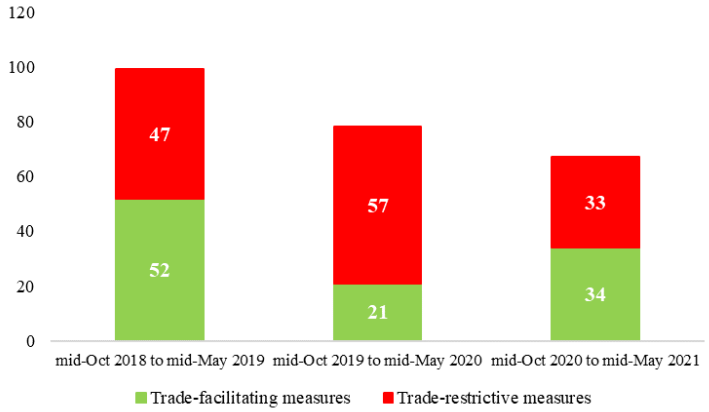
2.5 TRADE AND INVESTMENT MEASURES

On aggregate, there were fewer trade measures implemented by APEC economies during the period mid-October 2020 to mid-May 2021 compared to previous periods (Figure 2.15). Moreover, trade-facilitating measures increased from the level reported in mid-October 2019 to mid-May 2020, slightly outnumbering trade-restrictive measures. This development has helped to spur trade activity in the region during the first half of 2021.

To facilitate the flow of trade, some APEC economies moved to terminate anti-dumping investigations and/or duties, while others reduced or eliminated import tariffs and export duties (Table 2.2). Nonetheless, anti-dumping investigations and the corresponding duties dominated the trade-restrictive measures during the same period.[48]

[48] For a complete and detailed listing of trade and trade related measures implemented during the period mid-October 2020 to mid-May 2021, see Annex 1:
https://www.apec.org/-/media/Files/Publications/11/ARTA/Annex%201%20Trade%20and%20Traderelated%20MeasuresmidOct%202020%20to%20midMay%202021.docx

Figure 2.15 Trade and trade-related measures in APEC (actual number), 2018–2020



Source: WTO, "Report of the Trade Policy Review Body (TPRB) from the Director General on Trade-related Developments" (13 July 2021).

Table 2.2 Trade and trade-related measures in APEC, mid-October 2020 to mid-May 2021

	Number of Measures
Trade-restrictive measures	
Initiation/Imposition of anti-dumping investigation/duties	21
Initiation/Imposition of countervailing investigation/duties	10
Initiation/Imposition of safeguard investigation	3
Increase/Imposition of import tariffs, export duties, levy rates and taxes	0
Reduction/Elimination of tax rebates	0
Imposition of export/import requirements, quotas, bans, restrictions	0
Other trade-restrictive administrative measures	0
Sub-total: Trade-restrictive measures	*34*
Trade-facilitating measures	
Termination of anti-dumping investigation/duties	17
Termination of countervailing investigation/duties	2
Termination of safeguard investigation/duties	3
Reduction/elimination of export duties/import tariffs and taxes	11
Increase in tax rebates	0
Elimination of import/export ban, reduction/elimination of quotas and other restrictions	0
Other trade-facilitating administrative measures	0
Sub-total: Trade-facilitating measures	*33*
Total: Trade and Trade-related Measures	**67**

Source: WTO, "Report of the Trade Policy Review Body (TPRB) from the Director General on Trade-related Developments" (13 July 2021).

APEC economies who are also G20 members[49] implemented a total of 16 investment measures for the period mid-October 2020 to mid-May 2021, with investment-restricting measures outnumbering investment-facilitating measures (Table 2.3). The introduction of new rules together with mandatory requirements served to hold back investment activity in several economies during the period, with a few economies opting to relax entry restrictions and simplify regulations to encourage foreign investments.[50]

Table 2.3 Investment measures in APEC, mid-October 2020 to mid-May 2021

	Number of measures
Investment-facilitating measures	
Allows entry of foreign investments/lifts restrictions /removes caps	3
Relaxes rules on market access	1
Clarifies/Simplifies foreign investment rules	3
Sub-total: Investment-facilitating measures	*7*
Investment-restricting measures	
Prohibits/restricts entry of foreign investment	1
Imposes/Increases foreign acquisition fees, paid-up capital and other charges	2
Introduces new regulations/requirements and mandatory reviews on foreign investments	6
Sub-total: Investment-restricting measures	*9*
Total investment policy measures	**16**

Source: "OECD-UNCTAD 25th Report on G20 Investment Measures" (28 June 2021).

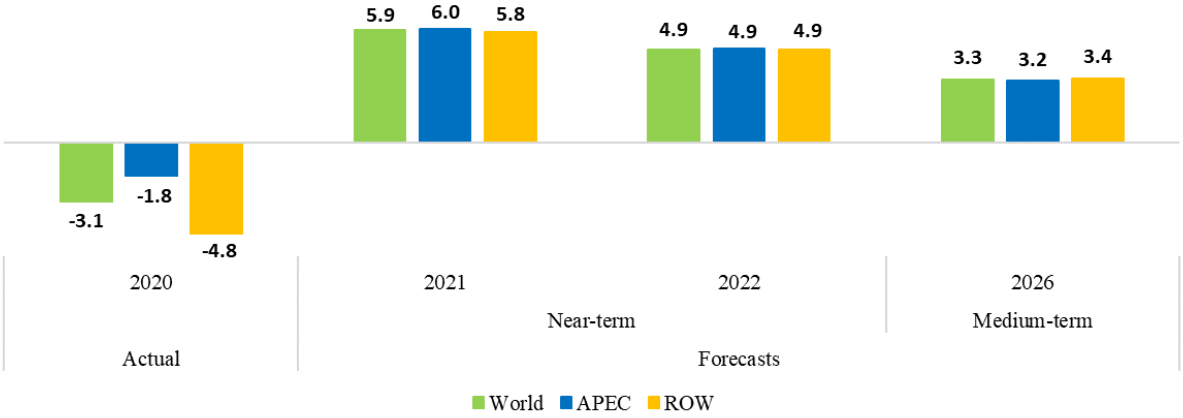
2.6 NEAR-TERM OUTLOOK, RISKS AND OPPORTUNITIES

A year and a half into the pandemic, the APEC region as a whole has gradually but steadily regained its footing, and is on the path of economic recovery even while managing a resurgence in infections brought about by the highly transmissible Delta variant. In the near term, APEC GDP is expected to expand by 6.0 percent in 2021, following a 1.8 percent contraction in 2020. Growth is projected to settle at 4.9 percent in 2022 with the anticipated winding down of fiscal and monetary support measures, moderating to 3.2 percent in the medium term (Figure 2.16).

The growth forecasts, however, mask considerable divergence in economic growth within APEC. Economies with enough fiscal buffers to sustain lifelines extended to households and businesses at the onset of the pandemic while accelerating vaccination deployment are seen to recover at a faster and more durable pace, while those navigating tighter fiscal conditions coupled with slow rollout of vaccines are facing a possible worsening of growth prospects.

[49] Australia; Canada; China; Indonesia; Japan; Mexico; Russia; Korea; and the United States.
[50] For a complete and detailed listing of investment measures implemented during the period October 2020 to mid-May 2021, see Annex 2: https://www.apec.org/-/media/Files/Publications/11/ARTA/Annex%202_Investment%20Measures_mid-Oct%202020%20to%20mid-May%202021.docx

Figure 2.16 Real GDP growth (%), actual (2020) and projections (2021–2022; 2026)



ROW=Rest of world
Source: Economy sources; IMF, "World Economic Outlook: Recovery during a Pandemic" (IMF, October 2021); APEC PSU calculations.

Moreover, substantial uncertainty surrounds these growth projections, with the Delta variant and new mutations posing as the biggest threat to economic recovery. The Delta variant has already slowed down economic momentum, with a downgrade in the growth forecast for APEC in 2021, from 6.4 percent based on the August 2021 update of the APEC Regional Trends Analysis (ARTA) to the current projection of 6.0 percent, even as the expansion in world output has also been revised downward slightly (Table 2.4).

Table 2.4 Comparing near-term GDP projections (%)

GDP Projections	as of ARTA May 2021	as of ARTA Update August 2021	as of ARTA November 2021
2020			
World	-3.3		-3.1*
APEC	-1.9		-1.8*
ROW	-5.0		-4.8*
2021			
World	6.0	6.0	5.9
APEC	6.3	6.4	6.0
ROW	5.7	5.5	5.8
2022			
World	4.4	4.9	4.9
APEC	4.4	4.9	4.9
ROW	4.5	4.9	4.9

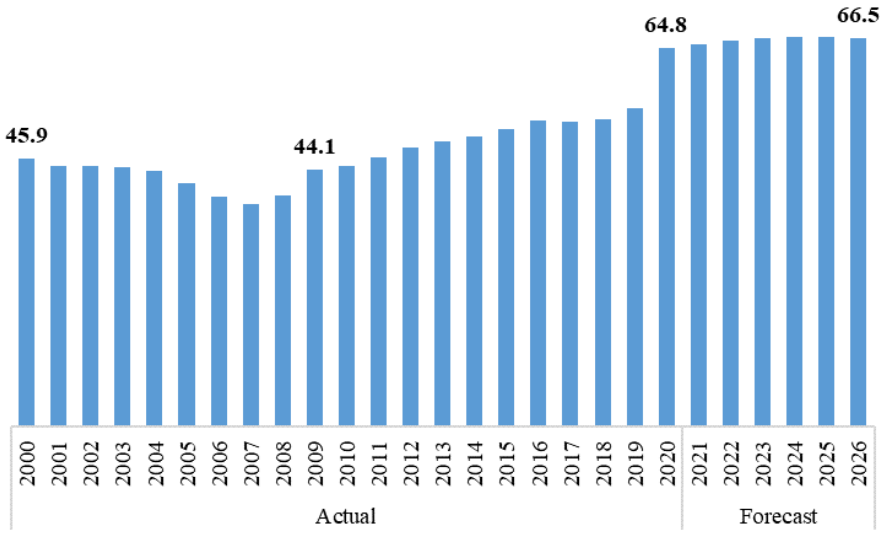
ARTA=APEC Regional Trends Analysis; ROW=Rest of world
Note: * denotes revised actual real GDP growth rates
Source: Economy sources; APEC, "APEC Regional Trends Analysis" (Singapore: APEC, May 2021); APEC, "APEC Regional Trends Analysis Update" (Singapore: APEC, August 2021); IMF, "World Economic Outlook: Recovery during a Pandemic" (IMF, October 2021); APEC PSU calculations.

Vaccines remain the single most effective antidote to the spread of COVID-19 and the emergence of new variants that could prove more dangerous. Economies need to speed up vaccination rollouts and ensure that access to vaccines, therapeutics and other medical supplies is not only wider but, importantly, more equitable.

Other factors that could weigh on growth include stubborn inflation due to sustained demand and a steady climb in global commodity prices, arising in part from supply chain disruptions, which could trigger an abrupt tightening of monetary policies and financial conditions. The scaling back or withdrawal of massive fiscal support measures is inevitable as governments have accumulated debt to mitigate the adverse repercussions of the pandemic. In turn, the tightening of monetary, financial and fiscal conditions could dampen consumption and investment activity, putting the economic recovery on fragile ground.

Data show that countering the adverse impacts of COVID-19 has translated into a rise in APEC's average government gross debt to 64.8 percent of GDP in 2020, the highest in 20 years (Figure 2.17). Government debt in APEC is projected to increase anew in the medium term to 66.5 percent of GDP, as economies deal with the scarring effects of the pandemic, which has particularly affected women and youth in terms of employment, education and skills development.

Figure 2.17 APEC average general government gross debt as % of GDP



Source: IMF World Economic Outlook Database (October 2021).

On the other hand, stronger trade activity could provide a much-needed boost to economic recovery. The WTO upgraded its short-term forecasts for the volume of world merchandise trade to a 10.8 percent expansion in 2021 compared to the 5.3 percent contraction in 2020 and an earlier projection of 8.0 percent growth. In 2022, the volume of merchandise trade is expected continue to grow but at a slower pace of 4.7 percent, albeit still higher compared to the 4.0 percent forecast in March 2021 (Table 2.5).

The moderation in trade activity in 2022 takes into account base effects as well as downside risks such as constraints in global supply chains brought about by disruptions in production linkages as well as continued supply shortages, particularly in semiconductors, that affect delivery of key products, including digital and communication gadgets, household smart appliances and vehicles. The improvement in the WTO's trade forecasts is in line with the IMF's projections of a 9.7 percent growth in world merchandise trade volume in 2021 and 6.7 percent in 2022.[51]

[51] IMF, "World Economic Outlook" (October 2021).

Table 2.5 WTO trade forecasts

	as of March 2021	as of September 2021
2020		-5.3*
2021	8.0	10.8
2022	4.0	4.7

Note: * denotes actual growth
Source: WTO.

Meanwhile, UNCTAD estimates a 10–15 percent recovery in global FDI in 2021, although still below the 2019 level. The modest recovery expected in 2021 depends on vaccine access, the evolution of the pandemic, particularly the emergence of new variants, as well as the extent of economic reopening across the world. Furthermore, the rebound in FDI is seen to be uneven, driven largely by strong cross-border mergers and acquisitions (M&A) activity and large-scale public investment support among developed economies.[52]

2.7 CONCLUDING REMARKS: POLICIES MATTER

There are many vital lessons that the pandemic has taught the world: protect the environment, improve social safety nets, build fiscal buffers, invest in digital and human capital development, fortify supply chains, implement structural reforms, leverage multilateral cooperation, and be prepared for the next pandemic, among others. Central to these hard-earned lessons is that economic, trade and health policies are intertwined – and that policies matter.

These policies are crucial to the delivery of three key priorities: vaccinate as many people as soon as possible; facilitate the flow of medical and food products; and mitigate the economic, social and vaccine divide.

COVID-19 has shown the world that good public health policies are good economic policies. Investing in better health systems translate into a healthier and more productive society that contributes to more resilient and sustainable economic growth.

Vaccinating a wider segment of the population will prevent virus mutations and subsequent massive waves that could result in more costly loss of lives and lasting economic and social impacts. Moreover, a resurgence in infections brought about by new variants could force a re-imposition of movement restrictions in some form, reversing gains and weakening recovery efforts. Increasing the vaccination coverage necessarily requires equitable access to vaccines. This means that the great disparity observed in vaccine availability within the region needs to be addressed, today.

An APEC study on cross-border mobility in the region urges APEC to play a critical role in two essential ways.[53] First is ensuring that COVID-19 is effectively contained everywhere. This requires behind-the-border policy cooperation in order to ramp up the production and deployment of vaccines and therapeutics as well as facilitate the rapid and free flow of vaccines and other medical products to end this pandemic once and for all.

[52] UNCTAD, "World Investment Report 2021: Investing in Sustainable Recovery" (New York: United Nations, 21 June 2021), https://unctad.org/webflyer/world-investment-report-2021
[53] APEC, "Passports, Tickets and Face Masks COVID-19 and Cross-Border Mobility in the APEC Region" (Singapore: APEC, 2021), https://www.apec.org/Publications/2021/08/Passports-Tickets-and-Face-Masks

Second is coordinating policies at the border by working toward mutual recognition of test results and vaccination certificates; harmonising standards on health protocols; sharing data; and establishing clear criteria for closing or reopening borders to pave the way for the resumption of business and reopening of borders.

The 21 member economies of APEC recognise the imperative of implementing good policies, more so during a pandemic of unprecedented consequences. Battered by COVID-19, APEC economies came together to commit to policies that facilitate the free flow of essential goods and services as well as people. Leveraging on multilateral cooperation, APEC members strengthened their commitment to enhance coordination, efficiency and transparency at the border, including the full implementation of the WTO Agreement on Trade Facilitation. This is expected to ensure the free and rapid flow of vaccines and medical supplies, food and agricultural products and other key production inputs across borders (Appendix A).

APEC is also looking ahead, beyond the pandemic, by discussing and coordinating economic response and recovery initiatives to boost the region's resilience and ensure more inclusive policies that place women and girls front and centre in economic recovery efforts. This means enforcing policies that create more opportunities for participation in the economy and society, while also advancing policies and programmes that support MSMEs, youth and other sectors that have been made more vulnerable by COVID-19. On 18 October 2021, APEC launched the New Zealand Consensus Framework to reinforce the importance of ethical business conduct for small businesses in the health sector to boost productivity, bringing together industries, healthcare professionals, patient groups and governments to provide businesses with a transparent and predictable environment.[54]

Furthermore, APEC is taking decisive strides to help economies prepare to shift toward digitalisation, by implementing an increasing number of programmes, including capacity-building workshops. And APEC is implementing a project aimed at creating a digital platform for members to share best practices and discuss innovative ways to use digital technologies, particularly to facilitate trade, gather relevant data to support policy interventions, and develop new, more efficient models and approaches to improve health systems in light of the pandemic.[55]

APEC economies should think ahead toward facilitating a gradual and steady economic reopening to revive viable sectors such as travel and tourism, reinvigorate manufacturing industries and herald the emergence of new jobs, markets and businesses that could prove more sustainable as well as profitable. An economic resurgence that is broad-based and innovative is also resilient and inclusive.

Many policy reforms still need to be discussed and agreed upon, recognising that each economy is dealing with different realities, marked by varying trends in infections vis-à-vis available vaccines, hospital capacity and isolation units as well as fiscal and monetary space. But time is of the essence: as long as COVID-19 remains in the air, it continues to be a clear and present threat to health, the social fabric and economic prospects. APEC needs to act together, now.

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[54] APEC, "New Zealand Joins APEC's Efforts to Implement Ethics Pacts, Strengthens Small Businesses & Patient Health," Press Release, 18 October 2021, https://www.apec.org/Press/News-Releases/2021/1018_NZ

[55] APEC Conference on Digital Healthcare Innovation – COVID-19 Response by Health Information Utilization, see: https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=2705

Multilateral cooperation and coordination needs to be intensified. Taking the first step toward ending the pandemic and building back better and more inclusive societies is crucial. Implementing effective and inclusive policies takes us closer to the Putrajaya Vision 2040 of an APEC region that is resilient to pandemics and shocks by fostering quality growth that generates tangible benefits and greater well-being for all, today and well into the future.[56]

[56] APEC, "APEC Putrajaya Vision 2040" (Annex to the "APEC 2020 Leaders' Declaration," 20 November 2020), https://www.apec.org/Meeting-Papers/Leaders-Declarations/2020/2020_aelm/Annex-A

APPENDIX A: APEC ECONOMIC RESPONSE AND RECOVERY INITIATIVES

The table here summarises the APEC initiatives to address the impact of COVID-19 and support economic recovery in the region.

For a full listing and discussion of APEC's initiatives, see: APEC, "APEC COVID-19 Latest & Immediate Virtual Exchange: APEC COVID-19 Economic Response and Recovery Initiatives," https://www.apec.org/COVID-19/APEC-COVID-19-Economic-Response-and-Recovery-Initiatives#1

Initiative	Response	Main Objective
Supporting supply chains for essential goods and services	Declaration on Facilitating the Movement of Essential Goods by the APEC Ministers Responsible for Trade	Enhance coordination, efficiency and transparency of border clearance of essential goods, and full implementation of the WTO Agreement on Trade Facilitation, to help facilitate trade
	Statement by APEC Ministers on COVID-19 and Food Security	Boost food security by ensuring the smooth flow of food and agricultural products and inputs across borders to minimise disruptions to global supply chains and food trade
Securing access to COVID-19 vaccines and medical products	Joint Statement on Building a Resilient Asia-Pacific in a COVID-19 World by APEC Health Ministers	Provide safe, quality, effective and affordable vaccines and medical products, especially those essential to the COVID-19 response across the region; and contribute additional resources from across APEC to combat the pandemic and support workers and sectors through the economic recovery process
	Best Practice Guidelines for APEC Customs Administrations to Facilitate the Distribution of COVID-19 Vaccines and Related Goods	Facilitate the distribution of COVID-19 vaccines and related goods, in particular by strengthening the predictability, visibility and reliability of economies' vaccine supply chains and also send a strong signal to the global community that APEC is committed to expediting the successful rollout of COVID-19 vaccines.
Facilitating the essential movement of people	Commitment by APEC Ministers to Explore Ways to Facilitate Essential Movement of People across Borders	Explore ways to facilitate essential movement of people across borders, without undermining the efforts to prevent the spread of the virus
	Review of Measures Facilitating Essential Movement of People across Borders	Voluntary information exchange on economies' measures undertaken to ease travel restrictions in order to keep global supply chains open, secure and stable; a survey of measures being explored or implemented by economies

Initiative	Response	Main Objective
Increasing transparency for COVID-19 response measures	Commitment by APEC Ministers to Notify any Trade COVID-19 Response Measures in Accordance with WTO Obligations	Ensure that emergency trade measures designed to address COVID-19 are targeted, proportionate, transparent, temporary, do not create unnecessary barriers to trade, and are consistent with WTO rules
	COVID-19 Latest & Immediate Virtual Exchange (LIVE)	Website displaying a range of COVID-19 information relevant to APEC economies
Analysis, exchanges and best practices on COVID-19 response and recovery	High-level exchanges on COVID-19 response and recovery Measures and recommendations	Expert exchanges between economies, international organisations, private sector representatives and other stakeholders on: policies, measures and best practices related to customs response to the COVID-19 pandemic; emergency preparedness measures; measures to foster the resilience of SMEs during the COVID-19 crisis; women-focused responses to the pandemic; and initiatives in response to the impact of COVID-19 on tourism, among others.
Building resilience and inclusion in APEC communities	Ministerial Statement on Advancing Women's Economic Empowerment to Strengthen Post-Pandemic Recovery and Resilience	Place women and girls at the centre of economic recovery efforts; create opportunities to further unlock their potential; and remove barriers to better drive toward a swift, inclusive and sustainable recovery.
	• APEC Entrepreneurship Programme: Nurturing Youth Entrepreneurs to Enhance Resilience • Exploring Innovative Digitalisation for Tourism MSMEs in Developing APEC Economies: What Can We Learn from Tourism's Response to COVID-19 • Growing Indigenous Businesses in APEC through Trade • Supporting Women's Access to Global Markets: Online Course for the APEC Business Community etc.	Undertake or plan programmes targeted at supporting MSMEs, women, youth and others with untapped economic potential during the COVID-19 pandemic
Using digital technology to support COVID-19 response and recovery	Utilising Digital Technology in the Field of Trade Facilitation under the Current COVID-19 Pandemic and Beyond: Best Practices Sharing Workshops	Share best practices in light of the new reality of COVID-19 in order for economies to deepen understanding of and seek ways to align digital technologies in the field of trade facilitation
	APEC Conference on Digital Healthcare Innovation–COVID-19 Response by Health Information Utilisation	Create a platform to learn about and discuss various applications of digital health data; enable member economies to develop an integrated health service model through cooperating with hospitals, communities and the smart healthcare industry

WTO=World Trade Organization
Source: APEC, "APEC COVID-19 Latest & Immediate Virtual Exchange," accessed 22 October 2021, https://www.apec.org/COVID-19

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