2. Penang's Macroeconomic Performance

2.1 Output performance

Penang's economic growth has moderated to 3.8% in 2019, down by 1.3 percentage points compared with the GDP growth rate in 2018 (Table 2.1). It is noteworthy that Penang's contribution to the national GDP has remained at 6.7% in 2019, with the manufacturing sector being the second-largest contributor to the sector at the national level. Unlike 2018, all economic sectors registered positive growth rates in 2019, although slower growth was recorded in the manufacturing and services sectors.

Table 2.1 Penang's GDP, growth rate, and contribution to national GDP, 2017–19 (at constant 2015 prices)

	2017	2018	2019
GDP (RM million)	86,768	91,226	94,663
GDP growth rate (%)	5.2	5.1	3.8
Contribution to national GDP (%)	6.7	6.7	6.7

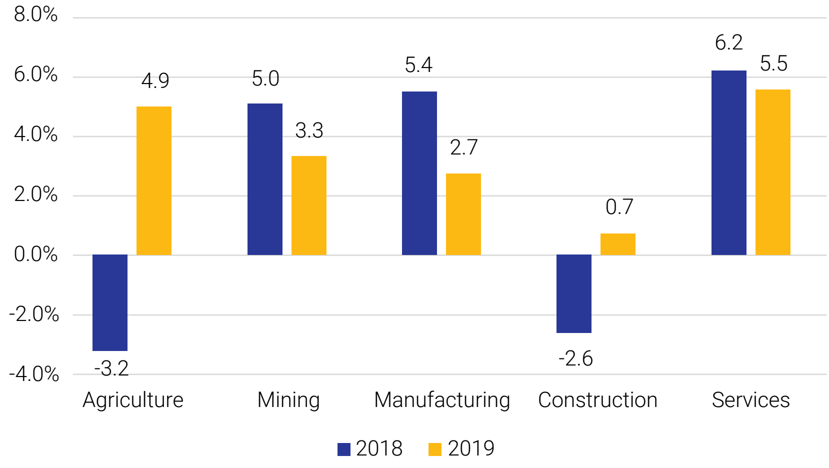
Source: Department of Statistics, Malaysia.

The services sector remained as the main growth engine for Penang's economy in 2019, accounting for 51.4% of the state's GDP. The sector's growth rate slowed down by 0.7 percentage point to 5.5%, with utility, transport, and storage and information and communication recording the largest growth (6.9%), followed by wholesale and retail trade, food and beverage, and accommodation (6.4%), and finance and insurance, property, and business services (5.4%) (Figure 2.1). All services sub-sectors recorded a lower growth rate in 2019 except finance, insurance, property, and business services. This was particularly due to the continued expansion of advanced business services brought about by a number of multinational global business services (GBS) companies such as Monitor ERP[4] and UST Global[5]. While advanced business services continue to grow, the main services sub-sector for Penang is still wholesale and retail trade, food and beverage, and accommodation, which are closely related to tourism-related activities. This sub-sector made up 16.8% of the state's GDP.

While Penang remained as the country's second-largest manufacturing sector after Selangor, it grew modestly at 2.7% in 2019. The growth rates of all manufacturing sub-sectors were lower in 2019 compared with the previous year except petroleum, chemical, rubber, and plastics products. This was partly to the result of a lower inflow of investments approved in previous years, bringing down the realised projects and growth rates (at RM5.8 billion in 2018 compared with RM10.8 billion in 2017). For 2019, Penang recorded its highest-ever approved investment at RM16.9 billion, ranking second after Selangor. As the backbone of the state, E&E and optical products had a lacklustre performance with an output growth of only 2.5% in 2019 compared with 6.3% in 2018. Petroleum, chemical, rubber, and plastics products had the largest growth rate of 4.7%, followed by transport equipment and other manufacturing and repair equipment (3.3%). E&E and optical contributed 28.4% of total state's GDP.

[4] Monitor ERP System provides business process management software supplier for companies in Southeast Asia (Persson, 2018).
[5] A digital technology and software solutions company.

Figure 2.1 GDP growth rate by sector in Penang, 2018–19 (at constant 2015 prices)



Source: Department of Statistics, Malaysia.

Table 2.2 Percentage share of economic activity to Penang's GDP, 2017–19 (at constant 2015 prices)

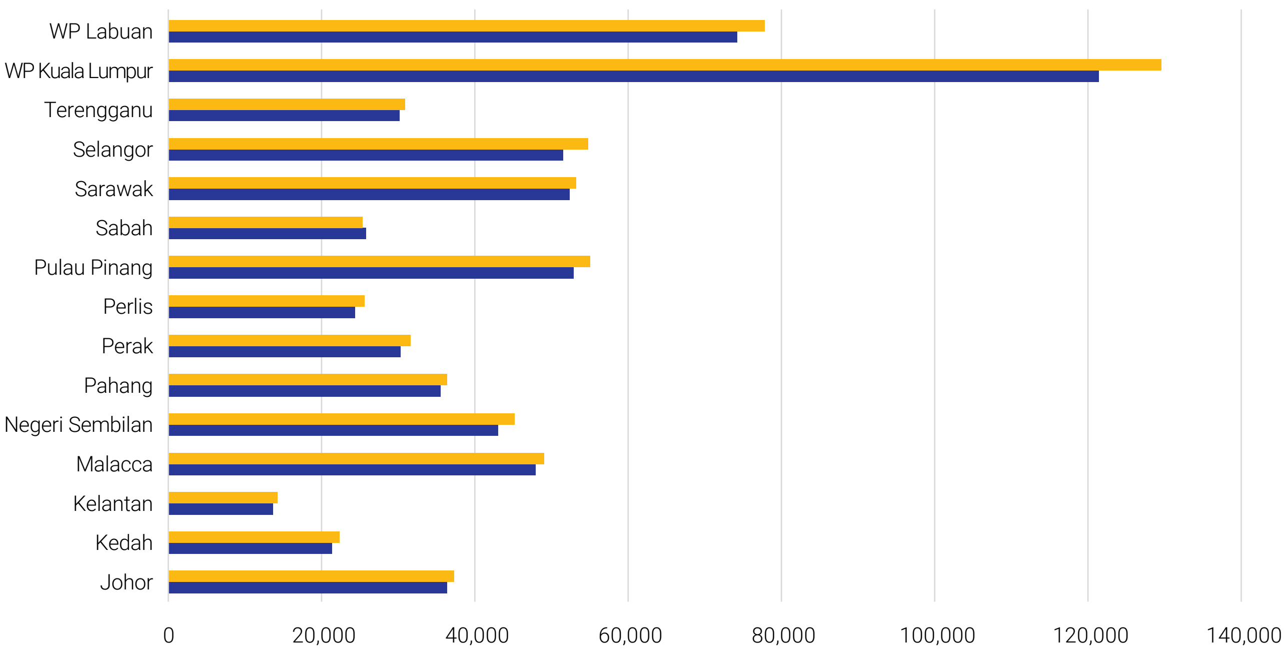
	2017	2018	2019
Agriculture	2.3	2.2	2.2
Mining and quarrying	0.2	0.2	0.2
Manufacturing	43.1	43.3	42.8
Construction	3.1	2.9	2.8
Services	50.1	50.6	51.4

Source: Department of Statistics, Malaysia.

Considering Penang's highly industrialised nature and limited land size, the agriculture sector contributes only 2.2% to Penang's GDP (Table 2.2). However, this sector plays an important role in overall growth and poverty reduction through linkages with the manufacturing sector and connecting the poor along the agri-supply chain. The sector grew significantly in 2019, rebounding from a deep contraction of 3.2% in 2018 to an expansion of 4.9%, primarily because of favourable weather conditions. The mining and quarrying sector's share, on the other hand, still accounted for less than 1% of Penang's GDP in 2019; this has not changed significantly since 2010. The contribution of the construction industry to Penang's GDP is lower in 2019 owing to the continued weakening of the Malaysian property market.

In parallel with the national economy, the state's economy is set to soften significantly in 2020 as a result of the impact of the COVID-19 pandemic. All economic activities are expected to experience a downturn, with the services sector seeing the largest impact, followed by manufacturing. Manufacturing activities are dependent on external headwinds; lockdowns in other countries have resulted in supply-chain disruptions, especially for companies that are based in Penang. While the construction and agriculture sectors constitute a small percentage of the state's GDP, the sectors will likely perform poorly owing to weak demand for residential and non-residential properties and weak export demand for agriculture. Small-medium enterprises (SMEs) in all sectors are affected by the lockdown and many may not be able to survive even after the economy reopens (Box 2.1).

Figure 2.2 GDP per capita by state, 2018–19 (current prices)



	Johor	Kedah	Kelantan	Malacca	Negeri Sembilan	Pahang	Perak	Perlis	Pulau Pinang	Sabah	Sarawak	Selangor	Terengganu	WP Kuala Lumpur	WP Labuan
2019p	37,311	22,341	14,286	49,052	45,209	36,404	31,626	25,625	55,062	25,333	53,230	54,807	30,902	129,589	77,800
2018e	36,369	21,394	13,677	47,939	43,010	35,543	30,289	24,401	52,923	25,832	52,392	51,539	30,190	121,444	74,263

Note: e - estimate, p - preliminary
Source: Penang Institute estimates based on data from Department of Statistics, Malaysia.

While Penang's GDP growth has slowed by half, its GDP per capita registered a higher rate of growth at 4% in 2019, up 0.4 percentage point compared with 2018, or RM55,062 compared with RM52,923 in 2018. This reflects an improved standard of living in the state. The state maintains its ranking at the top (without taking into account federal territories such as Kuala Lumpur and Labuan) in GDP per capita across the country (Figure 2.2). This suggests that Penang is relatively more prosperous than other states, holding all other variables constant.

Box 2.1 Effects of COVID-19 on small-medium enterprises (SMEs) in Penang's sectoral economy

By Yeong Pey Jung

The coronavirus disease 2019 (COVID-19) pandemic has plunged the SME industry into turmoil. Businesses involved in the production of non-essential goods have been directed to cease operations for the duration of the MCO. This is also applicable to businesses involved in non-essential services and sectors. As a result, workers and employees of these businesses are restricted to working from home. For those unable to work remotely, they face temporary suspension without pay, or worst, unemployment.

Under the present situation, most of the negatively affected SMEs were projected to see zero cash inflow from April to June (Shanker, 2020). The SMEs also found that the assistance afforded to them under the Prihatin Rakyat Economic Stimulus Package will not be sufficient as a significant proportion of SMEs do not quality for loan relief measures as announced by the government (Shanker, 2020). An additional stimulus package, known as the Second Economic Stimulus Package 2020, was announced on 27 March, and caters specifically to SMEs, and provided additional relief measures. Realistically, however, these are still short-term measures. Without more encompassing measures and policies, SMEs are still expected to struggle in the post-MCO period (Lee, 2020).

The five sectors of the state's economy include agriculture, mining, manufacturing, construction, and services. SMEs are integral drivers of each sector. In 2015, 66,921 of 67,591 businesses in Penang were SMEs, or 99.0% of all business establishments. The MCO has negatively impacted Penang's SMEs, leading to huge losses to the state's economy.

Table 2.3 Principal statistics of SME by sector, Penang, 2015

Sector	Number of establishments		Value added		Number of persons engaged		Salaries and wages paid	
	Total	%	Total (RM million)	%	Total	%	Total (RM million)	%
Agriculture								
Total	486	100.0%	1,064	100.0%	4,998	100.0%	92	100.0%
SMEs	470	96.7%	349	32.8%	4,021	80.5%	71	77.2%
Construction								
Total	2,888	100.0%	3,474	100.0%	71,403	100.0%	1,943	100.0%
SMEs	2,804	97.0%	1,823	52.5%	43,463	60.9%	1,046	53.8%
Manufacturing								
Total	4,191	100.0%	34,294	100.0%	272,241	100.0%	10,431	100.0%
SMEs	4,021	95.9%	8,223	24.0%	102,507	37.7%	2,791	26.8%
Services								
Total	59,997	100.0%	24,061	100.0%	291,279	100.0%	6,553	100.0%
SMEs	59,600	99.3%	19,743	82.1%	253,307	87.0%	5,350	81.6%

Source: Penang Institute estimates based on data from Economic Census, MyState Statistics, Penang, 2016 and Economic Census, Profile of Small and Medium Enterprises, 2016, Department of Statistics, Malaysia.

SMEs in the services industry were the biggest contributors to the sector in 2015[6], accounting for 99.3% of all business establishments and contributing 82.1% of the value added. Additionally, they were responsible for providing 87.0% of jobs within the sector, and paid 81.6% of salaries. Comparatively, manufacturing SMEs contributed the least to their sector in terms of value added (24.0%), number of persons engaged (37.7%), and salaries paid (26.8%). SMEs accounted for 95.9% of total business establishments in the Penang manufacturing sector.

Table 2.4 Percentage contribution of all sectors and SMEs in all sectors to Penang's total economy, 2015

Percentage contribution	Agriculture		Construction		Manufacturing		Services	
	Total	SMEs	Total	SMEs	Total	SMEs	Total	SMEs
Establishments	0.7%	0.7%	4.3%	4.1%	6.2%	5.9%	88.8%	88.2%
Value added	1.7%	0.6%	5.5%	2.9%	54.3%	13.0%	38.1%	31.3%
Persons engaged	0.8%	0.6%	11.1%	6.8%	42.4%	16.0%	45.4%	39.5%
Salaries and wages paid	0.5%	0.4%	10.2%	5.5%	54.7%	14.6%	34.4%	28.1%

Source: Penang Institute estimates based on Economic Census, MyState Statistics, Penang and Economic Census, Profile of Small and Medium Enterprises, Department of Statistics, Malaysia.

The contribution of SMEs in the agriculture sector to the economy is relatively small, standing at less than 1.0% across all parameters (Table 2.4). In terms of value added, agricultural SMEs accounted for approximately one-third of the sector's overall contribution towards the economy. The agriculture sector would be the least affected comparatively by the pandemic as foods are essential goods, and businesses are allowed to operate as usual (Kementerian Sumber Manusia, 2020; Majlis Keselamatan Negara, 2020a; Majlis Keselamatan Negara, 2020b). SMEs are expected to fare better as raw food materials continue to be in demand.

SMEs in the construction sector employed 6.8% of the total workforce, in addition to paying 5.5% of total salaries. The construction sector is deemed as non-essential and are not permitted to operate during the MCO. A post-pandemic recovery is expected to be slow as the sector may face a shortage of workers, risking productivity (Sivalingam, 2020). SMEs in this sector will face challenges in regaining their footing.

SMEs in manufacturing contribute 13.0% to the economy in terms of value added, and provide jobs to 16.0% of the workforce. Only half of the manufacturing sub-sectors are allowed to operate during the MCO, mainly in the manufacture of food, pharmaceutical, and chemical products, while the remainder, such as the manufacture of apparel, furniture, and textiles were ordered to cease operations (Choy et al., 2020). SMEs in the latter sector see zero revenue and production during the MCO, which would heavily impact cash flow and their buffer for fixed expenses, and the companies are expected to face challenges when operations resume.

SMES in the services sector accounted for 88.2% of Penang's total enterprises, and they were also responsible for 39.5% of the workforce. Only five sub-sectors in the services sector are classified as essential services during the MCO, although some services, such as professional, scientific, and technical services are able to continue operations as they can be conducted remotely (Choy et al., 2020). Some retail services are allowed to operate as well if they fall under the category of food and pharmaceutical supplies.

[6] The latest data published and available is for 2015. Therefore, this will be the reference data for this section.

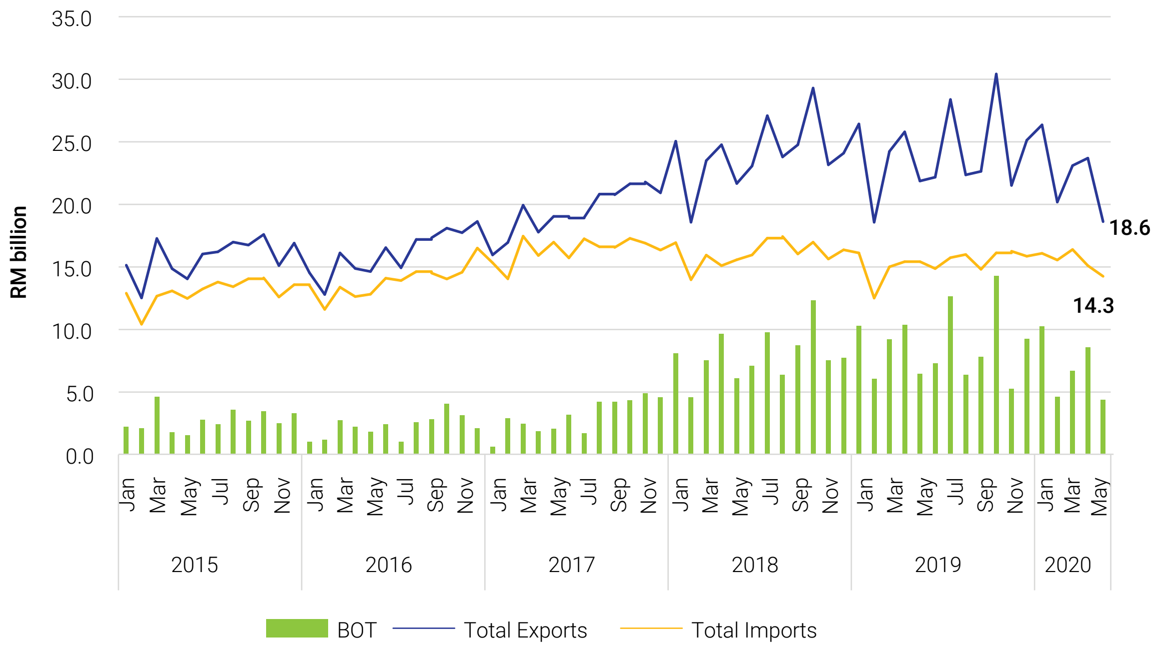
Non-operational SMEs in non-essential services will be negatively impacted, seeing no sales and revenue for the duration of the MCO. The retail sector will face especially significant challenges as the economic recession will see less spending on luxury and non-essential goods. SMEs involved in the tourism sector will be hit hardest, and these SMEs will struggle to maintain their businesses, given that tourism is not expected to recover in the short term[7].

Overall, SMEs in Penang contributed 47.9% to the state's economy in 2015 in terms of value added. Concurrently, SMEs provided employment to 63.0% of the workforce, and accounted for 48.1% of total salaries and wages[8]. It is essential that Penang SMEs receive the necessary support to sustain their businesses and operations in the post-pandemic period. Sustainable policies must be developed to ensure the survival of the industry.

2.2 External trade performance

During 2017–19, the balance of trade (BOT) in Penang was positive, indicating that the export value in the aforementioned period was higher than the import value. More than just a continuous trend, the BOT in the same period recorded a higher growth rate, further establishing Penang as a major export-oriented manufacturing hub in Malaysia[9]. This is represented in Figure 2.3, illustrating a widening gap between export and import values from 2017 to 2019.

Figure 2.3 Exports, imports, and balance of trade in Penang, January 2015–May 2020



Source: Department of Statistics, Malaysia.

[7] See page 129, Box 3.4 for more information.
[8] These percentages include the 0.1% (for value added, persons engaged, and salaries paid) contributed by SMEs in the mining sector.
[9] While this is true as evidenced in other chapters of this report, it is acknowledged that drawing a conclusion on Penang-specific performance solely from trade data may be positively biased. This is because other Malaysian states in the northern region utilise trade gateways (sea port and airports) in Penang given the absence of such gateways in other states.

A closer look at export performance shows that, in 2017, 2018, and 2019, Penang recorded growth rates of 20.7%, 23.7%, and 0.2%, respectively (Table 2.5). Import performance, on the other hand, showed a negative trend; -1.6% in 2018 and -4.7% in 2019. The significant fluctuation in growth rates over the period is consistent with the uncertainty in the global market owing to the US-China trade war which began in April 2018 (Box 2.2).

It is notable that the import value has consistently varied only within a small range of deviation despite the significant increase in export value. This indicates that Penang is not heavily dependent on imports for the production of manufactured goods. Penang has a robust manufacturing ecosystem of local suppliers, and the credible disassociation between imports and exports positions Penang as a preferred manufacturing hub to weather global uncertainties. Such a disassociation enables Penang to quickly adapt to global trade shocks, both in terms of quickly scaling capacity to meet demand shocks or become partially insulated from supply shocks.

Box 2.2 The US-China trade war and its effects on Malaysia

By Yeong Pey Jung

China's ascension to the World Trade Organisation (WTO) in 2001 has resulted in the rapid rise of its foreign trade and economic development. Today, China is one of the two biggest economies in the world, with the other being the United States. China and the United States are also each other's biggest trading partners, with bilateral trade totalling an approximate $559 billion in 2019 (South China Morning Post, 2020). However, the United States maintained a disproportionate trade deficit against China, a deficit that was a significant point of contention in the 2016 US presidential campaign. Then-Republican candidate Donald Trump blamed the deficit on unfair manipulative Chinese trade practices and vowed to close the trade gap as part of his campaign.

The strain on the US-China trade relationship intensified once Trump assumed the presidency in 2017. The beginning of the trade war was marked by Trump filing a case against China in the WTO in March 2018 for the latter's inequitable licensing practices, in addition to signing a memorandum that imposed tariffs on Chinese products and restricted investments in vital technology sectors. In April, the United States threatened China with its first set of 25% tariffs on 1,333 Chinese products, which covers $46.2 billion of US imports. China responded by imposing a 25% tariff on 106 products, amounting to $50 billion of Chinese imports (Bown & Kolb, 2020).

Amid tensions arising from the United States' decision to sanction US businesses from doing business with Chinese telecommunications giant ZTE, trade discussions were held between the United States and China in a bid to reach an agreement. The United States' demand that China reduce the trade deficit by $2 billion in two years was not met, and the talks ended without a resolution (Wong & Koty, 2020). Both countries then moved to finalise the list of products subjected to 25% tariffs, to be implemented in two phases. At the same time, President Trump demanded for the identification of another $200 billion products—mostly intermediate and consumer goods—to be subjected to a 10% tariff.

6 July 2018 marked the official execution of the first phase of China-specific tariffs, in parallel with China's own enactment of US-specific tariffs. The second phase, where respective lists of products were further revised, came into effect in August 2018, signifying the completion of the US-China's $50 billion tariffs (Bown & Kolb, 2020). In the same month, the United States contemplated increasing the original tariff rate of 10% on the $200 billion worth of Chinese goods identified in June to 25%. China retaliated by threatening to impose 5–25% tariff rates on $60 billion in US imports. These new tariffs came into effect in September, with the United States imposing a 10% tariff which increased to 25% in January 2019, and China enforcing its own 5–10% tariff rates (Wong & Koty, 2020).

The increase in tariff rates was suspended temporarily as President Trump and President Xi Jinping embarked on another round of trade negotiations in December 2018, with the aim of reaching a resolution by 1 March 2019. These discussions were not successful, and $200 billion in Chinese imports were then subjected to a 25% tariff rate in May 2019. China reacted by increasing its initial tariff rate to match the US rate of 25% (Bown & Kolb, 2020). The relationship between the two economic superpowers then worsened with the United States placing Huawei Technologies and its affiliates on its "entity list", effectively prohibiting American companies from doing business with Huawei without government approval.

Tensions were further escalated in August 2019 when President Trump threatened a 10% tariff on an additional $300 billion worth of Chinese products, then accused China of being a currency manipulator. China reacted by revealing plans to impose tariffs on $75 billion worth of US goods. The United States, then the tariffs to 15%, in addition to increasing the current 25% tariffs to 30% (ibid).

Trade talks resumed in September and October 2019, with mid-level talks taking place in September, in preparation for high-level negotiations in October. China agreed to exclude certain imports from tariffs, such as certain agricultural products and cancer drugs, while the United States delayed the increase in tariffs on $250 billion of Chinese goods by two weeks (Wong & Koty, 2020).

The two countries reached a tentative consensus after a two-day meeting held on 10 and 11 October 2019, where a "Phase 1" deal was announced. As part of the agreement, China will strengthen its intellectual property provisions, revise rules on currency management in addition to purchasing $40–50 billion in US agricultural goods per year (Mason & Lawder, 2019). The United States called off the 30% tariff hike that was scheduled to come into effect in December 2019.

The Phase 1 trade deal was signed on 15 January 2020, and US tariffs were decreased to boost China's purchase of US goods in an effort to correct the trade balance. Although certain tariffs have been reduced, most tariffs remain in effect. The specifics of the Phase 1 deal was not made public owing to concerns that disclosures could lead to market distortions (Wong & Koty, 2020). It remains to be seen, however, whether US-China trade talks will continue smoothly in light of the COVID-19 pandemic; the United States has accused China of hiding vital information about the containment of the virus, thus creating new tensions.

As a neutral party, Malaysia has seen some benefits from the US-China trade war. In the years leading up the trade war, Penang's position as one of the world's most important electronics manufacturing hub had been threatened by Chinese cities such as Shenzhen (Jamrisko & Shukry, 2019). As US businesses and factories look for alternatives supply chains outside of China in a bid to escape the escalating tariffs, Penang has emerged as an obvious choice for some companies. The Free Trade Zone and Batu Kawan Industrial Zone have a long-established and proven ecosystem of suppliers and customers (Straits Times, 2019). Penang's FDI increased by 136% to RM8.7 billion in the first half of 2019. In comparison, the FDI for the state in 2018 was RM2.1 billion. Additionally, 35% of Malaysia's approved FDI in 2019 was targeted at Penang. Factories in Penang are seeing opportunities for Penang to reclaim its role in the electronics value chain.

However, Penang had not been exempted from shocks and disruptions to the global supply chain brought on by the pandemic. Amid the uncertainty, it is difficult to predict the effects of the trade war on Penang's economy.

Table 2.5 Growth rate of exports and imports by SITC commodity section in Penang, 2017–20 (January–May)

SITC commodity section	2016/17		2017/18		2018/19		Jan–May 2019/20	
	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)
Food	6.6	5.6	-4.8	-15.6	4.7	-1.3	-4.4	6.9
Beverages and tobacco	35.4	9.6	-13.6	-15.7	-23.9	-16.8	-55.7	-32.3
Crude materials, inedible	64.9	66.9	-17.3	-11.5	-15.8	-4.1	-10.8	-3.2
Mineral fuels, lubricants, etc.	1,194.6	23.7	-54.7	28.3	-73.0	-14.5	-50.7	-26.2
Animal and vegetable oils and fats	10.1	89.3	-20.1	-46.1	-1.8	-30.2	-2.9	-40.8
Chemicals	22.4	18.4	2.4	6.4	-7.0	-9.8	-15.6	-7.9
Manufactured goods	10.4	10.7	6.2	11.0	-0.8	-9.5	-24.2	-10.1
Machinery and transport equipment	17.4	17.5	32.1	-4.1	0.5	-3.1	-5.7	12.8
Miscellaneous manufactured articles	28.6	9.6	12.1	14.8	4.3	0.9	8.9	3.2
Miscellaneous transactions and commodities	158.9	35.4	-36.8	-14.0	-52.0	-17.2	-7.2	-59.1
Total	**20.7**	**18.2**	**23.7**	**-1.6**	**0.2**	**-4.7**	**-4.2**	**3.9**

Source: Department of Statistics, Malaysia.

Table 2.5 distills the growth rate of exports and imports in Penang by SITC commodity section. Looking solely at trade performance between 2017 and 2019, we find that some commodity sections recorded extremely erratic growth rates. Mineral fuels, lubricants, etc., for example, recorded a negative export growth rate of -54.7% and -73.0% in 2018 and 2019, respectively. Import growth rates of animal and vegetable oils and fats fluctuated significantly: 89.3% in 2017, -46.1% in 2018, and -30.2% in 2019.

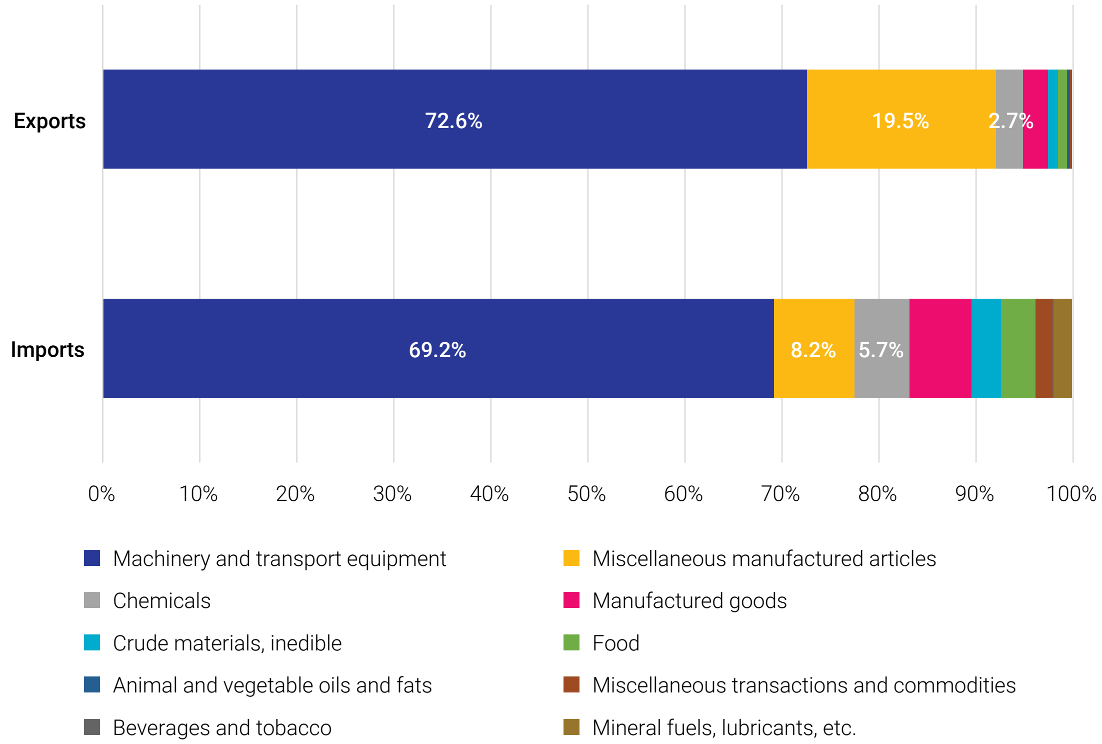
These outliers strongly reflected the position of Penang's shipping port as characterised by its niche functionality. Penang's shipping gateway may be utilised for a specific function by only one industry player (Lee et al., 2020). Such dynamics result in a pass-through effect, where the recorded trade value may only reflect firm-specific business cycles rather than as an indicator of common industry-wide market signalling.

In 2020, exports decreased by 4.2% during January–May compared with the same period in 2019. On the other hand, imports registered growth of 3.9%. A closer look at the monthly data shows that both imports and exports suffered large losses in January and May 2020. The slowdown at the beginning of the year is possibly due to a contraction in Chinese manufacturing, which had knock-on effects on Penang's ability to meet orders from customers worldwide. The subsequent drop in May is a reflection of the economic pessimism that began to unfold not only in Malaysia, but major economic hubs as well, as countries slid into severe recessions.

Overall trade of almost all commodities have contracted except for food, machinery and transport equipment, and miscellaneous transport equipment, which saw growth in imports. Export and import values of mineral fuels and lubricants fell by 50.7% owing to historically low prices and drastically decreased fuel demand.

Looking at the overall trend, however, the trade performance of established sectors in Penang are on a trajectory of robust growth. Machinery and transport equipment and miscellaneous manufactured articles, two commodity sections that make up a significant portion of the E&E and medical devices industries, remain important nodes in connecting Penang to the global value chain (Figure 2.4). Broadcom's newly established global distribution warehouse at Batu Kawan Industrial Park was earmarked to boost exports by RM65 billion in 2018 (Tan, 2017). Notably, exports for both commodity sections outweighed imports in contrast with other commodity sections where the reverse situation is observed.

Figure 2.4 Percentage share of exports and imports by SITC commodity section, Penang, January–May 2020



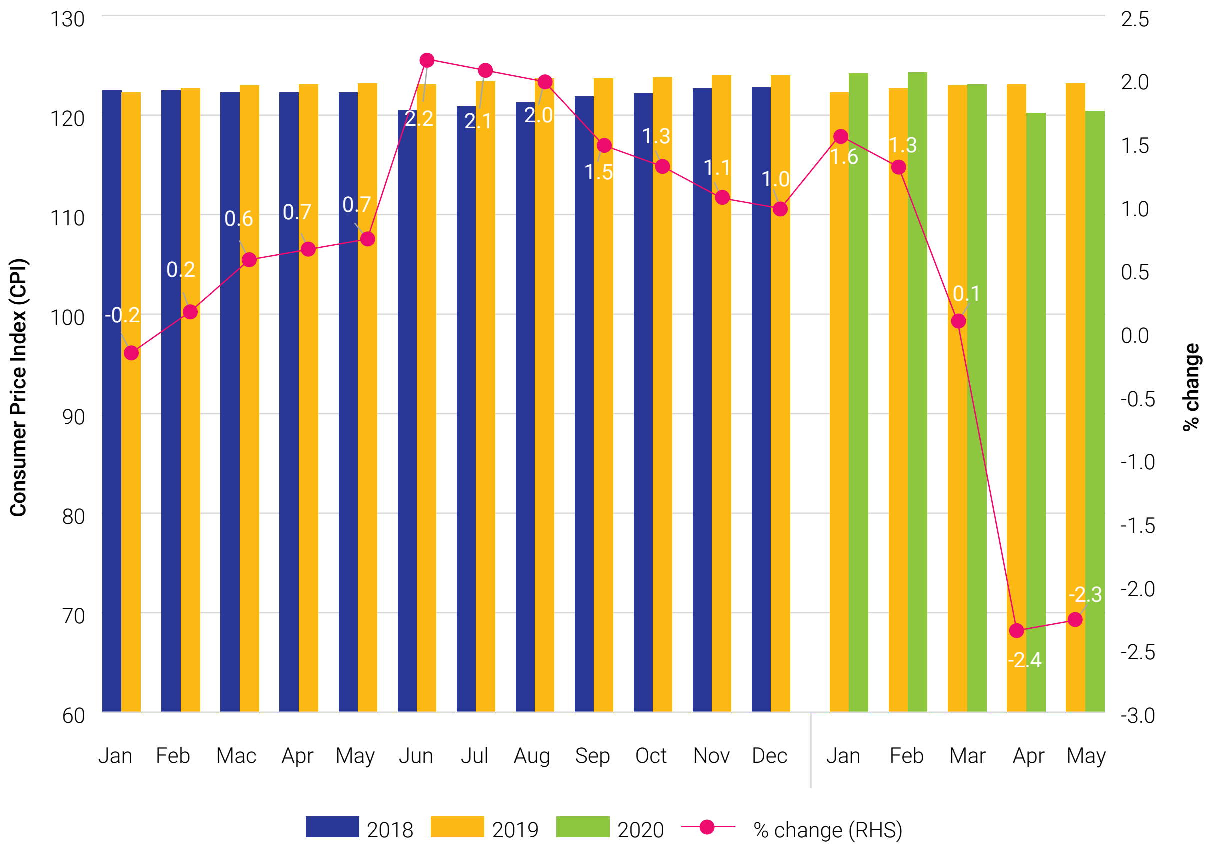
Source: Department of Statistics, Malaysia.

2.3 Prices

Consumer Price Index (CPI)

Penang recorded an inflation rate of 1.1% for 2019, 0.2% higher than the inflation rate of 0.9% in 2018. It should be noted, however, that the 2018 inflation rate was 3.1% lower than the preceding year due to the removal of the Goods and Services Tax (GST) and a three-month tax exemption period. With the Sales and Services Tax (SST) in effect from September 2018 onwards, the inflation rate saw only a slight increase as the SST only taxed 38% of the goods and services in the Consumer Price Index (CPI) basket, compared with the 60% taxed by the GST.

Figure 2.5 CPI and year-on-year percentage change in the CPI in Penang, 2018–19



Source: Penang Institute estimates based on data from Department of Statistics, Malaysia.

In the first quarter of 2019, the CPI recorded an average increase of 0.3%, which then spiked throughout the year. Figure 2.5 shows that the percentage change in CPI was significantly higher in the months of June to September in 2019 due to the aforementioned tax exemption period in the previous year. In these three months, most items in the CPI basket saw a rise in prices. With percentages of 3.4% to 4.2%, miscellaneous goods and services observed the highest price increases, while education had the lowest price increases, ranging from 0.3% to 0.4%. Clothing and footwear, as well as transport, were the only groups to experience a consistent deflation in prices, which was also reflected in the overall yearly changes.

In 2020, the CPI saw a drop from February to March, before dropping further to indicate deflation for the months of April and May. This is largely due to the lockdown measures brought about by the COVID-19 pandemic, in addition to the pandemic itself. Along with the fact that the restricted movement meant fewer opportunities to spend, the purchasing power of consumers is presumed to have declined because of financial difficulties. Non-essential items such as clothing and footwear, and alcoholic beverages and tobacco both saw reductions in price. Transport experienced the biggest decrease in prices, with prices dropping by 24.6% in April in comparison with the 10.6% reduction in the previous month. The fall in global oil prices and the MCO would explain this decrease. The only group to see a significant increase in prices was miscellaneous goods and services. The CPI changes for other groups are not substantially pronounced.

Table 2.6 Changes in CPI by groups, Penang, 2018–19 (2010 = 100)

	Weights	% Change		Contribution to CPI growth (percentage points)	
		2018	2019	2018	2019
Total	**100.0**	**0.9**	**1.1**	**0.92**	**1.05**
Food and non-alcoholic beverages	28.4	1.7	1.9	0.47	0.53
Alcoholic beverages and tobacco	2.3	0.3	2.4	0.01	0.05
Clothing and footwear	3.0	-1.8	-2.5	-0.05	-0.07
Housing, water, electricity, gas, and other fuels	29.2	1.5	2.2	0.45	0.65
Furnishings, household equipment, and routine household maintenance	3.3	-0.6	1.3	-0.02	0.04
Health	1.8	0.5	0.4	0.01	0.01
Transport	11.0	1.1	-3.7	0.13	-0.41
Communication	4.6	-1.1	0.4	-0.05	0.02
Recreation services and culture	5.2	-0.1	0.9	0.00	0.05
Education	1.7	0.0	0.3	0.00	0.01
Restaurants and hotels	2.8	1.1	1.6	0.03	0.05
Miscellaneous goods and services	6.7	-0.6	2.0	-0.04	0.14

Source: Penang Institute estimates based on data from Department of Statistics, Malaysia.

In terms of year-on-year percentage changes on specific items in the basket, alcoholic beverages and tobacco saw the biggest price increase of 2.4% in 2019, but only contributed 0.05 percentage point to CPI growth (Table 2.6). The highest contributor to CPI growth would be housing, water, electricity, gas, and other fuels, at 0.65 percentage point. In contrast, the transport group saw a deflation of 3.7% in comparison with an inflation of 1.1% in the previous year, and made a negative contribution of 0.41 percentage point towards CPI growth.

Although the abolishment of the GST saw lower prices for certain groups in 2018, the prices for most groups readjusted accordingly for the following year, most notably for services such as restaurants and hotels.

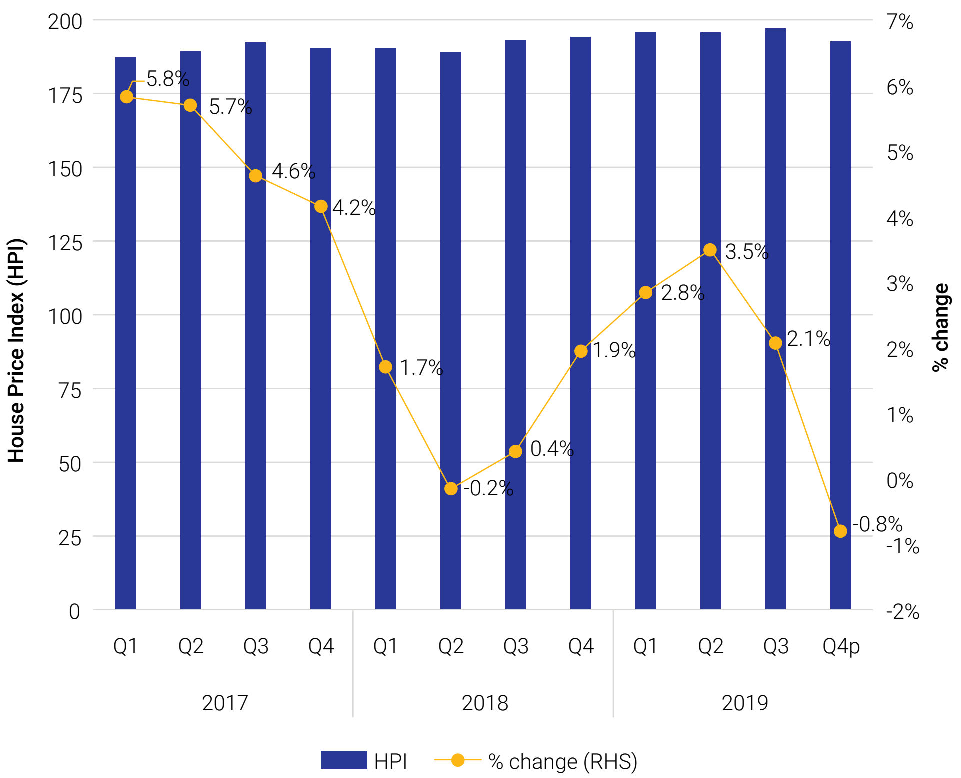
The inflation rate is expected to deflate for 2020 owing to the economic pressures brought about by the COVID-19 pandemic. As observed in Figure 2.5, the months of April and May saw the inflation rate decreasing to negative numbers, reflecting deflation. As the production of non-essential products were suspended during the MCO, the supply of these products has decreased. In a usual scenario, prices would increase because of reduced supply. However, people are unlikely to spend on non-essential items, and the reduced demand would lead to lower prices. The significant drop in current oil prices may also cause global deflationary shocks.

House Price Index (HPI)

Figure 2.6 illustrates that the House Price Index (HPI) for Penang has been increasing in the past three years. The overall HPI in 2019 was 195.3, a growth of 1.8% from an HPI of 191.7 in 2018, which is an increase from the previous year's growth of 1.0%. This growth rate is mostly attributed to the price increase across detached and semi-detached properties for the first three quarters. However, house prices fell across the board in the last two quarters of 2019, which saw the growth rate decreasing. In fact, a negative growth of -0.8% was recorded in Q4 2019, which also represented the lowest growth rate in three years.

House prices were mostly on an upward trend for the first three quarters of 2019, with terrace house prices being the sole exception, before falling in the last quarter (Table 2.7). The growth was mostly driven by the Detached House Price Index (DHPI) and High-rise House Price Index (HHPI), which averaged an increase of 1.7% across three quarters, whereas the price for semi-detached units averaged a three-quarter growth of 0.5%.

Figure 2.6 HPI and percentage of year-on-year change of the overall HPI in Penang, 2017–19



Note: p - preliminary
Source: Penang Institute estimates based on data from National Property Information Centre (NAPIC).

Table 2.7 HPI and percentage of year-on-year change of HPI in Penang by type of residential property in Penang, 2017–19

Year	Quarter	Terrace		High-rise		Detached		Semi-detached	
		HPI	% change	HPI	% change	HPI	% change	HPI	% change
2017	**Q1**	170.2	5.6%	208.1	7.4%	180.2	4.8%	183.3	2.1%
	Q2	174.1	7.2%	205.7	3.8%	185.2	5.5%	191.0	6.6%
	Q3	176.9	5.6%	209.4	1.8%	186.7	7.4%	193.4	7.4%
	Q4	175.0	6.3%	205.8	0.0%	188.8	11.3%	195.0	8.4%
2018	**Q1**	173.7	2.1%	202.6	-2.6%	197.3	9.5%	204.1	11.3%
	Q2	173.6	-0.3%	196.0	-4.7%	203.6	9.9%	209.6	9.7%
	Q3	176.2	-0.4%	201.5	-3.8%	204.8	9.7%	215.4	11.4%
	Q4	178.3	1.9%	201.3	-2.2%	208.2	10.3%	215.8	10.7%
2019	**Q1**	179.4	3.3%	205.5	1.4%	210.1	6.5%	211.7	3.7%
	Q2	175.0	0.8%	206.8	5.5%	213.9	5.1%	218.2	4.1%
	Q3	173.1	-1.8%	211.5	5.0%	219.3	7.1%	219.2	1.8%
	Q4p	170.5	-4.4%	203.6	1.1%	217.3	4.4%	217.6	0.8%

Note: p - preliminary
Source: Penang Institute estimates based on data from National Property Information Centre (NAPIC).

High-rise properties in particular rebounded from negative year-on-year growth in 2018, seeing an increase in its HPI for 2019. However, even though detached and semi-detached properties registered positive growth, their growth rates have slowed down from the previous year, with Q4 2019 achieving the lowest growth rates for the year.

Table 2.8 HPI and percentage of year-on-year change of HPI in Penang Island and Seberang Perai by type of residential property in Penang, 2017–19

Year	Quarter	Terrace				High-rise			
		Penang Island	% change	Seberang Perai	% change	Penang Island	% change	Seberang Perai	% change
2017	**Q1**	162.8	5.9%	179.7	5.1%	211.8	7.6%	149.6	2.5%
	Q2	164.8	7.4%	186.2	7.0%	209.1	3.8%	149.9	1.9%
	Q3	167.6	5.5%	189.0	5.7%	212.9	1.6%	153.8	5.6%
	Q4	161.7	3.5%	192.2	9.6%	209.0	-0.3%	154.5	6.6%
2018	**Q1**	162.1	-0.4%	188.7	5.0%	205.7	-2.9%	151.7	1.4%
	Q2	157.4	-4.5%	194.7	4.6%	198.8	-4.9%	152.0	1.4%
	Q3	159.2	-5.0%	198.3	4.9%	204.4	-4.0%	155.3	1.0%
	Q4	161.6	-0.1%	200.0	4.1%	204.2	-2.3%	156.0	1.0%
2019	**Q1**	160.7	-0.9%	203.7	7.9%	208.7	1.5%	153.7	1.3%
	Q2	156.5	-0.6%	199.0	2.2%	210.4	5.8%	148.8	-2.1%
	Q3	160.3	0.7%	198.7	0.2%	210.7	3.1%	150.0	-3.4%
	Q4p	152.9	-5.4%	193.4	-3.3%	206.9	1.3%	149.6	-4.1%

Note: 1. p - preliminary
2. The HPI for detached and semi-detached units are not disaggregated by councils.
Source: Penang Institute estimates based on data from National Property Information Centre (NAPIC).

The Terrace House Price Index (THPI) for both Penang Island and Seberang Perai has been seeing decreases since the beginning of 2019 (Table 2.8). In the same year, the popularity of high-rise properties on the island resulted in price increases in each quarter; in contrast, their prices were largely on the decline in Seberang Perai.

The THPI on Penang Island had been seeing negative year-on-year growth since the first quarter of 2018, whereas in Seberang Perai it was largely the opposite. The mainland saw positive growth for the same period, with the exception of Q4 2019, where it fell into negative growth. High-rise properties for the island, on the other hand, recorded positive growth in 2019 following negative growth in prices in the previous year. However, Seberang Perai registered negative growth since the second quarter of 2019, after having seen positive growth in the last two years. The growth rate for the last quarter of 2019 was significantly lower in comparison with previous quarters, with high-rise properties in Seberang Perai the only category to see positive growth (1.3%).

The HPI is expected to see a decrease in 2020 across all property types on both Penang Island and Seberang Perai because of the COVID-19 pandemic. The property market had been on a downward trend since the beginning of 2020 (Poh, 2020). The impending economic recession and uncertainty will lead to income and economic losses, negatively impacting buying sentiment and further reducing demand for properties. However, the industry is expected to recover in due time as transaction volumes and values had surged in the aftermath of similar crises such as the 1997 Asian financial crisis, the 2002 SARS epidemic, and the 2008 global financial crisis (Kathy, 2020). But because of the global scale of the COVID-19 pandemic, recovery will be comparatively slower.

2.4 Household income and expenditure

Household income

The median monthly household income for Malaysia recorded a compounded annual growth rate (CAGR) of 4.0%, while the compounded growth for mean monthly household income was 4.3% in 2019.

Table 2.9 Median and mean monthly household income and CAGR[10] by state, Malaysia, 2016–19

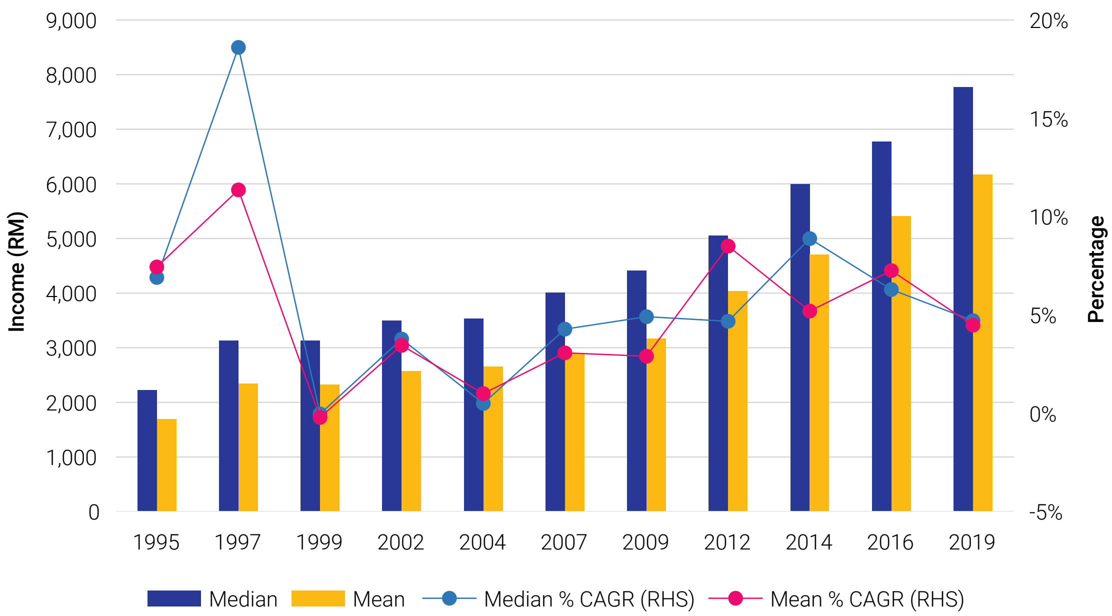
State	Median (RM)		Mean (RM)		CAGR (%)	
	2016	2019	2016	2019	Median	Mean
Malaysia	**5,228**	**5,873**	**6,958**	**7,901**	**4.0%**	**4.3%**
Johor	5,652	6,427	6,928	8,013	4.4%	5.0%
Kedah	3,811	4,325	4,971	5,522	4.3%	3.6%
Kelantan	3,079	3,563	4,214	4,874	5.0%	5.0%
Malacca	5,588	6,054	6,849	7,741	2.7%	4.2%
Negeri Sembilan	4,579	5,005	5,887	6,707	3.0%	4.4%
Pahang	3,979	4,440	5,012	5,667	3.7%	4.2%
Penang	**5,409**	**6,169**	**6,771**	**7,774**	**4.5%**	**4.7%**
Perak	4,006	4,273	5,065	5,645	2.2%	3.7%
Perlis	4,204	4,594	4,998	5,476	3.0%	3.1%
Selangor	7,225	8,210	9,463	10,827	4.4%	4.6%
Terengganu	4,694	5,545	5,776	6,815	5.7%	5.7%
Sabah	4,110	4,235	5,354	5,745	1.0%	2.4%
Sarawak	4,163	4,544	5,387	5,959	3.0%	3.4%
*Kuala Lumpur	9,073	10,549	11,692	13,257	5.2%	4.3%
*Labuan	5,928	6,726	8,174	8,319	4.3%	0.6%
*Putrajaya	8,275	9,983	11,555	12,840	6.5%	3.6%

**denotes Federal Territories*
Source: Penang Institute estimates based on Household Income Survey 2019, Department of Statistics, Malaysia.

[10] CAGR calculation: [(ending value/beginning value) ^ (1/periods)-1] x 100

Penang's median and mean monthly household income growth[11] was higher than the national average at 4.5% and 4.7%, respectively (Table 2.9). As a similarly developed state, Selangor's growth rates can be considered as on par with Penang's for both median income (4.4%) and mean income (4.6%). In Johor, the median income growth rate was slightly lower than Penang's at 4.4% but its mean income growth rate was higher at 5.0%. Kuala Lumpur, on the other hand, registered a higher growth rate for median income (5.2%) but its mean income growth was smaller at 4.3%. With a 5.7% growth rate, Terengganu was the state with the highest mean monthly household income growth rate for 2019. Meanwhile, the highest median monthly household income growth rate was found in Putrajaya, at 6.5%.

Figure 2.7 Median and mean household income and CAGR, Penang, 1995–2019



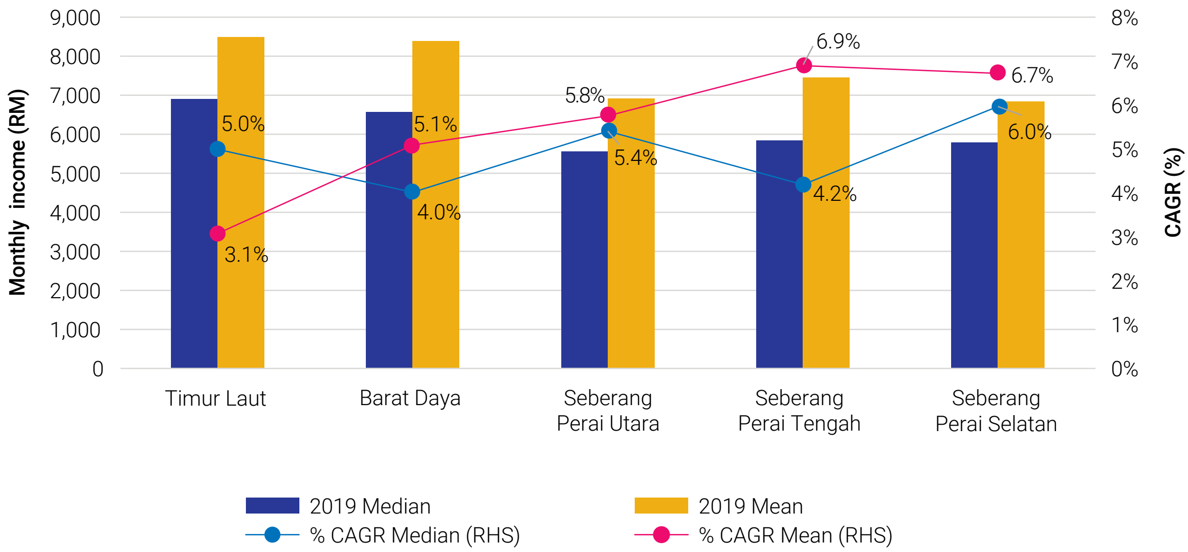
Source: Household Income Surveys, Department of Statistics, Malaysia.

Figure 2.7 illustrates the CAGR for Penang's median and mean monthly household income over a period of 24 years[12]. Both incomes saw an impressive spike in growth for 1997, with the median income achieving 18.6% growth, while growth in mean income was 11.4%. No other years in the same period came close to attaining similar growth rates. However, this was followed by a massive drop to zero growth for median income, and negative growth (-0.2%) for mean income in 1999. This was due to Malaysia being impacted negatively by the 1997 Asian financial crisis. The output of Malaysia's real economy declined heavily in 1998, with important sectors such as manufacturing (where it was, and still is, a vital sector for Penang's economy), construction, and agriculture all contracting, resulting in the country's economy going into a recession.

The gradual recovery of the economy saw household income growth rates increasing, and there were no other periods with negative growth rates since then. Growth rates for both measures of income hovered around rates below 5% for approximately a decade, before the median monthly household income saw a growth rate of 8.5% in 2012. The growth for mean income, however, had its highest growth rate of 5.2% in 2014 since the 1997 crisis. For 2019, Penang's median and mean monthly household income recorded growth rates of 4.5% and 4.7% respectively.

[11] Growth in section 2.4 is regarded as compounded growth unless otherwise indicated.
[12] Household income data for 1994 is not available, so 1995 is chosen as the starting point to illustrate growth over an approximate period of 25 years.

Figure 2.8 Median and mean monthly household income and CAGR by administrative district, Penang, 2016–19



Source: Penang Institute estimates based on data from Household Income Survey 2019, Department of Statistics, Malaysia.

With a median monthly household income of RM6,902 and a mean monthly household income of RM8,493, Timur Laut remained as having the highest incomes across all administrative districts in Penang for 2019, and this was no different from 2016 (median income: RM5,964; mean income: RM7,756) (Figure 2.8). Seberang Perai Utara's median income (RM5,566) was the lowest in 2019, but Seberang Perai Selatan recorded a lower mean income (RM6,843). There is a difference of 19.4% between both the highest and lowest median and mean incomes across districts. The income gap has narrowed when compared with 2016, where the income difference was 20.3% for median income and 27.4% for mean income.

Despite recording the highest mean income, Timur Laut's CAGR of 3.1% was the lowest across all districts, while its CAGR of 5.0% for median income was the third highest. Conversely, Seberang Perai Selatan, with a household income on the lower spectrum, recorded the highest CAGR for median income at 6.0%. The highest CAGR of 6.9% for mean income belonged to Seberang Perai Tengah. Even though household income for both categories were distinctively higher for administrative districts within Penang Island, the CAGR for administrative districts in Seberang Perai was higher than that of the island.

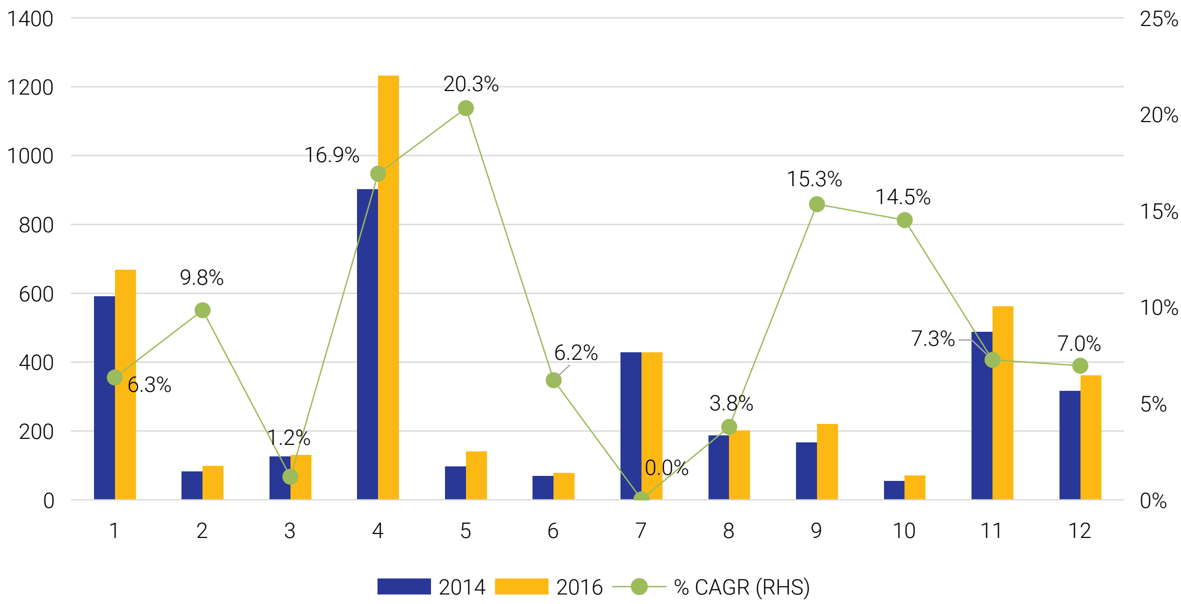
The high household incomes of Timur Laut and Barat Daya can be attributed to the fact that manufacturing and services sectors are highly concentrated on Penang Island, leading to higher overall incomes. The mainland is generally considered relatively less developed, but the state government has recognised the industrialisation of the mainland as one of its priorities. For instance, Batu Kawan in Seberang Perai Selatan has been primed for economic development with the establishment of the Batu Kawan Industrial Park and various other mixed development projects, including the IKEA shopping complex and the University of Wollongong (UOW) Malaysia KDU Penang University College. Additionally, the benefits of the gradual development of Seberang Perai is reflected in the comparatively higher growth rates in income for its administrative districts.

Due to the economic difficulties brought on by the COVID-19 pandemic, and with unemployment on the rise owing to layoffs and retrenchment, reduction in household income may be observed in the short term. Household income growth in the following years will be largely dependent on the recovery of the economy, but as a whole, it is projected to be comparatively slower.

Household expenditure

The implementation of the GST on 1 April 2015 had contributed to higher overall costs of living. With the abolishment of the GST on 1 June 2018, household expenditure after this period is also expected to increase, especially for more developed states such as Penang, as their higher purchasing power will allow them to consume more goods and services with the zero-rated GST. Additionally, the re-implementation of the SST has positively affect the prices of certain goods and services.

Figure 2.9 Average monthly household expenditure and CAGR of average expenditure in Penang, 2016–19



1. Food and non-alcoholic beverages
2. Alcoholic beverages and tobacco
3. Clothing and footwear
4. Housing, water, electricity, gas, and other fuels
5. Furnishing, household equipment, and routine household maintenance
6. Health
7. Transport
8. Communication
9. Recreational services and culture
10. Education
11. Restaurants and hotels
12. Miscellaneous goods and services

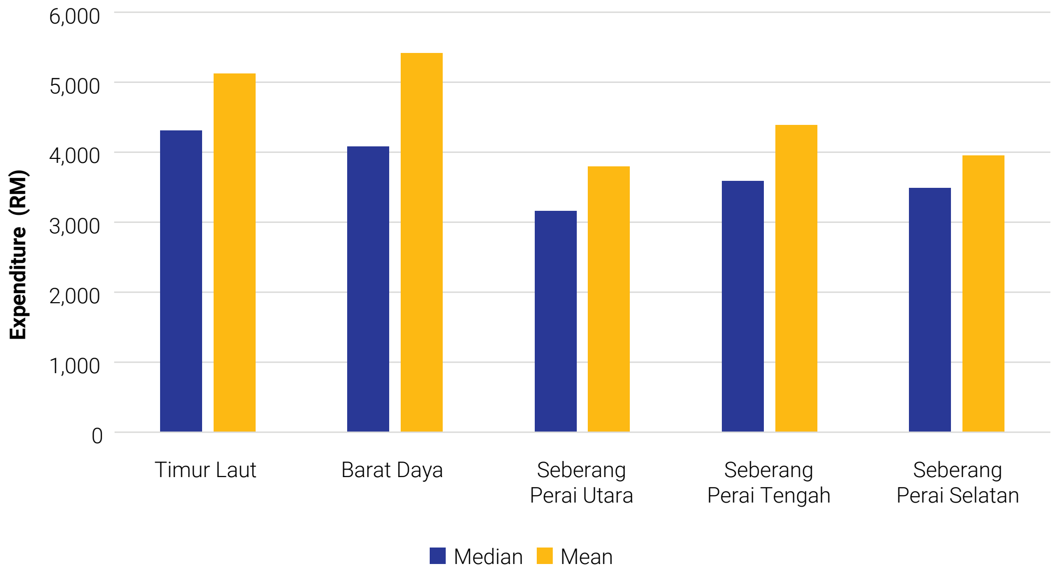
Source: Penang Institute estimates based on data from Household Expenditure Survey 2016 and 2019, Department of Statistics, Malaysia.

Figure 2.9 illustrates that Penang's mean household expenditure grew from RM4,190 in 2016 to RM4,630 in 2019, which was an overall increase of 10.5%, with a CAGR of 3.4%. The CAGR was lower compared with Selangor (3.9%) and Johor (4.8%). With a CAGR of 3.8% and 4.4%, respectively, the less-developed states of Terengganu and Kelantan also recorded comparatively higher growth rates.

Penang households spent the most on housing, water, electricity, gas, and other fuels for 2016 and 2019, where spending stood for 29.4% and 28.0% of overall spending for each respective year. The CAGR for this category, however, is among the lowest at 1.7%. Penangites also spent considerably on food and non-alcoholic beverages, with this category accounting for the second-biggest percentage of overall spending for both years—15.9% in 2016 and 15.1% in 2019—in addition to seeing a growth rate of 1.5%. Within this group, the most was spent on fresh fish (12.4%), followed by a tie between fresh meat and fresh vegetables (9.6% of total spending for food each).

Restaurants and hotels saw the second-highest growth rate of 6.3% in average spending, and this category accounted for 14.6% of overall spending in 2019—97.1% of which were spent in restaurants. Transport, which accounted for 10.3% of total average expenditure, noted a growth rate of 3.6%. Health spending recorded the highest growth rate at 10.9%, but was only 2.3% of overall spending. The lowest growth rate was seen for alcoholic beverages and tobacco, which was only 0.6%. The spending for the aforementioned category was also the second lowest.

Figure 2.10 Median and mean monthly household expenditure by administrative district, Penang, 2019



Source: Household Income Expenditure Survey 2019, Department of Statistics, Malaysia.

Reflective of household income, household expenditure was higher for the administrative districts on Penang Island compared with Seberang Perai. Timur Laut had the highest median expenditure of RM4,307 but the mean expenditure was eclipsed by Barat Daya (RM5,414). In Seberang Perai, the highest mean and median expenditure was found in Seberang Perai Tengah at RM3,586 and RM4,390, respectively. Conversely, spending was lowest in Seberang Perai Utara. With a median expenditure of RM3,160 and a mean expenditure of RM3,795, spending was 36.3% and 42.7% less compared with the state's highest spending districts, respectively.

In terms of percentages, the composition of spending across various expenditure groups for all districts were more or less the same. The categories where a spending difference was apparent would be transport and restaurants and hotels. It is observed that administrative districts on the island spent more on the aforementioned categories compared with administrative districts in Seberang Perai.

As with household income, household expenditure is expected to decrease in the current year, even with the anticipation of a possible deflation in the prices of goods. Households are expected to hold back on spending on luxury and non-essential items owing to more limited financial constraints brought on by the pandemic. Household expenditure patterns on food and essential goods are projected to be more constant in comparison.

2.5 Income distribution and poverty

Income distribution

For 2019, the most populated state in Malaysia is Selangor, with an estimated population of 6.5 million people. The people of Selangor accounted for 20.0% of the country's overall population. Penang, on the other hand, is the ninth-most populated state, with its population making up an estimated 5.5% of total population. However, Penang is the second-smallest state in Malaysia in terms of land area, and the smallest state in comparison with the similarly developed states of Selangor and Johor. Kuala Lumpur, as a federal territory, is smaller in mass size but has a higher population in comparison with Penang.

Table 2.10 Median income, household share and income share by income class and state, Malaysia, 2019

State	Top 20%			Middle 40%			Bottom 40%		
	Median income (RM)	Household share	Income share	Median income (RM)	Household share	Income share	Median income (RM)	Household share	Income share
Malaysia	**15,031**	**100.0%**	**46.8%**	**7,093**	**100.0%**	**37.2%**	**3,166**	**100.0%**	**16.0%**
Johor	14,629	12.0%	43.5%	7,549	14.1%	38.6%	3,677	10.2%	17.9%
Kedah	10,204	2.8%	43.0%	5,050	5.9%	38.2%	2,686	9.8%	18.8%
Kelantan	9,500	1.8%	45.7%	4,242	3.1%	36.3%	2,301	7.9%	18.0%
Malacca	14,393	2.9%	45.0%	7,001	3.4%	37.8%	3,318	2.9%	17.2%
Negeri Sembilan	13,257	2.8%	46.3%	5,886	3.6%	36.7%	2,801	4.4%	17.0%
Pahang	10,431	2.1%	41.9%	5,133	4.1%	37.6%	3,017	6.8%	20.5%
Penang	**14,002**	**5.8%**	**43.1%**	**7,264**	**7.2%**	**38.4%**	**3,631**	**5.3%**	**18.5%**
Perak	10,308	3.7%	45.0%	5,041	7.4%	37.1%	2,614	12.7%	17.9%
Perlis	9,782	0.3%	40.4%	5,377	0.8%	40.5%	2,665	1.1%	19.1%
Selangor	20,175	37.1%	46.0%	9,737	25.2%	37.0%	4,657	12.1%	17.0%
Terengganu	12,137	2.3%	41.3%	6,539	4.0%	39.1%	3,372	3.7%	19.6%
Sabah	11,461	4.0%	46.2%	5,177	5.6%	37.5%	2,444	10.0%	16.3%
Sarawak	11,856	5.3%	45.1%	5,478	7.3%	38.3%	2,541	11.5%	16.6%
*Kuala Lumpur	22,610	15.7%	43.2%	12,068	7.4%	37.3%	6.623	1.3%	19.5%
*Labuan	15,196	0.4%	41.2%	7,889	0.4%	39.1%	4,272	0.2%	19.7%
*Putrajaya	22,291	1.0%	44.1%	11,574	0.5%	37.0%	5,976	0.1%	18.9%

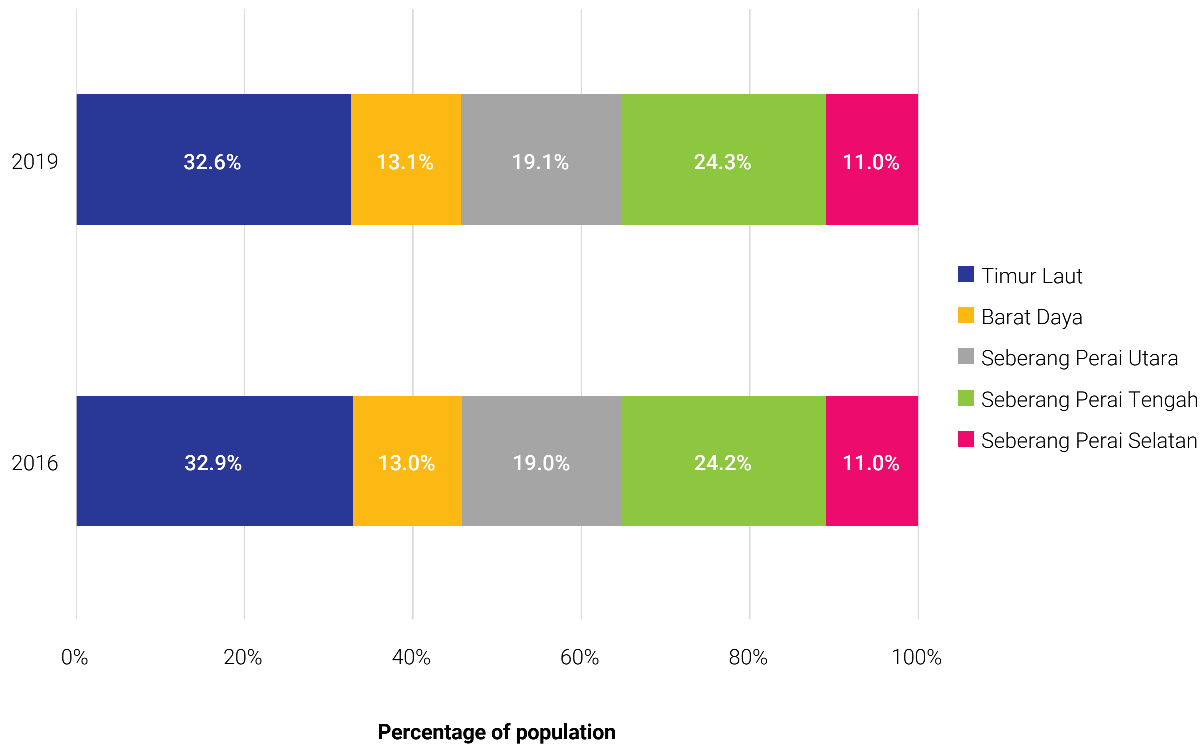
** denotes Federal Territories*
Source: Household Income and Basic Amenities Survey Report Malaysia 2019, Department of Statistics, Malaysia.

In 2019, the highest share of T20 (Top 20%) households was found in Selangor, which accounted for 37.1%, followed by Kuala Lumpur at 15.7% (Table 2.10). Penang (5.8% of total T20 households) was placed fourth after Johor. However, Selangor and Kuala Lumpur's median income for T20 households was significantly higher than Penang's—44.1% and 61.5% higher, respectively. The lowest T20 median income belonged to Kedah, which was RM10,204. T20 households typically account for more than 40% of an individual state's overall income, while holding the smallest share of total households within the states.

The same pattern persisted for the next household income group, where Selangor also held the largest share of M40 (Middle 40%) households at 25.2%, followed by Johor. With a household share of 7.2%, Penang was ranked sixth, after Kuala Lumpur (7.4%), Sarawak (7.4%), and Perak (7.3%). However, with a median income of RM12,068, Kuala Lumpur recorded the highest median income among all M40 households, followed by Putrajaya (RM11,574) and Selangor (RM9,737). Meanwhile, Penang's M40 household median income of RM7,264 was slightly lower than Johor's, and accounted for 7.0% of all M40 households. The total income share of M40 households across all states individually were close in terms of percentages, standing below 40.5% and fluctuating between 36.0% and 39.0%.

The situation differed in the overview of B40 (Bottom 40%) households. Perak held the biggest share of B40 households at 12.7%. Selangor had the next-largest household share at 12.1%, followed by Sarawak at 11.7% and Selangor at 11.5%. Penang's B40 household share was 5.3%, where these households contributed 18.5% of the state's total income. The B40 household group usually represents the biggest share of households for a state, yet accounted for the smallest percentage share of income. For 2016, the income shares of B20 households within states roughly equated to less than 20% individually, with Pahang (20.5%) being the only exception.

Figure 2.11 Population distribution by administrative district, Penang, 2016–19



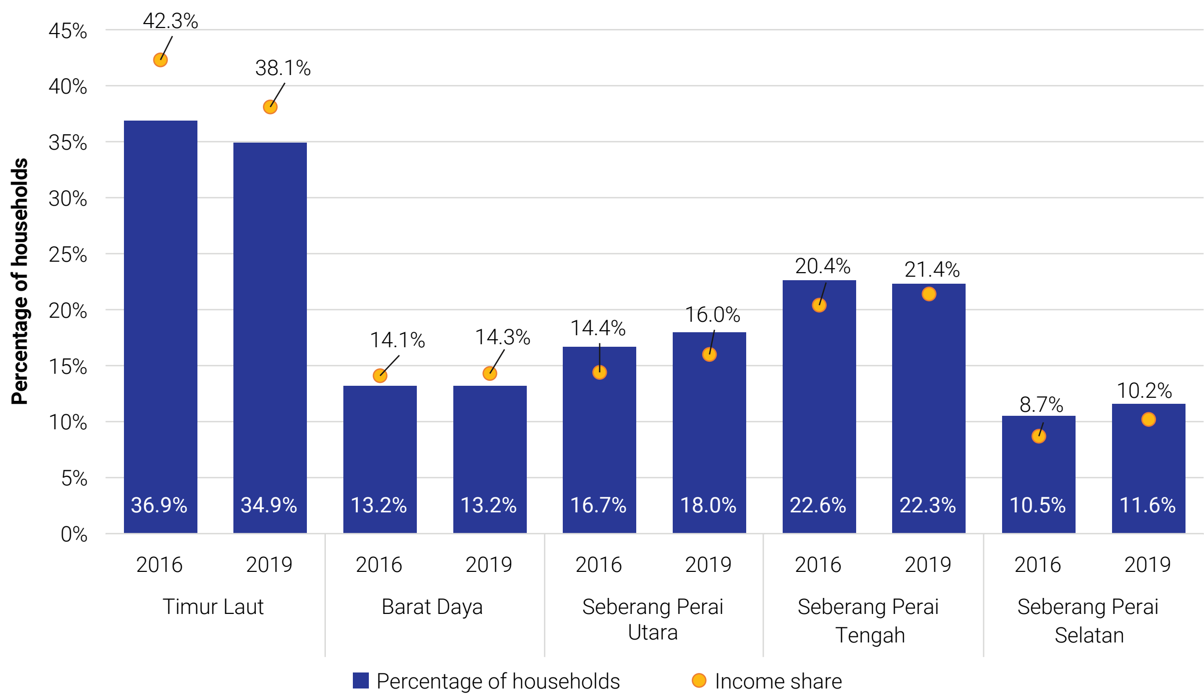
Source: Household Income and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

Overall, Figure 2.11 shows that population distribution remained constant between 2016 and 2019. Timur Laut maintained its position as the most highly and densely populated district in 2019, comprising 32.6% of Penang's total population and a density of 4,749 people per km^2. Timur Laut is also the smallest district in Penang in terms of land mass. Seberang Perai Selatan has the lowest population share at 11.1%, and is also the least densely populated district at 806 people per km^2.

Timur Laut held the highest percentage share of households for Penang at 34.9%, although it saw a decrease of 2.0% from 2016 (Figure 2.12). Its neighbouring district, Barat Daya, had a household share of 13.2%. However, its household share remained unchanged.

In Seberang Perai, the highest share of households was found in Seberang Perai Tengah, where it held 22.3% of total households, followed by Seberang Perai Utara at 18.0%. The former was also the only district (beside Timur Laut) to experience a decrease in its household share, where it had shrunk by 0.3%. Meanwhile, Seberang Perai Selatan had the lowest share of households overall, standing at 11.6%, but saw an increase of 1.6% over the three-year period.

Figure 2.12 Percentage of households and income share by administrative district, Penang, 2016 and 2019

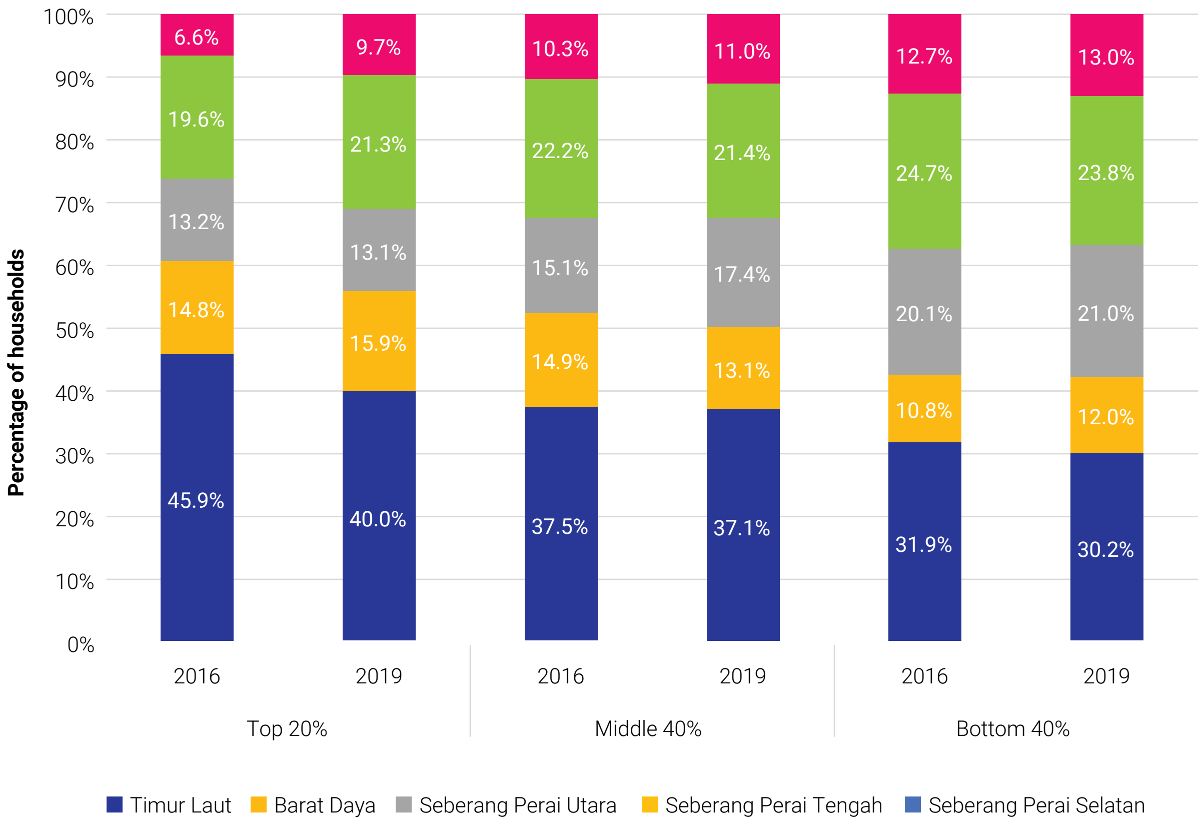


Source: Household Income and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

In terms of income share, Timur Laut held the highest share at 38.1%, but it also observed a significant drop of 4.2% from 2016. It was also the only district to see a decrease in its corresponding income share. With an increase of 1.0% from the previous period, Seberang Perai Tengah came in second with 21.4% of total income share. Seberang Perai Selatan held the smallest income share of 10.2%, an increase from the previous year's 8.7%. Barat Daya and Seberang Perai Utara also observed increases in their income share. However, the latter's increase of 1.6% made it the district with the highest percentage increase in income share for 2019.

Figure 2.13 illustrates that Timur Laut held the highest percentage of household share across all income groups, followed by Seberang Perai Tengah, mainly because they were the state's two most populous districts. Timur Laut accounted for 40.0% of Top 20% (T20) households—higher than Barat Daya, Seberang Perai Utara, and Seberang Perai Selatan combined. However, it was also a 5.9% decrease from 2016, in line with the decrease observed in its total income share (Figure 2.12). Seberang Perai Selatan had the lowest share of T20 households at 9.7%, but recorded a 3.1% increase from the previous period.

Figure 2.13 Percentage of households by household income groups in administrative districts, Penang, 2016 and 2019



Note: Income thresholds are as follows: T20: ≥ RM10,680, M40: RM5,310–10,679, B40: <RM5,410
Source: Household Income and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

The biggest increase in M40 household share was seen in Seberang Perai Utara, where it had increased by 2.3%, from 15.1% to 17.4%. Another district that saw an increase was Seberang Perai Selatan, which recorded an increase of 0.7% to 11.0%; it was also the district with the smallest share of M40 households. All other districts saw a reduction in their respective total household share. Timur Laut had the highest percentage of M40 households, but saw a decrease of 0.4% over the last three years.

Timur Laut and Seberang Perai Tengah were the only districts that saw a decline in their respective Bottom 40% (B40) household share. The former had a 1.7% decrease while the latter recorded a decline of 0.9%. Barat Daya's B40 household share saw the biggest increase, rising from 10.8% to 12.0%. Other districts observed increases of less than 1.0% overall.

Table 2.11 Percentage share of household and income share by monthly gross household income class, Penang, 2016 and 2019

Gross income class (RM)	2016		2019	
	Household share (%)	Income share (%)	Household share (%)	Income share (%)
1,999 and below	5.8%	1.3%	3.0%	0.6%
2,000–2,999	8.0%	3.0%	9.3%	3.1%
3,000–3,999	17.7%	9.0%	11.9%	5.3%
4,000–4,999	13.5%	9.0%	12.0%	6.9%
5,000–5,999	11.2%	9.1%	12.0%	8.5%
6,000–6,999	9.6%	9.2%	9.4%	7.8%
7,000–7,999	7.6%	8.4%	8.3%	8.0%
8,000–8,999	5.7%	7.1%	6.8%	7.4%
9,000–9,999	4.5%	6.3%	4.2%	5.1%
10,000–10,999	3.3%	5.1%	4.5%	6.0%
11,000–11,999	2.6%	4.4%	3.8%	5.6%
12,000–12,999	2.2%	4.1%	2.7%	4.4%
13, 000–13,999	1.8%	3.6%	2.1%	3.7%
14,000–14,999	1.0%	2.1%	1.9%	3.6%
15,000 and above	5.5%	18.5%	8.1%	24.0%

Source: Household Income and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

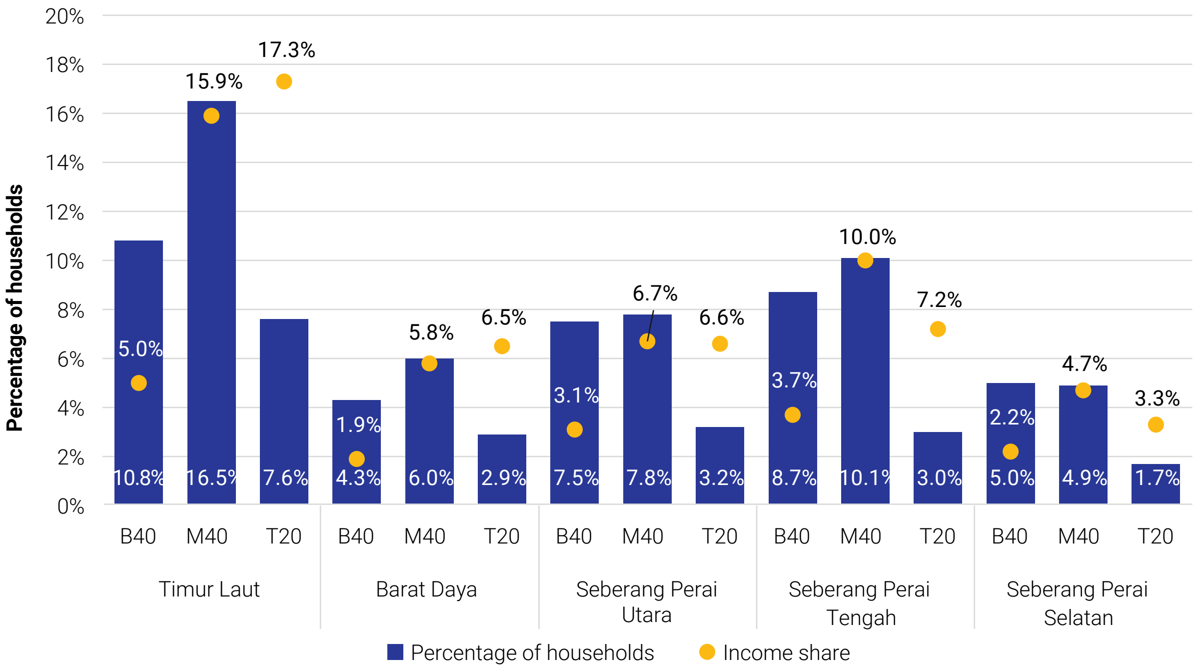
As Table 2.11 shows, the lower range of income classes generally observed decreases in total household and income shares in 2019. Within Penang households, 35.9% earned a monthly gross household income of between RM3,000 and RM5,999. Comparatively, 42.4% of households fell within the same income parameters in 2016. Income shares for the same classes of income were also lower in 2019, seeing an estimated decrease of 6.6% over the last three years. However, the biggest household shares were found in the income classes of RM4,000–4,999 and RM5,000–5,999, which held 12.0% each.

In contrast, increases in household shares were observed for the highest income classes (beginning from RM10,000), and the same situation applies to the corresponding income shares. It also signifies that approximately 23.1% of Penang households were earning T20 income[13], or at least close to it. Similarly, this represents an increase of 2.2% in household shares from the previous period, where the share was approximately 20.9% in 2016[14].

For the highest income class—a monthly gross household income of RM15,000 or more—there was a 2.6% increase in household share and a 5.5% increase in income share in the same period. Concurrently, the lowest income class of RM1,999 and below saw a reduction in their respective household and income shares. As a whole, the household shares for the lower spectrum of income classes in the B40 category (RM1,999 and below to RM5,999) saw an approximate reduction of 7.9%, while the share for M40 households saw an increase of 2.5%. Additionally, there was also an increase of approximately 5.5% in household shares for T20 households. In this sense, it can be deduced that more Penang households have moved up the income class ladder during 2016–19.

[13] The threshold for T20 income in 2019 is determined by Department of Statistics as ≥RM10,680.
[14] The threshold for T20 income in 2016 is determined by Department of Statistics as ≥RM9,200.

Figure 2.14 Percentage of households and income share by household income group and administrative districts, Penang, 2019



Note: Income thresholds[15] are as follows: T20: ≥ RM11,000, M40: RM5,000–10,999, B40: ≤ RM4,999
Source: Penang Institute estimates based on data from the Household Survey and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

The percentage of income share for T20 households were significantly higher, if compared with its share of total households. Income shares for T20 households were approximately double its corresponding household share. The reverse is observed for B40 households, where the income share was about half of the household share. M40 households, however, maintained a similar share for both household and income.

In 2019, Timur Laut had the highest share of all household income groups (Figure 2.14). The lowest share of B40 households was found in Barat Daya (4.3%), while Seberang Perai Selatan had the lowest share of M40 and T20 households at 4.9% and 1.7%, respectively.

Timur Laut's large share of households also signifies that income shares were also the highest within the district. T20 households in the district accounted for 17.3% of the state's total income share, with 9.2% of households earning an income of more than RM15,000. Its M40 and B40 households accounted for 15.9% and 5.0%, respectively, resulting in Timur Laut holding 38.2% of Penang's total income share. However, this is a drop of 4.1% from 2016, where 42.3% of the state's total income was concentrated in this district.

Seberang Perai Selatan recorded the smallest share of total income at 8.7%, but it was an increase of 2.9% over the three-year period. Its household share also saw a 1.1% increase. Another district with significant increases in both categories was Seberang Perai Utara, which saw an increase of 1.8% in household share and 2.0% in income share. The other two districts saw little to no changes.

The increase in household and income shares for both Seberang Perai Selatan and Seberang Perai Utara can be attributed to recent developments in the districts. With the Batu Kawan Industrial Park in Seberang Perai Selatan gaining traction as Penang's second industrial zone, other development projects

[15] The income thresholds in accordance to income classes are an approximation, readjusted to the categorisation of monthly gross income of income classes, as published by the Department of Statistics, Malaysia.

have been planned to advance the district's economy. Seberang Perai Utara has benefitted from a mixed-development project spearheaded by SP Setia, which is intended to be an economic centre (The Malaysian Reserve, 2017).

Inequality

Penang's Gini coefficient was lower than the national Gini coefficient for both 2016 and 2019, but it saw a slight increase in the latter year, going from 0.356 to 0.359. It was the lowest Gini coefficient when compared with the similarly developed states of Selangor (0.393) and Johor (0.366). Johor and Selangor's Gini coefficient also increased from 2016, and in greater value, signifying that income inequality had worsened in both states. Kuala Lumpur, however, saw its Gini coefficient decline to 0.350 from the previous period's value of 0.378. Although Sabah's Gini coefficient improved from 0.402 to 0.397 in 2019, income inequality in this state was still highest in the country.

Table 2.12 Gini Coefficient of monthly gross household income by administrative districts, Penang, 2016 and 2019

Administrative district	Gini coefficient	
	2016	2019
Timur Laut	0.377	0.356
Barat Daya	0.327	0.361
Seberang Perai Utara	0.338	0.359
Seberang Perai Tengah	0.330	0.367
Seberang Perai Selatan	0.339	0.323
Penang	**0.356**	**0.359**

Source: Household Income and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

Within districts in Penang, the Gini coefficient was the highest in Seberang Perai Tengah (0.367), which signified the biggest increase in value in the state (Table 2.12). Seberang Perai Selatan's Gini coefficient of 0.323 was the lowest, and had improved from the previous period. Timur Laut also saw an improvement to its Gini coefficient, going from the highest value in 2016 (0.3777) to recording the second-lowest value in 2019 (0.356). This can be explained by the increase in M40 households and the corresponding income share in the district; income was more evenly distributed. In contrast, the Gini coefficient of Barat Daya, which was the lowest in 2016, increased to 0.361, making it the district with the second-highest index in the state. Overall, the income inequality gap in Penang has slightly worsened since 2016.

Poverty

Malaysia's Poverty Line Income (PLI) has been redefined for 2019. Therefore, the PLI in 2016 has also been readjusted and recalculated in accordance to these new parameters. The national PLI for 2019 was determined to be RM2,208[16], which was an increase of 3.2% from the PLI of RM2,141 in 2016.

From 2016 to 2019, the incidence of absolute poverty generally declined across most states and federal territories, with the national incidence of absolute poverty standing at 5.6% (Table 4). The exceptions are Selangor and Putrajaya, with each seeing a 0.4% increase in their respective incidences of poverty, but they are also among the states and territories with the lowest levels of absolute poverty for both periods. Kelantan saw the biggest improvement, with its absolute poverty rate decreasing by 7.1% to 12.4%. Sabah still had the highest level of absolute poverty in 2019, despite a 4.4% drop from 2016. Penang's absolute poverty rate saw a decrease of 0.3%, going from 2.2% to 1.9%.

[16] Prior to the recalculation, Malaysia's PLI was set as RM980.

Table 2.13 Incidence of absolute poverty by administrative district, Penang, 2016 and 2019

Administrative district	Incidence of absolute poverty (%)	
	2016	2019
Timur Laut	1.0	0.5
Barat Daya	0.7	1.0
Seberang Perai Utara	4.2	4.6
Seberang Perai Tengah	2.5	2.3
Seberang Perai Selatan	4.8	2.1
Penang	**2.2**	**1.9**

Source: Household Income and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

Table 2.13 shows that Seberang Perai Selatan saw the biggest improvement to its absolute poverty levels. Its incidence of poverty decreased by 50%, dropping from 4.8% in 2016 to 2.1% in 2019, perhaps a result of the rapid development of the district in recent years. Timur Laut had the lowest incidence of poverty at 0.5%, an improvement from 1.0% in the previous period.

Seberang Perai Selatan had the highest incidence of absolute poverty. At 4.6%, its incidence of absolute poverty was significantly higher than rest of the districts, an increase of 0.4% in 2019.

In terms of relative poverty, 16.9% of Malaysians were considered to be relatively poor in 2019, an increase of 1.0% from 2016. At 17.0%, Malacca had the highest incidence of relative poverty among all states and federal territories, and also recorded the biggest increase in share (6.3%)[17]. The lowest incidence of relative poverty was observed in Pahang, which saw 6.0% of its total households living in relative poverty, a decline of 2.2% from the previous period. In Penang, the relative poverty rate increased by 1.9% to 13.2% in 2019. The more developed states such as Selangor, Johor, and Penang all saw increases in their respective relative poverty rates. In contrast, the incidence of relative poverty has declined in less-developed states such as Kelantan, Kedah, and Sabah.

Table 2.14 Incidence of relative poverty by administrative district, Penang, 2016 and 2019

Administrative district	Incidence of relative poverty (%)	
	2016	2019
Timur Laut	7.9	8.6
Barat Daya	5.1	10.8
Seberang Perai Utara	16.6	18.1
Seberang Perai Tengah	13.7	16.9
Seberang Perai Selatan	17.2	15.3
Penang	**11.3**	**13.2**

Source: Household Income and Basic Amenities Survey Report for Penang, 2019, Department of Statistics, Malaysia.

Incidence of relative poverty has increased across all districts except Seberang Perai Selatan, which was the only district to see the share of its households living in relative poverty decreasing, dropping from 17.2% to 15.3%. The decrease is in line with Seberang Perai Selatan's decline in absolute poverty rates. Despite an increase of 0.7% from 2016, Timur Laut remained as the district with the lowest relative poverty rate. Barat Daya saw the biggest increase in relative poverty, where it grew by more than 50%, from 5.1% to 10.8%.

[17] Incidence of relative poverty is calculated in accordance to each state's individual median income, and not the national median income.

2.6 Labour market

Labour force, employment, and unemployment

Penang's labour market remains cautiously optimistic amid global economic uncertainties brought about by the COVID-19 pandemic. While worker retrenchment is projected to be higher than previous years, some industries may have stable employment conditions compared with others. For example, layoffs in the manufacturing sector could be temporary owing to the considerable investments planned in 2019 that are scheduled to be executed in 2020–21, during which new job opportunities will be available. However, layoffs in the hospitality industry and retail trade businesses may take longer to recover.

In 2019, the Penang labour market performed relatively well compared with most states. While the number of labour force and employed persons increased by less than 1%, unemployment declined by 10.2% to 16,700 people in 2019, representing 3.3% of Malaysia's total unemployment (Department of Statistics Malaysia, 2020a). This caused Penang's unemployment rate to fall by 0.2 percentage point from 2.2%. With an unemployment rate lower than 4%, the economy has achieved full employment status.

Despite the COVID-19 pandemic, Penang's economy will likely maintain a state of full employment in 2020. During the global financial crisis, Penang's unemployment rate increased to 2.5% in 2009, while the rate was 2.3% during the Asian financial crisis in 1998. It is projected that the state's unemployment rate will be higher than 2.5% as a result of the pandemic, but will remain below 4%.

Penang's labour force participation rate (LFPR) has moderated to 67.3%; male LFPR increased by 1 percentage point to 80.5% in 2019 while female LFPR declined to 54.1% (Table 2.1). Workers aged 25–29 and 30–34 years have the highest rate of participation compared with other age groups, accounting for 86.8% and 86.3%, respectively. Meanwhile, the LFPR for tertiary education was 3.6 percentage points higher than the participation rate of labour force with secondary education (70.6% versus 67%). Labour force with certificates had the highest rate of participation (88.7%), followed by those with degrees (86.7%) and diplomas (77.7%).

Table 2.15 Principle statistics of labour force, Penang and Malaysia

Indicators	Penang		Malaysia	
	2018	2019	2018	2019
Labour force participation rate (LFPR) (%)	67.7	67.3	68.3	68.7
Labour force ('000)	849.4	852.3	15,280.3	15,581.6
Employed persons ('000)	830.8	835.6	14,776.0	15,073.4
Outside labour force ('000)	424.9	433.6	7,094.4	7,103.5
Unemployed ('000)	18.6	16.7	504.3	508.2
Unemployment rate (%)	2.2	2.0	3.3	3.3
Men labour force participation rate (%)	79.5	80.5	80.4	80.8
Women labour force participation rate (%)	55.9	54.1	55.2	55.6
Youth unemployment rate (%)	7.4	6.6	10.9	10.5

Source: The Labour Force Survey Report, Department of Statistics, Malaysia.

The share of employed persons in the manufacturing sector grew by 2.6 percentage points from 34.5% in 2018 to 37.1% in 2019. In contrast, the services sector decreased by 1.8 percentage points to 54.4% in 2019 (Table 2.16). Wholesale and retail trade continued to make up the largest proportion of employment in the services sector (15.2% of total employment in Penang), followed by accommodation and food and beverage service activities (9.5%). With a combined total of 24.7%, this reflects the significance of the hospitality industry to Penang, where a majority of the workforce in this industry are being employed in tourism-related services.

Table 2.16 Employment by industry in Penang, 2018 and 2019

Industry	('000)		% share	
	2018	2019	2018	2019
Agriculture, forestry, and fishing	13.0	11.6	1.6	1.4
Mining and quarrying	0.5	1.0	0.1	0.1
Manufacturing	286.7	309.9	34.5	37.1
Electricity, gas, steam, and air conditioning supply	3.7	2.4	0.4	0.3
Water supply, sewerage, waste management, and remediation activities	3.5	4.2	0.4	0.5
Construction	56.7	52.3	6.8	6.3
Services	466.6	454.4	56.2	54.4
Wholesale and retail trade; repair of motor vehicles and motorcycles	130	126.9	15.6	15.2
Transportation and storage	45.6	46.7	5.5	5.6
Accommodation and food and beverage services activities	79.3	79.7	9.5	9.5
Information and communication	7.4	4.7	0.9	0.6
Financial and insurance/takaful activities	18.8	16.6	2.3	2.0
Real estate activities	5.3	3.8	0.6	0.5
Professional, scientific and technical activities	21.7	22.1	2.6	2.6
Administrative and support service activities	28.7	34.3	3.5	4.1
Public administration and defence; compulsory social security	30.7	28.3	3.7	3.4
Education	43.6	43.4	5.2	5.2
Human health and social work activities	29.7	27.1	3.6	3.2
Arts, entertainment and recreation	5.7	3.5	0.7	0.4
Other service activities	13.4	11.7	1.6	1.4
Activities of households as employers	6.7	5.6	0.8	0.7
Total	**830.8**	**835.6**	**100.0**	**100.0**

Source: The Labour Force Survey Report, Department of Statistics, Malaysia.

While Penang's semi-skilled and low-skilled workforce are on a decline, there has been an increase in high-skilled occupations[18]. Since 2015, the proportion of high-skilled workforce increased from 29.2% in 2015 to 33.4% in 2019, though a majority of Penang's workforce were still employed in semi-skilled occupations[19]. Penang has the fourth-largest employment in high-skilled occupations after Putrajaya, Kuala Lumpur, and Selangor. This coincides with the education attainment of employed persons where only the tertiary-educated workforce is on the rise while workforce with primary and secondary education are declining.

Many states have their tertiary-educated workforce employed in semi-skilled or low-skilled occupations, including Penang. In 2019, about 283,300 of Malaysia's tertiary-educated workforce worked in non-high-skilled occupations, with Kelantan being the hardest hit (having 63,200 persons), followed by Terengganu (51,500 persons) and Sabah (40,200 persons). Penang had about 5,800 of its tertiary-educated workforce employed in positions that are not classified as high-skilled. Interestingly, Johor and Kuala Lumpur had workforce with non-tertiary education employed in high-skilled occupations, suggesting that there may be insufficient tertiary-educated labour in these states.

Males dominated Penang's workforce, accounting for nearly 60% of its total employment (Table 2.17). Both males and females were largely plant and machine operators, as well as service and sales workers, which are categorised as semi-skilled positions.

[18] High-skilled occupations comprise managers, professionals, and technicians and associate professionals
[19] Semi-skilled occupations consist of clerical support workers, service and sales workers, skilled agricultural, craft and related trades, and plant and machine operators.

Within the high-skilled occupational group, males were particularly prevalent among managers (73.7%) and technicians and associate professionals (70.4%), whereas more females were found in professional positions. For the semi-skilled workforce, females were dominant in clerical support, representing three-quarters of the workforce, while males were highly dominant in skilled employment in the primary sectors—agriculture, forestry, livestock, and fishery (97.4%), and craft and related trades (87.0%). A majority of the workforce in elementary occupations were males. These include cleaners, agricultural, fishery and forestry labourers, food preparation assistants, and construction and manufacturing labourers.

Table 2.17 Employed persons by main occupational groups and gender in Penang, 2019

Main occupational groups	('000)		% share		Total
	Male	Female	Male	Female	
Managers	37.8	13.6	73.7	26.5	51.3
Professionals	61.5	64.4	48.8	51.1	126.0
Technicians and associate professionals	71.7	30.1	70.4	29.6	101.8
Clerical support workers	20.6	61.5	25.1	74.9	82.1
Service and sales workers	92.7	68.8	57.4	42.6	161.5
Skilled agricultural, forestry, livestock, and fishery workers	11.1	0.4	97.4	3.5	11.4
Craft and related trades workers	61.5	9.2	87.0	13.0	70.7
Plant and machine operators and assemblers	98.7	69.5	58.7	41.3	168.2
Elementary occupations	44.1	18.5	70.6	29.6	62.5
Total	**499.6**	**336.0**	**59.8**	**40.2**	**835.6**

Source: The Labour Force Survey Report, Department of Statistics, Malaysia.

Youth unemployment remains as the main contributor to unemployment in the state. While the national youth unemployment continues to register a rate of 10.5%, Penang's unemployed youths (aged 15–24) declined by 0.8 percentage point to 6.6% or 16,700 people in 2019, compared with 7.4% or 18,600 in 2018 (Table 2.15). Without including unemployed youths, Penang only exhibited a 1.1% unemployment rate. Penang had the third-lowest rate of youth unemployment in Malaysia after Putrajaya (1.3%) and Malacca (1.1%).

Penang's unemployment level has also improved across all education levels, with its tertiary-educated workforce performing above the primary and secondary education categories. The rate of unemployment for tertiary-educated workforce was at 1.96%, down by 0.6 percentage point in 2019 from 2.56% in 2018. Meanwhile, workforce with secondary education registered the highest rate of unemployment, standing at 2.17%. These rates remain low compared with the national average.

Furthermore, working population aged 15–64 years and are not contributing to Penang's labour force grew by 2% to 433,600 in 2019. According to the Labour Force Survey Report 2019, a large proportion of working-age population outside the labour force were those in the 15–24 age group. A majority of them were not seeking jobs because of family responsibilities and schooling.

Jobs market

Labour demand is expected to be affected by the COVID-19 pandemic. Job hiring will slow down as employers are cautious about their business prospects after the MCO and CMCO, which lasted more than two months. Business are projected to take more than three months to rebound, which will impact the hiring market. However, digital-related positions will continue to experience exponential growth amid the health and economic crises.

According to the Department of Statistics Malaysia, the number of jobs created fell to less than 20,000 in the first quarter of 2020, the first time this has happened since 2015. On a year-on-year basis, the number of new jobs created declined by about 19% in the first three months of 2020 compared with the same period in 2019. Compared with the last quarter of 2019, this number plunged by 24.6% in the first quarter of 2020, an indication of the looming impact of the pandemic on Malaysia's jobs market.

All economic activities saw a reduced number of newly created jobs except petroleum, chemical, rubber, and plastic products; transportation and storage; and information and communication. Job searches on information technology roles were particularly high during the MCO with an increase of 40% on JobStreet Malaysia reported in May 2020 compared with the previous year (JobStreet, 2020a). Hardware technician, network engineer, IT project manager, and helpdesk analyst are high in demand. For the manufacturing industries, the four-most-searched roles are supply chain assistant, mechanical engineer, production manager, and quality control manager.

The latest available data (as of December 2019) from JobsMalaysia, a jobs recruitment portal managed by the Ministry of Human Resources, reported that Penang had about 9,584 vacancies advertised, and was responsible for 7.6% of Malaysia's total job vacancies. Of this, 85.4% were permanent positions while 11.4% were contract positions. Furthermore, 3.2% were part-time and temporary positions.

In 2019, Penang received the highest-ever approved capital investment for its manufacturing sector, with foreign direct investment at RM15 billion. This investment is estimated to create nearly three times more employments in 2019 compared with the investment in 2018. A portion of the investment will be implemented this year despite the COVID-19 pandemic. However, a majority of the investment will materialise in 2020–21.

Moving forward, more work-from-home jobs will be created to enhance social distancing at the workplace in response to the COVID-19 pandemic. Newly created jobs will have to consider new norms, where employees should report for work through digital platforms. It is found that companies in Kedah had advertised a total of 80 work-from-home vacancies in December 2019.

Graduate employability

Penang's graduate labour force increased by 5.4% to 286,700 people in 2019, with its participation rate exceeding the overall participation rate at 80.8%. Of this, 98.2% of graduates were employed while the remaining 1.8% were unemployed. The rate of graduate unemployment fell to 1.9% in 2019 from 2.6% in 2018; this was 0.1 percentage point lower than the overall unemployment rate in Penang.

Both males and females exhibit different patterns in the graduate labour market. While the male graduate labour force participation rate was above 85%, the female graduate labour force participation rate remained low at 75.4%. The unemployment rate of both genders declined concurrently, but the drop in the male unemployment rate was greater than their female cohort. The male unemployment rate decreased by 0.8 percentage point to 1.5% in 2019, while the female rate dropped by only 0.2 percentage point to 2.3%. In general, females still accounted for the largest proportion of working-age population outside the labour force compared with males, with family responsibilities being the core reason.

In terms of salaries among graduates who are employed, it is important to note that Penang's employers on average paid lower monthly salaries to graduates compared with some states in Malaysia. This may be due to the lower cost of living in Penang. In 2018, the mean monthly salaries for employed graduates increased by 8% from RM3,955 in 2017 to RM4,270 in 2018. However, this is still low compared with many other states, such as Kuala Lumpur (RM6,424), Putrajaya (RM5,028), Selangor (RM5,216), Johor (RM4,842), and Negeri Sembilan (RM4,641).

Labour retrenchment

Job losses have become the key concern in the labour market primarily because of the pandemic. For the first five months of 2020, over 1,667 employees were retrenched in Penang (Table 2.18). The layoffs were particularly prevalent after the implementation of the MCO which started on 18 March 2020. The retrenchment increased by 40% in April 2020 from 252 workers in March 2020 to 353 workers.

The manufacturing and services sectors were the most affected industries. Retrenchments in these sectors accounted about 94.6% of the total retrenchment from January to May. Additionally, 525 employees took voluntary separation schemes (VSS), which were largely implemented by manufacturing firms for local employees. A total of 189 companies retrenched their workers between January and May, with two-thirds in the services sector (Table 2.19). Retrenchment activity will continue to be high in Q3 2020.

Table 2.18 Labour retrenchment and VSS in Penang, January–May 2020

Sector	Retrenchment			VSS			Grand total
	Foreign	Local	Total	Foreign	Local	Total	
Business	1	36	37	0	1	1	38
Construction	0	3	3	0	0	0	3
Manufacturing	16	453	469	0	490	490	959
Services	10	600	610	0	35	35	645
Transportation	0	21	21	0	1	1	22
Grand total	**27**	**1113**	**1140**	**0**	**527**	**527**	**1667**

Source: Penang Labour Department.

Table 2.19 Retrenching companies, January–May 2020

Sector	Number of companies
Services	125
Manufacturing	62
Construction	2
Total	**189**

Source: Penang Labour Department.

The pandemic has significantly disrupted global supply chains and businesses, leading to a substantial drop in demand for products and services. Employers are forced to restructure, leading to employees being made redundant. Though the number is not significant, the operations of a few companies have either fully or partially shifted to other states or other countries.

A survey by JobStreet (2020b) found that one in five Malaysians have lost their jobs owing to COVID-19. Ong and Lee (2020) revealed that most local manufacturing firms are laying off some employees to keep their companies going, retaining only high-value employees. As such, unemployment and worker retrenchment will be considerably high nationwide.

Salaries and wages

Based on the Salaries and Wages Survey Report (Department of Statistics Malaysia, 2019a), Penang's median monthly salary grew by 2.5% to RM2,215 in 2018, with males' median monthly salary higher than females' (male: RM2,241 versus female: RM2,082)[20]. The median gender pay gap was 7.1%, indicating that a female employee would earn 7.1% less for every RM1 earned by a male employee. Though its gender pay gap was larger than the national gender pay gap of 4.9%, Penang still outperformed Johor (17.7%), Perak (15.2%), Kedah (12.9%), Negeri Sembilan (12.5%), and Selangor (11.7%).

In Penang, the industry with the highest median monthly salary was electricity, gas, steam, and air conditioning supply, with its median monthly salary at RM415 higher than the same industry at the national level (RM3,324). Industries with the next highest median monthly salary include education, professional, scientific, and technical activities, and financial and insurance/takaful activities.

Administrative and support service activities, on the other hand, generated the lowest median monthly salary, standing at RM128 lower than the industry in Malaysia (RM1,545).

Managers earned the highest median monthly salary in Malaysia, with Penang making RM685 more than the national salary (RM6,276). Professionals enjoyed the second-highest median monthly salary. However, Penang's median salary was RM891 lower than the national median salary (RM4,814), indicating a pay

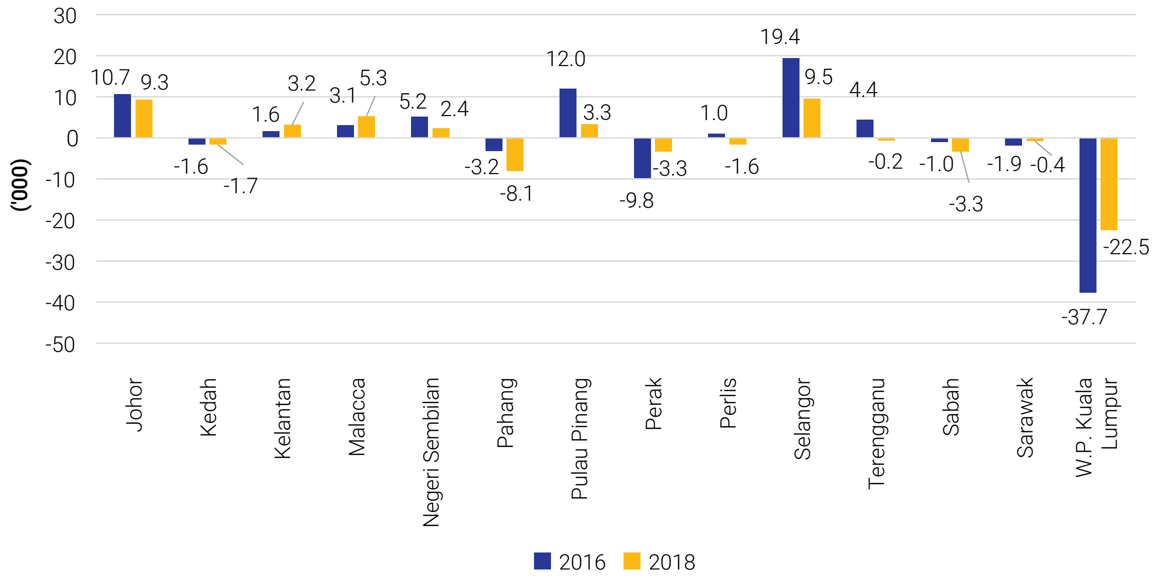
[20] Monthly salary includes basic wages, fixed allowance, and overtime payment. However, it excludes bonuses and gratuity, family allowances, and social security payments.

gap between Penang and other states in Malaysia. Meanwhile, elementary occupations registered the lowest median monthly salary, where employees in this group earned RM281 more than those in Malaysia as a whole (RM1,329).

Internal and international migration

Penang once again registered a positive net migration in 2018 despite weak migration flows (Department of Statistics Malaysia, 2019b). Net migration dropped by 52.4% per year from 12,000 persons in 2016 to 3,300 in 2018. With 11,500 in-migrants, Kedah and Perak remained the major contributors, with each recording 2,400 persons migrating to Penang. Meanwhile, 8,200 persons were moving out of Penang during the same period. A majority have migrated to Malacca, which accounted for about 3,700 persons in 2018. No out-migrants from Penang were found in Negeri Sembilan, Perak, Pahang, Terengganu, Sarawak, and Kuala Lumpur. Meanwhile, Penang attracted the highest number of migrants from overseas in Malaysia.

Figure 2.15 Net migration by state in Malaysia, 2016 and 2018



Source: The Migration Survey Report 2018, Department of Statistics, Malaysia.

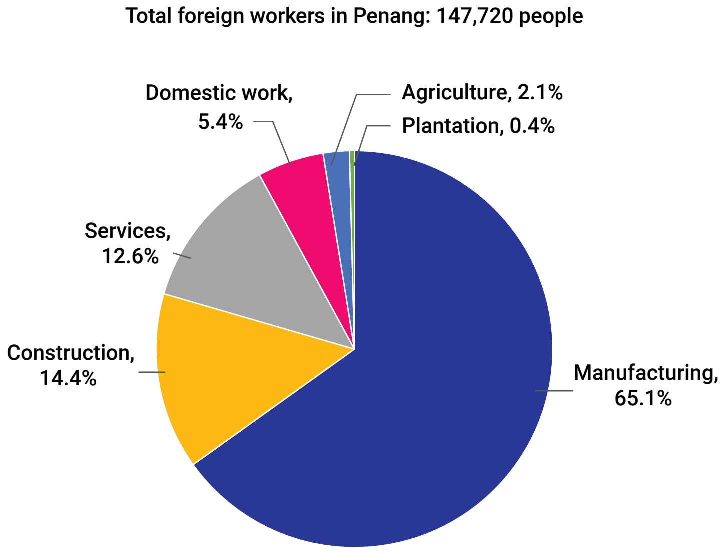
Foreign knowledge workers and foreign workers

Based on the latest available data, Penang had the fourth-largest foreign workforce in Malaysia in June 2019, with 147,720 workers. This accounted for about 7.4% of Malaysia's foreign workforce. Male foreign workforce accounted for 64% of Penang's entire foreign workforce.

As the second-largest contributor to the national GDP, Penang's manufacturing sector employs a smaller number of foreign workers compared with manufacturing firms in Selangor and Johor, suggesting that a majority of manufacturing firms in Penang hire local residents for low-skill jobs. This also suggests that a large segment of manufacturing firms is involved in high-tech and high-value-added operations, where more mid-to-high-skill workers are needed.

The manufacturing sector remained the largest sector employing foreign workers in Penang, representing nearly two-thirds of total foreign workers as of June 2019 (Figure 2.16). This was followed by the construction (14.4%), services (12.6%), and domestic work (5.4%).

Figure 2.16 Foreign workers by economic sectors in Penang as of June 2019

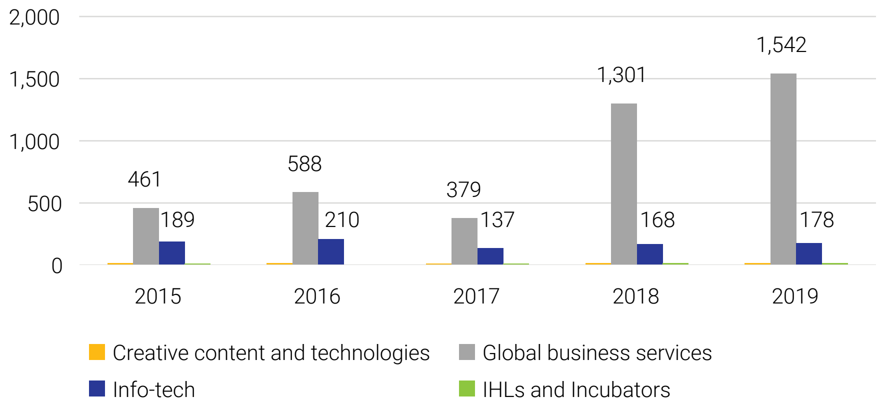


Source: Penang Institute estimates based on data published by the Ministry of Home Affairs, Malaysia.

Penang is the third-largest state receiving knowledge workers in Malaysia, following Kuala Lumpur and Selangor. It represented 6% of the total number of foreign knowledge workers contributing to companies with multimedia super corridor (MSC) Malaysia status[21]. Furthermore, the state imported a higher number of knowledge workers in 2019 compared with 2018. This volume increased by 16.9% in 2019, up from 1,476 persons in 2018 to 1,725 in 2019.

Foreign knowledge workers are categorised into four main clusters: creative content and technologies, global business services, info-tech, and institutes of higher learning (IHLs) and incubators. With 1,725 workers, about 89% of the foreign knowledge workforce were employed in global business services, and about 10% work in info-tech (Figure 2.17).

Figure 2.17 Number of foreign knowledge workers by cluster in Penang, 2015–19



Source: Malaysia Digital Economy Corporation (MDEC).

[21] According to the Malaysia Digital Economy Corporation (MDEC), MSC Malaysia has been established since 1996 to accelerate the growth of the nation's digital economy. The MSC Malaysia status provides eligible ICT-related businesses, both local and foreign, with a wide range of incentives, rights, and privileges to promote continued growth.