# FROM SINGAPORE

# PRIVATE LIMITED,

# TO SINGAPORE

# VIRTUALLY UNLIMITED.

**ECONOMIC DRIVERS IN A POST-COVID WORLD** 



**ABSTRACT** 

Covid-19 is arguably the most disruptive event of this generation. The pandemic will undeniably

create profound, long-lasting change extending across the politics, economy and society. These

changes threaten to render obsolete the formula that Singapore has hitherto relied on for

success. Yet, they offer Singapore new opportunities as well. Hence, there is a dire need to,

first, correctly identify key economic drivers in the post-Covid context, and second, determine

how best Singapore can harness these trends to ensure the people's wellbeing.

In this vein, we posit that the three key drivers that will shape the post-Covid world will be the

processes of recontextualising globalisation, reconfiguring economies and reimagining the

social contract. Overall, a broad-based paradigm shift away from efficiency to resilience will

enable Singapore to capitalise on these drivers.

In Chapter II, we show how Covid might rewire globalisation into regionalisation by exposing

the fragility of "hyper-globalisation". **Annex A** illustrates the interconnectedness of global supply

chains. Singapore's imperative, then, is to remain at the centre of the regional system and at the

crossroads of different regional systems.

In Chapter III, we propose that Covid will reconfigure the structure of the economy. First, it will

accelerate digital transformation. Second, it will trigger a fundamental re-evaluation of our

conception of value, particularly with respect to essential workers, the green economy and the

prioritisation of resilience over efficiency. In both cases, private sector innovation, coupled with

government regulation, assistance and direction are needed to make the best of this

reconfiguration, as elaborated upon in **Annex B**.

In Chapter IV, we note that Covid-induced socio-economic inequality will likely strain the social

fabric in Singapore. By calibrating existing social schemes and evolving the tripartite dynamic,

Singapore can build a more resilient social compact. Annex C demonstrates how these

proposals might be manifested in Singapore.

Word count: 299

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# CHAPTER I: INTRODUCTION

The Covid-19 pandemic is unprecedented in its global magnitude. Starting in Wuhan, China, the virus would go on to infect more than 200 million people across more than 150 countries outside Asia, causing over 4 million deaths.<sup>1</sup> The initial international public health emergency has evolved into a multi-faceted crisis with wide-ranging ramifications.



Fig 1. 2021 World Press Photo of the Year, depicting an 85 year old woman being embraced by a nurse<sup>2</sup>

Singapore has not been immune to the crisis. Initially limited in its spread, the ubiquity of entry points and adaptive nature of the virus has caused multiple resurgences, forcing repeated lockdowns and extended Safe Management Measures. In particular, the global economic downturn has been harsh on Singapore's trade-dependent economy. Although the immediate impacts of the crisis may fade, such an epochal event will leave permanent changes in its wake. By following the repercussions of this upheaval from external events in the region through internal economic and social policy, we can elucidate the direction Singapore should take amidst

<sup>&</sup>lt;sup>1</sup> How Covid-19 is Spreading Across the World (6 Sep 2021). The Straits Times. https://www.straitstimes.com/multimedia/graphics/2020/02/coronavirus-global-numbers/index.html <sup>2</sup> The First Embrace. Mads Nissen (2020). Politiken/Panos Pictures.

world.		

the overarching transition from efficiency to resilience that forms the bedrock of the post-Covid

# POST-COVID ECONOMIC DRIVERS

Properly harnessed, these drivers can transform our economy from

Singapore private limited,

to Singapore virtually unlimited

**Recontextualising Globalisation** 

Covid-19 has disrupted supply chains and unveiled unhealthy, systemic over-dependence, prompting a shift away from *globalisation* towards *regionalisation*.

Singapore should double down efforts to position itself in the centre and at the crossroads of regional systems.



# **Reconfiguring Economies**



The experience of the pandemic will likely cause the economy to experience accelerating digitalisation and a reconceptualisation of value.

Private sector innovation, as well as government regulation, assistance and direction, are needed to channel these trends into economic growth.

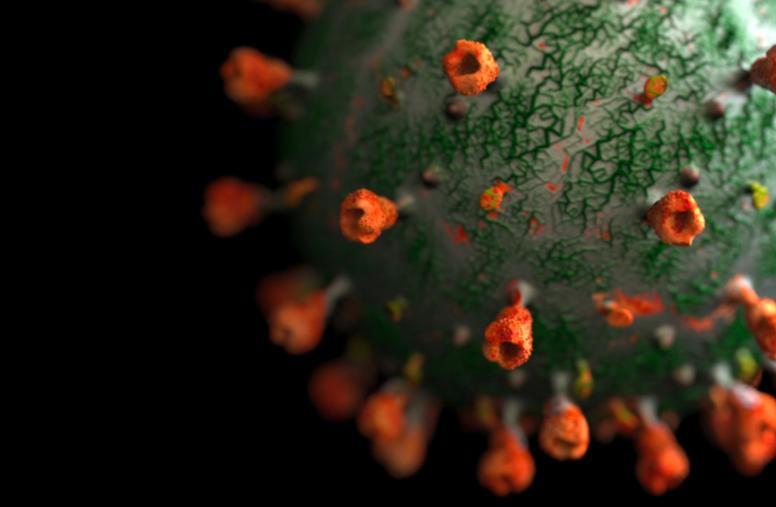
# Reimagining the Social Contract

Covid-19 has *widened the socio-economic divid*e, disproportionately affecting not only the low-income group, but also the middle class.

At the same time, Covid-19 has revealed *tensions in* the *tripartite dynamic* between government, businesses and the people.

Going forward, Singapore can calibrate/repurpose existing social schemes and evolve the tripartite dynamic to build a more resilient economy and society.





# CHAPTER II: RECONTEXTUALISING GLOBALISATION

"Wave goodbye to the greatest era of globalisation."

The Economist, 20203

Bereft of natural resources or a sizable consumer base, Singapore relies upon globalisation<sup>4</sup> to make the global marketplace its hinterland.

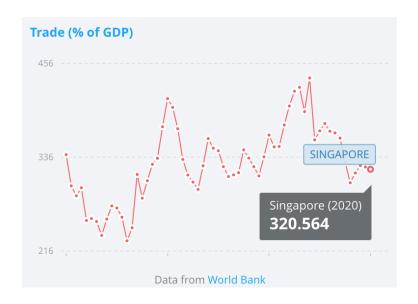


Fig 2. One of the highest in the world — trade as a % of Singapore's GDP, from 1965 to end-2020<sup>5</sup>

Covid-19 has upset globalisation by disrupting supply chains and surfacing unhealthy overdependence. More significantly, it has made clear to policy-makers world-wide that globalisation cannot continue as it did before. This chapter explains how Covid-19 has prompted a shift away from efficiency-based "hyper-globalisation" towards resilience-oriented

<sup>&</sup>lt;sup>3</sup> The Economist (16 May 2020).

<sup>&</sup>lt;sup>4</sup> Globalisation is defined as "the process through which the free flow of ideas, people, goods, services

and capital leads to the integration of economies and societies" by the International Monetary Fund.

<sup>5</sup> Trade (% of GDP) - Singapore, Ireland, Belgium, United Kingdom, China, United States (2020). World Bank Data. https://data.worldbank.org/

<sup>&</sup>lt;sup>6</sup> Hyper-globalisation is a concept first conceptualised by Dani Rodrik, a Harvard economics professor. It refers to the unfettered pace of capitalism aimed at eliminating all transaction costs and unlimited economic integration beyond national borders that occurred in parallel with the founding of the World



Rodrik, Dani (2011). The Globalisation Paradox: Democracy and the Future of the World Economy. New York: W. W. Norton & Co. (200-201).

# 2.1 Globalisation Under Threat

Covid-19 jammed the brakes on the wave of hyper-globalisation ongoing since the 1990s.<sup>7</sup> Across most of the world, global trade nosedived as a result of policies like lockdowns and cross-border travel restrictions.

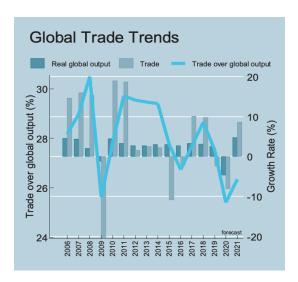


Fig 3. Trade as a % of total global output has nosedived to the level of the 2008 Financial Crisis<sup>8</sup>

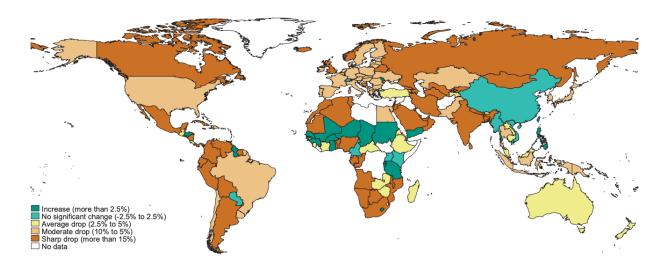


Fig 4. Trade trended a "moderate" or "sharp" drop across most of the global economy in 20209

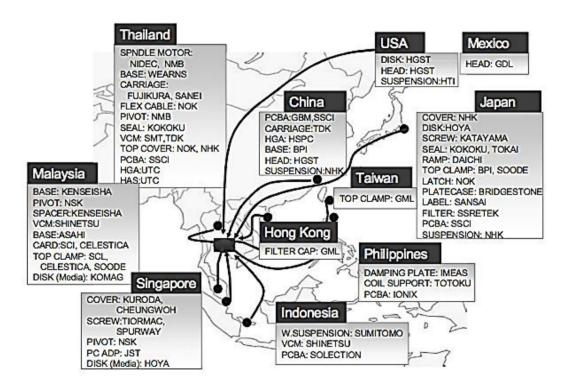
<sup>&</sup>lt;sup>7</sup> Rodrik, Dani (2011). *The Globalisation Paradox: Democracy and the Future of the World Economy*. New York: W. W. Norton & Co. (200-201).

<sup>&</sup>lt;sup>8</sup> Key Statistics and Trends in International Trade 2020, United Nations Conference on Trade And Development (2020), UNCTAD/DITC/TAB/2020/4. UNCTAD Secretariat calculations based on UNCTADSTAT and IMF data. *United Nations Publications*, (1) 1.
<sup>9</sup> Ibid.

Although global trade has since recovered moderately,<sup>10</sup> Covid-19 has exposed the vulnerabilities of hyper-globalisation's fetishisation of efficiency.

## 2.1.1 Supply Chain Disruptions

During hyper-globalisation, companies outsourced production to subcontractors in countries with cheap labour and lax regulations. <sup>11</sup> This global supply chain reaped great profit but was too thinly spread out.



<u>Fig 5. Origins of different components of a Thai hard disc drive —</u>
<u>an example of a global, multi-tiered supply chain</u><sup>12</sup>

<sup>&</sup>lt;sup>10</sup> The State of Globalization in a Distancing World (2020). Steven A Altman, Philip Bastian. *DHL Global Connectedness Index* 2020, (1) 6.

<sup>&</sup>lt;sup>11</sup> Is It Time to Rethink Globalized Supply Chains? (19 Mar 2020). MITSloan Management Review. https://sloanreview.mit.edu/article/is-it-time-to-rethink-globalized-supply-chains/

<sup>&</sup>lt;sup>12</sup> Hiratsuka, D. 2011. Production Networks in Asia: A Case Study from the Hard Disk Drive Industry. ADBI Working Paper 301. Tokyo: Asian Development Bank Institute.

Covid-19 revealed the vulnerability of such chains to unpredictable "structural breaks". <sup>13</sup> As governments implemented lockdowns, crucial links in the global supply chain shut down, disrupting various industries (See **Annex A**).



Fig 6. Textile workers in India face disruptions in operations amidst the pandemic14

<sup>&</sup>lt;sup>13</sup> Strategy in a 'structural break'. McKinsey & Company. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/strategy-in-a-st ructural-break

<sup>&</sup>lt;sup>14</sup> Fashion's Supply Chain Disruptions: What You Need to Know. Business of Fashion. https://www.businessoffashion.com/articles/global-markets/fashions-supply-chain-disruptions-what-you-ne ed-to-know

# 2.1.2 Unhealthy Overdependence



Fig 7. Political cartoon showing the deep entanglements between the US and China exposed by the onset of Covid<sup>15</sup>

Covid-19 has also unveiled an unhealthy overreliance on key countries for sensitive goods. Countries realised that supplies of such goods might not be guaranteed during global crises. In May 2020, critics accused China of hoarding key equipment. This played out against worsening US-China relations and economic contest, to exacerbating globalisation's decline.

## 2.1.3 Globalisation to Regionalisation

Covid has accelerated the shift away from hyper-globalisation. Global supply chain vulnerability incentivises businesses to de-globalise, and popular frustration at overreliance on foreign countries gives policymakers a political motive to do the same. US-China rivalry, aggravated by

<sup>&</sup>lt;sup>15</sup> Illustration from "How Covid Hastened the Decline and Fall of the US-China Relationship" Opinion Essay by Josh Rogin (4 Mar 2021). *The Washington Post*.

<sup>&</sup>lt;sup>16</sup> Significantly, China also produces around half of the world's mask and respirator supply. The World Needs Masks. China Makes Them, but Has Been Hoarding Them. The New York Times. https://www.nytimes.com/2020/03/13/business/masks-china-coronavirus.html

<sup>&</sup>lt;sup>17</sup> Rising Regionalisation: Will the Post-Covid-19 World See a Retreat from Globalisation? Peter Enderwick, Peter Buckley (2020). *Transnational Corporations*, 27 (2), 99-112.

the pandemic, hastens this reversal too. It is unlikely, however, that countries revert completely to on-shoring, <sup>18</sup> given the limitations of comparative advantage and demographic challenges.

Instead, globalisation will likely be rewired as regionalisation — a selective de-globalisation that encourages bloc integration<sup>19</sup> while cutting back on external exposure.<sup>20</sup> By concentrating and shortening supply chains, as Japan<sup>21</sup> and Europe<sup>22</sup> have done in light of Covid, companies build resilience while retaining efficiency.<sup>23</sup>

<sup>&</sup>lt;sup>18</sup> On-shoring refers to the practice of relocating businesses from outside a country to a location within the national borders of a country. It is opposed to off-shoring, the practice of relocating a business abroad, usually to take advantage of lower labour costs or lax regulations.

<sup>&</sup>lt;sup>19</sup> Of note, "blocs" in this sense should not be construed purely in the *geographical* sense, but should be thought of more expansively. For instance, though Japan and Vietnam are not geographically proximate to each other, they can be considered to be within the same bloc of countries as they share similar political and trade outlooks. In fact, Japanese FDI into Vietnam is expected to continue growing after a slight dip in absolute terms due to the pandemic in early 2020.

http://ven.vn/vietnam-hopeful-about-future-japanese-investment-43850.html

<sup>&</sup>lt;sup>20</sup> Rising Regionalisation: Will the Post-Covid-19 World See a Retreat from Globalisation? Peter Enderwick, Peter Buckley (2020). *Transnational Corporations*, 27 (2), 99-112.

 <sup>&</sup>lt;sup>21</sup> In April 2020, Japan offered businesses \$2.2 billion to shift production out of China and into either Japan or into other regions like Southeast Asia on the grounds of stability and resilience.
 https://www.businesstoday.in/latest/world/story/coronavirus-impact-japan-to-offer-22-billion-to-firms-shiftin g-production-out-of-china-254367-2020-04-10
 <sup>22</sup> In a Consultation Note issued on 16 June 2020, the European Union signalled that it intends to build up

<sup>&</sup>lt;sup>22</sup> In a Consultation Note issued on 16 June 2020, the European Union signalled that it intends to build up its "strategic autonomy" to "pursue its interests independently and assertively" through trade policy, essentially heralding greater regulation of external trade with economies outside the Union. https://trade.ec.europa.eu/doclib/docs/2020/june/tradoc 158779.pdf

<sup>&</sup>lt;sup>23</sup> Alliance for Actions Pilots New Data Infrastructure to Interconnect Supply Chain Ecosystem (16 Nov 2020).

https://www.imda.gov.sg/news-and-events/Media-Room/Media-Releases/2020/Alliance-for-Action-Pilots-New-Data-Infrastructure-to-Interconnect-Supply-Chain-Ecosystem

# 2.2 Singapore's Imperative — In the Centre, At the Crossroads

To sustain its status as a major hub amidst the rising tide of regionalisation, Singapore must position itself in the centre of its own regional system, while remaining at the crossroads of other regional systems.

## 2.2.1 In the Centre of the Regional System

With global supply chains likely being rerouted into the region, Singapore can expect to find itself in the centre of a dynamic regional market that produces an even greater variety of products, requiring greater logistical needs.<sup>24</sup>

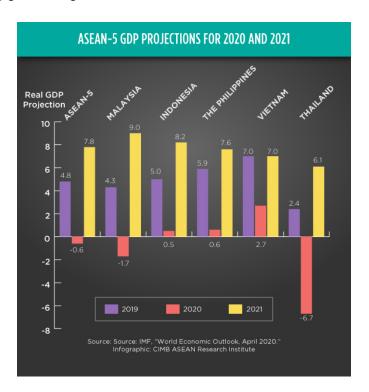


Fig 8. GDP projections for countries in the region made in April 2021<sup>25</sup>

<sup>&</sup>lt;sup>24</sup> Already, the establishment of various pharmaceutical plants has been announced in the region. BioNTech announced that it will build its headquarters and a vaccine manufacturing site in Singapore. Vietnam has also announced its intention to build a global vaccine factory. This would drive up the demand for complex logistical processes like cold-chain.

https://e.vnexpress.net/news/news/vietnam-offers-to-build-covid-vaccine-production-factory-for-global-supply-4287262.html

<sup>&</sup>lt;sup>25</sup> CARI captures 450: ASEAN-5 countries projected to grow in 2021. *CARI ASEAN Research and Advocacy*.

Singapore's air and seaports can boost efficiency while entrenching their niches in complex logistic processes.<sup>26</sup> Singapore can also proactively establish high-frequency air and sea connections with emerging regional growth-hubs to enable greater intra-regional mobility.<sup>27</sup>

Beyond that, seeing how Covid-19 has accelerated digitalisation and remote working, Singapore should focus on developing intangible regional connections too. Singapore can capitalise on high investor confidence induced by its pandemic resilience<sup>28</sup> to double-down on its position as the region's FDI and arbitration hub as more businesses near-shore. Simultaneously, Singapore can fashion itself as the region's Silicon Valley — a venture capital source, an environment for university-private sector collaboration and an innovation test-bed.<sup>29</sup>

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<sup>&</sup>lt;sup>26</sup> The handling of regional vaccine shipments using cold-chain processes has already demonstrated the attractiveness of this strategy. Some examples of complex, digital logistical processes include cold-chain, the management of perishable goods, digital container flow node decongestion and digital real-time tracking of good movement through supply chains. Such complex processes require entire logistical ecosystems and specialised facilities to manage — something that Singapore can further deepen its expertise in.

https://lot.dhl.com/small-but-connected-how-singapore-stands-its-ground-as-a-global-logistics-hub/https://www.imda.gov.sg/news-and-events/Media-Room/Media-Releases/2020/Alliance-for-Action-Pilots-New-Data-Infrastructure-to-Interconnect-Supply-Chain-Ecosystem

<sup>&</sup>lt;sup>27</sup> Three factors that have made Singapore a global logistics hub (26 Jan 2017). Yin Lam & Karuna Ramakrishnan.

https://blogs.worldbank.org/transport/three-factors-have-made-singapore-global-logistics-hub

<sup>&</sup>lt;sup>28</sup> Pandemic resilience can be source of competitive advantage for Singapore: MAS chief (7 Jul 2021). The Straits Times.

https://www.straitstimes.com/singapore/politics/pandemic-resilience-can-give-spore-competitive-edge-say s-mas-chief

<sup>&</sup>lt;sup>29</sup>https://www.edb.gov.sg/en/business-insights/insights/asia-s-testbed-for-smart-cities.html

# 2.2.2 At the Crossroads of Regional Systems

Covid-19 will likely accelerate the formation of different regional spheres and Singapore must remain at the intersection of them. The global vaccine divide between China and the rest of the world might be emblematic of this trend. Singaporean financial, legal and consulting services can act to bridge the technological barriers between the "walled gardens" of different regionally-based standards and technologies. By remaining interoperable and not over-committing ourselves to one side, we stand to reap the rewards of a recontextualised globalisation.



Fig 9. Frequency spectrums that different countries use for 5G, with blocs (US, South Korea, Japan etc) operating on spectrums incompatible with other blocs (China, most of Europe and Africa)<sup>32</sup>

<sup>&</sup>lt;sup>30</sup> How Singapore can sharpen its innovative edge (16 Jul 2021). Ravi Menon. IPS-Nathan Lectures. Published in The Straits Times.

<sup>&</sup>lt;sup>31</sup> Intractable gaps have already formed in 5G, carbon taxation, Intellectual Property rights and global taxation policy have surfaced between different regional blocs. The US-China battle over 5G threatens to split the world into separate spheres with different 5G standards on specifics like frequency and technology standards.

<sup>&</sup>lt;sup>32</sup> Research done by Global System for Mobiles Association for the APAC Spectrum Management Conference. https://www.gsma.com/spectrum/wp-content/uploads/2019/05/Cristian-Gomez.pdf

#### **CHAPTER III:**

#### **RECONFIGURING ECONOMIES**

"The economic impact of this great pandemic (is) an extraordinary opportunity — and a commensurate challenge."

McKinsey and Company<sup>33</sup>

Singapore's economic story is a tale of reinvention amidst challenge, rebounding sharply and emerging stronger after each setback.<sup>34</sup> Covid-19 is one such challenge, and will likely have a broad and significant economic impact.

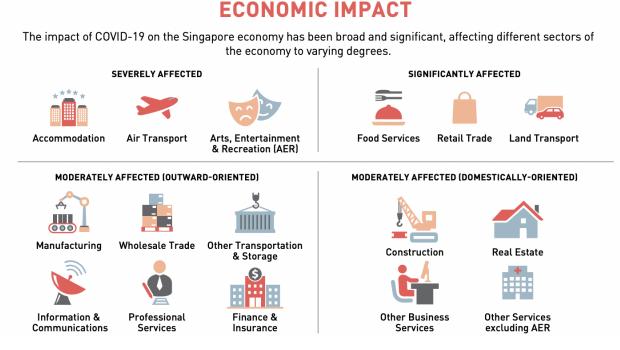


Fig 10. Economic impact of Covid-19 on various sectors of the Singapore economy<sup>35</sup>

<sup>&</sup>lt;sup>33</sup> Looking beyond the pandemic: Could the world economy gain more than it lost to COVID-19? (4 Jun 2021). McKinsey & Company.

https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/looking-beyond-the-pandemic-could-the-world-economy-gain-more-than-it-lost-to-covid-19

<sup>&</sup>lt;sup>34</sup> Particularly in the early 2000s, coming off the impact of the Asian Financial Crisis, Singapore's economy was buffeted by one crisis after another, including the Dotcom crash in 2001, SARS in 2003 and the Global Financial Crisis in 2008.

https://www.mas.gov.sg/news/speeches/2015/an-economic-history-of-singapore

<sup>&</sup>lt;sup>35</sup> Impact of the Covid-19 Pandemic on the Singapore Economy. Economic Survey of Singapore First Quarter 2020. *Ministry of Trade and Industry*.

This chapter posits that Covid's key economic impacts come in the form of digital transformation and reprioritising existing conceptions of value. For the Singaporean economic miracle to continue, we must position ourselves to best take advantage of these changes.

## 3.1 Digital Transformation

Covid-19 catalysed the digital development of Singaporean businesses. 84% of businesses reported accelerated digitalisation efforts due to the pandemic, with lockdown and other physical limitations pushing more activities online.<sup>36</sup>

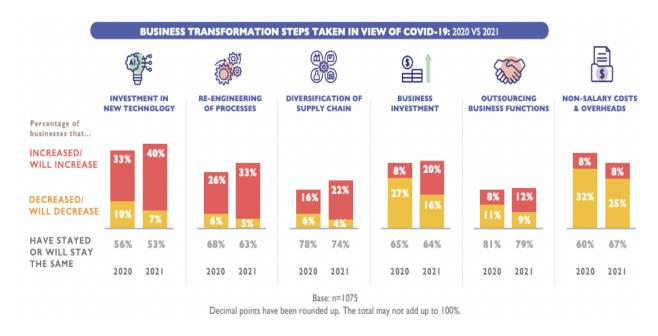


Fig 11, Business transformation steps taken in view of Covid-19 over the last two years<sup>37</sup>

37 Ibid.

<sup>&</sup>lt;sup>36</sup> National Business Survey 2020/2021 Summary Report. *Singapore Business Federation*, 12.

# 3.1.1 Uneven Growth

However, the pandemic did not affect all sectors equally. Increased digitalisation buoyed certain industries, while other sectors faced greater distress.<sup>38</sup> In the rush to digitalise our businesses, there is a need to ensure no one gets left behind.

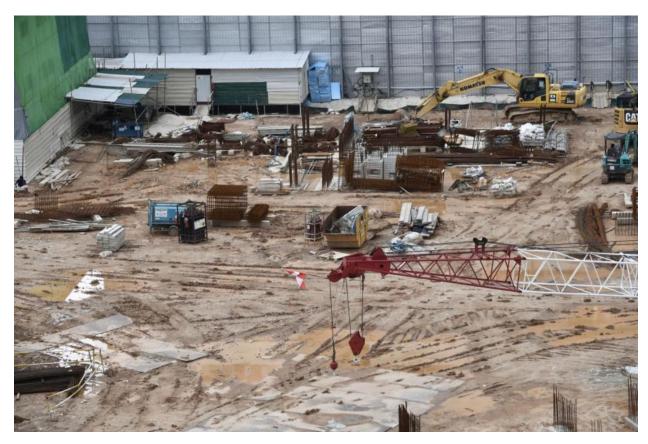


Fig 12. Construction sites left empty as the construction and civil engineering sector took a hit during the pandemic<sup>39</sup>

<sup>&</sup>lt;sup>38</sup> Digitalisation has in particular benefitted the logistics and transportation, banking and insurance, and IT and professional service sectors, while sectors like construction and civil engineering, highly reliant on migrant workers, have suffered during the pandemic.

<sup>&</sup>lt;sup>39</sup> Suspending all construction work to stem coronavirus spread is a difficult trade-off: Josephine Teo (25 Apr 2020). The Straits Times.

https://www.straitstimes.com/singapore/suspending-all-construction-work-to-stem-coronavirus-spread-is-a -difficult-trade-off

For the economy to truly digitalise, integration needs to be done vertically across the entire supply chain.<sup>40</sup> The scope of areas for improvement through digitalisation is regularly underestimated by most companies.<sup>41</sup>

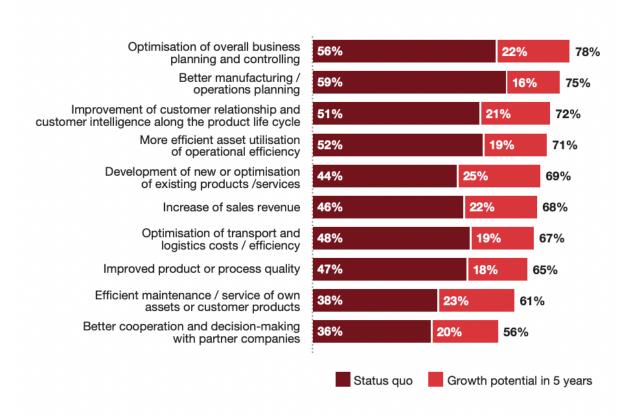


Figure 8: Are companies underestimating the scope of data analytics?

Q: In which areas are you using big data analytics today? In which additional areas will your company use data analytics in five years?

Fig 13. Scope for improvement in various business departments through digital analysis<sup>42</sup>

By focusing on integrating digital solutions into every aspect of business, digitalisation will eventually spread to all sectors of the economy, allowing Singapore businesses to reap its rewards while also giving them a competitive advantage over their international counterparts.

<sup>&</sup>lt;sup>40</sup> This is to ensure efficiency across the supply chain as a whole. For example, even the most sophisticated e-commerce transactions would be hamstrung by the retention of traditional backend systems of paper cataloguing.

<sup>&</sup>lt;sup>41</sup> Industry 4.0: Building the Digital Enterprise. Global Digital Operations Study. *PricewaterhouseCoopers*. <sup>42</sup> *Ibid*.

## 3.1.2 Rampant Proliferation of Innovation

The Covid-19 pandemic has sparked numerous product and process safety innovations. TraceTogether and SafeEntry aside, services such as the "Ask Jamie" chatbot have been enhanced to address Covid-19 queries.<sup>43</sup>

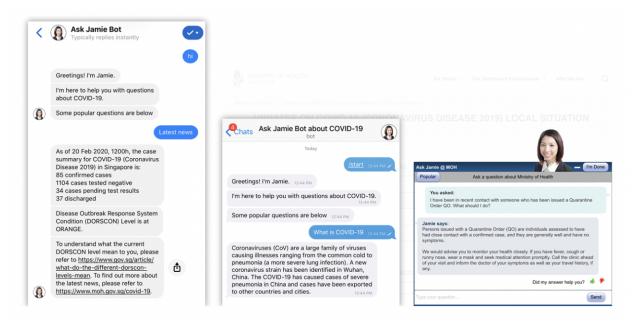


Fig 14. Ask Jamie chatbot using data analytics to respond to Covid-19 queries<sup>44</sup>

While it is uncertain if these innovations will endure post-pandemic, the increased demand for safer interactions as well as digital platforms, software and hardware may cause problems.<sup>45</sup> New companies need to stay nimble to seize opportunities, riding the wave of increased innovation and risk-taking as others seek to diversify and become more modular.<sup>46</sup> This is best achieved in a regulatory framework which encourages agile thinking.

<sup>&</sup>lt;sup>43</sup> "Ask Jamie" chatbots used by various ministries started using data analytics and machine learning to detect trending topics and improve accuracy of replies related specifically to Covid-19. https://www.tech.gov.sg/products-and-services/responding-to-covid-19-with-tech/

<sup>&</sup>lt;sup>44</sup> Responding to Covid-19 with Tech. GovTech Singapore.

https://www.tech.gov.sg/products-and-services/responding-to-covid-19-with-tech/

<sup>&</sup>lt;sup>45</sup> How Covid-19 is shaping software and hardware trends (23 Jul 2020). Simmons & Simmons. https://www.simmons-simmons.com/en/publications/ckc3i7zarxl3m0900ejrfe64g/how-covid-19-is-shaping-software-and-hardware-trends

<sup>&</sup>lt;sup>46</sup> Hastened developmental processes and the accelerated consolidation of industries may pose difficulties for regulatory frameworks meant to keep these in check. Singapore must straddle the line between overly restrictive regulations that curtail innovation and overly lax regulations that result in a "Wild West" of innovation.

# 3.2 Shifting Perceptions of Value

Pre-Covid, economic policymaking was primarily focused on boosting economic growth.<sup>47</sup> The pandemic, however, has exposed chronic development fault-lines challenging how people conceive economic value.

#### 3.2.1 Essential Workers

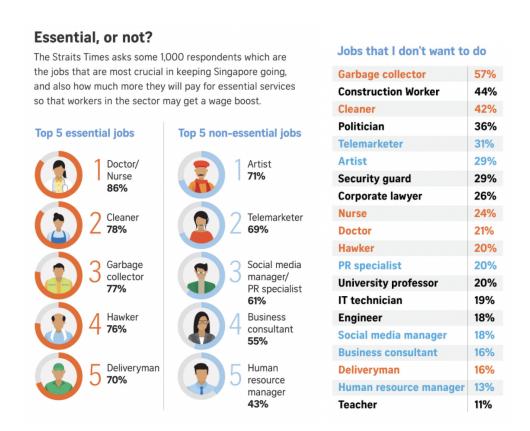


Fig 15. Jobs considered essential that are undervalued in the eyes of the public<sup>48</sup>

Covid-19 has revealed that many essential societal services are neither well-paid nor valued. Since such jobs are generally shunned by the majority, tying wages to productivity in these

<sup>&</sup>lt;sup>47</sup> Towards Post-Covid-19 Resilient Economies. Economic and Social Survey of Asia and the Pacific 2021. *United Nations Economic and Social Commission for Asia and the Pacific*.

<sup>&</sup>lt;sup>48</sup> 8 in 10 Singaporeans willing to pay more for essential services: Survey (14 Jun 2020). The Straits Times.

https://www.straitstimes.com/singapore/manpower/8-in-10-singaporeans-willing-to-pay-more-for-essential -services

sectors, as would be normal for other jobs, may be a "false equivalence". 49 Going forward, the essential nature of these services should be valued as well.

## 3.2.2 Resilience over Efficiency

Singapore's small size and lack of natural resources has necessitated an openness to trade and investment, forcing the economy to remain competitive and efficient, with spare capacity often being viewed as wasteful.<sup>50</sup> However, this ruthless cost-cutting has left companies with little flexibility to absorb disruptions.<sup>51</sup>

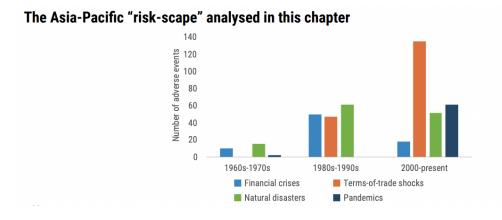


Fig 16. Adverse events classified by category since the 1960s<sup>52</sup>

With increasing trends of adverse events affecting economies, Singapore should be prepared for such disruptions by buffering itself with spare capacity, paramount for a resilience-based economy. This is especially true in essential services like healthcare and food security.<sup>53</sup>

<sup>&</sup>lt;sup>49</sup> A "false equivalence" refers to a comparison between two subjects based on flawed reasoning. In this case, the increased remuneration that would reward increased productivity in other sectors may not be applicable to essential work due to its undesired nature.

NMP Walter Theseira urges rethink to value essential, manual work (5 Jun 2020). The Straits Times. https://www.straitstimes.com/politics/nmp-urges-rethink-to-value-essential-manual-work

<sup>&</sup>lt;sup>50</sup> Globalisation in a Small Open Economy: the Singapore Experience. Edward Robinson. https://www.bis.org/publ/bppdf/bispap100\_u.pdf

<sup>&</sup>lt;sup>51</sup> Emerging Stronger Taskforce Report. Emerging Stronger Together. *Ministry of Trade and Industry*, 6.

<sup>&</sup>lt;sup>52</sup> Towards Post-Covid-19 Resilient Economies. Economic and Social Survey of Asia and the Pacific 2021. *United Nations Economic and Social Commission for Asia and the Pacific*.

<sup>&</sup>lt;sup>53</sup> Essential services are usually defined as services and functions that are critical in maintaining health and welfare. In Singapore, these services were allowed to remain open during the circuit breaker in compliance to covid lockdown measures.

https://www.gobusiness.gov.sg/images/covid/Permitted%20Services%20(26%20Aug).pdf

#### 3.2.3 Green Transformation

Covid-19 has also engendered a renewed emphasis on environmental sustainability. Increasing digitalisation and the ability to work from home during the pandemic has shown that there are alternatives to emission-heavy activities like transportation.

With this shift in perceptions, Singapore is best placed to take advantage of these growing opportunities by positioning itself as a green sustainability hub. In this respect, Singapore can capitalise on several pandemic-induced trends to establish itself as a green economy market leader.

Firstly, there is value in strengthening traceability in industry supply chains. This provides the ability to account for and value the costs of emissions.<sup>54</sup> Transparency is facilitated by end-to-end digitalisation — the hallmark of a post-pandemic world.<sup>55</sup>

<sup>&</sup>lt;sup>54</sup> As seen from the proposal to require climate-related disclosures for listed companies. https://www.spglobal.com/platts/en/market-insights/latest-news/energy-transition/082621-singapore-exchange-proposes-mandatory-climate-reporting-in-key-sectors-from-2023

<sup>&</sup>lt;sup>55</sup> Open and free sharing of information can drive the analysis necessary to optimize decision-making and aid the sharing of best practices.

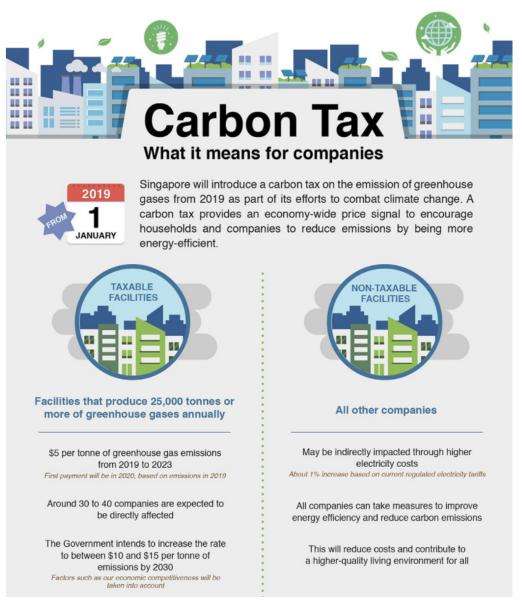


Fig 17. Implementation of Singapore's existing carbon tax in 2018<sup>56</sup>

Secondly, Singapore's green incentive system has to be reviewed. The current carbon tax is an outlier amongst countries that have introduced similar legislation.<sup>57</sup> With this in mind, the current incentivization scheme can be improved upon to create a carbon marketplace that would establish Singapore as a green hub.

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<sup>&</sup>lt;sup>56</sup> Singapore Budget 2018: Carbon Tax – What Does It Mean to Your Company. The Logistics Academy. https://tla.edu.sg/singapore-budget-2018-carbon-tax-mean-company/

<sup>&</sup>lt;sup>57</sup> The average of European carbon taxes hovers around SGD \$57 per tonne, while estimates currently value the actual impact of carbon on the environment at roughly SGD \$102 per tonne. https://www.straitstimes.com/singapore/politics/singapore-can-introduce-higher-carbon-taxes-and-still-stay-competitive-mas-chief

By taking advantage of growing climate opportunities and leveraging sustainability as an essential enterprise opportunity, Singapore can capitalise on pandemic-induced trends to remodel itself as a regional green hub.

# CHAPTER IV: REIMAGINING THE SOCIAL CONTRACT

"If you are not socially sustainable, you are not going to have a competitive economy in the long term." Senior Minister Tharman Shanmugaratnam, 2020<sup>58</sup>

Covid-19 has rendered the truism that society is a chain only as strong as its weakest link painfully obvious. Oft-neglected groups have turned out to be chinks in Singapore's armour, highlighting the necessity of adopting an inclusive approach when confronting today's challenges.<sup>59</sup> Yet, Covid-19 has also strained Singapore's social fabric, particularly along socio-economic lines.

In this chapter, we demonstrate how Covid-19 stands to exacerbate socio-economic inequalities. We then outline how Singapore might be able to rectify this by reimagining its social contract to deliver inclusive growth.

<sup>&</sup>lt;sup>58</sup> Think of the Economy as a Social Ecosystem, says Tharman (19 Nov 2020). The Business Times. https://www.businesstimes.com.sg/government-economy/think-of-the-economy-as-a-social-ecosystem-says-tharman

<sup>&</sup>lt;sup>59</sup> In Singapore, significant Covid-19 clusters have been linked to vulnerable groups like migrant workers living in cramped dormitories, contract cleaners who move between different shopping centres and fishmongers.

https://www.straitstimes.com/singapore/nearly-half-of-migrant-workers-in-dormitories-have-had-covid-19 https://www.todayonline.com/singapore/32-new-covid-19-infections-singapore-including-17-linked-changiairport-t3-cleaner

# 4.1 Widening Socio-Economic Inequality

Pandemic restrictions have favoured white-collar knowledge workers who were able to easily transition to remote working arrangements vis-a-vis their counterparts in blue-collar/non-knowledge industries.<sup>60</sup>

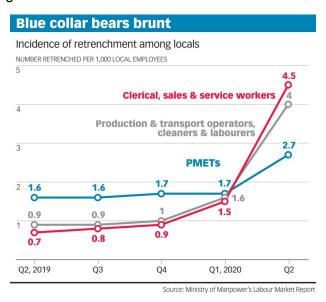


Fig 18. Workers in industries sales/service, transport and cleaning were more likely to be retrenched than PMETs during Covid-19<sup>61</sup>

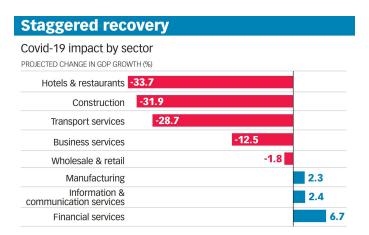


Fig 19. Blue-collar/non-knowledge industries are generally expected to recover slowly,

likely meaning prolonged job insecurity for workers in those sectors<sup>62</sup>

<sup>&</sup>lt;sup>60</sup> Lower-wage Workers in Singapore Hit Hard by Fallout of Pandemic (15 Sep 2020). The Straits Times. https://www.straitstimes.com/singapore/manpower/lower-wage-workers-here-hit-hard-by-fallout-of-pandemic

<sup>&</sup>lt;sup>61</sup> How has Covid-19 hit Singapore's less well-off? (26 Oct 2020). The Business Times. https://www.businesstimes.com.sg/government-economy/how-has-covid-19-hit-singapores-less-well-off *lbid*.

Faced with greater job and income insecurity, non-knowledge workers have increasingly turned to unstable but accessible gig-employment.<sup>63</sup> This trend might have hidden, potentially dangerous impacts on upskilling<sup>64</sup> and individual CPF contributions.<sup>65</sup>

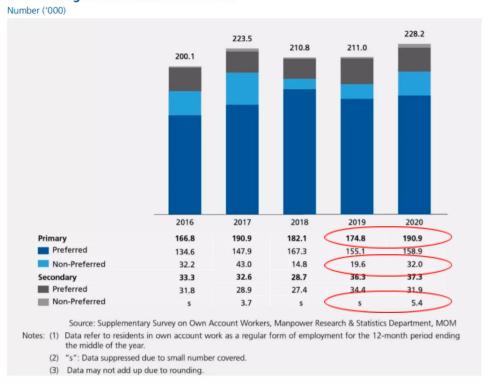


Chart 18 Resident regular own account workers

Fig 20. 2020 saw an increase in own account workers (freelancers in gig economy), with a notable increase in "non-preferred" primary/secondary account holders who might have been forced into the gig economy due to Covid-19<sup>66</sup>

<sup>&</sup>lt;sup>63</sup> Commentary: The gig economy – a surprise boost from the pandemic and in Singapore, it's not going anywhere (9 Mar 2021). Channel News Asia.

https://www.channelnewsasia.com/news/commentary/gig-economy-performance-covid-19-jobs-revenue-grab-gojek-14288764

<sup>&</sup>lt;sup>64</sup> Gig economy workers might be disincentivised from upskilling, facing challenges as they usually have to pay for upskilling courses out of their own pockets and face significant opportunity costs in the form of lost income when going for such courses (see **Fig 21**). They might also not have enough time or energy, or might have a misperception of financial security due to their employment situation.

https://www.channelnewsasia.com/news/commentary/grab-drivers-hard-find-job-gig-economy-cpf-retirement-skills-10691350

 <sup>&</sup>lt;sup>65</sup> Self-employed gig economy workers only need to contribute to the MediSave CPF account.
 Self-employed persons are also not liable for any employer CPF contributions into any of their accounts.
 https://www.cpf.gov.sg/Members/Schemes/schemes/self-employed-scheme/self-employed-matters
 <sup>66</sup> Labour Force in Singapore 2020. Impact of COVID-19 on the Labour Market. MRSD 2020 Labour Force Survey Findings. *Ministry of Manpower*.



Chart 21 Challenges faced by resident regular own account workers, 2020

Fig 21. Own account workers (ie freelancers in the gig economy) face difficulties with healthcare/retirement savings and face difficulties upskilling (circled in red)<sup>67</sup>

As Covid-19 accelerates digitalisation, workers in sunset industries or uncompetitive companies face structural unemployment. Intergenerational inequalities may worsen as the digital divide between youths and older workers translates into employment bias. Simultaneously, rich asset-owners have seen their incomes skyrocket due to unprecedented levels of global expansionary monetary and fiscal policy.<sup>68</sup>

Like a ventilator, current relief measures have kept the socio-economic balance on life support. However, these policies will inevitably end, portending the potential untenable widening of socio-economic inequality.

<sup>&</sup>lt;sup>67</sup> Labour Force in Singapore 2020. Impact of COVID-19 on the Labour Market. MRSD 2020 Labour Force Survey Findings. *Ministry of Manpower*.

<sup>&</sup>lt;sup>68</sup> Forbes' Rich List: Combined net worth of Singapore's 50 richest people rises 25%; 3 new faces debut (21 Aug 2021). Today Online.

https://www.todayonline.com/singapore/combined-net-worth-spores-50-richest-people-rises-25-cent-three -new-faces-debut-forbes?cid=tdy%20tg\_tg-pm\_social-msging-free\_09102018\_today

# 4.2 Singapore's Imperative — A Resilient Social Compact

Singapore needs imaginative solutions to deliver inclusive growth. A reimagined social contract can build a more resilient social compact.

## **4.2.1 Calibrating Existing Schemes**

For lower-income workers who have felt Covid-19's impact most acutely, a more robust social safety net can be considered.<sup>69</sup> For starters, temporary wealth transfers to cushion the immediate aftermath of the pandemic can be fashioned into longer-term programmes, funded by a recalibration of progressive taxes to redistribute wealth.<sup>70</sup>

Covid-19 has also exposed the precarious position of those on the margins, like Grab drivers or sunset industry workers. Beyond helping the most vulnerable, the government can focus on these groups too.

Regulatory regimes can be adapted to the increasing prevalence of gig-employment. Gig-economy matching services like Grab could be made liable for a portion of CPF or work-injury insurance for full-time drivers.<sup>71</sup> Simultaneously, the power of freelance and gig-employee unions can be expanded to level the employer-employee playing field.<sup>72</sup>

<sup>&</sup>lt;sup>69</sup> National Day Rally Speech by Lee Hsien Loong. Published by The Straits Times.

https://www.straitstimes.com/singapore/politics/prime-minister-lee-hsien-loongs-national-day-message-20 21-read-his-speech-in-full

<sup>&</sup>lt;sup>70</sup> For instance, as part of Budget 2020, the government unveiled the one-off Care and Support Package, which included policies such as a one-time Workfare Special Payment. The Workfare Income Supplement (WIS) is one programme that can be expanded upon to enhance our safety net. The Workfare and PWM schemes can also be further expanded.

upon.https://www.straitstimes.com/singapore/politics/mas-chief-says-wealth-tax-could-tackle-wealth-inequality-in-singapore

<sup>&</sup>lt;sup>71</sup> The Singapore gig economy: Right balance on regulations needed to unlock its full potential, say experts (27 Jan 2020). Channel News Asia.

https://www.channelnewsasia.com/news/singapore/the-singapore-gig-economy-right-balance-on-regulations-needed-to-12235556

<sup>&</sup>lt;sup>72</sup> Currently, the NTUC has created the Visual, Audio, Creative Content Professionals Association and the National Delivery Champions Associations to represent freelancers in the gig economy. However, there has been criticism that these associations do not level the playing field between employers and gig workers. Other sectors of the gig economy are also still not yet covered by such associations. https://www.straitstimes.com/singapore/ntuc-forms-two-new-associations-for-creative-content-professionals-and-delivery-riders

To mitigate structural unemployment, Singapore can develop a dynamic labour market by evolving place-and-train initiatives into long-term fixtures across more industries to provide job-seekers with quality experience on top of certifications.



Fig 23. "Skills Ignition SG" — an example of a place-and-train initiative by Google in partnership with the EDB and SkillsFuture, Google<sup>73</sup>

<sup>&</sup>lt;sup>73</sup> A new skills partnership for Singaporeans (20 Jul 2020). Google in Asia. https://blog.google/around-the-globe/google-asia/new-skills-partnership-singapore/

To boost the wages, productivity and skill-level of workers in blue-collar industries that traditionally pay less, blueprints for industry professionalisation can be introduced (see **Annex C**).<sup>74</sup> At the same time, dependence on cheap foreign labour should be weaned off.

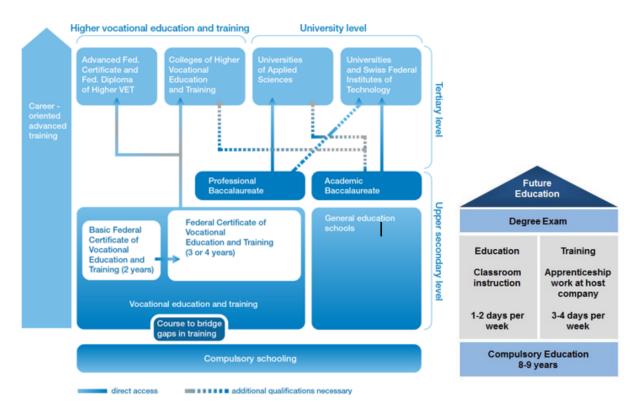


Fig 24. The Swiss education model that allows for training/apprenticeship alongside classroom vocational education, as well as clear pathways of professional progression to the tertiary level in vocational fields<sup>75</sup>

<sup>&</sup>lt;sup>74</sup> To do so, structured, formalised and officially-recognised vocational training courses can be designed in tandem with rigorous apprenticeship programmes for all occupations, especially blue-collared ones to "professionalise" and put a premium on quality in such industries.

https://www.straitstimes.com/opinion/how-to-reclaim-jobs-for-locals-0

<sup>&</sup>lt;sup>75</sup> Global Risks 2014. World Economic Forum.

https://reports.weforum.org/global-risks-2014/part-2-risks-in-focus/2-3-generation-lost/, https://www.ebcswiss.org/dual-education-switzerland/

# **4.2.2 Evolving the Tripartite Dynamic**

However, bigger government must not spiral into Big Government. Excessive government intervention might cause a "crowding-out effect" and stifle the social economy. The rollout of TraceTogether, Quarantine Orders and Heightened Alert phases has spotlighted the government's enlarging footprint in society and its associated tensions. Going forward, the tripartite dynamic between government, private and people sectors could evolve towards greater sensitivity to different stakeholders.

Government can empower the private sector to take more ownership of developing a skilled and productive workforce.<sup>79</sup> Businesses can also make use of Alliances-for-Action (AfAs)<sup>80</sup> to envision the future of their industries.

Additionally, the nation's Covid-19 experience has proven that civil society and businesses are well-equipped to identify and tackle social issues independently.<sup>81</sup> The government can leverage this growing social economy to pursue social causes too.

By recalibrating existing schemes and evolving the tripartite partnership, Singapore can reimagine its social contract to deliver inclusive growth and build a more resilient society.

The "crowding-out effect" refers to the phenomenon where rising government action drives down private sector action. It is usually used to refer to the effects of increasing public sector spending.
 The social economy refers to the collection of cooperatives, mutuals, foundations, ethical banks and

social enterprises that prioritise people and communities over business. It is generally considered to be a pivotal engine driving ground-up, sustainable change.

https://www.socialeconomy.eu.org/the-social-economy/

<sup>&</sup>lt;sup>78</sup> After the Pandemic: Building a Fairer Post-Covid-19 Economy, LKYSPP.

https://lkyspp.nus.edu.sq/gia/article/after-the-pandemic-building-a-fairer-post-covid-19-economy

<sup>&</sup>lt;sup>79</sup> How to Reclaim Jobs for Locals (27 Jul 2021). The Straits Times.

https://www.straitstimes.com/opinion/how-to-reclaim-jobs-for-locals-0

<sup>&</sup>lt;sup>80</sup> Alliances for Action are coalitions between the government, businesses and the people sector to seize growth for Singapore in a variety of areas. They were introduced by the government as part of the wider Singapore Together movement. Most of the AfAs currently established are focused on niche economic issues such as supply chain digitalisation, digital commerce etc. https://emergingstronger.sg/afa 
<sup>81</sup> Employers, operators and NGOs step up for workers cooped up in factory-converted dormitories (5 Jun 2020). Channel News Asia.

https://www.channelnewsasia.com/singapore/factory-converted-dormitories-fcd-migrant-workers-isolation-649836

# CHAPTER V: CONCLUSION

Covid-19 has caused a seismic shift across the entirety of Singapore. Our economic lifeblood of globalisation is increasingly morphing into regionalisation. Domestically, the twin waves of digitalisation and a fundamental realignment of values look poised to sweep over the economy with even greater strength, while a growing socio-economic gap threatens to fray the social fabric.

Yet, should Singapore manage to adapt, we stand to catch the winds of change in our sails. By recontextualising globalisation, restructuring our economy and reimagining our social contract, we can make Singapore more resilient by delivering economic growth while making sure that all boats truly rise with the tide. Properly harnessed, the economic drivers in a post-Covid world will transform our country from Singapore private limited to Singapore virtually unlimited.

## **ANNEX A:**

### Overreliance — Automotive Part and Chip Shortages

In 2020, the lockdown in Hubei, China led to a global shortage of car components, causing manufacturers like Hyundai, Volkswagen and Renault to tighten or even halt production. <sup>82</sup> This was particularly significant for the automotive industry, which is especially vulnerable to disruptions in the flow of goods across its supply chain as cars are complex machines which include many precision parts that are manufactured in different parts of the global supply chain. Although automotive manufacturers had spare inventories of car parts, these were only sufficient for around a week. <sup>83</sup> Consequently, manufacturers could not continue to produce cars during a month-long disruption in car parts due to the virus. Figure A1 shows the interdependence of the Indian car manufacturing industry, where major automotive companies like Hyundai manufacture cars, on the Chinese car part supply chain.

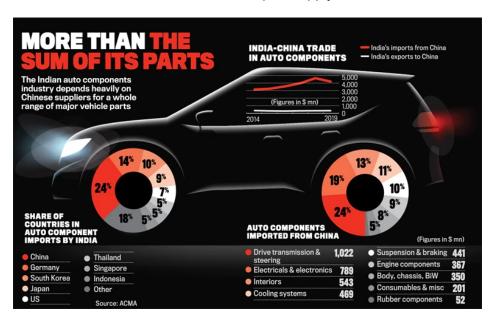


Fig A1. The Indian automotive industry, in which major brands like Hyundai operate, relies

heavily on Chinese components<sup>84</sup>

<sup>&</sup>lt;sup>82</sup> Production halts at China factories lead to worldwide shortages in components as coronavirus outbreak spreads. South China Morning Post.

https://www.scmp.com/business/companies/article/3049118/coronavirus-outbreak-adds-salt-wounded-global-car-industry

<sup>&</sup>lt;sup>83</sup> Virus Exposes Cracks in Carmaker's Chinese Supply Chains. The New York Times. https://www.nytimes.com/2020/02/04/business/hyundai-south-korea-coronavirus.html

<sup>84</sup> The Long Road to Self-Reliance (13 Jul 2020). India Today.

https://www.indiatoday.in/magazine/cover-story/story/20200713-the-long-road-to-self-reliance-automobile s-1696554-2020-07-04

In addition, outbreaks of Covid in Taiwan and Malaysia threatened to close vital parts of the semiconductor supply chain, worsening the global chip shortage.<sup>85</sup> Taiwan's Taiwan Semiconductor Manufacturing Company (TSMC) occupies 52.9% of the semiconductor foundry market share by revenue,<sup>86</sup> while Malaysia is one of the world's most important destinations for assembling and testing of semiconductor devices that are pivotal for the function of smartphones, engines and medical equipment.<sup>87</sup> The worsening Covid-19 situation in Taiwan and Malaysia in the first half of 2021 meant the imposition of lockdown measures which slowed down activity in the semiconductor industry. Analysts feared that this would exacerbate the existing shortage of semiconductor chips, causing knock-on effects on the rest of the global supply chain.

WORLD | ASIA

# Covid-19 Surge in Malaysia Threatens to Prolong Global Chip Shortage

Southeast Asia country is cited as auto makers cut production, highlighting little-known but critical link in semiconductor supply chain



A global chip shortage is affecting how quickly we can drive a car off the lot or buy a new laptop. WSJ visits a fabrication plant in Singapore to see the complex process of chip making and how one manufacturer is trying to overcome the shortage. Photo: Edwin Cheng for The Wall Street Journal

Fig A2. Article from the Wall Street Journal titled "Covid-19 Surge in Malaysia Threatens to Prolong Chip Shortage<sup>88</sup>

<sup>&</sup>lt;sup>85</sup> New Covid-19 Outbreaks in Asia Could Exacerbate the Global Chip Shortage (12 Jun 2021). Jay Peters. The Verge.

https://www.theverge.com/2021/6/12/22530908/covid-19-outbreaks-asia-global-chip-semiconductor-short age

Leading Semiconductor Foundries Revenue Share Worldwide from 2019 to 2021 by Quarter.
 https://www.statista.com/statistics/867223/worldwide-semiconductor-foundries-by-market-share/
 Covid-19 Surge in Malaysia Threatens to Prolong Global Chip Shortage. The Wall Street Journal.
 https://www.wsj.com/articles/covid-19-surge-in-malaysia-threatens-to-prolong-global-chip-shortage-11630
 234802

<sup>88</sup> Ibid.

#### **ANNEX B:**

#### **Fintech Innovation**

In most circumstances, it falls upon the government to create the best ecosystem to nurture a compelling business environment.<sup>89</sup> One example of this would be in the FinTech sector, where a regulatory sandbox was established in 2016 for faster market testing of innovative financial services. This was backed up through solidarity grants and other support initiatives for innovation.<sup>90</sup>

Exhibit 8: Innovation initiatives supported by Singapore's public sector



#### **FSTI 1.0**

Pledged US\$165MN to catalyse new ideas & establish innovation labs through funding support (up to 50% of set up costs)

>200 FIs and FinTechs have benefitted with 40+ innovation labs set up

In 2019 alone, equity funding reached US\$0.9BN

#### FSTI 2.0

August 2020: Second round of funding to inject US\$185MN into the sector to accelerate growth



#### Startup SG Founder programme

US\$112MN committed to groom new startups; first-time entrepreneurs can receive mentorship support and a startup capital grant of up to US\$37,000

Access to equity financing enhanced with additional investments through EDBi & SEEDS Capital

## Regulatory sandbox

In 2016, first Asian country to offer this type of setting; allowed players to test FinTech products on customers within a well-defined space



#### API Exchange (APIX)

Open architecture platform launched in 2018 to support innovation by fostering API sharing between FIs & FinTechs

#### MAS-SFA-AMTD FinTech Solidarity Grant

US\$4.5MN grant backed by MAS, SFA and AMTD for FinTechs

One-time grant (of up to US\$15,000) to help FinTechs sustain their operations and retain their employees

Source: Monetary Authority of Singapore, Enterprise Singapore

Fig B1. Innovation initiatives for Fintech supported by Singapore's public sectore1

Reimagining a post-COVID world with agility and resilience. KPMG.
 https://home.kpmg/sg/en/home/insights/2020/05/thriving-in-a-post-covid-19-world.html
 Singapore Fintech Landscape 2020 and Beyond. Oliver Wyman, Singapore Fintech Association, 10.

https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2020/dec/singapore-fintech-land scape-2020-and-beyond.pdf

<sup>&</sup>lt;sup>91</sup> *Ibid*. 11.

These projects propelled Singapore to the top of the Cisco annual Digital Readiness Index in 2019.<sup>92</sup> In 2021, Singapore's Nium, a payments start-up serving businesses, became a fintech unicorn with a value topping US\$1 billion.<sup>93</sup> Overall, providing regulatory incentives and IT infrastructure may be the best way to encourage companies to break new frontiers and share best practices, thrusting Singapore into pole position in the digitalisation race.

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<sup>92</sup> Digital Readiness Index 2019. Cisco.

https://www.cisco.com/c/m/en\_us/about/corporate-social-responsibility/research-resources/digital-readine ss-index.html#/

<sup>&</sup>lt;sup>93</sup> Singapore fintech Nium turns unicorn, topping US\$1 billion in valuation (29 Jul 2021). The Straits Times.

https://www.straitstimes.com/business/banking/singapore-fintech-nium-turns-unicorn-topping-us1-billion-in-valuation

#### ANNEX C:

### **Swiss Vocational Education System and Industry Professionalisation**

The Swiss vocational education and training (VET) system consists of two tracks. Namely, these are the classroom track, where students are formally instructed on vocational skills like carpentry, and the part-time workplace apprenticeship track, in which students take up an apprenticeship at a company. Students under the VET spend roughly 2-3 days in the classroom and 3-4 days on apprenticeship. He VET can be completed either as a two year programme leading to a Federal VET Certificate or a three year programme leading to a Federal VET Diploma. Both the Certificate and the Diploma are *professional* qualifications recognised by Swiss industries to gauge the skill level of students entering the workforce or being re/upskilled. The programmes can be obtained in various fields such as, *inter alia*, nature, landscape and food, and health and social affairs. He

Statistically, around 70% of all Swiss students undergo some variation of the vocational route.<sup>96</sup> The high uptake rate by the Swiss can be at least partially explained by the relative absence of social stigma against taking up vocational jobs vis-a-vis Singapore as a result of the emphasis on quality in vocational occupations. Of note, adults can also join the VET system and undergo a Certificate or Diploma programme to attain better industry-recognised and legitimate qualifications for their vocational jobs.<sup>97</sup>

In addition, around 30% of Swiss companies are participants in the vocational education system, meaning that they act as host for student apprenticeships.<sup>98</sup> Swiss professional organisations, like trade associations and industry organisations, are in charge of defining the content and objectives of VET programmes.

<sup>&</sup>lt;sup>94</sup> Swiss Vocational Education and Training Model: The Recipe for Success?

https://hospitalityinsights.ehl.edu/swiss-vocational-education-training-model <sup>95</sup> Switzerland" Organisation of Vocational Upper Secondary Education.

https://eacea.ec.europa.eu/national-policies/eurydice/content/organisation-vocational-upper-secondary-ed ucation-79 en

<sup>&</sup>lt;sup>96</sup> Gold Standard: The Swiss Vocational Education and Training System (11 Mar 2015). Center on International Education Benchmarking.

https://ncee.org/wp-content/uploads/2015/03/SWISSVETMarch11.pdf

<sup>&</sup>lt;sup>97</sup> Lifelong Learning for Adults. https://www.ch.ch/en/continuing-education-and-training-adults/

<sup>&</sup>lt;sup>98</sup> Gold Standard: The Swiss Vocational Education and Training System (11 Mar 2015). Center on International Education Benchmarking.

https://ncee.org/wp-content/uploads/2015/03/SWISSVETMarch11.pdf

Several pointers from the Swiss VET system can be adapted for the Singaporean context to professionalise our industries. This is especially so given the prevalence of similar vocational programmes, such as the Institute of Technical Education (ITE) and some more vocational/technical Polytechnic courses in the Singaporean educational landscape.

First, there can be a greater participation and involvement of the private sector in vocational education. Private businesses from traditionally non-professional industries can be more willing to offer mentored apprenticeships to train vocational students. At the same time, businesses can also have greater input in shaping vocational curriculum to make sure the content taught is relevant to the industry. With greater private sector input, greater private sector buy-in into the programme would logically follow as well. Hence, more companies would likely recognise these qualifications, thereby catalysing a greater degree of professionalisation in industries, especially those that are traditionally non-professional.

Second and more importantly, the association between vocational work and low income and undesirability in the Singaporean psyche needs to be changed. Low vocational training uptake vis-a-vis Switzerland might stem from how Singaporeans generally view vocational work and institutions that provide vocational training undesirably. If society gradually shifts to thinking of vocational work as work of high quality, as in Switzerland, companies and customers might value vocational work more. It stands to reason that there might be greater impetus for the professionalisation of vocational industries due to this revaluation of vocational work.

#### **REFERENCES**

#### **Newspaper Articles**

8 in 10 Singaporeans willing to pay more for essential services: Survey (14 Jun 2020). The Straits Times.

https://www.straitstimes.com/singapore/manpower/8-in-10-singaporeans-willing-to-pay-more-for-essential-services

Commentary: The gig economy – a surprise boost from the pandemic and in Singapore, it's not going anywhere (9 Mar 2021). Channel News Asia.

https://www.channelnewsasia.com/news/commentary/gig-economy-performance-covid-19-jobs-revenue-grab-gojek-14288764

Covid-19 Surge in Malaysia Threatens to Prolong Global Chip Shortage. The Wall Street Journal.

https://www.wsj.com/articles/covid-19-surge-in-malaysia-threatens-to-prolong-global-chip-shortage-11630234802

Employers, operators and NGOs step up for workers cooped up in factory-converted dormitories (5 Jun 2020). Channel News Asia.

https://www.channelnewsasia.com/singapore/factory-converted-dormitories-fcd-migrant-workers-isolation-649836

Forbes' Rich List: Combined net worth of Singapore's 50 richest people rises 25%; 3 new faces debut (21 Aug 2021). Today Online.

https://www.todayonline.com/singapore/combined-net-worth-spores-50-richest-people-rises-25-c ent-three-new-faces-debut-forbes?cid=tdy%20tg\_tg-pm\_social-msging-free\_09102018\_today

How Covid-19 is Spreading Across the World (6 Sep 2021). The Straits Times. https://www.straitstimes.com/multimedia/graphics/2020/02/coronavirus-global-numbers/index.ht ml

How has Covid-19 hit Singapore's less well-off? (26 Oct 2020). The Business Times. https://www.businesstimes.com.sg/government-economy/how-has-covid-19-hit-singapores-less-well-off

How to Reclaim Jobs for Locals (27 Jul 2021). The Straits Times. https://www.straitstimes.com/opinion/how-to-reclaim-jobs-for-locals-0

Illustration from "How Covid Hastened the Decline and Fall of the US-China Relationship" Opinion Essay by Josh Rogin (4 Mar 2021). *The Washington Post*.

Is It Time to Rethink Globalized Supply Chains? (19 Mar 2020). MITSloan Management Review. https://sloanreview.mit.edu/article/is-it-time-to-rethink-globalized-supply-chains/

Lower-wage Workers in Singapore Hit Hard by Fallout of Pandemic (15 Sep 2020). The Straits Times.

https://www.straitstimes.com/singapore/manpower/lower-wage-workers-here-hit-hard-by-fallout-of-pandemic

New Covid-19 Outbreaks in Asia Could Exacerbate the Global Chip Shortage (12 Jun 2021). Jay Peters. The Verge.

https://www.theverge.com/2021/6/12/22530908/covid-19-outbreaks-asia-global-chip-semiconductor-shortage

NMP Walter Theseira urges rethink to value essential, manual work (5 Jun 2020). The Straits Times. https://www.straitstimes.com/politics/nmp-urges-rethink-to-value-essential-manual-work

Pandemic resilience can be source of competitive advantage for Singapore: MAS chief (7 Jul 2021). The Straits Times.

https://www.straitstimes.com/singapore/politics/pandemic-resilience-can-give-spore-competitive-edge-says-mas-chief

Production halts at China factories lead to worldwide shortages in components as coronavirus outbreak spreads. South China Morning Post.

https://www.scmp.com/business/companies/article/3049118/coronavirus-outbreak-adds-salt-wou nded-global-car-industry

Suspending all construction work to stem coronavirus spread is a difficult trade-off: Josephine Teo (25 Apr 2020). The Straits Times.

https://www.straitstimes.com/singapore/suspending-all-construction-work-to-stem-coronavirus-spread-is-a-difficult-trade-off

The Long Road to Self-Reliance (13 Jul 2020). India Today.

https://www.indiatoday.in/magazine/cover-story/story/20200713-the-long-road-to-self-reliance-au tomobiles-1696554-2020-07-04

The Singapore gig economy: Right balance on regulations needed to unlock its full potential, say experts (27 Jan 2020). Channel News Asia.

https://www.channelnewsasia.com/news/singapore/the-singapore-gig-economy-right-balance-on-regulations-needed-to-12235556

The World Needs Masks. China Makes Them, but Has Been Hoarding Them. The New York Times.

https://www.nytimes.com/2020/03/13/business/masks-china-coronavirus.html

Think of the Economy as a Social Ecosystem, says Tharman (19 Nov 2020). The Business Times.

https://www.businesstimes.com.sg/government-economy/think-of-the-economy-as-a-social-ecosystem-says-tharman

Virus Exposes Cracks in Carmaker's Chinese Supply Chains. The New York Times. https://www.nytimes.com/2020/02/04/business/hyundai-south-korea-coronavirus.html

#### **Press Releases**

Alliance for Actions Pilots New Data Infrastructure to Interconnect Supply Chain Ecosystem (16 Nov 2020).

https://www.imda.gov.sg/news-and-events/Media-Room/Media-Releases/2020/Alliance-for-Actio n-Pilots-New-Data-Infrastructure-to-Interconnect-Supply-Chain-Ecosystem

How Singapore can sharpen its innovative edge (16 Jul 2021). Ravi Menon. IPS-Nathan Lectures. Published in The Straits Times.

National Day Rally Speech by Lee Hsien Loong. Published by The Straits Times. https://www.straitstimes.com/singapore/politics/prime-minister-lee-hsien-loongs-national-day-message-2021-read-his-speech-in-full

#### **Publications**

CARI captures 450: ASEAN-5 countries projected to grow in 2021. CARI ASEAN Research and Advocacy.

Emerging Stronger Taskforce Report. Emerging Stronger Together. *Ministry of Trade and Industry*.

Impact of the Covid-19 Pandemic on the Singapore Economy. Economic Survey of Singapore First Quarter 2020. *Ministry of Trade and Industry*.

Industry 4.0: Building the Digital Enterprise. Global Digital Operations Study. *PricewaterhouseCoopers*.

Key Statistics and Trends in International Trade 2020, United Nations Conference on Trade And Development (2020), UNCTAD/DITC/TAB/2020/4. UNCTAD Secretariat calculations based on UNCTADSTAT and IMF data. *United Nations Publications*.

Labour Force in Singapore 2020. Impact of COVID-19 on the Labour Market. MRSD 2020 Labour Force Survey Findings. *Ministry of Manpower*.

National Business Survey 2020/2021 Summary Report. Singapore Business Federation.

Production Networks in Asia: A Case Study from the Hard Disk Drive Industry. ADBI Working Paper 301. Tokyo: Asian Development Bank Institute.

Rising Regionalisation: Will the Post-Covid-19 World See a Retreat from Globalisation? Peter Enderwick, Peter Buckley (2020). *Transnational Corporations*, 27 (2), 99-112.

Rodrik, Dani (2011). *The Globalisation Paradox: Democracy and the Future of the World Economy*. New York: W. W. Norton & Co.

The Economist (16 May 2020).

The State of Globalization in a Distancing World (2020). Steven A Altman, Philip Bastian. *DHL Global Connectedness Index* 2020.

Towards Post-Covid-19 Resilient Economies. Economic and Social Survey of Asia and the Pacific 2021. *United Nations Economic and Social Commission for Asia and the Pacific*.

#### Websites

A new skills partnership for Singaporeans (20 Jul 2020). Google in Asia. https://blog.google/around-the-globe/google-asia/new-skills-partnership-singapore/

After the Pandemic: Building a Fairer Post-Covid-19 Economy. LKYSPP. https://lkyspp.nus.edu.sg/gia/article/after-the-pandemic-building-a-fairer-post-covid-19-economy

Fashion's Supply Chain Disruptions: What You Need to Know. Business of Fashion. https://www.businessoffashion.com/articles/global-markets/fashions-supply-chain-disruptions-what-you-need-to-know

Globalisation in a Small Open Economy: the Singapore Experience. Edward Robinson. https://www.bis.org/publ/bppdf/bispap100\_u.pdf

How Covid-19 is shaping software and hardware trends (23 Jul 2020). Simmons & Simmons. https://www.simmons-simmons.com/en/publications/ckc3i7zarxl3m0900ejrfe64g/how-covid-19-is-shaping-software-and-hardware-trends

Leading Semiconductor Foundries Revenue Share Worldwide from 2019 to 2021 by Quarter. https://www.statista.com/statistics/867223/worldwide-semiconductor-foundries-by-market-share/

Looking beyond the pandemic: Could the world economy gain more than it lost to COVID-19? (4 Jun 2021). McKinsey & Company.

https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/looking-beyond-the-pandemic-could-the-world-economy-gain-more-than-it-lost-to-covid-19

Responding to Covid-19 with Tech. GovTech Singapore. https://www.tech.gov.sg/products-and-services/responding-to-covid-19-with-tech/

Singapore Budget 2018: Carbon Tax – What Does It Mean to Your Company. The Logistics Academy. https://tla.edu.sg/singapore-budget-2018-carbon-tax-mean-company/

Strategy in a 'structural break'. McKinsey & Company. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/strategy-in-a-structural-break

The First Embrace (2020). Mads Nissen. Politiken/Panos Pictures.

Three factors that have made Singapore a global logistics hub (26 Jan 2017). Yin Lam & Karuna Ramakrishnan.

https://blogs.worldbank.org/transport/three-factors-have-made-singapore-global-logistics-hub

Trade (% of GDP) - Singapore, Ireland, Belgium, United Kingdom, China, United States (2020). World Bank Data. https://data.worldbank.org/