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THE BUSINESS AND ECONOMIC IMPACT OF COVID-19 ON PENANG'S MANUFACTURING SECTOR

By ***Ong Wooi Leng and Dr Lee Siu Ming***

PENANG INSTITUTE
making ideas work

10, Brown Road, 10350 George Town
Penang, Malaysia
T +604 228 3306 **F** +604 226 7042
E enquiry@penanginstitute.org

The Business and Economic Impact of Covid-19 on Penang's Manufacturing Sector

Ong Wooi Leng *(Head, Socioeconomics and Statistics Programme) and* Dr Lee Siu Ming *(Senior Analyst, Socioeconomics and Statistics Programme)*

EXECUTIVE SUMMARY

- Since the Covid-19 Movement Control Order (MCO) began on 18 March, Penang's manufacturing firms have experienced supply and demand shocks.

- A survey done by Penang Institute reveals that about half of Penang-based manufacturers are reliant on China as their supplier or sub-tier supplier, more than during the Severe Acute Respiratory Syndrome (SARS) crisis in 2004. They also stress the significance of local supply chains.

- Penang's well-developed manufacturing ecosystem, often cited as a key factor for its status as a manufacturing hub, has gone through different crises with the nature of the disruptions varying over the crisis period and the location of their suppliers.

- Suggested measures to manage future supply chain disruptions in the future include:
    a. diversifying and increasing range of suppliers;
    b. enhancing supply chain management;
    c. increasing buffer stock;
    d. placing earlier orders for materials; and
    e. improving communication relationship with suppliers.

- Based on the survey responses, the recovery is expected to be more U-shaped than V-shaped – the period between recession and recovery will be long, and it may be years before a rebound. Textile companies are less optimistic about their recovery outlook compared to the electronics and electrical (E&E) and medical devices sub-sectors.

- A multi-actor and multi-pronged approach for developing clear, coherent and strategic measures is needed. Proposed measures include the following:
    a. Clear guidelines for employers and employees;
    b. Staggered financial assistance to small and medium industries (SMIs)/SMEs;
    c. Improved collaboration between state and federal governments to develop a practical containment strategy at the corporate level; and
    d. Systematic, effective and coordinated policies across government departments.

INTRODUCTION

Since the 1970s, the manufacturing sector has been Penang's key economic driver. From contributing 20% of the state's total GDP in 1975, it grew to be responsible for 56.3% by 2006 to become the country's second largest GDP contributor. Although that share decreased to 43.3% in 2018,[1] Penang continues to attract huge domestic and foreign investments every year. Financial crises aside, manufacturing investments alone created at least 10,000 new job opportunities annually. Foreign investments were particularly successful at cultivating a number of prominent local entrepreneurs, many often previously employed in multinational corporations (MNCs). A handful of them founded large companies (public-listed with at least 200 employees), while others remained small and medium enterprises (SMEs), providing engineering and design support to MNCs and large local firms.

Unlike the SARS epidemic of 2004, the spread of Covid-19 in 2020 has been exerting pressure on the country's output, its external trade, the labour market and also the financial market. World Bank Malaysia has outlined two possibilities going forward: a strong recovery (in which Malaysia's 2020 GDP is expected to contract by only 0.1%) and a sluggish one (showing a 4.6% contraction, lower than for the 2008-9 global financial crisis) (Aruna, 2020).

Shutdowns in Chinese factories contributed to the global supply chain crisis that began earlier this year, worsened when lockdown measures were imposed by governments in the most highly industrialised countries. In Malaysia, the implementation of the Movement Control Order (MCO) caused Malaysia's trade value to shrink significantly in March. Looking at E&E products specifically, exports and imports plunged by 13.9% and 7.5% year-on-year (yoy) respectively in March. The trend is expected to continue until June. As such, we need to ask the following questions:

- What lessons have we learnt about the nature of economic linkages during times of health crisis?
- What is the economic impact so far on business operations, in terms of resilience and future risk-taking for Penang's manufacturing sector?
- How have manufacturing supply chains been disrupted by the MCO?
- How should policymakers respond to help sustain manufacturing operations in Penang?

Survey and profile of respondents

To answer the above questions, manufacturing firms in Penang were surveyed online through industry associations and direct contacts. The survey questionnaire used is divided into four sections: business impact, business plan and projections, policy response and company particulars. 22 manufacturing firms responded to the survey, 59% of whom are owned by Malaysians. The respondents represented industries such as electronics and electrical (E&E), machinery and equipment (M&E), medical devices, engineering support, basic metal products, food processing and finally, the textile and textile products sub-sectors.

Comparing Covid-19 statistics to manufacturing performance

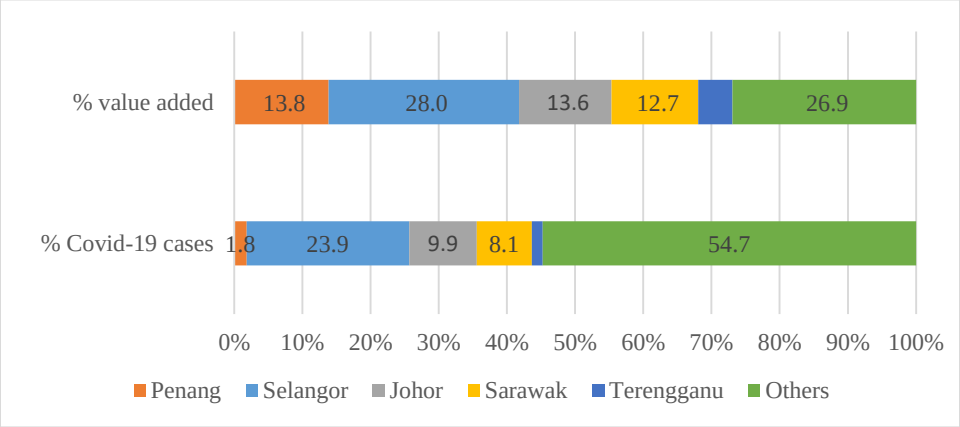
Malaysia recorded a total of 6,742 Covid-19 cases as of 12 May 2020, with Selangor being the hardest-hit (having 23.9% or 1,610 cases), followed by the Federal Territory of Kuala Lumpur (21.8% or 1,470 cases) and Johor (with 9.9% or 667 cases). In contrast, Penang has only 1.9% of the cases or 121 cases thus far (See Figure 1).

[1] Penang's services sector outperforms manufacturing sector. This is largely attributed to the rise in the tourism industry and in global business services by MNCs. In recent years, the state also attracted international companies that provide third-party business services to global customers, specifically in the areas of business processes, knowledge-based processes and information technology.

Based on the latest available statistics (2017), Selangor's manufacturing output was the highest nationwide, valued at RM82.2 billion (28% of total value-added output), followed by Penang. However, Penang's products had the highest average value created per worker (RM141,000), ahead of Selangor (RM124,200) and Johor (RM84,400). Its average value-added output per firm is also the highest among the three states. We may infer that Penang's manufacturing sector is therefore more capital-intensive and less low-skilled labour-intensive.

Among the three states with the largest manufacturing sector, Penang was most lightly hit in terms of Covid-19 cases, signaling that it has suffered the least disruptions (see Figure 1).

Figure 1 Percentage share of value-added in manufacturing sector (2017) and Covid-19 cases (as of May 12) among top manufacturing states in Malaysia.



Source: Authors' own calculations based on data published by Ministry of Health and Annual Economic Statistics (Manufacturing) 2018, Department of Statistics Malaysia.

Judging from the trade data, the first phase of the MCO caused Malaysia's trade value to drop drastically. Trade surplus fell by about 15% in March yoy, with export value contracting at a faster rate (-4.8%) than the import value (-2.7%). This indicates a slowdown in value-added manufacturing during that month. As for the manufacturing sector, E&E exports plunged by about 14%, declining at a faster pace than for imports (-7.5%).

In March, Penang's trade surplus shrank by as much as 27.3% in March yoy (from RM9.2 billion to RM6.7 billion). But while exports fell at a rate of 4.7%, imports surged by 9.2% (see Table 1). Penang International Airport remains the main channel for exports and imports, and it still handles the largest trade value in Malaysia. The decline in exports is attributed to the 18.8% decline from the port of Butterworth.

Table 1 Trade in Penang for Mar 2019 and Mar 2020 (RM million)

	Exports			Imports			Balance of Trade	
	Mar-19	Mar-20	% change (yoy)	Mar-19	Mar-20	% change (yoy)	Mar-19	Mar-20
Bayan Lepas	18,929.9	18,825.3	-0.6	11,030.4	11,597.0	5.1	7,899.4	7,228.3
Butterworth	5,012.9	4,070.1	-18.8	3,599.7	3,889.6	8.1	1,413.2	180.5
Others	291.7	206.6	-29.2	379.3	908.2	139.4	-87.6	-701.7
Total value	**24,234.5**	**23,102.0**	**-4.7**	**15,009.5**	**16,394.9**	**9.2**	**9,225.0**	**6,707.1**

Source: Authors' own calculations using data from Department of Statistics Malaysia.

It is projected that Penang will see a dramatic dip in trade activity in April 2020 due to restricted operations in selected industries throughout the second and third phases of MCO, and disrupted imports of raw materials. Trade activity is expected to recover gradually in the next three to six months.

BUSINESS CHALLENGES

With the MCO being continuously extended, business for both local and foreign manufacturing firms have been considerably disrupted. There is a two-way effect, where both input and output impact the economy at both the state and national level. The two-way effect is illustrated through the supply and demand shocks that resulted from the implementation of the MCO in Figure 2.

During the MCO, all operations required special permission from the Ministry of International Trade and Industry (MITI). Sometimes, multiple applications needed to be made, even for firms that supported the medical devices industry. As a result, some operations were temporarily halted while others operated at 15% to 30% capacity. Only a few were allowed to operate at 50% capacity.

We now look more closely at supply and demand (both external and internal) shocks.

Supply shocks

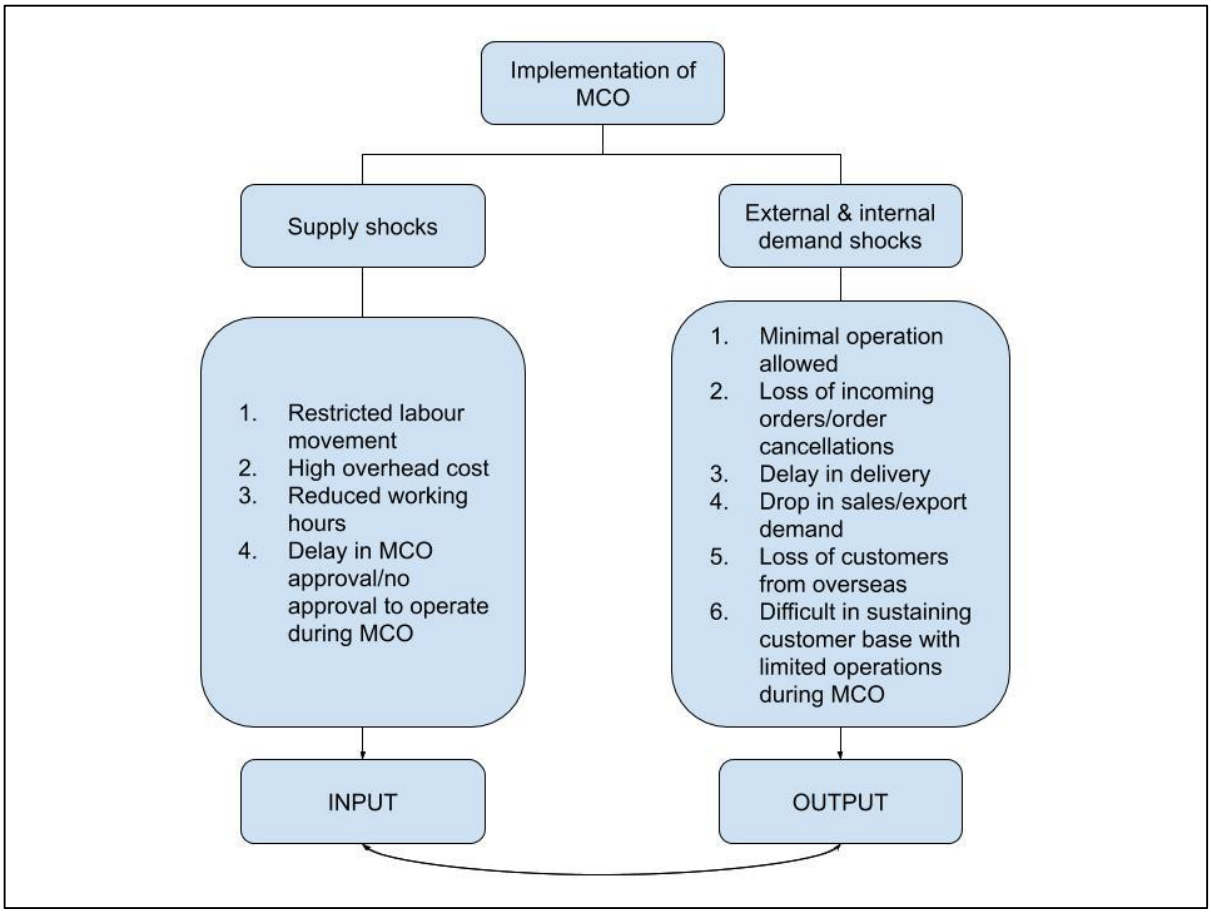
Covid-19 caused severe supply shocks, while MCO created further problems. Although essential sectors were permitted to operate at minimal level, some employees decided to stay home for fear of contracting Covid-19. So, while companies had to bear full labour costs, they were not able to even meet the permitted operational rate. Take for instance the food processing industry: half the employees were allowed to work shorter hours, while the other half stayed home – all this time, everyone was still getting paid in full. While keeping workers away from work is crucial for containing Covid-19, reduced manufacturing output was inevitable (Baldwin and Freeman, 2020).

The effects of the MCO on employee compensation will be more visible by the end of the year. Given the high overheads, we foresee that long-term compensation plans for employees will be affected. Year-end perks, incentives,

rewards and annual salary reviews will be vastly affected if businesses are unable to return to normal in the immediate post-MCO period. This will result in lower purchasing power, and hence a slower economic growth.

In particular, manufacturers directly or indirectly related to the medical industry had to face crucial challenges. Manufacturers of medical devices, and also companies that support this sub-sector (such as E&E, basic metal products and M&Es) also suffered delays in gaining approval to operate. Such delays significantly affected order fulfilment and delivery schedules[2]. Clearly, policymakers need to ensure that a more efficient approval plan/process is implemented.

Figure 2 A summary of supply and demand shocks to manufacturing operations in Penang



Source: Authors' compilations based on survey responses (N=22)

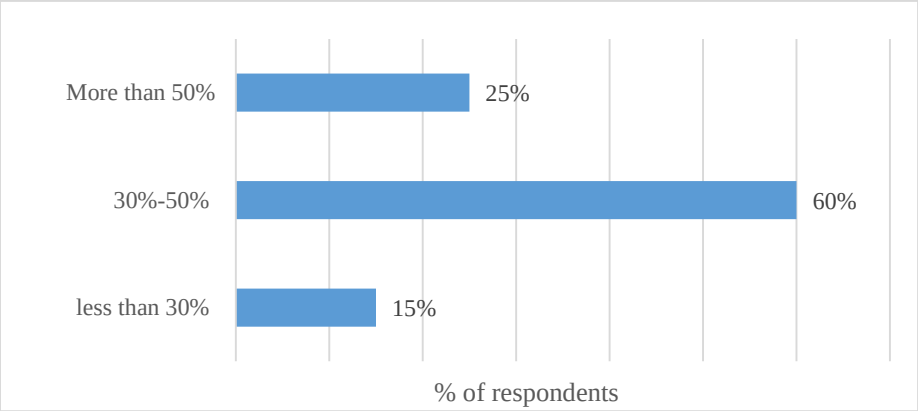
Demand shocks (internal and external)

With the supply chain broken, there were cancellations of orders and a failure to fulfil contracts. Business substantially slowed down during the MCO. Most respondents expect sales revenue to drop by at least 30% yoy (See Figure 3). This is particularly concerning for the M&E, E&E, engineering support and food processing industries, as well as 80 to 90% of textile and textile products manufacturers.

[2] This is also in line with the IHS Markit Malaysia Manufacturing Purchasing Managers' Index in April 2020 (31.3, down sharply from 48.4 in March). The decrease in new orders, supply-chain delays and longer delivery times are severely restricted the demand for goods (IHS Markit 2020).

Sales revenue for the medical devices industry is expected to decrease by more than 50%, which may seem shocking at first. However, one must keep in mind that survey respondents did not include firms that directly support infectious disease management. A significant number of Penang's medical device manufacturers produce orthopedic and cardiovascular products, and decreased sales revenue of related products would have resulted from that fact that some non-critical procedures were delayed to reduce the strain on the healthcare system.

Figure 3 Percentage of business revenue affected by Covid-19



Source: Authors' compilations from survey responses (N=20)

Some companies predict that domestic sales and exports will continue to plunge in May and June due to continued internal demand shocks (e.g. the unfulfilled orders and deliveries discussed above), while there will be reduced incoming orders. Companies will also have to forego business opportunities. Worryingly, the MCO has affected their customer base, particularly foreign customers who had been cultivated over the years. Should those customers turn to other overseas suppliers, this would constitute an increased external demand shock. To sustain their businesses, companies will either look for new customers after the MCO or rebuild their customer base altogether.

So while MCO reduced the supply (input) for production and operations (output), both of which are interdependent at every stage, it also created demand challenges leading to monetary and non-monetary losses. This is bound to start a vicious cycle, and lead to a slower recovery.

However, there are opportunities for firms to review their overall operations. For example, employers can lay off redundant workers in order to reduce total fixed costs, and offer minimal annual perks to remaining employees. They can improve their existing supply chains (for raw materials and components), and even embrace new work cultures, such as enhanced social distancing on site and work-from-home policy for some employees.

SUPPLY CHAIN DISRUPTIONS

The precariousness of international manufacturing supply chains was tested when Covid-19 started spreading quickly in China. More than five million companies (including 938 of the Fortune 1,000 companies), which had Tier 1 (direct) or Tier 2 (indirect) linkages with Chinese suppliers were affected by the virus (Dun & Bradstreet, 2020; Betti and Hong, 2020). Since China is the largest supplier for intermediate goods and the main producer of finished goods in Asia, trade in global supply chains had a larger economic effect regionally, compared to trade in final goods (Baldwin and Freeman, 2020). But the resulting "supply-chain contagion" is enough to damage regional trade significantly.

In reality, only 15.2% of businesses in the Chinese manufacturing sector were impacted by lockdowns, and these were largely confined to Guangdong, Zhejiang and Shandong (Dun & Bradstreet, 2020). Although the proportion seems small, the ripple effect still disrupted global business operations and supply chains.

Therefore, many companies are having to consider whether a China-centric supply chain is sustainable (The Economist, 2020). Already, India and Japan are offering incentives for companies to relocate their Chinese factories home (Barrett, 2020). The lockdown in China will certainly have an impact on Penang's manufacturing supply chains, and a number of responses from our survey show that these companies have been searching for alternative local suppliers.

The World Trade Organization (WTO) expects trade to fall steeply in sectors characterised by complex value chain linkages, particularly in the E&E and automotive products industries.[3] Foreign and local companies in Penang are deeply involved in both of these, especially the E&E industry.

Chinese and local suppliers

In the survey, firms compared their level of reliance on Chinese suppliers today compared to 2004, when the SARS epidemic was raging. About half the companies report that they are now more reliant on China as their direct or indirect supplier. Based on data from World Integrated Trade Solution, Malaysia's import of intermediate goods from China rose from USD1.4 billion in 2004 to USD9.9 billion in 2018. Using mirror import data, Malaysia's dependence on China rose, with import of intermediate goods in 2018 constituting 22.9% of Malaysia's total imported intermediate goods) import compared to 13.8% in 2004. Competitive costs of materials and China's technical expertise (for products such as printed circuit boards, chemicals, and more products, as seen in Table 1) were key factors behind this trend.

However, survey respondents also highlighted that Malaysia-based suppliers (including foreign-owned companies) play a significant role in the supply chain too. These suppliers were also disrupted by the MCO. The well-developed manufacturing ecosystem in Penang, which is often cited as a key factor for it being an important manufacturing hub, is exhibited prominently in times of shutdowns like the present. At least three MNCs stated that they have been obtaining most of their supplies alternatively from companies based in Malaysia.

Most companies would not have inventory buffers for a disruption of the scale (Deloitte, 2020). Penang-based manufacturers that rely on China-based suppliers only had enough reserves to continue operating for around two weeks to a month. Companies practise lean manufacturing or just-in-time systems were particularly susceptible to unexpected shortages. Besides local suppliers, respondents also mentioned that they are taking efforts to find suppliers from other countries despite higher costs, in order to mitigate the current shortage and the disruption in operations.

Timeline of Disruptions

Firms experienced disruptions in supply chains differently, depending on the time period and the location of their suppliers. In Table 2, responses from the survey are collated and summarised here, divided into two key time periods:

- Period 1: From Chinese New Year (25 January 2020) till MCO implementation on 18 March
- Period 2: After implementation of MCO (18 March)

[3] According to the OECD Trade in Value Added database, the share of foreign value added in electronics exports was around 10% for USA, 25% for China, more than 30% for Korea, more than 40% for Singapore and more than 50% for Mexico, Malaysia and Vietnam (WTO 2020).

Table 1 Supply chain disruptions due to Covid-19, based on location of suppliers, and the time period

Time period / Supplier's location	Period 1	Period 2
China	Suppliers hampered by lockdowns and production shutdowns.	Import of supplies from China disrupted due to ongoing lockdowns in China and border controls in Malaysia. However, some reported that the lockdowns in China are easing, and that some suppliers have resumed operations.
Malaysia	Sub-tier suppliers may not have been able to get supplies from China during this period.	Most companies report that up to 100% of the companies in their local supply chains have not been able to operate due to the MCO. This has led to severe supply chain disruptions. While the E&E industry is allowed to operate by MITI, most respondents highlight that micro and SME firms are not able to obtain approval, such as precision metal fabrication firms. Many supporting firms for essential services are also not able to obtain approval, such as packaging material firms.
Other locations (such as the United States, Europe and other ASEAN countries)	N/A	A shortage of supplies and long lead times has been occurring.

Source: Authors' compilations based on survey responses (N=22)

Logistics were also a challenge. Companies that placed orders before the MCO stated that by the time material reached Malaysia, they were stuck at local ports, and clearance exercises only took place at stipulated times. This tallies with the experiences of freight forwarders and hauliers, which are only allowed to clear their shipments from ports at certain times. As of April 15, three port clearing exercises had taken place during the MCO (Bernama, 2020).

81.8% of the respondents expect supply chain disruptions to persist for the foreseeable future. While operations in other countries may be beyond Malaysia's control, most companies hope that the government will allow businesses in Malaysia to continue operating so as to mitigate the current disruption.

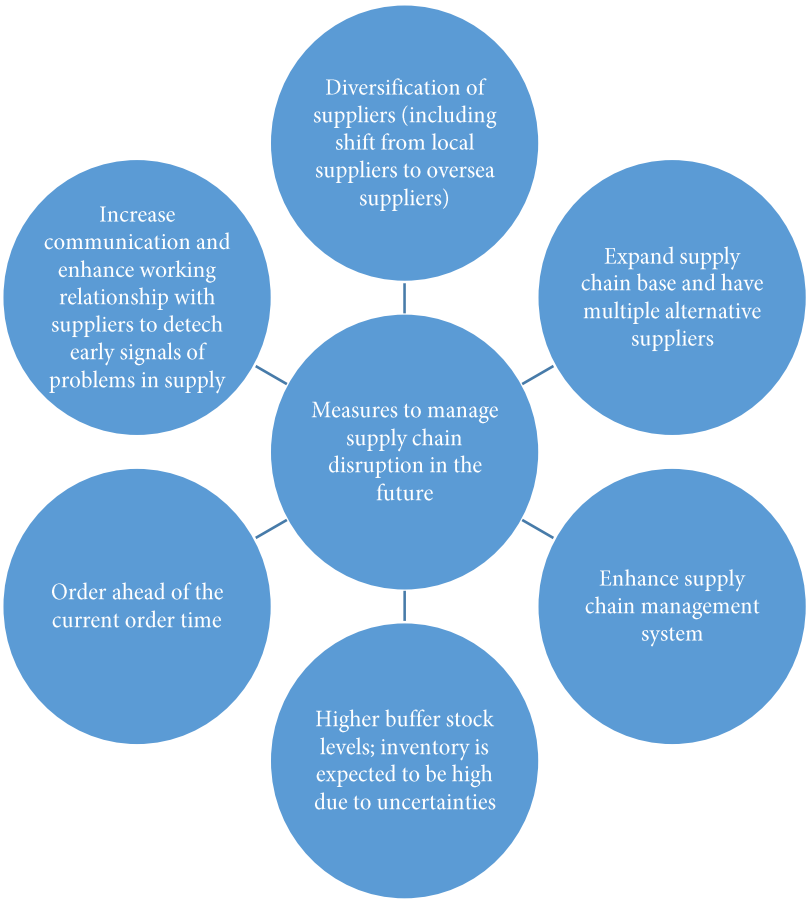
Proposed measures by respondents

The respondents also highlighted some short-term and long-term measures for managing the disruptions (see Figure 4). We acknowledge that these measures prerequire Covid-19 to be effectively controlled on a global scale, among other considerations. Some Penang-based MNCs will remain affected even after the MCO, since procurement, logistics and crisis management are controlled from global and regional headquarters, and not from Penang.

Key suggested measures from Figure 4 include:

- Expanding the supplier base and having multiple alternative suppliers;
- Procuring supplies from foreign suppliers (from China, Taiwan and South Korea) to mitigate risks, despite (1) higher costs and (2) existing local companies with the necessary expertise;[4]
- Best practices such as increasing inventory levels and buffer stock, and lengthening order times for supplies should be adopted. Admittedly, this would cause cash-flow and storage problems for SMEs.

Figure 4: Measures to undertake to manage supply-chain disruptions in the future



Source: Authors' compilations based on survey responses (N=22)

[4] Respondents want to continue to support local supporting companies, but generally feel the need to expand supplier base to include foreign suppliers.

PROSPECTS

Economic Recovery

Where the recovery of the economy is concerned, a majority of the respondents fear a severe global economic recession. One large company foresees a recovery process lasting more than 12 months, until the first half of 2021. Only two respondents believe in a quick recovery. They have encouraged their employees to go on leave, at least until the MCO is lifted or approval to operate is granted. Most expect a pace of recovery different from the SARS case. Almost all respondents, including an engineering support provider, opine that the recession will be much longer due to the accelerated structural changes in the business and consumer sectors. Therefore, a V-shaped recession[5] – steep decline but quick recovery – is unlikely.

Respondents expect a U-shaped recovery – a long period between recession and recovery, with a rebound taking years to come.[6] A textile company had an even less optimistic prediction. In their case, they expect an L-shaped recovery, where the downturn continues for years.

The demand for manufactured goods, particularly E&E products, is expected to be more severely affected in the second half of 2020, given the fact that European countries and the USA are still battling the pandemic, thus weakening the employment situation.

Labour

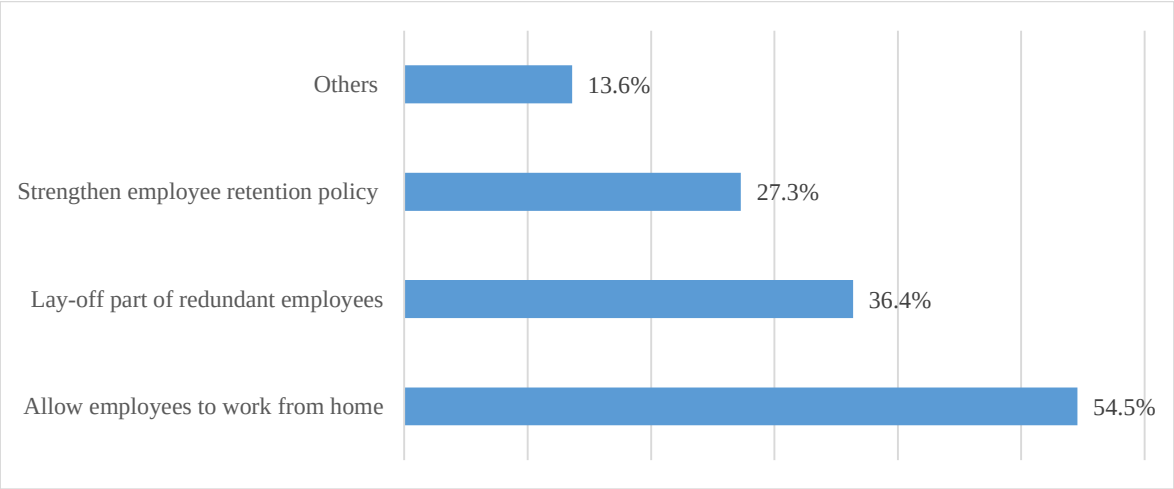
A radical slowdown in economic activity certainly poses a threat to employment. Consistent with the national survey conducted by the Department of Statistics Malaysia (DOSM), more than half of our respondents in Penang's manufacturing sector allowed employees to work from home, thus reducing the possibility of transmission (see Figure 5).

However, some essential manufacturing production work cannot be undertaken remotely. Production staff (such as machine operators) were required to report to work on a rotating basis, while office staff worked from home. Incentives and allowances were provided (to those reported to work) by a small pool of employers.

As part of firms' cost-control measures, manufacturing operations were halted temporarily, particularly when the demand for manufactured parts were low. While some companies kept paying full salaries despite being unable to operate, about 36.4% of the survey respondents, mostly large local manufacturers, stated that they would lay off some redundant employees to keep the company going, and retain high-value employees. Other actions included pay cuts and voluntary annual leaves, as per discussions with employees. It is important to note though, that firms are looking into various measures to sustain employees despite lower sales revenue. About 27% of the survey respondents plan to undertake employee retention measures by reskilling employees – especially in digital technology.

[5] This recovery pattern is only possible if the economy is re-opened immediately, and if consumer behaviour remains unchanged (Rodeck, 2020).
[6] This pattern means that the economy re-opens gradually, and social distancing continues until a vaccine is discovered. However, there is a possibility of this period being relatively long, especially if we consider that the US GDP formally took 19 months to rebound during the 2008-9 recession.

Figure 5 Employee policies during the MCO



Source: Authors' compilations based on survey responses (N=22)

MANUFACTURING PRACTICES IN THE 'NEW NORMAL'

The MCO has forced manufacturers to rethink business operations. We identified four "new normal" practices to be considered and adopted extensively:

a. **Boosting sales revenue through e-commerce**
The restriction of movement and reduced demand have damaged traditional sales networks. Unable to reach potential buyers physically, some manufacturing firms started to explore e-commerce options. The survey shows that firms have experienced an increase in e-commerce orders.

b. **Mapping supply networks**

Firms that conducted supply network mapping prior to the Covid-19 crisis should emerge better prepared to handle the new normal (Choi et al., 2020). Basically, this involves creating an inventory of potential supply chains, containing information related to suppliers, sites, parts and products. If the assessment of multiple tiers of suppliers includes supply-chain disruption metrics, firms can use the supply maps as a guide to solve material sourcing issues.

Although the process can be time-consuming and resource-intensive, risks can be mitigated, as seen during this crisis. In emergencies, an inventory of local suppliers is urgently needed especially when supply chains are disrupted on a global scale. However, only a small number of companies globally have had such a preparation. According to a survey by Choi et al. (2020), 70% of 300 respondents were still collecting and assessing their supply chains, and this effort was even harder to perform during the lockdown.

c. **Scaling up investment in the cloud and in automation infrastructure**
Cloud computing technology is vital to business operations being automated. Cloud-based IT systems allows for innovative business solutions and growth. The cost of secured cloud systems, which includes necessary security measures, requires massive upfront investments, but it is an economical long-term business model.

During the crisis, companies which have embraced cloud-based systems coped better, since they could keep working remotely. Some local manufacturing firms are looking into such infrastructure as part of their business diversification plans.

d. Practising work-from-home permanently

The MCO has inadvertently doubled as an opportunity to evaluate the readiness of companies to let employees work from home (Malay Mail, 2020). New tracking systems may be put in place to ensure that workers remain productive, if this practice becomes widespread. A reliable cloud system is an important prerequisite.

POLICY SUGGESTIONS

Three fiscal stimulus packages have been released by the Malaysian government at the federal level, totalling RM41 billion – about 2.8% of the annual GDP (International Monetary Fund, 2020). About one third of the package (RM13.8 billion) has been set aside for SMEs in the form of wage subsidies, which will cover the salaries of employees whose salaries are less than RM4,000 a month for a three-month period.[7] However, this subsidy is only applicable to firms which have suffered a 50% loss in revenue since 1st January 2020.[8] Besides that, there have been direct fiscal injections into the economy. Finally, a RM50 billion working capital loan has been set up to cater to all affected businesses. However, this has not been received well by the business community due to weak cash flow and losses in borrowing power.

We asked respondents to rate their satisfaction of the government measures. Out of 21 respondents, 43% expressed dissatisfaction, particularly with regard to the stimulus package for manufacturing firms, while 57% are conditionally satisfied. While the strict containment efforts were highly commended, the process of shutting down and limiting business operations were widely perceived as confusing and poorly executed.

Below are the key observations and suggestions revealed by manufacturing firms in Penang, and proposed measures to be taken into consideration by policymakers.

Solutions/Strategies	**Key observations/recommendations**
Clear guidelines for both the employers and employees should be established in emergency situations	**<u>Labour and business operations</u>** The Ministry of Human Resource (MOHR) should give clear guidelines on **employees' work arrangements**. Employers have been left to decide on difficult decisions such as salary cuts and forced or unpaid, which may result in internal disputes.[9] While employers would certainly prefer to cut costs, they must also take the livelihoods of employees into consideration.

[7] The subsidies differ according to the size of the company. The breakdown is as follows:

- Companies with 200 employees and above can claim RM600 per worker;
- Companies with 76 to 199 employees and above can claim RM800 per worker; and
- Companies with less than 76 employees can claim RM1,200 per worker.

[8] Companies with more than 75 workers will need to prove their income have reduced by more than 50% compared to January this year. This condition is not applied to companies with less than 75 headcounts.

[9] During the first MCO, the MOHR did not allow employers to pay cuts. It was only after the third stimulus package announced by the prime minister on 6 April 2020 that internal negotiations could begin.

	Stricter control measures at workplaces should have been implemented since early this year, such as the monitoring of employees' body temperature, quarantining employees who recently travelled abroad, or whose family members had recently done so, and common areas should have been disinfected daily following government recommendations. During the MCO, essential services were not clearly defined, which resulted in firms that fell under those categories having to submit applications. The approval process was slowed down due to a high volume of applications. The government should have focused on **macro-management** of the business community instead of the specifics. It placed unnecessary emphasis on control measures. For example, firms allowed to operate at 50% capacity needed to submit the names of their workers, and hence rotating the staff was not allowed. This led to internal disputes and resentment among employees.
Staggered financial assistance to SMIs/SMEs	**<u>Business sustainability</u>** Production capability is dependent on **SMIs/SMEs** as critical suppliers of parts and components needed to support MNCs and local large companies (LLCs). MNCs and LLCs are also important in keeping the local ecosystem afloat. In this context, job security for workers can be ensued when SMIs/SMEs maintain business with MNCs and LLCs, or between each other. Wage subsidies should be expanded to a wider business community such as MNCs and LLCs. For example, the subsidy should be based on occupations/skills instead of salaries. For example, a flat rate can be given to machine operators, and another to middle management. Some respondents opined that government should subsidise 30% to 50% of the employees' monthly salaries for a period of three months. However, government assistance can only be a short-term solution. In addition, financial assistance for SMIs/SMEs should cover the cost of rentals and loan repayments. In the medium-to-long term, **raising resilience among employers** is the ultimate measure to address the economic challenges faced by B40 and M40 groups.
Improved collaboration between state and federal governments to develop a practical containment strategy at the corporate level	**<u>Inter-government collaboration</u>** Greater state-federal collaboration is necessary despite differences in political regimes. State government and local authorities can be **strategic partners** of the federal government by providing best business operation proposals after consulting key industry leaders in the state. The state governments should facilitate and assist manufacturers to return to the pre-MCO status. At the state level, the best way to ease business operation burdens is to give discounts on quit rent and assessments for 2020. So far, Penang Aid Package

	2.0 has allocated a total of RM47.3 million in the form of rebate on assessment rate to benefit over 600,000 properties registered under both city councils (Malay Mail, 2020).
Systematic, effective and coordinated policies across government departments	**<u>Policy coordination and communication</u>** **Contradictory information released by different ministries** at the level of the federal government led to confusion. In the long term, strong facilitation and coordination between government departments that take into account the concerns of manufacturers can help reduce the impact on businesses and the workforce.

Other proposed measures include:

i. Reduced corporate tax;
ii. Discounts on utilities such as electricity, water and natural gas;
iii. Waiving the levy on foreign workers;
iv. Reducing each employer's EPF contribution; and
v. Setting up a taskforce to identify problems faced by Penang's SMEs, MNCs and LLCs.

The **basic principle** for a whole-of-society approach in tackling health, business and economic crises is to integrate and incorporate multi-actor and multi-pronged approaches to develop clear, coherent and strategic measures.

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APPENDIX

Components that have experienced supply disruptions, and their countries of origin

Industry	Components	Countries of origin
E&E	Metal fabrication parts; optical glass and prisms; carton box suppliers, tooling makers for repair of production tools and other paper related-packaging products; aluminum and stainless material, heat pipe; precision machined parts, sheet metal parts, casting parts, plastics parts, die-cut materials, packaging, plating services; IC, Precision machining parts and Probes, PCB, packaging, RF Interconnect, plating services, machining parts & components, surface cleaning & treatment processes, tools etc.	China, USA, Germany, Malaysia, South Korea, Taiwan
M&E	Evaporative pads, fibreglass, cages components, silos; electrical parts; Japanese sensors	Europe, USA, China, India, Japan
Engineering support	Plastic decorated parts; electronic components	Malaysia, China, Philippines
Medical Devices	-	China, Taiwan
Basic Metal Products	Mechanical and electrical components	-
Food Processing	Primary packaging supply (metalised bags, PE/OPP bags, PP bulk bags, carton boxes etc.)	Malaysia
Textile and Textile Products	Fibre, yarns and grey goods, chemicals and dyes	ASEAN and China

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Managing Editor: Ooi Kee Beng

Editorial Team: Alexander Fernandez, William Tham and Nur Fitriah (designer)

PENANG INSTITUTE making ideas work

10 Brown Road
10350 George Town
Penang, Malaysia

Tel : (604) 228 3306
Web : penanginstitute.org