

ASIA-PACIFIC TRADE AND INVESTMENT TRENDS 2022/2023

*Foreign Direct Investment and Policies in the Health
Sector in Asia and the Pacific*





Asia-Pacific

Trade and Investment Trends 2022



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Asia-Pacific

Trade and Investment Trends 2022

ACKNOWLEDGEMENT:

This Brief was written by Vanika Sharma, Consultant, Investment and Enterprise Section, Trade, Investment and Innovation Division, ESCAP. The Brief was developed under the supervision of Rupa Chanda, Director, TIID; Heather Taylor-Strauss, Economic Affairs Officer, Technology and Innovation Section, TIID; and Yann Duval, Chief, Trade Policy and Facilitation Section (TPFS), TIID. Natnicha Sutthivana provided secretariat support as well as cover design and editorial layout. The Brief was copy - edited by Robert Oliver.



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Highlights

- The ongoing COVID-19 pandemic has exposed the cracks in the current health sector. From 2019 to 2020, investment in the health-care sector dropped by 45 per cent and continued to decline in 2021 to 34 per cent in the first three quarters of 2022.
- Globally, greenfield investment in the health sector, from 2008 to 2021, fluctuated considerably, falling by 28 per cent between 2008 and 2012 and then increasing by 97 per cent to US\$ 24 billion by 2021. Global peaks and falls have been replicated in the FDI received by countries in the Asian and Pacific region, while the share of global inward FDI in the health sector in Asia and the Pacific has declined over the period.
- Greenfield FDI in the health sector in Asia and the Pacific was 49 per cent lower in 2021 compared to 2008. However, prospects for 2022 look better, with an increase of 78 per cent in the first quarter of the year, compared to the same period in 2021.
- On individual subsectors, between 2008-2021 in Asia and the Pacific, the pharmaceutical subsector attracted the highest amount of greenfield investment, US\$ 32 billion. It attracted more than twice the investment that went into the medical devices subsector, which was second (US\$ 20 billion). They were followed by biotechnology (US\$ 17 billion) and health-care subsectors (US\$ 10.8 billion).
- Prospects for the pharmaceutical subsector in Asia and the Pacific are subdued for the remainder of 2022, with a steady value of US\$ 96 million worth of greenfield investments undertaken in the first quarter of 2022 in the pharmaceutical subsector. For medical devices, however, the first quarter of 2022 witnessed a sharp increase in investments, reaching US\$ 1.2 billion. At the same time, the biotechnology subsector only reached US\$ 55 million. Investment in the health-care subsector in 2021 was also more promising, with an uptick reaching close to US\$ 60 million.
- FDI flows through cross-border M&As have been on a constant rise since the early 2000s, with the total value of projects increasing from US\$ 2 billion to US\$ 10.6 billion from 2001 to 2020. Most M&A deals in the region took place in the pharmaceuticals subsector – close to 2,500 between 2010 and 2020. This was followed by the health-care subsector and then biotechnology.
- Mergers and acquisitions in the Asia-Pacific region have been larger than greenfield investment for the health sector, where ownership of assets is valued, given the health sector's strategic importance in most countries.



- China was the largest receiver of inward greenfield FDI during 2008-2020, followed by India (US\$ 14 billion), Singapore (US\$ 9 billion) and Malaysia (US\$ 5 billion).
- Between 2008 and 2021, the United States was the largest investor in the Asia-Pacific region's health sector, making up 35 per cent of all health-related greenfield investments in the region. Switzerland, Japan, Germany and France followed the United States as the largest sources of investment. Together, those five countries accounted for 66 per cent of all health-related investments in the Asia-Pacific region.
- In terms of intraregional investors, firms from China, Japan, the Republic of Korea, Singapore and India led investments in the health-care sector in the region. In 2021, however, Asia-Pacific economies saw decreasing outward investment explained by the delayed COVID-19 wave, which hit the region in 2021.
- Investment policies in the region have varied widely and have not all been promotion-related. Ten countries in the region, namely China, India, Indonesia, the Lao PDR, Malaysia, Mongolia, the Philippines, Thailand, Viet Nam, and Myanmar, impose some type of entry restrictions (out of the total 70 surveyed by UNCTAD for WIR 2021). In terms of subsectors, health-care facilities and medical services stand out as the most protected.
- Many countries in the Asia-Pacific region have invested in the health sector as a core policy objective. Countries such as Sri Lanka, Brunei Darussalam, Bhutan, Timor-Leste and Thailand have prioritized FDI in the health sector.
- Certain key challenges exist in the region, such as the limited capacity of countries in the region to attract the quantity and quality of investment needed. These include poor regional and domestic investment ecosystems, the lack of capital, technology, skills, low regulatory capacity, and poor infrastructure and related services.
- Countries in Asia and the Pacific will need to create and improve an ecosystem of coherent policy and transparent regulatory institutions. In tandem, Governments will need to invest in skills development, technological capacity and health infrastructure relevant to achieving growth in the sector. Regional cooperation and political commitment to openness for investment will be crucial to helping economies build back better and harness the potential of FDI.



1. Introduction

The health sector has always been a core priority in most national development strategies. Ensuring access to health-related services and goods is a permanent policy objective for achieving the Sustainable Development Goals (SDGs). The ongoing COVID-19 pandemic has exposed the cracks in the current health sector, deteriorated access to health care, tested the resilience of global supply chains of medical goods, and put an unprecedented strain on national health systems. Through this, it has also highlighted the importance of investing more in health and creating stronger health systems.

The Asia-Pacific region has, since before the pandemic, considered investment in the health-care sector as imperative. However, declining flows into the sector and the added relevance from the pandemic has led to greater prioritization of the sector in terms of investment and promotion activities. From 2019 to 2020, investment in the health-care sector dropped by 45 per cent and continued to decline in 2021 to 34 per cent in the first three quarters of the year. Although investment promotion activities are essential in attracting the quantity and quality of investment needed, there are some key challenges that Investment Promotion Agencies (IPAs) will need to focus on for investment to create the maximum positive benefits. These challenges include poor regional and domestic investment ecosystems, lack of capital, technology and skills, low regulatory capacity, and poor infrastructure and related services.

Member countries will need to drive this effort in a number of ways – i.e., an improved policy ecosystem, investment in skills and harnessing digital avenues for growth. Regional cooperation and political commitment to openness for investment will be critical to helping economies build back better and to harnessing the potential of foreign direct investment (FDI). All this will require an understanding of the evolving investment trends and policies in the health sector in Asia and the Pacific, for which this paper provides a brief but comprehensive review.

The remainder of this paper is structured as follows. Part II reviews the linkages between FDI and health; Part III delves into the subsectors comprising the health sector, and the recent trends in FDI in the health sector in Asia and the Pacific countries; Part IV assesses the key policies currently affecting FDI in the health sector and the policy changes implemented in light of the COVID-19 pandemic; Part V proposes policy recommendations for increasing investment in the health sector in a sustainable manner; Part VI comprises the conclusion.



2. FDI and Health: Literature review

The literature has often framed the discussion on FDI and health under three broad and inter-related dimensions – access, quality and public-private competition. The main benefits of FDI in the health sector can be described as increasing access to health care by making more medical goods and services available in a country. The inflow of investment can increase physical capacity, alleviate supply shortages, and enlarge the scope of health services available in a country, while also contributing to more technology and medical knowledge. The increase in physical capacity and infrastructure can be particularly useful in developing countries that may suffer from under-investment in the health sector, while also potentially bringing in means of production that can replace expensive imports or fill gaps in the medical supply chain. FDI is often regarded as a crucial opportunity for countries' health systems that face constraints or difficulties in public financing since it frees up public resources that can be redirected to other urgent areas of need. FDI-induced income gains can further lead to higher private and public expenditure on medical care, which is often dependent on the ability to pay (Burns and others, 2017). This is also evident in Asia and the Pacific where a positive relationship was found in ASEAN between the level of FDI and health-care expenditures (Verma, 2021). FDI in the health sector is an essential factor in improving access to health and influencing the health expenditure capacity of a country. Empirical evidence of FDI enhancing access to health care is also seen in the least developed countries (LDCs), where the positive effect of FDI on life expectancy appears to be driven by improvements in adult health, as opposed to child or infant health. An explanation for this is that increases in wages for skilled labour and improvements in working conditions owing to FDI are arguably more relevant to adults than children, allowing them the necessary means to access health services (Burns and others, 2017).

Another benefit of FDI in the health sector is that it can lead to marked improvements in the quality of health-care goods and services. This can occur through technological and knowledge upgrading via direct impacts and spillovers. Directly, FDI could bring in newer technology, means of production, and knowledge and skills transfer. Indirectly, inward FDI can lead to positive spillovers that raise quality and standards in the health sector and drive innovation through competition between existing/domestic health providers and incoming ones. This could also potentially lead to the provision of specialized medical services and goods that were not readily available before, contributing to better access and a broadened scope of the health sector. In the Indian pharmaceutical industry, however, between 1980 and 1994, knowledge spillovers from MNCs' local research and development (R&D) activities



had limited benefits for domestic firms. Significant R&D spillover only took place between MNCs, instead of between MNCs and local firms due to a restricted FDI policy environment and weak intellectual property protection provisions (Feinberg and Majumdar, 2001).

On the other hand, FDI in health can pose some risks. FDI in the health sector could give rise to greater inequality in the host countries and reduce government funding in the public health-care sector. Essentially, FDI can create a “dual health-care system” where the rich can access higher quality care from the private sector, while low-income families only have access to cheaper, lower-quality public health care (Akyuz and Demir, 2020). This can happen when an internal brain drain is created with skilled workers moving from the public sector to the private sector in search of higher wages, better opportunities and better infrastructure. In addition, better technology, innovation and infrastructure from the private sector can distort government motives to invest in the public health sector, choosing to redirect resources to more urgent matters. This could leave the public health sector lagging behind significantly and have a negative impact those dependent on the public provision of health-care services. This is the case in Malaysia, where the public sector caters to the bulk of the population (65 per cent) but is served by just 45 per cent of all registered doctors and even fewer specialists (25-30 per cent). The heavily subsidised public sector is almost entirely borne by budget allocations, with patients paying only nominal fees for access to both outpatients and hospitalization. On the other hand, the private sector has grown tremendously over the past 25 years. On average, the private sector constitutes around 55 per cent of all registered doctors, who look after some 25 per cent of the population, most on a self-paying fee-for-service arrangement and increasingly through some third-party payment mechanisms (e.g., health insurance) (Quek, 2014).

Therefore, although FDI can lead to increased access and better quality of health care in the host country, certain safeguards also need to be in place to ensure that the access to better quality is not unequal. Health is primarily a public good, and FDI in the host country should meet that country's sustainability criteria for the health sector. This can be achieved through proper governance as well as sound regulation that highlights complementarities between the public and private health sectors.



3. Health sector FDI definition and trends

Investments in the health sector usually refer to investments in three key components (UNCTAD, 2021). These are:

- (a) The manufacturing component – including the production of medical goods and devices and the manufacturing of medical equipment and pharmaceutical products (including final drugs and the raw materials used to make them);
- (b) The infrastructure component – including the construction of medical facilities such as hospitals and health centres, and medical research centres;
- (c) The services component – including the provision and export of medical services, research and development in fields such as medical technology and medicine, and medical tourism.

In the context of this section of the paper, health-related FDI focuses on four related subsectors: pharmaceuticals, biotechnology, medical devices and health care. National development goals and comparative advantages in the various subsectors have often determined which subsector has been prioritized for investment. Consequently, each respective subsector's level of FDI will differ within each country and across the Asia-Pacific region.

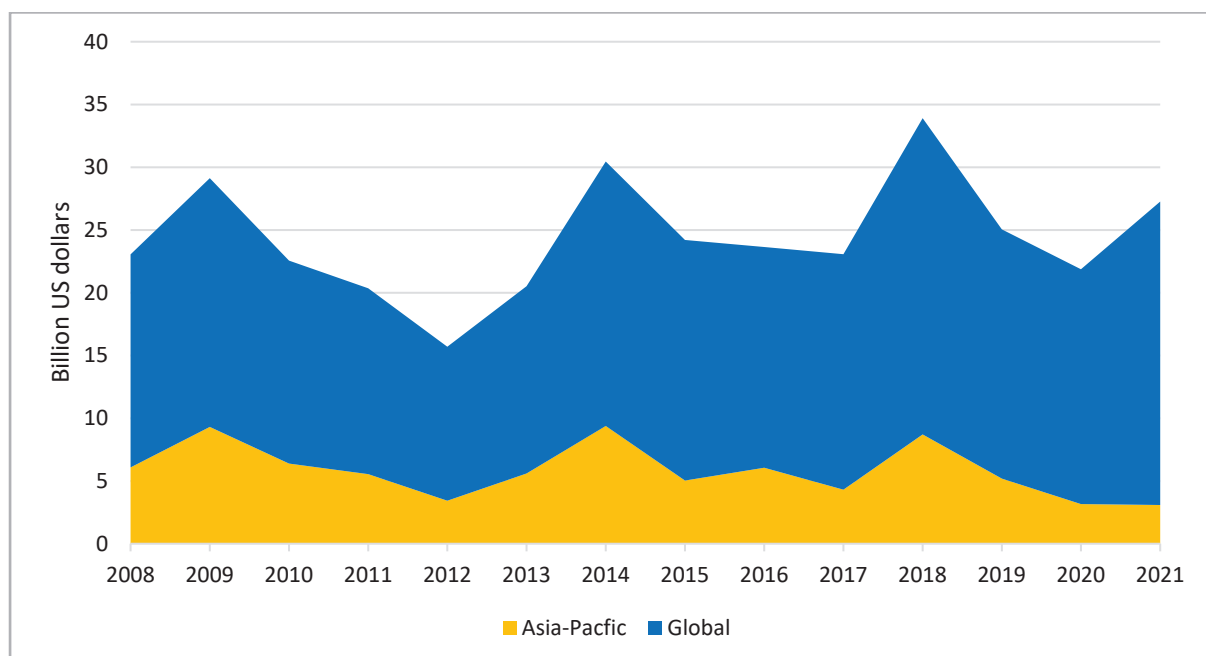
3.1 Health sector FDI trends

Globally, from 2008 to 2021, greenfield investment in the health sector fluctuated considerably, falling by 28 per cent between 2008 and 2012, and then increasing by 97 per cent to US\$ 24 billion by 2021. Global peaks and falls have been replicated in the FDI received by countries in the Asian and Pacific region, while the share of global inward FDI in the health sector in Asia and the Pacific has declined over the period (figure 1). Recent incoming health sector greenfield FDI declines in the region have also been sharper than those experienced globally between 2018-2021. However, while global FDI flows in the health sector recovered in 2021, flows to Asia and the Pacific declined. Similar to sector trends, global subsector trends have also closely matched trends in the region. For example, globally, during 2008-2021, the pharmaceuticals subsector has received the largest share of inward FDI, followed by biotechnology, medical devices and then the health-care subsector. Regionally, pharmaceuticals have been followed by medical devices, and then biotechnology and health care services.



In terms of countries, the United States has been the largest receiver of greenfield FDI in the health sector during the same period, but countries such as China, Singapore, Australia and India have not been far behind. On the other hand, Asia-Pacific region countries have lagged as sources of health sector greenfield FDI. For example, in 2020, the largest sources of investment in the health sector were the United States, Japan, Germany, the United Kingdom, and France – i.e., only one Asian economy in the top five source countries. Apart from Japan, lower on the list large investors from the Asia-Pacific region included Australia, China, Malaysia, India and the Republic of Korea.

Figure 1. Greenfield FDI inflow in the world and to Asia and the Pacific in the health sector, 2008-2021



Source: fDi Markets.

1. Greenfield FDI in Asia and the Pacific

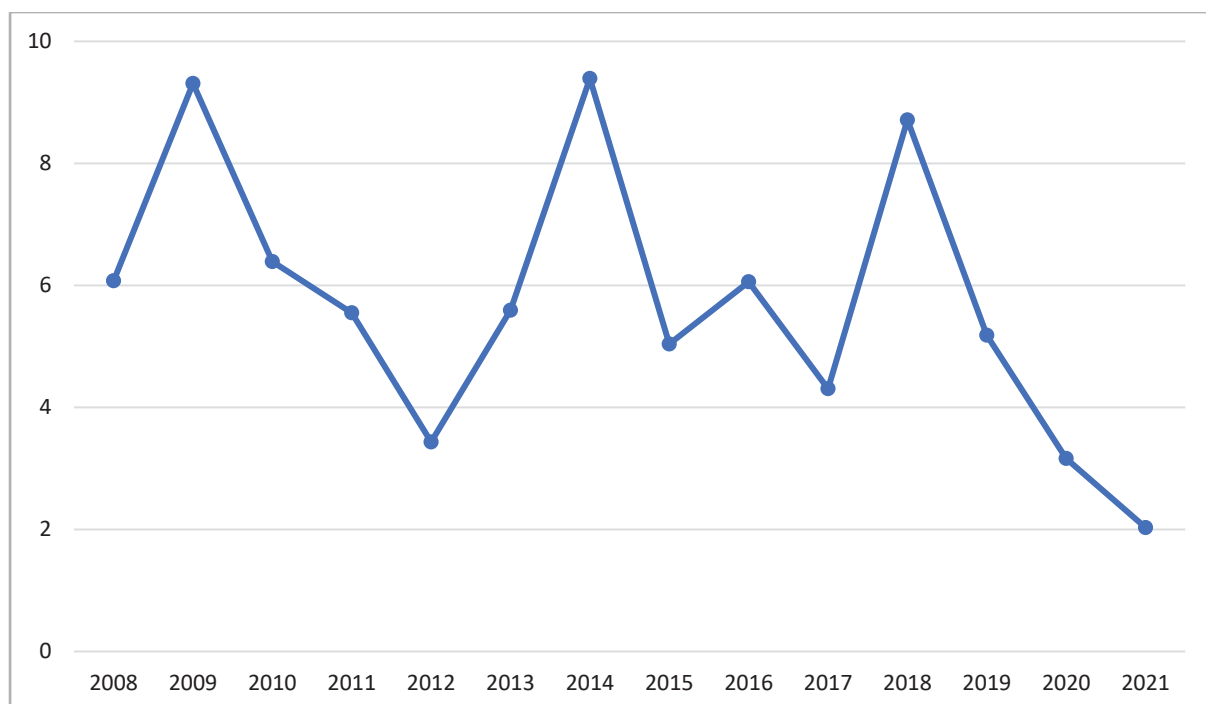
Greenfield inward investment in Asia and the Pacific in all four segments of the health sector was considerably volatile from 2008 to 2021 (figure 2). More worrisome, greenfield FDI in the health sector was 49 per cent lower in 2021 compared to 2008. Drops in investment in the sector began after the financial crisis in 2009; although they started to recover in 2012, they dropped again in 2015, and again in 2019. More recently, the general downward trend in FDI levels during the past five years, combined with dramatic declines in greenfield investments since the start of the COVID-19 pandemic, have driven the slide in FDI into the sector. However, prospects



for 2022 are looking better, showing an increase of 78 per cent in the first quarter of the year, compared to the same period in 2021.

The peaks in greenfield FDI inflow to Asia and the Pacific seen in 2009, 2014 and 2018 can be explained by large investments made by a few companies in the region. In 2009, major investments took place in China and the Republic of Korea by the pharmaceutical company Novartis in research and development projects in the biotechnology sector (according to fDi Markets). At the same time, General Electric Healthcare, a medical equipment company, also invested US\$ 1 billion to set up an advanced research laboratory in India. The 2014 peak was the result of investments by the Japanese company Toshiba in Malaysia (launch of production at a new diagnostic imaging systems manufacturing base) and China (in the medical devices sector in an R&D project). In the case of 2018, it can be accounted for by a US\$ 5.5 million investment by Péters Surgical, a French medical devices manufacturing company, for expanding its manufacturing facility in India.

Figure 2. Greenfield FDI inflow to Asia and the Pacific in the health sector, 2008-2021



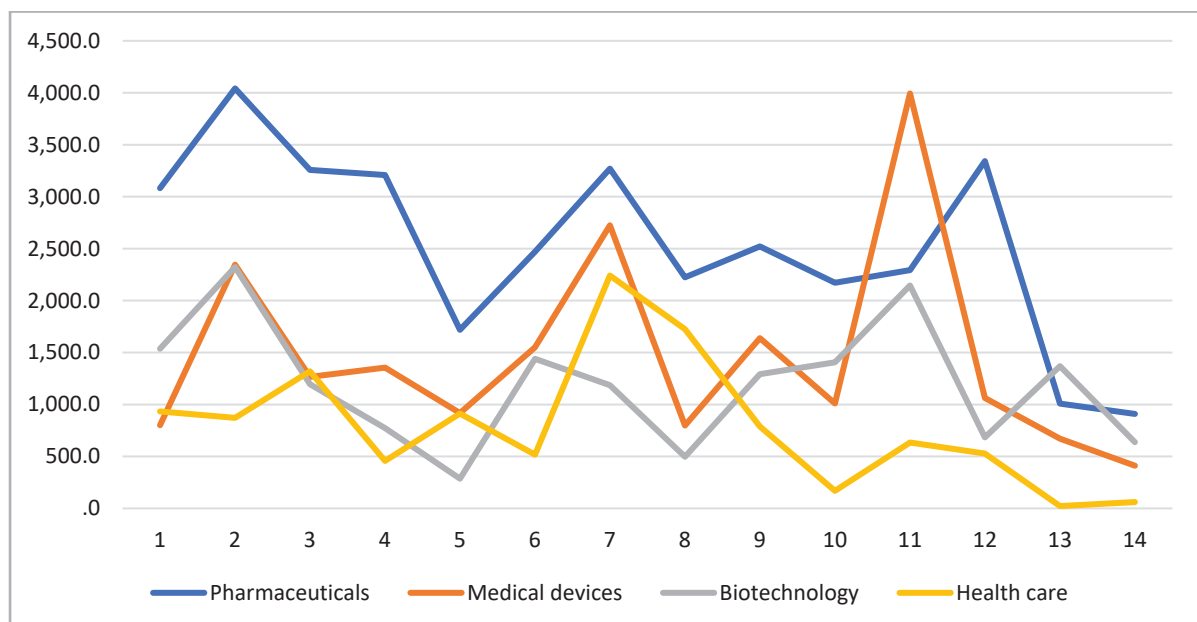
Source: fDi Markets.



2. Greenfield FDI in health subsectors in Asia and the Pacific

Turning to the individual subsectors, during 2008-2021 in Asia and the Pacific the pharmaceutical subsector attracted the highest amount of greenfield investment, amounting to US\$ 32 billion. It attracted more than twice the amount of investment that went into the medical devices subsector, which was second (US\$ 20 billion). They were followed by the biotechnology (US\$ 17 billion) and health-care subsectors (US\$ 10.8 billion). The decrease in investment in the health sector since the start of the COVID-19 pandemic can be attributed mainly to contractions in the medical devices subsector, which declined sharply in 2019, compared to smaller contractions in the health-care and biotechnology subsectors, and an increase in the pharmaceuticals subsector (figure 3).

Figure 3. Greenfield FDI inflow to Asia and the Pacific, by subsector, 2008-2021



Source: fDi Markets.

The production and export of pharmaceutical products constitutes a large share in most Asian and Pacific economies. China and India, in particular, are two of the world's largest suppliers of pharmaceuticals. In 2019, investment in the pharmaceutical subsector in Asia and the Pacific amounted to US\$ 3.3 billion, largely due to a US\$ 1.2 billion investment by the Roche Group in Japan in a pharmaceutical R&D project, but had fallen by 62 per cent to US\$ 1 billion by 2021. Prospects for the pharmaceutical subsector in Asia and the Pacific are subdued for the remainder of 2022, with a steady value of US\$ 96 million worth of greenfield investments undertaken in the first quarter of 2022 in the pharmaceutical subsector. Investment in that subsector might take longer to bounce back as countries rethink their medical



supply chains, given the disruptions and shortages caused by the lockdowns in 2020. At the same time, however, the pharmaceutical subsector also forms a large part of vaccine manufacture and distribution. Between 2020 and 2021, there was some investment in the region in vaccine production to combat the COVID-19 crisis. For example, the United States-based contract research organisation Pharmaceutical Product Development is planning to open a new multifunctional laboratory in China. It will offer bioanalytical, biomarker and vaccine sciences services with the new laboratory opened in 2020. The Germany-based pharmaceuticals specialist Bayer is also expanding its site at the Beijing Economic and Technological Development Area, China with the addition of a new production and supply plant. The company is investing US\$ 59 million in the new plant, which is scheduled to commence operation by the end of 2022. It is expected to increase the annual output of the Beijing site by about 40 per cent to serve the domestic market. In the face of this crisis, countries are also focusing on ensuring preparedness for facing future pandemics. Several FDI projects have already been announced and initiated for increasing vaccine production and distribution capacity in the region. Some of these projects are listed in box 1.

The medical devices subsector in the region has experienced the largest growth in investment, amounting close to 400 per cent from US\$ 0.8 billion in 2008 to US\$ 3.9 billion in 2018. However, the subsector also experienced the largest decrease in investment, a fall of 83 per cent between 2018 and 2019. In 2021, this fall increased further, leading to an 85 per cent decrease since the 2018 level. In the first quarter of 2022, however, this subsector witnessed a sharp increase of investments, reaching US\$ 1.2 billion. This is not surprising, given the excessive increase in demand for medical devices such as PPE suits, ventilators, oxygen masks and latex gloves. The decrease in 2020 could be explained by the rethinking of supply chains. However, unlike in the pharmaceuticals subsector, the medical devices subsector saw a smaller decrease in 2021 and an increase in 2022. In the short term, contractions in investment in this sector are already being reversed by an increase in demand for medical equipment, as developed countries set up their factories for manufacturing medical devices. Investment in this sector is also set to increase, given a rapidly expanding middle class and an ageing population in several Asian countries. Investments in this subsector are also seen as important in the context of future pandemics and similar investments, as announced by the pharmaceutical sector, to ensure that regional market demand for medical devices is met in the future (box 1).



Box 1. Investments in increased preparedness for future pandemics

Singapore – France-based Sanofi, a health care company that develops therapeutic solutions, is establishing a vaccine production site in Singapore. The US\$ 448 million project will supply Asia, with operations commencing in the first quarter of 2026.

Singapore – Germany-based BioNTech, a biotechnology company, plans to establish an mRNA-based vaccine and therapeutics manufacturing facility in Singapore by 2023, to serve regional and global supply, with an annual production capacity of several hundred million doses.

Uzbekistan – The pharmaceutical company Rafarma Pharmaceuticals, a subsidiary of Cyprus-based R&D Biocogency Laboratories, is set to establish a joint venture with the Pharmaceutical Industry Development Agency of Uzbekistan to establish a medicine factory in the Tashkent Pharma Park, Uzbekistan. The US\$ 82 million project will be completed in 2025 and will serve the domestic market.

Bangladesh, Sri Lanka, and Fiji – These three countries have also made the pharmaceuticals sector a priority investment sector, providing incentives to attract FDI (according to the respective IPA websites).

China – Cytiva, a provider of technologies and services for the development and manufacture of therapeutics, and a subsidiary of United States-based Danaher, will expand operations at its manufacturing plant in China. It is part of the firm's US\$ 500 million investment to expand its 13 manufacturing facilities globally and create 1,000 new jobs across 10 sites in Austria, China, Singapore, Sweden, Switzerland and the United States by 2025. The expansion will help Cytiva to meet growing global demand for its products, partly as a result of the coronavirus pandemic.

Source: fDi Markets.

Investment in the biotechnology subsector in Asia and the Pacific was at its peak in 2009, before a continued and sharp decrease until 2012 following the global financial crisis. In 2012, investments were at their lowest in this subsector at US\$ 0.2 billion. Since then, however, inward investment began rising, and reached US\$ 2.1 billion in 2018. The pandemic caused an expected decrease in investment in the subsector in 2019, but unlike all the other subsectors, the biotechnology subsector saw an uptick in investment in 2020 and 2021 with US\$ 1.3 billion in investments in 2021. The biotechnology subsector is the primary driver of innovation in the health sector. Its resilience during the pandemic should not come as a surprise, as the race to under-



standing and developing treatments for the virus has led to an increase in the attractiveness of this sector as an area of investment. This trend is only set to increase as the world moves towards further advances in digital technologies, particularly digital health technologies. Although in 2021, investments in this sector fell compared to 2020, and in the first quarter of 2022 investment in this subsector only reached US\$ 55 million, the slow-down could be justified by the focus on manufacturing more vaccines instead of developing new ones. However, with the slowdown in the coronavirus pandemic, the focus could shift towards preparing for future pandemics, leading to new investments in the biotechnology sector for newer vaccines and more innovation.

Finally, the health-care subsector during this period received the lowest amount of inward investment in the region. It was at its peak in 2014, attracting US\$ 2.2 billion in greenfield investment, but has since recorded a steady decline – except for a small increase in 2018 when it attracted US\$ 0.6 billion worth of investments. Between 2014 and 2021, investment in this sector saw a decrease of 99 per cent, which is not surprising given the dismal amount of investment made in this subsector in 2020 (US\$ 13 million). However, investment in 2021 was more promising, with an uptick reaching close to US\$ 60 million. The health-care sector faces the highest amount of FDI restrictions that aim to prevent crowding out of smaller domestic firms. However, as the pandemic has exposed the fault lines in the current health system, with shortages not just of medical equipment but also of medical services, investment in health-care services, including education and training, is going to become an important aspect on which Asia-Pacific IPAs will need to focus their strategies.

3.2 Mergers and acquisitions in the health sector in Asia and the Pacific

Turning to mergers and acquisitions (M&As), this type of investment has also been particularly dominant in the health-care sector in the region. FDI flows through cross-border M&As have been on a constant rise since the early 2000s, with the total value of projects increasing from US\$ 2 billion to US\$ 10.6 billion dollars from 2001 to 2020 (figure 3). Between 2010 and 2020, more than 6,000 agreements worth US\$ 421 billion, took place in the region. Since 2010, M&As have seen a steady rise, but they increased very quickly in 2018 by 416 per cent compared to their level in 2010, reaching a value of US\$ 120 billion. This sudden increase can mainly be attributed to a US\$ 76 billion deal between Shire PLC (Ireland) and Takeda Pharmaceuticals (Japan). This deal made up more than 50 per cent of the value of M&As in 2018. The Covid-19 crisis caused a sharp decrease of 67 per cent in these project values, but they remained above pre-2018 levels.



Most M&A deals in the region took place in the pharmaceuticals subsector – close to 2,500 between 2010 and 2020. This was followed by the health-care subsector, and then biotechnology. Although there seems to be a pivot in the expansion strategies of developed economies, where they favour smaller acquisitions more than larger ones in this sector (UNCTAD, 2021), the same cannot be said for Asia and the Pacific yet, where between 2010 and 2019 M&As over a value of US\$ 1 billion increased from four to 10 with a dip in 2020 to five (Refinitiv Eikon).

Mergers and acquisitions in the Asia-Pacific region have been larger than greenfield investment for the health sector. Although this is the case in most sectors, it is especially true for the health sector, where ownership of assets is valued, given the strategic importance the health sector has in most countries.

3.3 Country-wise health sector FDI trends in Asia and the Pacific

Turning to country-wise trends in investment in the health sector in the region, China was the largest receiver of inward greenfield FDI during 2008-2020 (figure 4). During that period, China accumulated a stock of US\$ 31 billion in the health sector and in 2021, amounting to 43 per cent of the total health sector investment in the region. In terms of investment amount, China was followed by India (US\$ 14 billion), Singapore (US\$ 9 billion) and Malaysia (US\$ 5 billion). Market-seeking is the primary incentive for firms to invest in those countries. A total of 51.5 per cent of companies reported domestic market growth as the key motive, and 32.7 per cent of companies believe that proximity to markets and customers incentivizes them. In addition, a friendly regulatory environment and active promotion measures contribute to health-related FDI promotion in those countries. For example, stronger patent protection leads to higher FDI inflow to the Indian pharmaceutical sector (Tripathy and others, 2011). In the case of Singapore, the launch of a comprehensive pharmaceutical program – the Biomedical Science (BMS) initiative – has provided a clear policy framework which has boosted FDI in the country (Mercurio and Kim, 2015).

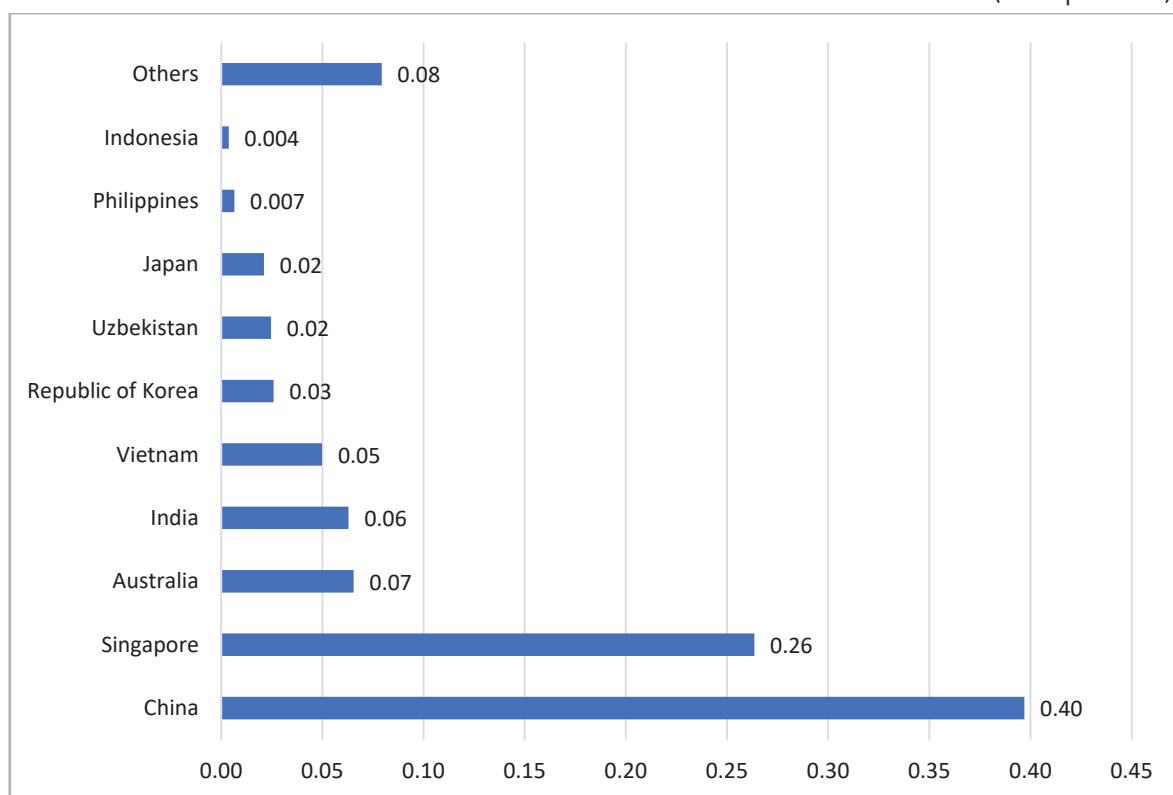
The 2018 increase in the inward greenfield investment to the region was mainly led by increased inward investment to India and China. For example, inward greenfield investment in the health sector of China grew by 22 per cent and by 885 per cent in India in 2018. In 2020, concerted efforts to increase health-related FDI resulted in several economies in the region recording higher investments in the sector, including (in descending order) Singapore, Thailand, Uzbekistan, Cambodia, New Zealand and Macau (China). Several of the developing countries such as the Lao Peoples Democratic Republic, Maldives, Cambodia, Nepal and Sri Lanka, began to receive FDI into the health sector for the first time, illustrating the important role that health-



sector FDI can play in complementing public resources to build and develop a sector that is better able to respond to health crises. Subsectoral investment trends in these countries are similar to the trends seen in subsectoral investment trends for the region. For most, the highest amount of investment was in the pharmaceutical subsector, sometimes preceded by the medical devices subsector, and followed by the biotechnology and health-care subsectors. For India and Malaysia, investments in the medical devices subsector have been greater than in the pharmaceutical subsector, while for the Republic of Korea, the biotechnology subsector has attracted the largest amount of investment compared with all other subsectors.

Figure 4. Share of health sector investment in Asia and the Pacific, 2021

(Unit: per cent)



Source: *fDi Markets*.

In terms of source countries, investors from developed countries together with several Asian economies were responsible for the largest shares of investment in Asia and the Pacific in this sector. Between 2008 and 2021, the United States of America was the largest investor in the Asia-Pacific region health sector, making up 35 per cent of all health-related greenfield investment in the region. In descending order, Switzerland, Japan, Germany and France followed the United States as the largest sources of investment. Together, those five countries accounted for 66 per cent of all health-related investment in the Asia-Pacific region. While investment in the



health-care sector by developed economies outside the region decreased in 2020, intraregional FDI in the sector grew, with investment by China and the Republic of

Korea growing by 3,771 per cent and 87 per cent, respectively. In terms of intraregional investors, firms from China, Japan, the Republic of Korea, Singapore and India led investments in the health-care sector in the region. In 2021, however, developed economies were the source of higher investment in the region's health sector, while Asia-Pacific economies saw decreasing outward investment. This could be explained by the delayed COVID-19 wave which hit the region in 2021. The role of Asia-Pacific economies as outward investors in the region's health sector is expected to grow in the wake of the COVID-19 pandemic. Japan, in particular, can act as a reliable source of investment, since it excels in its expertise in advanced technology. In addition, its companies disclose nearly 100 per cent of their pharmaceutical manufacturing know-how, which can induce knowledge spillovers and aid receivers to achieve self-reliance (Kumari and others, 2021).



Box 2. Digital health sector investment in Asia and the Pacific

The health sector is going through a shift, which is very much part of the Industry 4.0 Revolution. Digital health is at the forefront of this transformation, with technology becoming a larger part of the health sector in areas such as telemedicine, diagnostics, drug R&D, health data analytics, MedTech, genomics as well as wellness apps and marketplaces. A significant number of countries in Asia and the Pacific are forerunners in the adoption trends of digital health technology. For example, in 2019, China had 94 per cent of health care currently using any digital health technology or mobile health apps. Such high percentages can also be seen in other member countries in the region, such as India (88 per cent), Singapore (82 per cent), the Russian Federation (81 per cent) and Australia (76 per cent). These countries have the potential to leapfrog their adoption of digital health technology and make it a part of their everyday health-care system.

Countries in the region are also important sources and destinations for digital health sector investments. According to Wavteq's 3600 digital health firms dataset, 12 per cent are from the Asia-Pacific region. Top source markets from the region include India, China, Australia and Singapore, with around 53 per cent, 13 per cent, 13 per cent and 12 per cent respectively of firms being headquartered in these countries. These Asian and Pacific region-based firms have mostly expanded their footprint within the region, targeting important host countries that include Malaysia, China, Singapore, Japan, India, the Republic of Korea and the Philippines.

The rapid rise of digital technologies, combined with the recent increased importance of the health sector, make the digital health sector an attractive choice for investment. The consequences of cheaper, efficient, accessible and innovative health care make this investment a key component in preparation for future pandemics. ESCAP has advanced the work in this area and supports member states in increasing access to cost-effective digital health care through its infrastructure financing and PPP network.

Source: Wavteq, *Industry Blueprint – Digital Health*, 2022.



4. National investment policies in the health sector

The health sector spans a number of different subsectors; thus, the policy instruments and regulations used to govern the sector are also different and many. Key policies affecting the health sector can be distinguished in two types – restrictive and liberalizing. Restrictive policies usually take the form of restrictions on entry and operation in the host country. These include FDI bans, FDI ceilings, conditional entry and FDI screenings. Liberalizing policies, on the other hand, are used to attract more investment in the country/sector and can take the form of investment incentives. At the same time, there are also some key activities that affect FDI in the health sector. These include promotion and facilitation activities such as targeted promotion, enhanced facilitation, and the creation of SEZs and clusters, and can be used to complement liberalizing policies to attract FDI.

Since the pandemic, countries in the Asia-Pacific region have needed more investment in the health sector. This is particularly the case in subsectors such as pharmaceuticals and health care, which are important for this region, given that one of them drives investment in the region while the importance of the other has been increasing since the beginning of the COVID-19 pandemic. However, the investment policies in the region have varied widely and have not all been promotion-related. This section provides an overview of the different policy instruments employed by various countries in Asia and the Pacific during the course of the pandemic.

4.1 Restrictive policies

According to surveys undertaken by UNCTAD in 2021, the Asia-Pacific region is one of the most restrictive areas for FDI in the health sector. Ten countries in the region impose some type of entry restrictions (out of the total 70 surveyed by UNCTAD for WIR 2021). They are China, India, Indonesia, the Lao PDR, Malaysia, Mongolia, the Philippines, Thailand, Viet Nam, Myanmar. In terms of subsectors, health-care facilities and medical services stand out as the most protected – most likely to avoid crowding out small local hospitals and clinics that are abundant in developing countries in the region. Specifically, by type of policy, the trends are as follows.



1.FDI bans

FDI bans are present in four Asia-Pacific economies, i.e., Indonesia, the Lao PDR, Malaysia and Myanmar. These bans do not extend to the entire health sector, but are instead limited to certain regions or subsectors of the health sector in each country. For example, Indonesia, the Lao PDR, and Malaysia prohibit foreign investments in small hospitals, while investment in nursing homes and basic health services are restricted in Indonesia and Myanmar. Finally, investment in certain regions in the Lao PDR is also banned.

2.FDI ceilings

Foreign investment caps are present in the pharmaceutical subsector in five countries in the region (India, Indonesia, the Lao PDR, Myanmar and Thailand). FDI ceilings also include foreign ownership ceilings and joint venture requirements. In some countries the foreign equity restrictions apply to the entire pharmaceutical sector (e.g., the Lao PDR), while in others they apply only to specific segments (e.g., in India, where they are limited to patented medicines). In the case of joint venture requirements, FDI caps apply to medical infrastructure and the provision of medical services like in China, or in the form of specific equity caps in Indonesia, Malaysia and Myanmar. Foreign ownership caps can also be found in the region, especially in the production of medical equipment in Indonesia, Myanmar and Thailand.

3.Conditional entry

Two countries in the Asia-Pacific region also use conditional entry requirements, which usually include minimum capital requirements or other conditions for foreign investment in the country. For example, Viet Nam sets entry requirements in specific sectors of the health sector, while export performance requirements are set on foreign ownerships in the health sector in the Philippines.

4.FDI screening

With the COVID-19 pandemic and the emerging risks to the health sector of countries, FDI screening has become one of the most prolific types of restrictive policies in the region. It is most prominently used in pharmaceutical manufacturing and biotechnology subsectors as well as infrastructure and medical services subsectors. Four countries in the Asia-Pacific region review all inbound investment. In those countries the procedures are not just limited to national security considera-



tion, but are also designed to confirm that investors meet certain performance obligations or minimal capital requirements. FDI screening mechanisms

are often already in place due to national security concerns, and often include screening of FDI in the health sector. The list of these countries includes China and the Lao PDR, and more recently in Myanmar since the adoption of the Myanmar Investment Law of 2016. The Russian Federation also has FDI screening mechanisms in place, which allows it to block acquisitions in the health and life sciences sectors.

4.2 Liberalizing policies

At the same time, many countries in the Asia-Pacific region have made investment in the health sector a core policy objective. Countries such as Sri Lanka, Brunei Darussalam, Bhutan, Timor-Leste and Thailand have prioritized FDI in the health sector, while others are ramping up liberalization policies such as incentives to attract more investment as described below.

1. Incentives

Incentive programmes usually aim at facilitating positive spillovers of foreign investment to strengthen local health-care systems and economies through skills development, technology transfer and cooperation with local partners. In Kazakhstan, for example, the Government can conclude an investment priority contract with companies constructing, running and/or investing in a sanatorium or hospital, offering tax preferences, custom duties exemptions, government grants (up to 30 per cent of all costs) and investment subsidies. The Philippines' Board of Investments also offers a range of incentives to investors in health-care and wellness services, including both fiscal incentives (e.g., a four-year income tax holiday on income derived from serving foreign patients, and tax-free and duty-free importing of medical equipment) as well as non-fiscal incentives (e.g., on the recruitment of foreign nationals and special residency visas for investors). In its mission to become the medical hub of Asia, Thailand has announced new incentives to accelerate investment in the medical industry, including a 50 per cent reduction in corporate income tax for another three years. Fiji has also prioritized investment in the health infrastructure and pharmaceutical subsectors. It is offering extensive tax exemptions for businesses to set up private hospitals and ancillary pathology and radiology laboratories, while also promoting the setting up of pharmaceutical manufacturing plants to reduce dependency on imports (Invest Fiji).

An Important component for attracting more investment in the region, in addition to liberalizing policies, are promotion activities that are usually undertaken by IPAs.



Some activities undertaken by IPAs in the region to promote investment in the health sector are listed below:

2.Targeted promotion and enhanced facilitation

Thirteen per cent of countries in Asia (UNCTAD, 2021) use targeted investment promotion to attract investment in their health sector. For example, Malaysia and Singapore periodically organize medical fairs to promote investment. Meanwhile, according to surveys conducted by ESCAP, Thailand's Board of Investment has also been ramping up its position as a medical hub for the entire Asia-Pacific region. It is looking at tapping into the strategic advantages of its competitive industrial and health-care supply chain and improved R&D resources to propel the country's medical device technology to the forefront of the global market and create Thailand's first medical hub – the Eastern Economic Corridor medical hub (EECmd) (box 3). EECmd is projected to offer complete health-care and medical services, elevate Thailand's health services and equip the country for its increase of its ageing population. Another interesting example is Timor-Leste, where the Government has liberalized health-related FDI in the areas of technological innovation, infrastructure development, access to investment dispute resolution, and access to finance. In Kazakhstan, the Government can conclude an investment priority contract with companies for constructing, running and/or investing in a sanatorium or hospital, offering tax preferences and custom duties exemptions, government grants (up to 30 per cent of all costs) and investment subsidies.



Box 3. Thailand's Eastern Economic Corridor medical hub (EECmd)

Dealing with the ongoing pandemic, and looking to be prepared for any future pandemics, Thailand is tapping into the strategic advantages of its competitive industrial and health-care supply chain and improved R&D resources in order to propel the country's medical device technology to the forefront of the global market. Thailand's policy on health sector development, therefore, focuses on the following two key areas.

The first key area is to ramp up technology development through innovation and testing facilities investment. In this regard, Thailand's efforts are concentrating on building local standard testing centres and laboratories.

The second is to build capacity for research in the medical field by encouraging greater collaboration among the public sector, private sector and academic institutes, and encouraging employment of more highly-skilled medical researchers. In this area it is currently aiming to reach the next level of medical and wellness services by promoting precision medicine for the treatment of more specific illnesses such as cancer and genetic-related diseases.

In line with these targets, Thailand is creating its first medical hub, the EECmd, which will offer all health-care and medical related services to elevate Thailand's health services, and equip the country to deal with its increasingly ageing population. Within the EECmd, is also the Eastern Economic Corridor for genomic medicine (EECg) which is a genomics testing hub built upon a collaborative research network, empowered by Next-Generation Sequencing Technology. The EECg will contribute to the "Thailand Genome Sequencing Center", a facility which will provide clinical services.

In addition to medical technology innovations, the Thai biopharmaceutical industry is also flourishing in vaccine production and development against the SARS-CoV-2 virus. Siam Bioscience Co., Ltd. is one of 25 companies worldwide that the UK-based AstraZeneca has licensed to produce its COVID-19 viral vector vaccine.

Finally, Thailand is also making headway in embracing digital technologies in health infrastructure, particularly with the development of a 5G smart hospital solution by Siriraj Hospitals and Huawei Technologies, which promises to be a new model for health care. The 5G hospital is expected to increase the efficiency of the health-care systems in Thailand with the development of AI-assisted diagnostic equipment and high-speed connections that are needed to ensure seamless transfer of patient data and operation of telemedicine equipment (*Bangkok Post*, 2022).



3. Special Economic Zones (SEZs)

SEZs in the health sector are more popular in Asia and the Pacific with 14 per cent of Asian economies creating these zones which combine targeted investment, incentives, and enhanced facilitation measures, together with spill-over benefits for foreign companies. Some examples of SEZs in the region are:

- (a) Brunei Darussalam which has established a 174-hectare Bio-Innovation Corridor to support the development of pharmaceuticals and health supplements;
- (b) The Chinese Zhuhai International Health Port and Taizhou Medical New and Hi-tech Industrial Development Zone with the focus on the pharmaceutical industry;
- (c) The Republic of Korea's Songdo region (part of the Incheon free economic zone) which focuses on high-tech industries such as bioengineering, and hosts a number of pharmaceutical companies;
- (d) Singapore, which has set up SEZs to promote FDI in health, with three zones prioritizing medical research. The Government also has established parks and hubs to support life sciences and R&D activities; and
- (e) A more detailed example of a health sector SEZ in the region, which can be found in box 4, is Sri Lanka's Dedicated Pharmaceutical Zone.



Box 4. Sri Lanka's Dedicated Pharmaceutical Zone

In Sri Lanka, the pharmaceutical industry has been identified as having the potential to create vertical linkages in. A key point of focus in the creation of the vertical linkages is import substitution in order to increase the domestic capacity and supply of pharmaceuticals. Currently only 15 per cent of the country's needs are supplied by local manufacturing plants (including SPMC) with an estimated value of US \$ 90 million annually. It is anticipated that the vertical linkages can create US\$ 1 billion in export earnings, while also giving import substitution the required impetus and significant import substitution by t2025. In order to attract global giants to set up shop in Sri Lanka, it is necessary to provide facilities with state-of-the-art technology and modern infrastructure.

Consequently, Sri Lanka decided in December 2020 to set up an SEZ called the Dedicated Pharmaceutical Zone. This zone plans to meet 40 per cent of the domestic demand for pharmaceutical products with locally manufactured drugs. The zone will be declared as a "Strategic Development Project" (SDP) and strategic pharmaceutical investments established within the proposed zone will be eligible for benefits under the SDP Act. This specifically tailored zone will make a conducive and liveable business environment for globally renewed pharmaceutical brands to bring the latest technological advances to manufacture pharmaceutical products. This will include: (a) environmental clearances to manufacture a full suite of pharmaceutical products and fast-tracked NMRA approvals; (b) a strategic location in proximity to both the Hambantota port and Mattala airport, with dedicated facilities at the airport to facilitate sea-air logistics; and (c) specifically tailored units for the pharmaceutical industry, including the latest technology.

The competitiveness of the Dedicated Pharmaceutical Zone will largely depend on the productivity of its workforce and labour-management practices. Given the highly skilled labour required for processing pharmaceuticals, this zone will create high-paying specialized jobs currently not available elsewhere in Sri Lanka. In addition, attention will also be paid to skills development through university programmes that will commence alongside the initiation of development activities in the zone. The aim is to ensure availability of skilled human resource by 2024/2025.

The creation of the zone also needs to be well designed so that people in the area will welcome this development activity. For the same, the zone will follow international standards and accreditations, while also providing facilities such as wastewater treatment and sea outfall plants and other common facilities. The project will strictly conform to environmental regulations and standards, which Sri Lanka realizes is a key selling point to investors.



5. Policy recommendations for increased investment in the health sector

Although investment-related policy and regulation has evolved during the pandemic to prioritize the health sector, certain key challenges exist, such as the limited capacity of countries in the region to attracting the quantity and quality of investment needed. These include poor regional and domestic investment ecosystems, the lack of capital, technology, skills, low regulatory capacity, and poor infrastructure and related services. Addressing these challenges is an essential first step in creating the needed investment environment and necessary safeguards to ensure the best possible results from investments in the health sector. A few actions that member countries can take in this regard include:

(a) Invest in skills development and technological capacity

Investing in skills and technological capacity is extremely important for the health sector as shown by the COVID-19 pandemic. The race to develop and distribute the vaccine was essential in combatting the pandemic, and investing in the necessary skills and technology to achieve these results can boost the attractiveness of a country as a place for innovation in the health sector. University education should be aligned and updated according to the industrial practices and regulatory standards.

(b) Create linkages between foreign investors and domestic producers.

Through stronger linkages between foreign investors and domestic producers, sharing of technology and knowledge becomes more accessible. This is particularly important in the health sector for developing vaccines, pharmaceuticals and medical devices that meet the required regulatory standards. A recent example involves AstraZeneca, a British-Swedish pharmaceutical company, that licensed the Serum Institute, a private company in India, and Siam Bioscience, a public-private partnership based in Thailand, to produce its COVID-19 vaccines. This has contributed extensively to India and Thailand becoming regional and global suppliers of the AstraZeneca vaccine.

(c) Improve access to finance

The health sector usually has complex regulatory requirements for investment, given its importance in national policy. Private sector investors are therefore often reluctant to invest in this sector. Therefore, Governments and regional development banks need to provide alternate ways of financing development in the health sector. In Asia-Pacific, the Asian Development Bank, for example, launched an Operation Plan for Health, 2015-2020, to support developing countries in achieving universal health



coverage through investments in health infrastructure, health governance, and health financing.

(d) Update and streamline regulations

The health sector usually has a complex regulatory framework. Streamlining and updating complex and old regulations can help to facilitate investment in the sector. To this end, countries can consider joining multilateral systems that enable upgrading of regulatory systems. For example, countries such as Indonesia, Thailand and the Islamic Republic of Iran, along with South Africa, Brazil, Argentina and Mexico, are part of the Pharmaceutical Inspection Co-operation Scheme that ensures members comply with the established international standards in the pharmaceutical sector.

(e) Invest in health infrastructure

One way of addressing infrastructure needs is through dedicated industrial parks or similar economic zones that provide centralized services and have positive spill-overs. For example, India is promoting “bulk drug parks” and “medical device parks” to reduce the cost of local manufacturing in the country. Another aspect of infrastructure development for the health sector is investing in the ICT sector to adopt more accessible and cheaper digital-health care. ESCAP, through its Infrastructure Financing and PPP network, is already partnering with the China Public-Private Partnerships Center (CPPPC) under the Ministry of Finance as well as the Asian Development Bank (ADB) to realize the promise of telemedicine in rural and remote areas via more resilient Information and communication technology (ICT) infrastructure development.

(f) Emphasize a regional cooperation approach

Regional cooperation can help to ensure more sustainable and equitable development for all. It reduces barriers to inter-regional trade and investment and facilitates more cross-border activity. It also helps harmonize regulation across regions, thereby making efforts to seek market approval across countries much more accessible. For example, in 2015, ASEAN established the ASEAN Medical Device Directive (AMDD), a set of directives that aim to harmonize regulations across the region and which requires medical device manufacturers to register their devices in any member State where they have production facilities. Because of the AMDD, medical device start-ups in ASEAN member countries are able to conduct cross-border business across ASEAN without having a physical base in the target country.

(g) Harness digital channels

Harnessing digital channels for investment promotion and facilitation activities can also make the health sector more attractive for investment. For example, the Republic of Korea has done a great job in adopting digital channels to promote investment in



the health sector, for which it was also recognized at the World Investment Forum in 2021 (box 5).

Box 5. Invest Korea: Harnessing digital channels for investment in the health sector

Invest Korea, the Republic of Korea's investment promotion agency, recently won an award at the World Investment Forum 2021 for promoting investment in health. It was particularly recognized for the wide-ranging coverage of the health sector on its virtual outreach channels, which includes tools such as sector guides and reports, information about investment opportunities, and incentives and databases as well as potential investment partners. In 2020, Invest Korea's annual investment event, Invest Korea Week, was also held online. Its session on "promising industries in Korea" featured the pharmaceutical industry and was viewed more than 40,000 times on YouTube (Wessendrop and others, 2021)

The Republic of Korea is also advancing innovation in the health sector. It had the largest growth in outward investment in the biotechnology sector in 2020. It has also developed a special economic zone in the region of Songdo that focuses on high-tech industries such as bioengineering, and hosts a number of pharmaceutical companies (UNCTAD, 2021).

The COVID-19 pandemic has brought with it a great opportunity to harness digital technologies, not only in the health sector, but also the investment sector. Channelling these technologies can help achieve the innovation and investment needed to overcome the fallout from the pandemic.

(h) Ensure sustainable investment.

The health sector can benefit from ensuring that investment in a country is contributing to the SDGs. To this end, the sustainable FDI indicators developed by ESCAP to assess the contribution of an FDI project towards sustainable development can enable countries to review their investments in the health sector and to determine if these can contribute to the country's priorities in that sector. Governments can use this tool to analyse project-level investments and understand their contributions to sustainable development.



6. Conclusion

The pandemic has emphasized the importance of a resilient and accessible health sector, but foreign direct investment in the health sector in Asia and the Pacific has been declining since before the pandemic. Moreover, investment policies and activities in the region have also only recently increasingly turned towards prioritizing FDI in the health sector, while some countries still have restrictive mechanisms in place that deteriorate investment probability.

Countries in the region also face a number of non-policy-related challenges such as lack of skilled workers, infrastructure and regulatory capacity, which has had detrimental effects on FDI in the region. To receive better quantity and quality of investment in the health sector, countries will need to drive this effort in several ways. First, they will need to create/improve an ecosystem of coherent policy and transparent regulatory institutions. This will include streamlining regulations and ensuring sustainable investment. In tandem, Governments will need to invest in skills development, technological capacity and health infrastructure relevant to achieving growth in the sector. This will also include harnessing digital channels for investment promotion and facilitation activities to make the health sector more attractive for investment.

Second, they will need to focus on building partnerships and cooperation that support the development of the health, pharmaceutical and vaccines sector for the entire region, including creating foreign linkages that benefit both sectors. Regional cooperation and political commitment to openness for investment will be crucial to helping economies build back better and harness the potential of FDI. Therefore, regional and multilateral cooperation will be needed in addressing transnational challenges, and in making national and international investment governance more coherent and sustainable development-oriented.

Increased investment in the health sector is essential not just to combat challenges from the current pandemic, but also to ensure preparedness for future pandemics. FDI in subsectors such as pharmaceuticals and medical devices can help to combat shortages in medical equipment and vaccines for the regional market, while investment in the biotechnology and health-care sector helps to ensure that the know-how and services exist to address new viruses and variants. Overall, investment in the health sector can ensure that countries are not just building back better, but also stronger.



References

- Akyuz, M. and I. Demir (2020). Foreign Direct Investment in the Healthcare Sector and Its Potential Benefit for the EU.
- Bangkok Post (2022). Siriraj 5G smart hospital 'a model' for the health sector. Accessed at: <https://www.bangkokpost.com/thailand/general/2270907/siriraj-5g-smart-hospital-a-model-for-the-health-sector>
- Burns, D. K., A. P. Jones, Y. Goryakin and M. Suhrcke (2017). "Is foreign direct investment good for health in low- and middle-income countries? An instrumental variable approach". *Social Science and Medicine*, No. 181, pp. 74-82. Available at <https://doi.org/10.1016/j.socscimed.2017.03.054>
- Feinberg, S. and S. Majumdar (2001). Technology Spillovers from Foreign Direct Investment in the Indian Pharmaceutical Industry. Available at <https://doi.org/10.1057/palgrave.jibs.8490975>
- Mercurio, B. and D. Kim (2015). Foreign Direct Investment in the Pharmaceutical Industry: Why Singapore and not Hong Kong. *Asian Journal of Comparative Law*. Available at: https://www.researchgate.net/publication/284226987_Foreign_Direct_Investment_in_the_Pharmaceutical_Industry_Why_Singapore_and_not_Hong_Kong
- Quek, D. (2014). The Malaysian Healthcare System: A Review. Available at https://www.researchgate.net/publication/237409933_The_Malaysian_Health_Care_System_A_Review/
- Tripathy, I. and others (2011). FDI Flows into the Indian Pharmaceutical Industry: An Analysis of Trends and Constraints. *Journal of Intellectual Property Rights*. Available at: https://www.researchgate.net/publication/286983083_FDI_Flows_into_the_Indian_Pharmaceutical_Industry_An_Analysis_of_Trends_and_Constraints
- UNCTAD (2021). World Investment Report, 2021: Investing in Sustainable Recovery. United Nations Conference on Trade and Development Available at https://unctad.org/system/files/official-document/wir2021_en.pdf
- Verma, R. (2021). FDI and Health Expenditure Dynamics in ASEAN. <https://doi.org/10.21203/rs.3.rs-640533/v1>
- Wessendrop, P. and others (2021) Promoting Investment in Health Post-Pandemic: A Global Trend. United Nations Conference on Trade and Development. Available at https://unctad.org/system/files/official-document/diaepcbinf2021d4_en.pdf

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