SINGAPORE INDUSTRY RESEARCH

INTRODUCTION

Singapore is an island nation that lies in the heart of Southeast Asia. With one of the highest per capita in the world and ranked top in terms of connectivity and ease of doing business, Singapore is recognized as the key hub linking many international businesses to Asia.

ECONOMY

Singapore continues to win investors' confidence as 2020 saw a 12-year high industrial commitment in Fixed-Asset Investments (FAI) of $17.2 billion, led by the electronics, chemical and R&D industries (Figure 1). The total FAI in 2020 was a 13% increase from 2019 and exceeded the medium to long term goal of $8 to $10 billion outlined by the Economic Development Board (EDB). Moreover, the projects from the investments secured in 2020 is expected to create 19,352 new jobs over the next five years, with a projected contribution of $31.2 billion in value-added per annum.

Investment commitments exceed targets

2020 investment commitments by industry

Industry	FAI* (S$ million)	TBE* (S$ million)	Expected VA per annum (S$ million)	Jobs expected to be created
Biomedical manufacturing	638	269	1,528	2,377
Chemicals	4,114	532	1,086	442
Education/healthcare services	7	10	4	94
Electronics	6,475	532	3,054	1,744
Engineering and environmental services	511	291	635	769
General manufacturing industries	123	75	101	126
Headquarters and professional services	163	1,198	8,030	3,089
Infocommunications and media	1,069	771	11,979	1,596
Logistics	1,032	251	103	1,402
Precision engineering	429	151	715	506
Research and development	1,328	1,117	2,445	4,268
Transport engineering	1,280	1,618	1,514	2,939
TOTAL	**17,171**	**6,815**	**31,196**	**19,352**

NOTES: Due to rounding, figures may not add up.
* FAI: Fixed-asset investments; TBE: Total business expenditure; VA: Value added to GDP.

Singapore 's GDP is expected to reach USD 340 billion in 2020 with an annual growth rate of 2-3% in the last five years. Though Singapore is considered a mature economy, its economy has continued to grow as its industries evolve from traditional industries such as manufacturing and trade to service industries such as financial and to the new digital economy. This was achieved through various policies and initiatives implemented by the government to develop and innovate old and new industries as well as to increase productivity.

CONNECTIVITY

Singapore is one of the most globally connected nation due to several key reasons. Firstly, Singapore is a key transhipment node for international and regional trade as it provides easy access between Asia and the rest of the international markets via one of the most important shipping networks, which is the Straits of Malacca. Today Singapore has established itself as global hub port that links to 600 ports in over 120 countries via more than 200 shipping lines and is the busiest port in the world in terms of shipping tonnage, handling more than 130,000 vessel calls annually.

Singapore is within a 7-hour flight radius to half of the world's population, providing favourable access to key markets around the world. Consistently ranked as the one of the world's busiest airport, the Changi Airport serves over 62 million passengers with more than 350 thousand commercial aircraft movements annually that connects to over 100 countries globally. Moreover, the annual air freight movement of over 200 thousand tonnes reemphasises Singapore's position as an international trading hub that extends beyond its key shipping lines.

Beyond physical connectivity, Singapore has formalized bilateral agreements with multiple countries in terms of Free Trade Agreements (FTA), Investment Guarantee Agreements (IGA), MOUs and Digital Economy Agreement (DEA) to align common standards, international laws and promote trade, information, and investment flows. Singapore has signed 14 single trading country FTAs and 11 regional FTAs with key economic markets and blocs such as the European Union – Singapore FTA, United States – Singapore FTA, ASEAN FTA, Gulf Cooperation Council – Singapore FTA and the recently completed Regional Comprehensive Economic Partnership (RCEP). RCEP is one of the largest FTA and accounts for about 30% of the global GDP and close to a third of the world's population. The RCEP aims to foster stronger economic ties among the 10 ASEAN member states and Singapore's 5 FTA partners (China, New Zealand, Republic of Korea, Australia and Japan). This major regional agreement will broaden participating countries' existing networks and economic cooperation on top of existing FTAs, particularly in the area of stronger supply chains in the region as favourable rules of origin rules are expected to be implemented to reduce/remove tariffs and attract foreign investment.

CONNECTIVITY

Apart from FTAs, the MOU sets the foundation and defines the path towards future collaboration between nations in terms of international treaties. Singapore has formed a strategic country to country cooperation with China whereby annually, the Joint Council for Bilateral Cooperation (JCBC) is organised and attended by key government and business leaders from Singapore and China. In addition, this cooperation is extended to 7 provincial councils between Singapore and the respective provinces which are Sichuan, Shandong, Liaoning, Zhejiang, Tianjin, Guangdong, Jiangsu and Shanghai. In addition, Singapore and China have established three Government-to-Government projects which are the China-Singapore Suzhou Industrial Park, the Sino-Singapore Tianjin Eco-City and the China-Singapore (Chongqing) Demonstrative Initiative on Strategic Connectivity. Singapore has also established state-level bilateral level cooperation projects such as the China-Singapore Guangzhou Knowledge City and several private sector-led, government-supported projects such as the Singapore-Sichuan Hi-Tech Innovation Park, the Nanjing Eco High-Tech Island, and the Jilin Food Zone.

In addition, Singapore is one of the first few countries in Asia to spearhead DEA partnerships with other countries. DEA is a treaty that establishes digital trade rules and digital economy collaborations between economies that can build on the current extensive network of FTAs and other digital cooperation initiatives, as well as address the challenges of digitalization. DEAs will develop common international frameworks to i) align digital rules and standards, and facilitate interoperability between digital systems; ii) support cross border data flows and safeguard personal data and consumer right; and iii) encourage cooperation between economic partners in nascent areas such as digital identities, Artificial Intelligence (AI) and data innovation. DEAs are expected to benefit businesses by lowering operational costs, increasing business efficiency, and providing easier access to overseas markets with an increased trust in digital trade through a secured and safe digital environment. Singapore’s current enforceable DEAs are the Digital Economy Partnership Agreement (DEPA) with Chile and New Zealand, and the Singapore-Australia Digital Economy Agreement (SADEA). While negotiations are still ongoing with the Republic of Korea on a Korea-Singapore Digital Partnership Agreement (KSDPA), Singapore also has plans to formalize DEAs with the UK and EU in the near future.

MANUFACTURING

Manufacturing is one of Singapore's key industry which contributes about 21% of Singapore's GDP and hires about 12% of the workforce. Singapore is a leading manufacturing hub consisting of several key clusters such as electronics, chemicals, biomedical sciences, aerospace engineering and precision engineering and is home to multinationals such as Dyson, Huawei, Unilever, Siemens and many more. Despite Singapore being a mature economy, Singapore's manufacturing industry continues grow with an average growth rate of 2.76% in the last 5 years and registered growth rates of 10.40% and 7% in 2017 and 2018 respectively.

Industry 4.0 is expected to be one of key drivers to drive the growth of Singapore's manufacturing. Both private sector and government organizations have demonstrated commitment to accelerate and harness the potential of Industry 4.0. Singapore has committed to invest USD 2.3 billion in R&D for advance manufacturing and engineering with the aim of developing the capabilities of companies which are embarking on the Industry 4.0 journey. This aligns with Singapore's Research, Innovation and Enterprise (RIE) 2025 plan in which the focus would be to develop cross-cutting technologies in areas such as robotics and automation, and additive manufacturing. Apart from enhancing innovation and productivity, Singapore is ensuring the availability of a highly skilled, competitive and adaptable workforce by introducing national initiatives such as the SkillsFuture Series in Advanced Manufacturing. This includes partnering with tertiary institutes like Singapore Polytechnic and Nanyang Technological University to offer courses at various competency levels that can equip employees with the key skills required in advanced manufacturing.

Multinationals view Singapore as a strategic and critical base for their global growth due to its skilled workforce, IP regulation and strong government support. Many leading firms in their respective sector have chosen Singapore as their strategic manufacturing hub to produce high tech and value goods. Singapore is currently the world's 4th largest global exporter of high tech products and produces 5 of the world's top 10 drugs. Companies such as ABB, Accenture and Siemens have established their Centre of Excellence to drive the adoption of Industry 4.0 technologies. Temasek Polytechnic (TP) has partnered with Harbin Institute of Technology Robot Group (HRG) to form the TP-HRG Robotics Innovation Center to provide training and test-piloting for local and regional Small Medium Enterprises (SMEs).

MANUFACTURING

Jurong Island is the cornerstone of Singapore's energy and chemical industry and houses over 100 leading global petroleum, petrochemical, and specialty chemical companies. This includes multinational energy and chemical companies such as ExxonMobile which is one of major refinery on the island with a capacity of 592 thousand barrels per day (BPD). Other investments include a joint venture refinery between Chevron and Singapore Petroleum Company, a subsidiary of PetroChina. Singapore currently ranks 5th globally with a refinery capacity of 1.51million bpd. As part of its continued process to enhance Jurong Island's competitiveness, the Jurong Island Version 2 (JIv2.0) masterplan which is a multi-government agency partnership to address the challenges of limited resources, and develop and implement innovative system level solutions. An example is the Jurong Rock Caverns (JRC) which is the amalgamation of 7 smaller islands to build Southeast Asia's first underground hydrocarbon storage facility.

TRADE

As a global trading centre, Singapore leverages on its excellent connectivity in terms of logistics, financial, digital, and bilateral to connect traders around the world. Wholesale trade account for 17.3% of Singapore's GDP (USD 47 billion) and comprises of more than 35,000 trading companies which trade a wide range of commodities from industrial to consumer products through Singapore. These trade companies would include brand owners such as Qualcomm, Bridgestone, Apple to large commodity trading houses such as Olam, Shell, COFCO, Wilmar. Everchanging consumer demand and advances in technology are transforming trading activities such as the increased transactions through e-commerce platforms that cater for B2B and B2C needs. As a member of ASEAN, Singapore has partnered with other ASEAN countries to develop the ASEAN Single Window (ASW), a digital trade facilitation platform which would allow traders within ASEAN to clear customs faster due to the exchange of electronic certificates of origins.

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

In order to continue to be relevant to the global economy, Singapore recognizes that supporting infrastructure to manufacturing and trade needs to be constantly developed. The Tuas Terminal Megaport project signifies Singapore's commitment in the construction of next generation port infrastructure. Expected to complete by 2040, the Tuas megaport is projected to be largest automated terminal in the world with a total capacity of up to 65 million TEUs, doubling the current capacity of 36.6 million TEU. Tuas Megaport will also adopt full automation systems such as automated wharf and yard functions, and full-electric automated guided vehicles。 In addition, the port will be built with 26km of deepwater berths that can cater to the demand of even the largest container ships.

Global air travel is expected to grow steadily in the next decade and Singapore is well-positioned to capture the increase in traffic flow. Spanning a massive 1,080 hectares, the Singapore Changi East expansion projects will include the development of its fifth terminal, Terminal 5 (T5) and the construction of a 3-runway system. Changi Airfreight Center will be expanded as part of the Changi East Industrial Zone (CEIZ) development in which its handling capabilities will increase from 3 million tonnes per annum to 5.4 million tonnes when completed. Smart features will be incorporated in every part of the system to reduce processing time, improve productivity and cargo visibility.

In tandem with Singapore's infrastructure development, the logistics and supply chain management industry has also transformed to address new needs and adoption of technologies. Tapping on Singapore's global and regional network, many logistic multinationals such as DHL, FedEx, Schenker and SF Express have made Singapore their regional HQ to complement their global operations. With the rise of e-commerce, Alibaba has invested into SingPost to support their operational needs in partnership with their Cainiao platform. Last mile delivery requirements have given birth to regional tech unicorns such as NinjaVan, LalaMove and J&T Express which leverage on artificial intelligence to efficiently match delivery personnel and parcels, and the possible usage of drone delivery in the future.

DIGITAL ECONOMY

In 2016, the Info-communication Media Development Authority ("IMDA") was formed through the merger of the Infocomm Development Authority ("IDA") and the Media Development Authority ("MDA"). IMDA was setup as the key agency in partnership with other government agencies to spearhead Singapore's digital masterplan to drive Singapore's growth in the digital space as technology would be used to transform how people live, learn, work and play. One of the key thrust for Singapore's digital masterplan is the rollout of the 5G network and its adoption of 5G technology to drive the growth of six strategic industries like (i) Maritime Operations; (ii) Urban Mobility; (iii) Smart Estates, (iv) Industry 4.0, (v) Consumer applications and (vi) Government applications.

Singapore has a high mobile and internet penetration which is expected to continue to rise with the widespread adoption of digital payment, e-commerce, online education and other digital services. Besides consumer needs, digital spending for business has also increased significantly with the digitalisation of documents, government and commercial transactions, digital media marketing and others.

Singapore has developed a vibrant Information Communication Technology (ICT) ecosystem with global connectivity and advanced IT infrastructures. This can be seen with the investment of over fifty data centres in Singapore by key data centre companies such as Equinix, China Mobile, NTT Telecommunications and others. Singapore is also the hub for submarine undersea cable network connecting East Asia to South and Central Asia and Europe.

In addition to a well-developed digital infrastructure and high mobile penetration population, Singapore's policies and its ability to attract global talents has also entrenched many established technology companies and tech unicorns to set up their international or regional headquarters in Singapore. An example is Google which has set up their headquarters in Mapletree Business Park. In addition to their core business, Google has set up the Google Academy in partnership with Singapore's various government agencies to develop skill training programmes to train people in terms of digital marketing, analytics, and cloud technology so as to prepare them for the future. Other companies such as Alibaba and Tencent have invested into Singapore technology companies such as Lazada and Shopee to expand their footprint into Southeast Asia.

DIGITAL ECONOMY

Besides overseas tech companies, the Singapore local tech start-up scene has grown exponentially in the last few years and is now home to over 3,800 startups, including tech unicorns like Grab, Lazada, Sea Group and NinjaVan. The tech ecosystem in Singapore has expanded to include key eco-partners which are critical for its growth in terms of funding and advisory like angel and venture capital funds and incubators such as B Capital, Sequoia Capital, Rakuten Ventures and others. Singapore has introduced tax incentive such as the Angel Investor Tax Deduction Scheme (AITD) and established government linked funds like EDBi, Seeds Capital and Temasek linked venture funds to continue to drive the growth of the tech industry in Singapore. In the 2019 Global Startup Ecosystem Report by US based Start-up Genome, Singapore's startup ecosystem was estimated to be USD 25 billion which exceeds the global average of USD5 billion.

FOREIGN DISTRICT INVESTMENTS (FDI)

Singapore is the 5th largest recipient of FDI in the world after USA, China, Netherlands and Hong Kong. FDI inflow is estimated to grow by 16.4% (YOY) to reach USD 92 billion in 2019 and FDI stock at USD 1.7 trillion. Europe continues to be Singapore's top investor contributing 32% as well as North America contributing 17.8%. FDI contribution from China and Hong Kong grew with a total contribution of 5.8%. Key industries invested in Singapore were in the Financial & Insurance services in terms of Holding companies (47.9%), Wholesale Trade (15.5%) and Computer, Electronic and Optical Products Manufacturing (4.8%).

FINANCIAL INDUSTRY

Singapore is one of the leading global financial centres. It is one of the most active and largest foreign exchange trading centres in Asia with average daily trading volume of USD 633 billion in 2019. Singapore has one of the most developed Over-The-Counter (OTC) derivatives trading centre and is ranked within the top 10 globally in terms of trading volume. Many companies also list in the Singapore Stock Exchange (SGX) to raise funds through IPOs or bonds. One of the most popular financial instruments is the Real Estate Investment Trust (REIT) in which many asset companies list their global real estate assets in Singapore ranging from retail malls, commercial spaces, healthcare assets to data centres. Singapore financial ecosystem currently comprises of over thousands of financial institutions ranging from traditional to digital banks, various types of fund offices, investment holdings, financial service providers, family asset offices to fintech companies. These companies as well as licenses and policies are regulated by the Monetary Authority of Singapore ("MAS").

PRIVATE WEALTH SECTOR

In recent years, Singapore has established itself as one of the leading private banking and wealth management centres in Asia. Many high-net-worth individuals choose Singapore because of its sound financial regulation, strong rule of law, as well as political and economic stability. In Oct 2020, MAS reported that assets managed by Single Family Office (SFO) have risen an estimated five times from 2017 to 2019 and total Assets Under Manager (AUM) in Singapore grew by YOY 15.7% to USD$2.94 trillion. To continue to encourage the growth of the private wealth sector in Singapore, government initiatives such as the Onshore Fund Tax Incentive Scheme (13R), the Enhanced-Tier Fund Tax Incentive Scheme (13X) and the Global Investor Programme (GIP) were introduced or enhanced. Furthermore, the 13R and 13X schemes have also been earmarked to be part of the new Variable Capital Company (VCC) program, a flexibly structured entity for investment funds launched by the MAS, to continue to enhance Singapore capabilities as a fund domicile hub for global wealth and asset management.

FINTECH SECTOR

The digital drive in Singapore has given rise to the Fintech industry in which financial services have undergone a major evolution in terms of payments, loans, investments, insurance, compliance, and analytics. One of the key focus in Singapore was adoption of digital payments for consumers transactions. Various financial institutions have come out with their own digital payment platforms such as DBS Paylah, UOB PayNow, GrabPay and VisaWave which was introduced to provide consumers new ways for payment. The adoption was accelerated in 2020 during the COVID pandemic as the Singapore government encouraged various industries to adopt contactless payment especially in the F&B and retail sector. Another example is the partnership between NTUC Income (Insurance) and ZA Tech Global which is the technology arm of ZhongAn Insurance to develop digital insurance products for Singapore.

To encourage companies to continue to develop new solutions and ideas, MAS introduced a variety of initiatives and grants such as such as Fintech Regulatory Sandbox which is a test pilot programme to allow financial institutions to experiment with innovative financial products or services in a live environment but within a well-defined space and duration. Till date, over 40 innovation labs have been set up such as Paypal Innovation Lab, Bank of China Innovation Lab, UBS Evolve etc. Fintech companies are also able to tap on MAS various grants to support their development such as the MAS Proof-of-Concept (POC) Scheme in which MAS would support up to SGD 400k in grant to conduct early-stage development of novel solutions that can potentially address challenges in the financial sector.

Singapore is host to the Singapore FinTech Festival which is the largest Fintech event in the world attracting more than 60,000 participants from 140 countries and showcasing solutions from major financial institutions to fintech start-ups. Through this festival, Singapore has been acknowledged as the Fintech hub for Southeast Asia. Till date, Singapore is home to more than 500 over fintech companies such as Flywire, OneConnect, FOMO Pay and is expected to house over 40% of all the Fintech companies in Southeast Asia.

CHINA INVESTMENT INTO SINGAPORE

Singapore plays an important role in China's Belt and Road Initiative (BRI) as companies leverage on Singapore's strong connectivity in the ASEAN region to set up their International/Regional Headquarters (IHQ) or Financial Treasury Centre (FTC). As reported by China Ministry of Commerce (MOFCOMM), the total ODI outflow from China was USD 143 billion in 2018. BRI investment was USD 5.8 billion with a 42.7% (YOY) growth. Singapore accounted for 35.8% of China's total investment into BRI countries, making Singapore the top BRI country of destination for China's foreign investment. The key sources of ODI were from Guangdong, Shanghai, Zhejiang, Shangdong and Beijing. Singapore was ranked the 6th most popular destination for Chinese firms to venture into, ahead of other Asian economic giants such as Japan and Republic of Korea and top in Asia excluding Hong Kong as of 2018.

OUTWARD DIRECT INVESTMENT (ODI)

Singapore's direct investment abroad reached USD 635 billion in 2018 with a CAGR of 7.1% in the last 5 years. Key investment destination continued to be focused in Asia with Mainland China being the top and accounting for 16.4%. Singapore is currently China's largest FDI investor, showing the strong economic and bilateral cooperation between both countries. Neighbouring Southeast Asia countries were also the top 10 investment destination for Singapore such as Indonesia, Malaysia, Philippines, and Thailand. Key industries invested abroad were Financial & Insurance services (46.8%) which constituted half of Singapore's ODI and Manufacturing (20.3%). Other significant industries were Wholesale Trade and Retail (8.1%) and Real Estate (8%).

CHALLENGES

Singapore has limited resources due its physical constraints as an island nation and one of its key challenges is manpower issues. Singapore total population is 5.7 million people (2019) with a workforce population size of 3.3 to 3.6 million people comprising of Singaporeans, Permanent Residents (PRs) and employees under various work passes. Singaporeans account for 70% of the workforce. Similar to all countries, Singapore's focus is to put Singaporeans as the core of the labour force so as to ensure stability and growth in the economy. To ensure that the Singapore's economy continue to remain competitive globally, the key focus is to increase the value add per worker regardless of nationality. This is achieved through several key government initiatives which focuses on developing higher value add industries as mentioned and increase in productivity within the working force.

PRODUCTIVITY GROWTH

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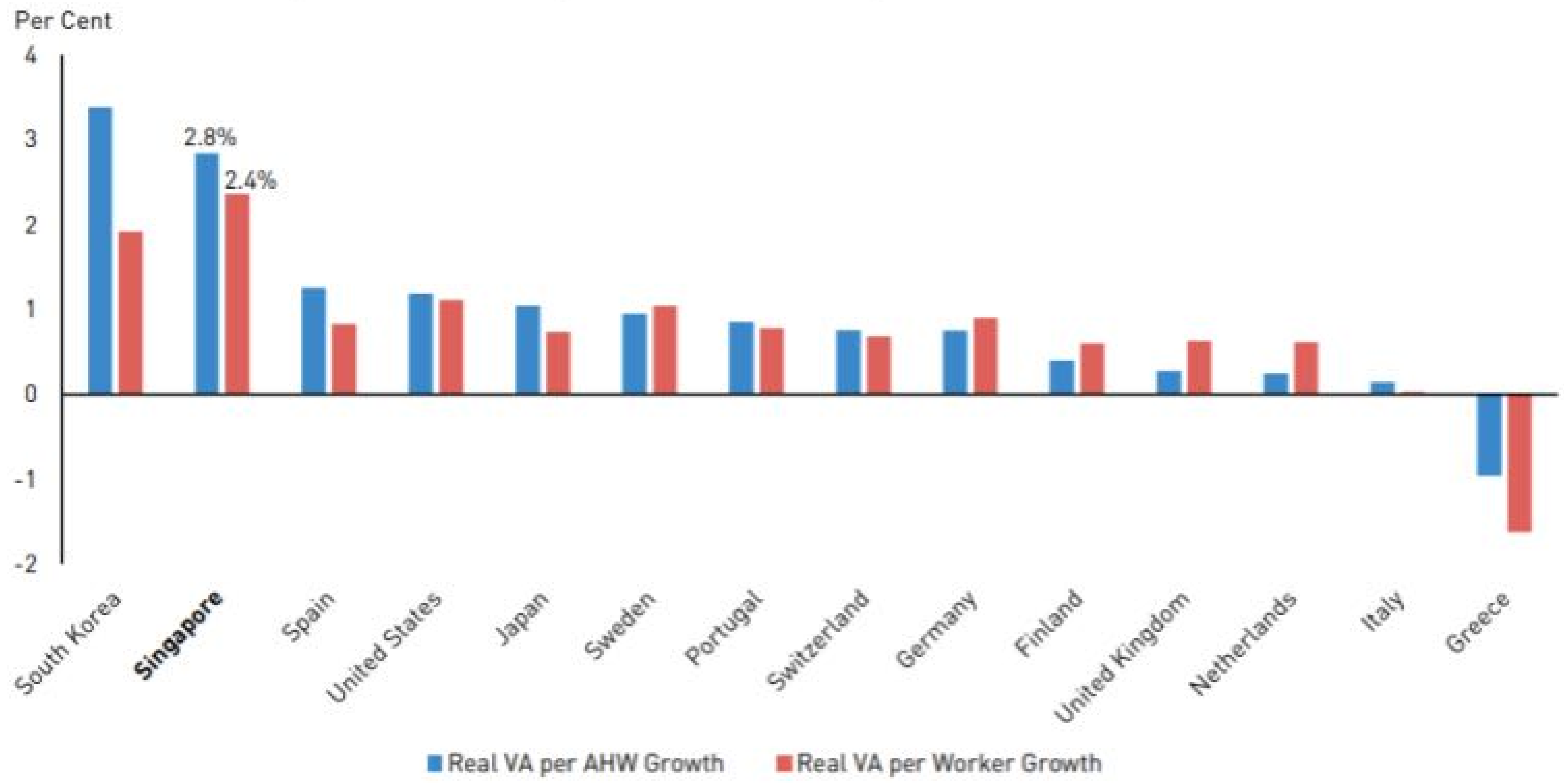
Exhibit 2: Productivity Growth (Real VA per AHW and Real VA per Worker) of Selected Advanced Economies (CAGR), 2009-2019



To aid firms in their transition towards productivity-driven growth, Singapore has introduced a series of initiatives such as the Lean Enterprise Development (LED) Scheme, Productivity Solutions Grant (PSG) and Automation Support Package which are administered by the various government agencies such as Enterprise Singapore (ESG), National Trade Union Congress (NTUC) and Workforce Singapore (WSG). The objective of these initiatives is to help firms transform and grow in the new manpower lean landscape through various methods such as streamlining processes, using technology such as digitalisation and automation to reduce manpower needs, or developing a robust and flexible HR system to cater for various types of employment. An example of the LED Scheme was the Smart Solutions project initiated by the Association of Early Childhood and Training Services (ASSETS) which partnered with various technologies companies to provides solutions for pre-schools to automate various jobs and reduce manual operations.

EDUCATION AND LIFELONG LEARNING

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FUTURE IN SINGAPORE

In 2020, the COVID pandemic affected the global economy including Singapore. The sectors that were severely affected were those that relied heavily on international travel such as aviation, tourism and events. Consumer sector such as retail and F&B were also badly affected due to COVID control measures. Exported oriented sectors such as manufacturing and wholesale trade fell due to drop in external demand and supply chain disruption. However, through this event, the digital sector grew exponentially as consumers and business switched to contactless transaction in which adoption of digital payment solutions accelerated. Consumption habits changed as e-commerce and food delivery services boomed and is expected to grow in the next few years after the pandemic. Online education was another bright spot as education providers developed new curriculum to teach online.

To ensure the recovery of Singapore's economy, key initiatives such as the Job Support Scheme (JSS) was introduced to ensure that companies were able to continue to retain their staff. The Rental Relief Framework was also introduced to co-share rental obligations between the government, landlords and tenants to ensure that business could continue despite the pandemic. Employees were encouraged to take the opportunity to attending upgrading and reskilling programmes which were heavily subsidies by the government.

Singapore is well positioned and expected to recover in 2021 with the introduction of the COVID vaccine and the implementation of green lane partnership between countries to encourage trade and travel. Singapore has weathered many crisis such as the 2002 SARS outbreak and 2008 Financial crisis, and has built the resilience and ability to overcome various challenges and continue to strive.