# Penang's Macroeconomic Performance

2.1 Output performance

Penang's economy has been growing at an average rate of 5.6% over the past seven years (Figure 2.1). The state's GDP growth slowed down by 0.3 percentage point to 5.3% in 2017, mainly due to the negative 10.1% growth rate in the construction sector. Agricultural and manufacturing sectors registered the higher growth rates at 2.2% and 5.7%, respectively, in 2017 compared to 2016, while the services sector remained at 5.6%. Although growth in Penang's mining and quarrying sector had slowed down from 8.7% in 2016 to 6.2% in 2017, it still exceeded the national average (1%) (Figure 2.2). The manufacturing and services sectors have been the main contributors to Penang's GDP over the past seven years. In fact, Penang's economic structure is mainly manufacturing- and services-oriented. In 2017, the services sector accounted for 49.3% of GDP, while 44.8% was from the manufacturing sector (Table 2.1). However, the agricultural (2%), mining and quarrying (0.1%), and construction (2.6%) sectors were less significant, altogether accounting for only 4.7% of Penang's GDP.

Figure 2.1 GDP growth in Malaysia and Penang, 2011–17 (at constant 2010 prices)
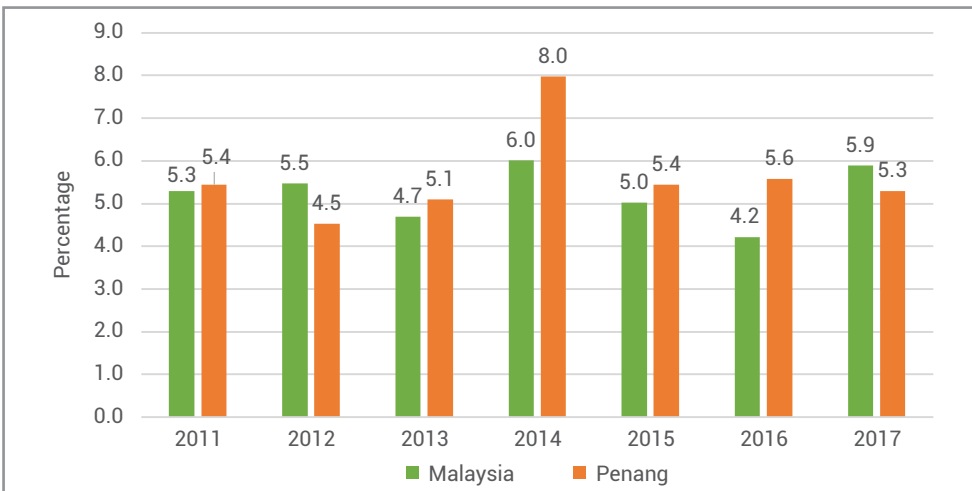
Source: Department of Statistics, Malaysia.

Figure 2.2 GDP growth rate by sector in Penang, 2016–17 (at constant 2010 prices)
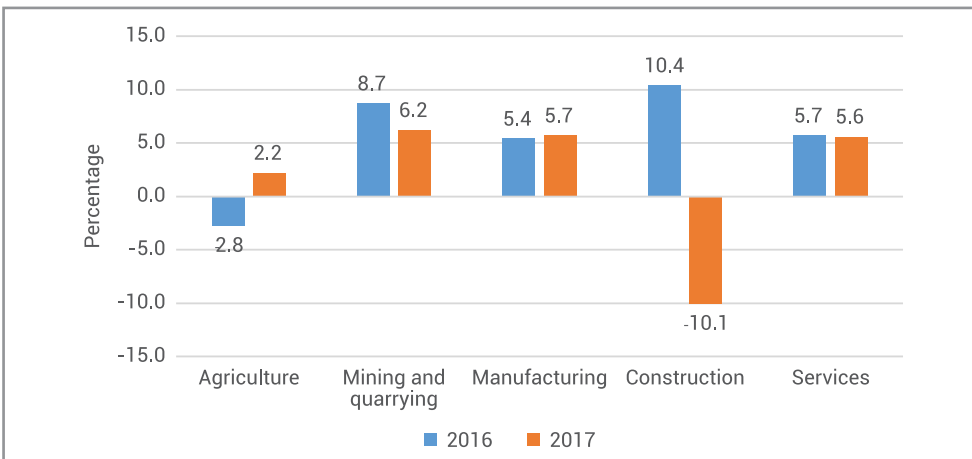
Source: Department of Statistics, Malaysia.

Table 2.1 Percentage share of economic activity to Penang's GDP, 2010–17 (at constant 2010 prices)

Economic activity	2010	2011	2012	2013	2014	2015	2016	2017
Agriculture	2.4	2.4	2.4	2.4	2.3	2.2	2.0	2.0
Mining and quarrying	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Manufacturing	45.9	45.2	43.9	43.5	44.1	44.7	44.6	44.8
Construction	2.8	2.8	3.3	3.1	3.2	3.0	3.1	2.6
Services	48.3	48.9	49.6	50.2	49.5	49.1	49.2	49.3

Note: Total may not add up due to rounding and exclusion of import duties component.
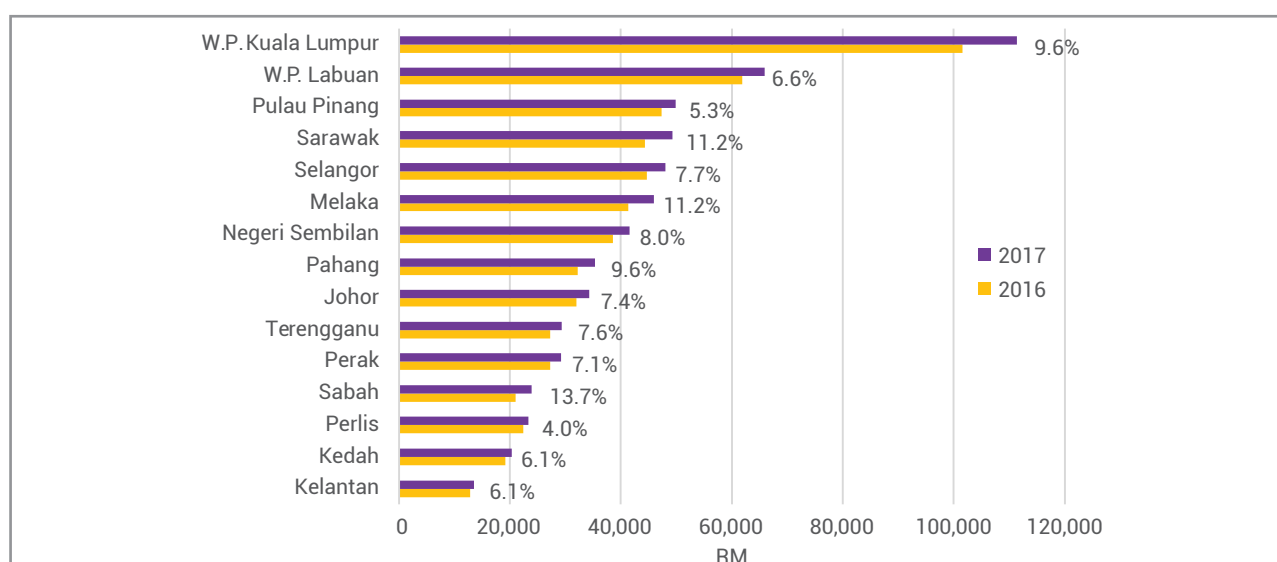*Source: Department of Statistics, Malaysia.*

In 2017, Penang contributed 12.9% to the country's manufacturing revenue of RM269.8 billion, second after Selangor (29.4%). The sector is dominated by E&E products. Penang's manufacturing sector recorded better growth in 2017 compared to 2016, which could be partly due to a huge increase in approved manufacturing investments from RM4.3 billion in 2016 to RM10.8 billion in 2017, as well as the improved global economy. Meanwhile, the services sector held steady at 5.6%, driven mainly by the wholesale and retail trade, food and beverage and accommodation; utilities, transportation and storage; and information and communication sub-sectors. Over the years, the services sector has experienced slight growth as a proportion of state output, while the manufacturing sector has had a slight gradual decline. Indeed, the services sector has overtaken manufacturing's slow growth, indicating the growth of shared services and outsourcing (SSO) activities in Penang.

Considering Penang's highly industrialised nature and limited land size, the agriculture sector contributes very little to Penang's GDP. 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 share of the agriculture sector in Penang's GDP dropped from 2.4% in 2010 to 2.0% in 2017. This was associated with a decrease in overall agricultural land use.

The mining and quarrying sector's share in Penang's GDP constituted less than 1% in 2017; this has not changed significantly since 2010. Similarly, the contribution of the construction industry to Penang's GDP has been almost consistently low. This sector recorded a significant decrease of 10.1% in 2017, mainly due to the contraction in residential, non-residential, and special trade activities.

Penang's GDP per capita registered a growth rate of 5.3% in 2017, reaching RM49,873 compared to RM47,345 in 2016. This suggests the strong likelihood of more goods and services that are available to consumers – and that consumers are in a better position to buy them, as the GDP per capita is the most widely used measure of standard of living. Penang was ranked third in GDP per capita in 2017, after Kuala Lumpur and Labuan (Figure 2.3).

Figure 2.3 GDP per capita and GDP growth rate by state, 2016–17 (current prices)

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

Being an open economy and a main hub for exports, Penang's economy is positively affected by the improvements in the global and domestic economies. Furthermore, the elimination of the GST in June 2018 and the reintroduction of the SST in September 2018 are expected to create more disposable income which, in turn, may boost consumer spending and business activities. Going forward, Penang's GDP growth is expected to remain favourable.

2.2 External trade performance

Penang's total volume of external trade had dramatically increased by 19.5% in 2017, mainly driven by improved global demand and robust domestic activities. As presented in Figure 2.4, Penang's exports, imports, and trade surpluses had increased by 20.7%, 18.2%, and 36.3%, respectively, in 2017 compared to 2016. The increase was the result of positive growth in all major import and export commodities, with miscellaneous transactions and commodities recording the highest export and import growth rates of 158.9% and 35.4%, respectively (Table 2.2). The trade surplus increased dramatically by about 50% in the final five months of 2017 compared to January–July 2017. It also registered an additional surplus of about RM7.5 billion over the same period in 2016. This was mainly attributed to the growth in export value as a result of a stronger Ringgit.
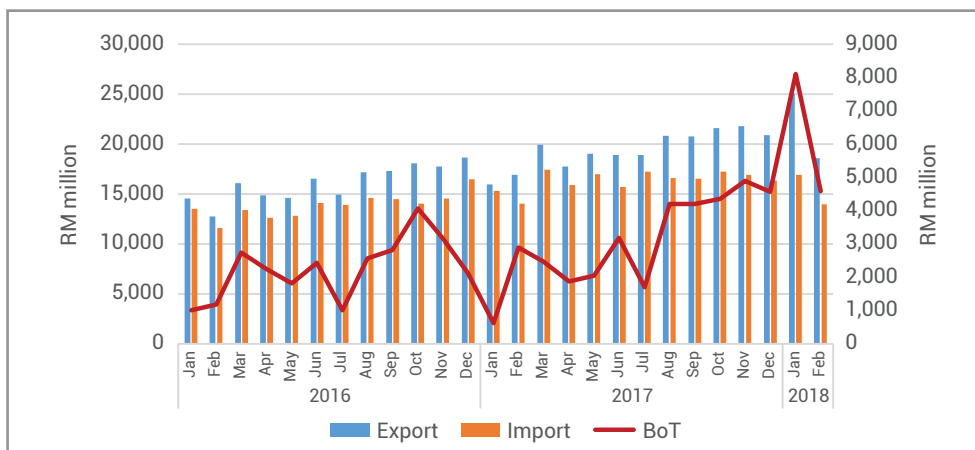
In 2017, machinery and transport equipment accounted for a significant share of Penang's total gross exports and imports at 69% and 65.4%, respectively. These include general industrial machinery and equipment; office machines and automatic data processing; telecommunications

and sound recording and reproducing apparatus; electrical machinery, apparatus, and appliances; and road vehicles. This reveals that Penang's external trade is still highly driven by the E&E industry, which is a leading industry in Penang's manufacturing sector. In fact, this industry has benefited from growing global demand in the usage of mobile devices (smartphones, tablets), storage devices (cloud computing, data centres, personal data drives), optoelectronics (photonics, fibre optics, light-emitting diodes (LEDs)) and embedded technology (integrated circuits, printed circuit boards, LEDs).

For the first two months of 2018, Penang's trade registered an additional surplus of about RM9 billion over the same period in 2017, with export and import growths of 32.5% and 5.2%, respectively. Machinery and transport equipment remained the largest exported (71.9%) and imported (66.3%) commodity in the first two months of 2018.

The North Butterworth Cargo Terminal and Bayan Lepas air cargo are two important gateways for trade in Malaysia. In 2017, the North Butterworth Cargo Terminal recorded the third-highest trade value among the major seaports in Malaysia, after Port Klang and Pasir Gudang in Johor. The export and import values gathered at this port were approximately RM50.7 billion and RM39.6 billion, respectively, an increase of 12.7% and 21.3% in 2017 compared to 2016. In the first four months of 2018, the port's exports value dropped by 0.2%, while the value of its imports grew by 1.5% compared to the same period in 2017. The Bayan Lepas airport is ranked number one among all air cargos in Malaysia by trade value. Its exports and imports

Figure 2.4 Monthly export, import, and balance of trade, Penang, January 2016–February 2018

Source: Department of Statistics, Malaysia.

Table 2.2 External trade, Penang, 2016–17

External trade	2016		2017	
	RM million	% Change	RM million	% Change
Gross exports	**193,444**	**2.1**	**233,493**	**20.7**
Machinery and transport equipment	137,468	0.3	161,453	17.4
Miscellaneous manufactured articles	32,976	6.3	42,400	28.6
Chemicals	7,382	14.3	9,036	22.4
Manufactured goods	7,880	-0.8	8,702	10.4
Crude materials, inedible	2,675	7.9	4,411	64.9
Miscellaneous transactions and commodities	1,265	58.4	3,277	158.9
Gross imports	**166,250**	**6.3**	**196,427**	**18.2**
Machinery and transport equipment	109,321	8.1	128,473	17.5
Manufactured goods	12,029	3.7	13,319	10.7
Miscellaneous manufactured articles	12,065	11.2	13,224	9.6
Chemicals	9,734	9.4	11,526	18.4
Miscellaneous transactions and commodities	7,144	1.5	9,669	35.4
Food	7,052	2.8	7,449	5.6
Total trade	**359,694**	**4.0**	**429,920**	**19.5**
Trade balance	**27,194**	**-17.7**	**37,065**	**36.3**

Source: Department of Statistics, Malaysia.

values amounted to RM17.7 billion and RM14 billion in 2017, respectively, for an increase of 23.8% and 17.7% compared to the year before. In the first four months of 2018, the value of its exports increased dramatically by 40.3%, while its imports value decreased by 2.4% compared to the same period in 2017.

In line with the increase in global trade activities, strong domestic investment, and Penang serving as the main electronics hub for Southeast Asia, Penang's external trade position is expected to remain resilient. This is supported by significant growth in the global manufacturing sector, with a 12.4% increase in the world semiconductor market in 2018 compared to 2017, as forecast by the World Semiconductor Trade Statistics (WSTS), as well as higher crude oil prices. Furthermore, a healthy trade balance is expected for 2018 as a result of the Ringgit appreciating against many major currencies, which may lead to lower import costs and higher export prices.

2.3 Prices

The overall inflation rate[3] in Penang stood at 4% in 2017 (1.5% higher than the preceding year), most likely due to the higher retail fuel prices. Higher price hikes were seen in transport (13.7%) and education (5%) groups, contributing 1.58 percentage points to the Consumer Price Index (CPI) increase in 2017 (Table 2.3). Yet, the communications group experienced lower prices at 0.3% in 2017. Inflation in the food and non-alcoholic beverages group rose at a slower pace of 4.4% compared to 4.9% in 2016, contributing 1.25 percentage points. In fact, the CPI reflects the patterns in consumer expenditure[4]; Penang households are spending more of their income on transport, education, and food and non-alcoholic beverage, while a lower share of income is being spent on communications.

[3] The inflation rate is measured by the annual changes in the CPI.
[4] The weights used in the calculation of the CPI are based on the pattern of expenditure obtained from the Household Expenditure Survey conducted in 2016.

Table 2.3 Changes in CPI, Penang 2016–17 (2010=100)

	Weights	Changes (%)		Contribution to CPI growth (percentage points)	
		2016	2017	2016	2017
Total	**100.0**	**2.5**	**4.0**	**2.5**	**4.0**
Food and non-alcoholic beverages	28.4	4.9	4.4	1.39	1.25
Alcoholic beverages and tobacco	2.3	16.2	0.7	0.37	0.02
Clothing and footwear	3.0	0.0	0.4	0.00	0.01
Housing, water, electricity, gas, and other fuels	29.2	2.8	2.4	0.82	0.70
Furnishings, household equipment, and routine household maintenance	3.3	3.3	3.0	0.11	0.10
Health	1.8	4.4	4.1	0.08	0.07
Transport	11.0	-5.5	13.7	-0.60	1.50
Communication	4.6	-2.1	-0.3	-0.10	-0.01
Recreation services and culture	5.2	1.5	1.8	0.08	0.10
Education	1.7	2.8	5.0	0.05	0.08
Restaurants and hotels	2.8	3.7	2.5	0.10	0.07
Miscellaneous goods and services	6.7	3.4	2.6	0.23	0.18

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

Figure 2.5 Year-on-year percentage of change in the CPI in Penang, January 2017–March 2018
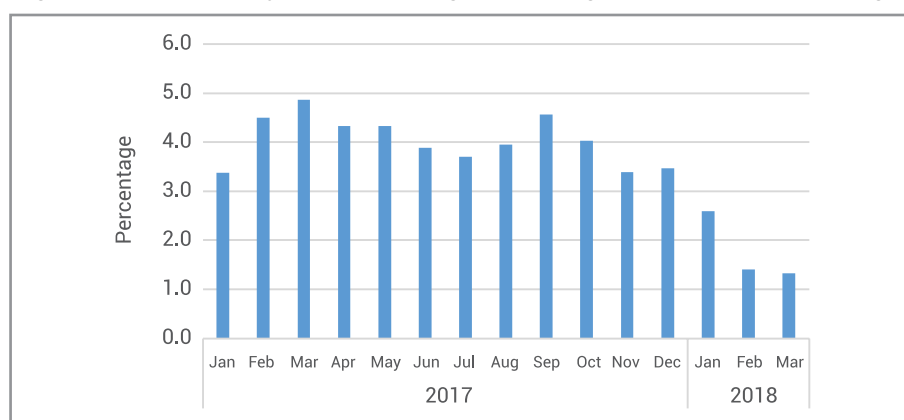

Source: Department of Statistics, Malaysia.

The CPI for the first quarter of 2018 increased by an average rate of 1.8% compared to 4.2% for the same period in 2017 due to the sharp decrease in cost of transport. Prices of food and non-alcoholic beverages also slowed down to 3.3% in Q1 2018 from 4.3% in Q1 2017 (Figure 2.5).

Penang's House Price Index (HPI) grew at 5.2% to 190.1 points in 2017, up from 180.7 points in 2016. This rise was mostly driven by the Detached House Price Index (DHPI) (7.2%) and Terraced House Price Index (THPI) (6.4%) (Figure 2.6). It shows the popularity of landed homes among buyers. Notably, the THPI in Seberang Perai outpaced Penang Island's over the past five years. However, Penang Island has had higher HPI for high-rise properties than Seberang Perai.

The imposition of the zero-rated GST in June 2018 is estimated to have a positive effect on prices, especially food and beverage, retail, and property prices since savings can come from input costs, leading to an increase in consumer expenditure. In addition, reintroducing the SST will benefit consumers, as the SST will result in lower prices of goods in general. Yet, there might be a potential increase in the prices of certain items such as automobiles or charges for services rendered.

Figure 2.6 House Price Index by types of residential property in Penang, 2016–17
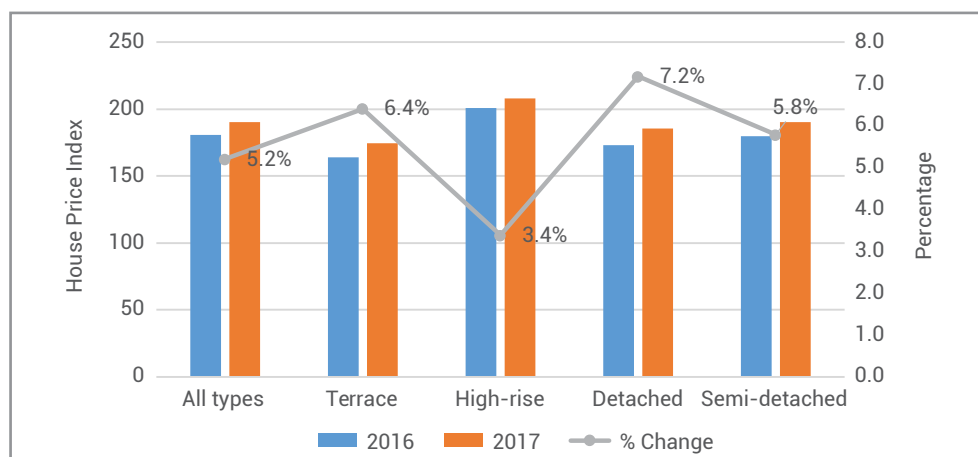
Source: National Property Information Centre (NAPIC).

2.4 Household income and expenditure

The median monthly household income for the people of Penang improved by 7% biannually to RM5,409 in 2016 from RM4,702 two years ago. It was the highest monthly household income in the northern region of Malaysia. While Penang's median monthly household income was lower than Johor and Malacca, its median per capita household income fared well above households in these two

states at a growth rate of 10.1% (Table 2.4).

In Penang, urban households earned RM1,112 more than rural households, or RM5,477 and RM4,365, respectively, with annual growth rates of 6.7% and 9.7%. Among the ethnic groups, Chinese households had the largest income at RM6,401 with an annual increase of 9.4% in 2016, followed by Malay households (RM4,874; 7.5%) and Indian households (RM4,751; 4.4%).

Table 2.4 Median monthly household income by state and gender, 2014 and 2016

States	Median monthly household income (RM)		Compounded annual growth rate (%)	Median per capita household income (RM)	Male (RM)	Female (RM)	Difference between male-female (RM)
	2014	2016					
MALAYSIA	4,585	5,228	6.6	1,443	5,455	4,145	1,310
Johor	5,197	5,652	4.2	1,564	5,824	4,376	1,448
Kedah	3,451	3,811	5.0	1,055	3,955	2,758	1,197
Kelantan	2,716	3,079	6.3	796	3,191	2,571	620
Malacca	5,029	5,588	5.3	1,555	5,873	4,142	1,732
Negeri Sembilan	4,128	4,579	5.2	1,357	4,812	3,512	1,300
Pahang	3,389	3,979	8.0	1,128	4,040	3,612	428
Penang	4,702	5,409	7.0	1,595	5,767	4,111	1,655
Perak	3,451	4,006	7.5	1,228	4,194	3,172	1,022
Perlis	3,500	4,204	9.2	1,103	4,304	3,254	1,050
Selangor	6,214	7,225	7.5	1,960	7,421	6,231	1,191
Terengganu	3,777	4,694	10.9	1,105	4,782	4,006	776
Sabah	3,745	4,110	4.7	946	4,144	3,463	681
Sarawak	3,778	4,163	4.9	1,132	4,344	3,381	962
W.P. Kuala Lumpur	7,620	9,073	8.7	2,654	9,367	7,640	1,726
W.P. Labuan	5,684	5,928	2.1	1,370	6,005	5,496	509
W.P. Putrajaya	7,512	8,275	4.8	2,339	8,706	5,232	3,474

Source: Household Income Survey 2016, Department of Statistics, Malaysia.

Male head of households had higher incomes than their female cohorts in all states. For the head of household in Penang, males earned RM1,655 more than females; males received a median monthly household income of RM5,767 in 2016.

According to the administrative districts, households from Penang Island were earning more than those in mainland Penang. Nearly half of Penang Island households earned RM6,000 and above per month while more than two-thirds of households in Seberang Perai Selatan did not make more than RM6,000 a month – the highest proportion of households whose earnings are at the lower tier (Figure 2.7). However, household income is forecasted to rise in the light of a number of development projects such as the IKEA shopping complex, which is scheduled to open by early 2019.

Interestingly, the size of Penang Island households is smaller than in mainland Penang. In particular, households in Timur Laut made up the highest income in the whole of Penang while having the smallest household size of 3.6 persons, followed closely by households in Barat Daya (3.9 persons). As the family size gets larger, the median monthly household income shrinks. This is evident in Seberang Perai Utara where households earned the lowest median income of RM4,753 a month in a family of 4.6 persons.

Penang Island comprises of high-tech manufacturing and business services while mainland Penang prioritises light and heavy industries along with some agricultural, fishery, and quarrying activities. This imbalance of income distribution between the island and the mainland is expected to change when

Batu Kawan Industrial Park and mixed development in the vicinity of Batu Kawan are fully operational. This will then stimulate income levels in Seberang Perai Selatan.

Penang's median monthly household expenditure on the other hand increased by 4.8% per year from 2014–16. Household expenditure grew slower than more developed states – Kuala Lumpur (5.4%), Selangor (6.4%), and Johor (5.1%) – as well as some less developed states – Perlis (13.3%), Terengganu (11.4%), and Perak (8.7%) (See Box 2.1).

Figure 2.7 suggests that the implementation of the GST on 1 April 2015 had a profound effect on household expenses in less-developed states. This might have raised the cost of living and lowered purchasing power, particularly for the lower income groups. With the election of the new government, the aggregate household consumption is expected to increase in 2018 due to the zero-rated GST, allowing for greater consumption of goods and services.

Similar to the national expenditure, Penang's households on average spent the largest proportion of total expenditure on housing, water, electricity, and gas (RM1,232), constituting nearly 30% of total expenses. This is followed by food and beverages (15.9%: RM667.78). Interestingly, spending in this category is proportionately lower than many neighbouring states such as Kelantan (26.9%: RM774.46), Perlis (24.1%: RM744.45), and Kedah (22.9%: RM699.98). While Penang is a highly industrialised state, expenditure on food is still low. This suggests that food in Penang is still relatively cheaper than many less industrialised states, holding all else constant.

Figure 2.7 Percentage of households by monthly household gross income class and administrative district in Penang, 2016
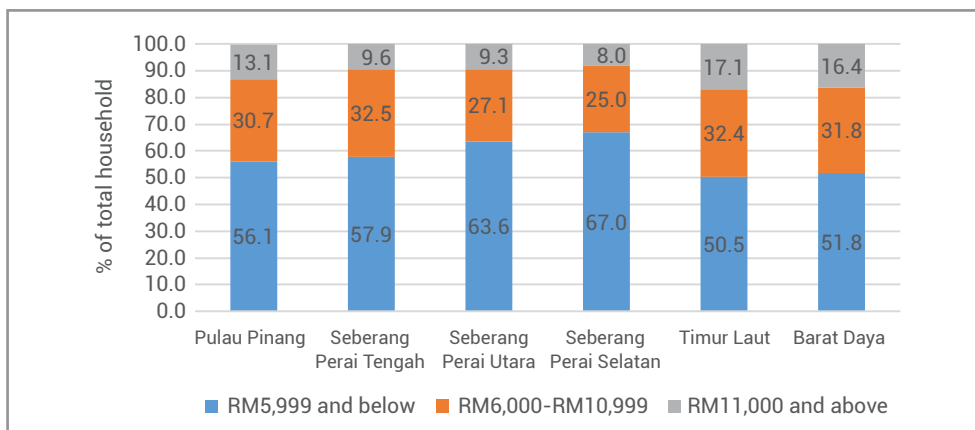
Source: Household Income Survey 2016, Department of Statistics, Malaysia.

Figure 2.8 Average monthly household expenditure in Penang, 2016
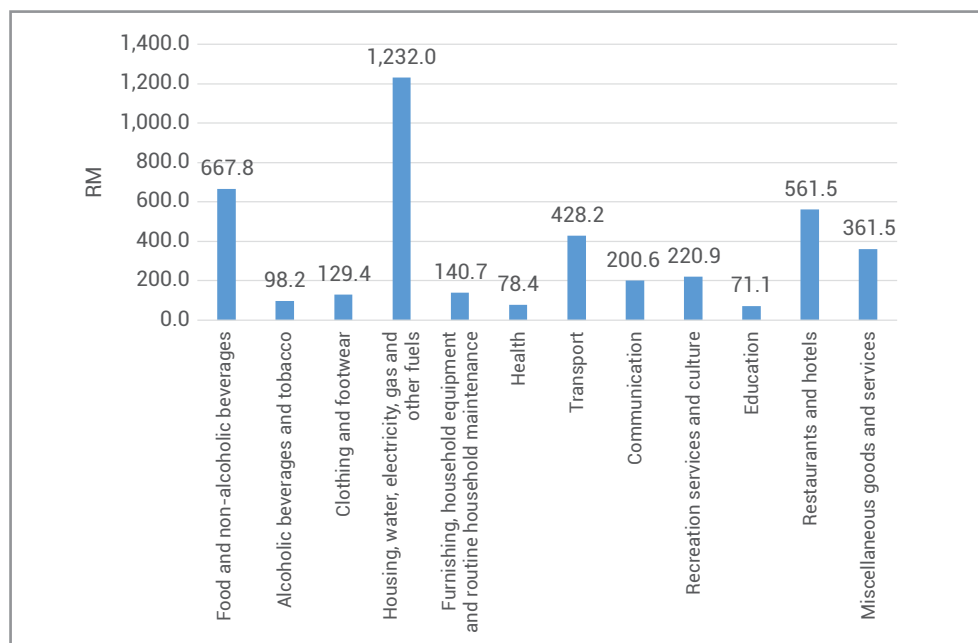
Source: Household Expenditure Survey 2016, Department of Statistics, Malaysia.

Box 2.1 Regional development disparities dictate household expenditure
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Regional disparities in socio-economic development to a great extent determine the patterns of household expenditure in Malaysia. This can be seen in the variations in the prices of goods and services sold in a specific region, as well as in household earnings. For example, household expenditure is often lower in a region that has agricultural and fishery activities as its primary economic focus, compared to a region reliant on the manufacturing and services sectors.

On average spending, the central region of Peninsular Malaysia – the most developed states – has the largest household expenditure in the country, with the exception of Negeri Sembilan. Putrajaya tops in average expenditure with a household spending of as high as RM6,971 per month, followed by Kuala Lumpur (RM6,214) and Selangor (RM5,183) in 2016.

Households in the southern region account for the second-largest expenditure, with Malaccan (RM4,274) households spending RM225 more every month compared to Johor (RM4,148).

Meanwhile, with the exception of Labuan, households in East Malaysia (Sabah: RM2,595; Sarawak: RM3,118), Kelantan (RM2,875), and Perlis (RM3,085) – the least developed states and are largely agricultural- and fishery-driven – spent the least. This shows that households residing in a region with high-intensity development spent more of their monies than households from low-intensity development regions.

In terms of component expenditure, Malaysian households spend about a quarter of their entire expenditure on housing, water, electricity, gas, and other fuels. This is often the key element in household consumption, and, unsurprisingly, in states with high-intensity development, namely Kuala Lumpur, Putrajaya, Penang, Selangor, and Johor, that share is generally higher.

States with a lower development intensity on the East Coast, for example, spend more than one-fifth of total household expenditure on food and non-alcoholic beverages.

It is of concern that the increase in average household income in most states did not keep up with the rise in household expenditure. Only households in Selangor, Kelantan, Perak, Pahang, Kedah, and Johor experienced a rise in income that was greater than the rise in expenditure (Figure 2.9).

Figure 2.9 Compounded annual growth rate of mean household expenditure and income by states
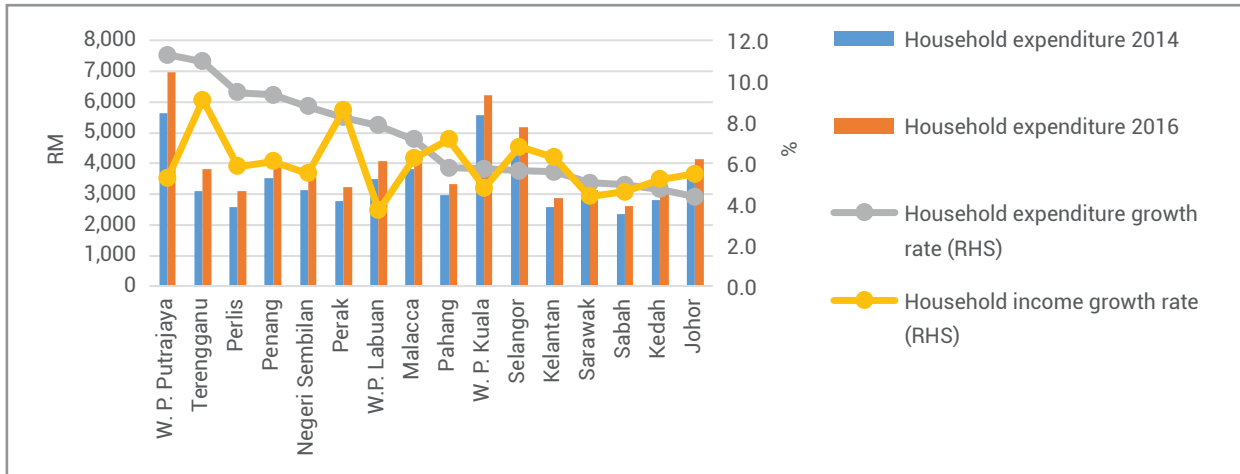
Source: Household Expenditure Survey 2014 and 2016, Department of Statistics, Malaysia.

What is vital to note is that household expenditure grew proportionately more in some of the country's least developed states. Terengganu and Perlis registered increases in household expenditure of 10.4% and 9% per year, respectively, from 2014−16, just trailing behind Putrajaya (10.7%).

In addition, households from different income groups value consumption items in their own way, heavily depending on individual need. While households from the top 20% (T20) spend half their household income on health, transport, communications, and education expenses, the bottom 40% (B40) households use an equal proportion of their income on food and housing.

2.5 Income distribution and poverty

In 2017, Penang's total population stood at 1.62 million persons, which made up 5.5% of Malaysia's total population, the same proportion as it was in 2016.

As depicted in Figure 2.10, the population distribution in the state remained the same over the last two years, with Timur Laut maintaining its position as the most populated administrative district. Although Timur Laut is the smallest administrative district with a land area of 119 km^2, it comprises 32.5% of the state's population, with a population density of 4,765 persons per km^2. This is followed by Seberang Perai Tengah, which account for 23.3% of the total population and has a population density of 1,769 persons per km^2. Despite sustaining the second largest land area at 241 km^2, Seberang Perai Selatan has the lowest population share among all districts, and it has the lowest density of population, with 785 persons per km^2.

The median monthly income for Penang's T20 households stood at RM12,268, which was below the nationwide median of RM13,148. In contrast, the state's middle 40% (M40) households recorded a higher median monthly income of RM6,382 against the national median of RM6,275, while the median monthly income for B40 households was RM3,286 – slightly higher than the national median of RM3,000.

Penang's T20 median monthly income ranked below Selangor, Johor, and the three federal territories. However, for M40 and B40 households, Malacca's median monthly income was higher Penang's.

Figure 2.10 Population distribution by administrative district, Penang, 2016–17
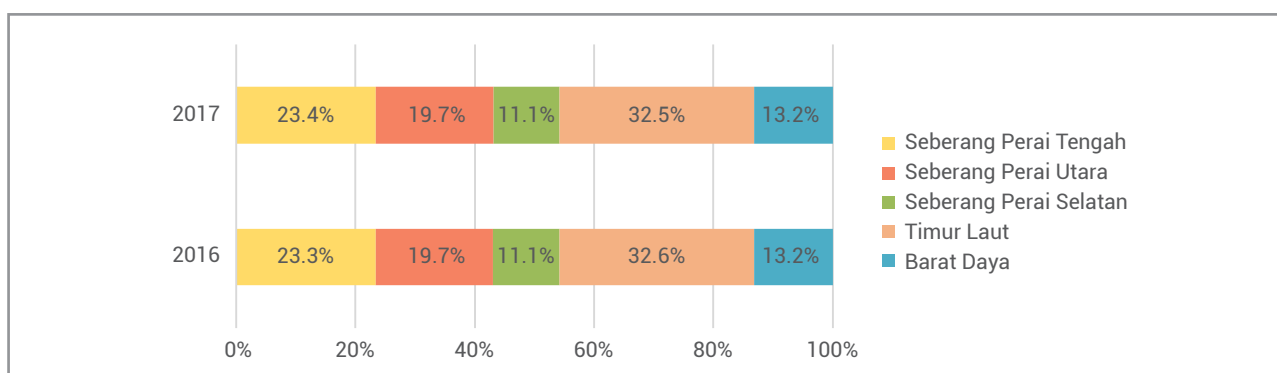
Source: Household Income and Basic Amenities Survey Report for Penang, 2016, Department of Statistics Malaysia.

Table 2.5 Median monthly household gross income of household groups by income and state, Malaysia, 2016

State	Median monthly income (RM)		
	Bottom 40%	**Middle 40%**	**Top 20%**
Malaysia	**3,000**	**6,275**	**13,148**
Johor	3,420	6,554	12,304
Kedah	2,154	4,412	9,602
Kelantan	1,869	3,667	8,427
Malacca	3,458	6,572	12,077
Negeri Sembilan	2,658	5,409	10,857
Pahang	2,722	4,648	9,049
Penang	**3,286**	**6,382**	**12,268**
Perak	2,366	4,678	9,540
Perlis	2,572	4,751	9,017
Selangor	4,395	8,585	17,410
Terengganu	3,135	5,443	10,692
Sabah	2,169	4,843	10,886
Sarawak	2,275	4,986	10,688
W.P. Kuala Lumpur	5,344	10,564	20,201
W.P. Labuan	3,654	7,217	15,238
W.P. Putrajaya	5,960	9,492	21,994

Source: Household Income and Basic Amenities Survey Report for Malaysia, 2016, Department of Statistics Malaysia.

Based on the latest data available[5], the highest percentage of Penang households for 2016 (36.9%) were concentrated in Timur Laut. Timur Laut also held the highest income share across all districts for both 2014 and 2016. Despite a decrease of 0.7% in percentage of households, Timur Laut saw an income share increase of 0.8%, going up from 41.5% to 42.3% for 2016 (Figure 2.11). The neighbouring administrative district of Barat Daya, however, recorded a 0.8% increase in its percentage of households, and a 0.7% increase in income share. Timur Laut and Barat Daya were the only two adminstrative districts with an income share higher than the percentage of households, with the proportion of the former being significantly higher.

Meanwhile, Seberang Perai Utara saw a decrease of 0.7% in households while Seberang Perai Selatan saw an increase of 0.5% in households. Seberang Perai Tengah generally maintained its percentage of households, seeing only a minimal increase of 0.1%. All three districts experienced a decrease in overall income share from 2014 to 2016, with the biggest decrease of 1.2% found in Seberang Perai Utara. Nevertheless, Seberang Perai Tengah maintained the second-highest income share in the state (20.4%). The district with the lowest income share is Seberang Perai Selatan (8.7%).

[5] Household income and expenditure data is collected biennially by the Department of Statistics, with 2016 being the latest year of reference. Therefore, the analysis of Penang's income distribution and poverty will use data from 2016 as its reference point.

Figure 2.11 Percentage of households and income share by administrative district, Penang, 2014 and 2016
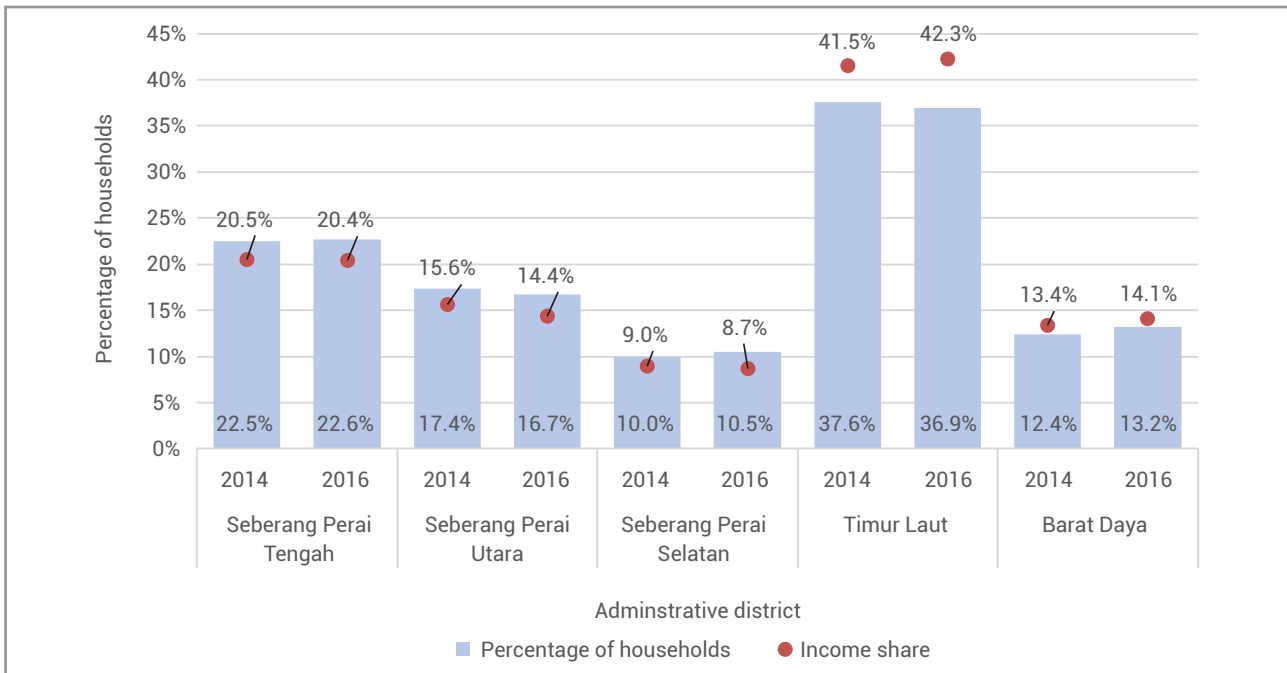
Source: Household Income and Basic Amenities Survey Report for Penang, 2016, Department of Statistics Malaysia.

Timur Laut retained the highest household percentage in each income group, in accordance to its population and household share (Figure 2.12). In 2016, about 46% of T20 households were in Timur Laut, which was an increase of 3.7% from 2014. Seberang Perai Tengah followed, but at a significantly lower percentage of 19.6% – an increase of 1.4% from 2014.

The trend of Timur Laut and Seberang Perai Tengah maintaining their top-two ranking in total share of households was observed across all income groups. In 2016, both districts saw decreases in their share of M40 households in 2016. While Timur Laut's share of B40 households was reduced by 2.6%, Seberang Perai Tengah recorded an increase of 1.7%.

In contrast, Seberang Perai Selatan had the lowest share in T20 and M40 households, while seeing a 1.4% drop in the former and a 0.4% rise in the latter in two years. The district with the lowest share of B40 households would be Barat Daya, whose percentage of 10.8% held steady from 2014 to 2016. Barat Daya also experienced a decrease of 1.3% in T20 households, but saw an increase of 2.9% in M40 households. Seberang Perai Utara was the only district that recorded a decline in all three household income groups over the two-year period.

Within each administrative district, the proportion

of income groups varied considerably (Figure 2.13). In 2016, Timur Laut and Barat Daya held a much higher percentage of T20 households at 25.9% and 23.4%, respectively. In addition, the T20 households held 52% of total income share in Timur Laut, and 45.7% in Barat Daya. The proportion of T20 households in the remaining districts were all below 20%, with Seberang Perai Tengah having the highest percentage at 18.6%. However, the income share of the T20 households in all districts exceeded 30%, with the lowest share of 31% found in Seberang Perai Selatan, whose share of T20 households stood at 13%.

With a corresponding percentage of 36.7% and 36.0%, Barat Daya and Seberang Perai Tengah again had the highest percentages of M40 households within its districts, but the rest were not significantly far behind. Seberang Perai Utara had the lowest percentage at 29.6%. Surprisingly, the income share of M40 was the lowest in Timur Laut, with 30.1% of total income share, accounting for 34.6% of its total households. At 41.2%, the highest income share sustained by M40 households was found in Seberang Perai Selatan.

B40 households made up the majority of households in each administrative district. The highest percentage of B40 households was found in Seberang Perai Utara, accounting for more than half

Figure 2.12 Percentage of households by household income group and administrative district, Penang, 2014 and 2016
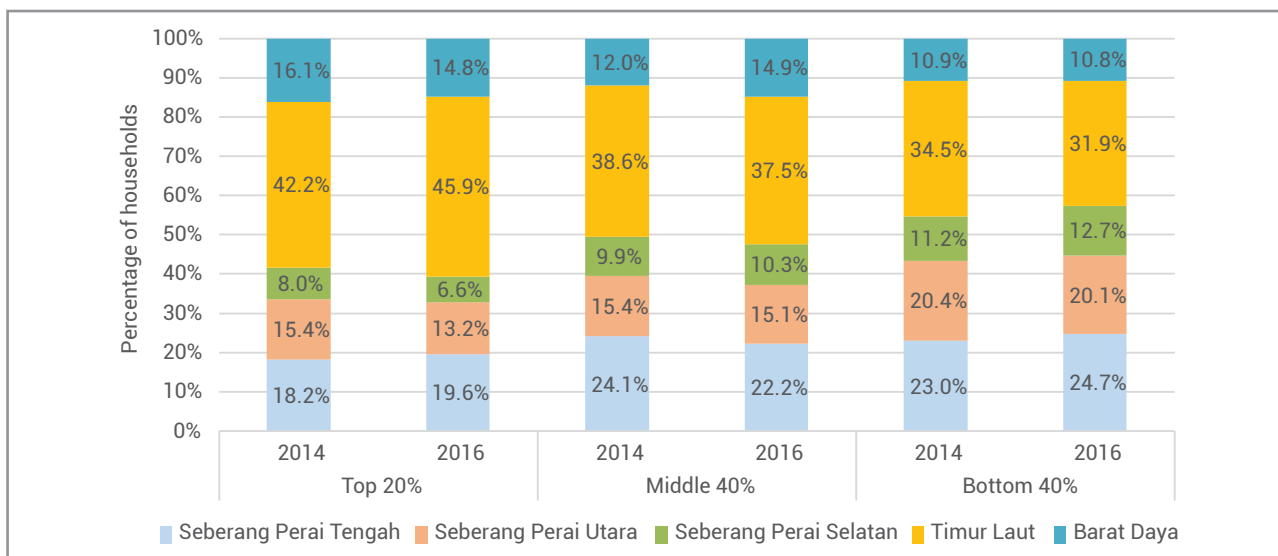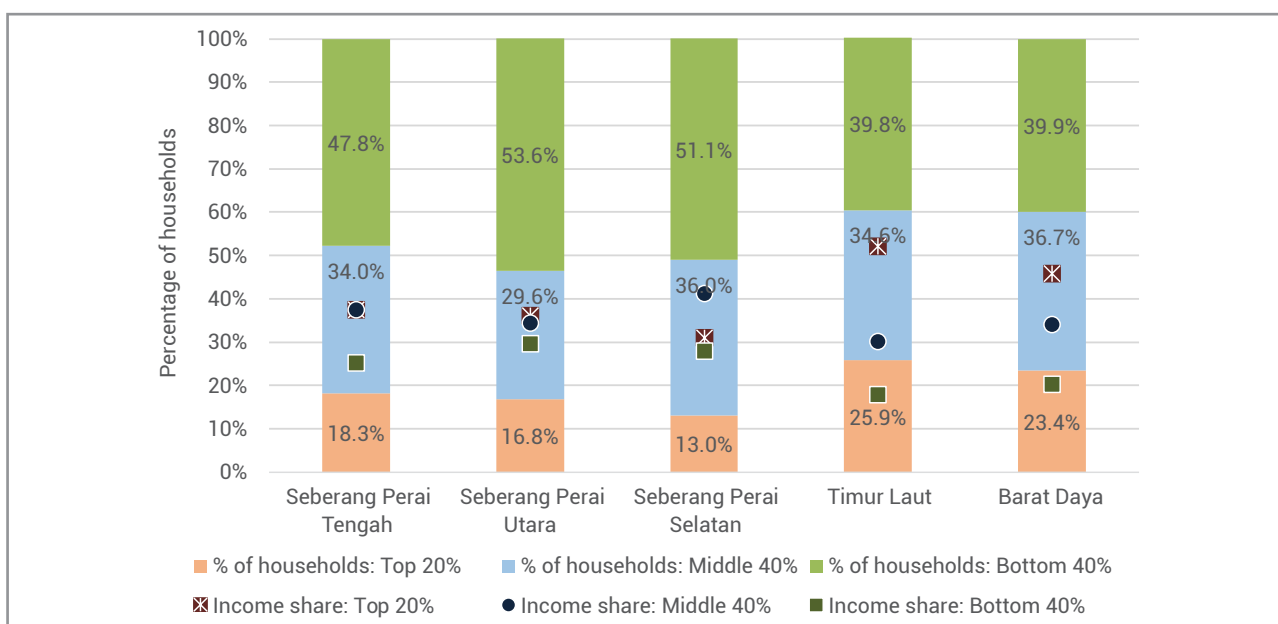

Note: Income thresholds are as follows: T20: ≥ RM9,200, M40: RM4,640−9,199, B40: <RM4,640[6].
Source: Household Income and Basic Amenities Survey Report for Penang, 2016, Department of Statistics Malaysia.

the households at 53.6%, and the lowest percentage was found in Timur Laut, at 39.8%. Despite being the majority group, the income share of B40 households was the lowest, falling below 30% of the state's total income share. Seberang Perai Utara's B40 households had the highest income share at 29.7%. B40 households in Timur Laut had only 17.9% of total income share, the lowest across all districts.

It is apparent that there were huge discrepancies in income distribution across different household groups and administrative districts. The discrepancies were especially significant in Timur Laut and Barat Daya. However, income distribution appeared to be more levelled in Seberang Perai − bearing in mind that their share of T20 households was also much lower than the share of Timur Laut and Barat Daya.

Figure 2.13 Percentage of households and income share within administrative districts, Penang, 2016

Note: Income thresholds are as follows: T20: ≥ RM9,000, M40: RM 5,000−8,999, B40: <RM 4,999[7]
Source: Household Income and Basic Amenities Survey Report for Penang, 2016, Department of Statistics Malaysia.

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6   The income thresholds for the respective household groups are as calculated and published by the Department of Statistics Malaysia.
7   The income thresholds for household groups are readjusted in accordance to the categorisation of monthly gross income class of household incomes, as published by the Department of Statistics Malaysia.

Taking a state-wide perspective of income distribution across different household groups and administrative districts in accordance to share of households, it was found that 22% of the state's income share belonged to Timur Laut's T20 households, which accounted for only 9.5% of total households (Figure 2.14). All T20 households within each administrative district had income shares that was higher than the respective share of households, with the reverse observed for B40 households. M40 households generally had an income share proportionate to the corresponding household share.

Within the M40 households, the group with the second-highest income share in the state was found in Timur Laut as well. Likewise, the district's B40 households also had the biggest share of income in comparison to all B40 households in other districts, bearing in mind that its share of B40 households was the highest. In fact, the income share of Timur Laut's B40 households outweighed that of every other income group in other districts, with the exception of M40 and T20 households in Seberang Perai Tengah.

The disproportionate share of income to population found in Timur Laut's T20 households can be explained by the fact that the biggest share of households (8%) in the group earned a monthly household income of more than RM15,000, accounting for 11.5% of the district's total income share.

Figure 2.14 Percentage of households and income share by administrative districts, Penang, 2016
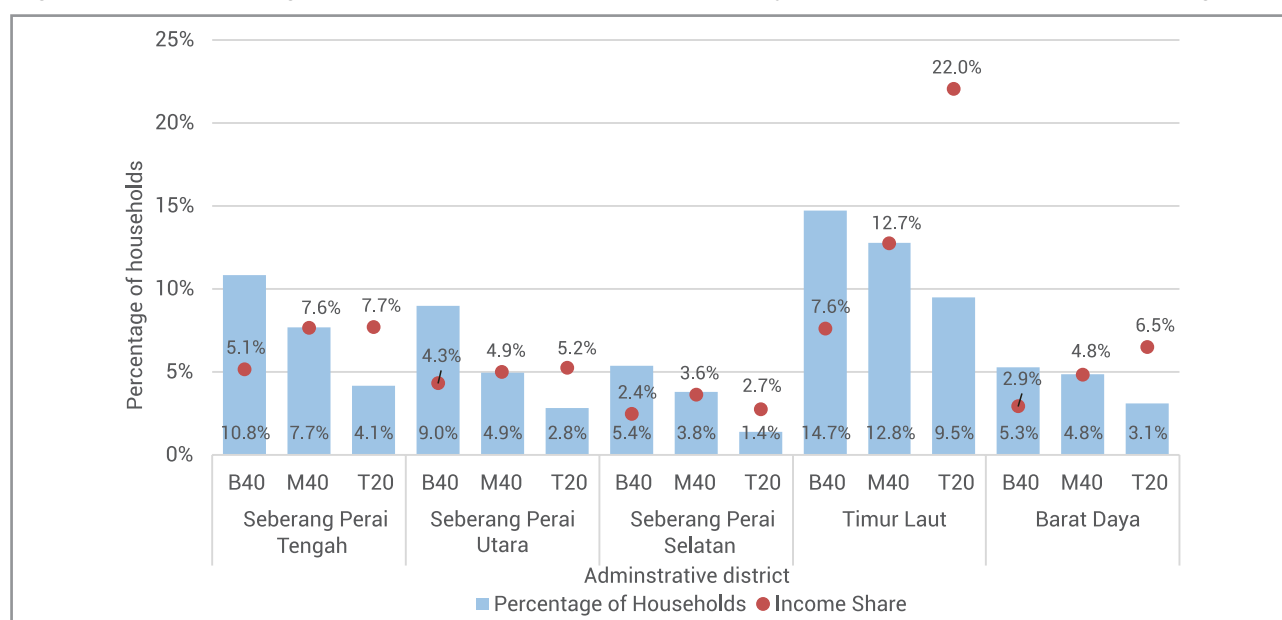
Note: Income thresholds are as follows: T20: ≥ RM9,000, M40: 5,000−8,999, B40: <RM4,999[8]
Source: Author's own calculations, data from Household Income and Basic Amenities Survey Report for Penang, 2016, Department of Statistics Malaysia.

Table 2.6 Gini coefficient of monthly household gross income, Penang 2014 and 2016

	Gini coefficient	
	2014	2016
Urban	0.364	0.356
Rural	0.314	0.324
Seberang Perai Tengah	0.317	0.330
Seberang Perai Utara	0.345	0.338
Seberang Perai Selatan	0.342	0.339
Timur Laut	0.395	0.377
Barat Daya	0.359	0.327
Penang	**0.364**	**0.356**

Source: Household Income and Basic Amenities Survey Report for Penang, 2016, Department of Statistics Malaysia.

[8] The income thresholds for household groups are readjusted in accordance to the categorisation of monthly gross income class of household in comes, as published by the Department of Statistics Malaysia.

Penang's Gini coefficient was the sixth-lowest in Malaysia for 2016, and it was also lower than the national Gini coefficient of 0.399. As the two states with a higher M40 and B40 median monthly household income, Johor and Malacca's Gini coefficient was lower than Penang's. However, the Gini coefficient of these two states actually increased from 2014 to 2016.

Overall, Penang's Gini coefficient decreased from 0.364 in 2014 to 0.356 in 2016, and the same situation was observed across all administrative districts, with the exception of Seberang Perai Tengah. This signifies that the income inequality gap had decreased somewhat across the majority of districts. However, looking at the urban/rural divide, the Gini coefficient had a slight increase in the rural area from 0.314 to 0.324. Timur Laut was

the district with the highest Gini coefficient (0.395), which could be explained by the large discrepancies in household incomes between B40 households and T20 households. Barat Daya had the lowest Gini coefficient at 0.326.

With the establishment of *Agenda Ekonomi Saksama* (AES) or Equitable Economic Agenda, hardcore poverty has been abolished in Penang. The incidence of poverty declined from 2014 to 2016, with the state's incidence of poverty standing at 0.1 for 2016. All districts except Seberang Perai Selatan recorded a decrease in their respective incidence of poverty to zero, with Seberang Perai Utara recording the biggest decrease. However, despite the increase in the number of AES recipients in Seberang Perai Selatan, its incidence of poverty increased from 0 to 0.1.

Table 2.7 Incidence of poverty by administrative district, Penang, 2014 and 2016

Administrative District	Incidence of poverty	
	2014	2016
Seberang Perai Tengah	0.2	0.0
Seberang Perai Utara	0.6	0.0
Seberang Perai Selatan	0.0	0.1
Timur Laut	0.3	0.0
Barat Daya	0.1	0.0
Penang	**0.3**	**0.1**

Source: Household Income and Basic Amenities Survey Report for Penang, 2016, Department of Statistics Malaysia.

Box 2.2 Agenda Ekonomi Saksama (AES)
by Yeong Pey Jung, Socioeconomics and Statistics Programme

In 2009, the Penang state government established the state's poverty alleviation programme, AES, which has the core objective of abolishing hardcore poverty and reducing income equality in the state. Initially named Bantuan UPEN, the AES acts as a cash transfer programme, where households earning below the state-defined poverty threshold will be given monthly financial aid in order to lift them above the poverty line. Presently, families earning a monthly household income of RM790 and below will qualify for AES assistance.

In its inception, the AES was a non-conditional cash transfer programme, where the only requirement was a household income of less than the minimum threshold. However, it has been redefined as a conditional cash transfer programme since 2015, where recipients are expected to submit vaccination records, school attendance, and academic records of their children (if any). Elderly recipients are also required to submit their health records in a bid to ensure that they are receiving the necessary medical attention. The change from unconditional to conditional was done based on the need to monitor the economic and social impact of the AES. The data collected from AES recipients will allow analysis on the profile of Penang's poor, and encourage the development of sustainable programmes to help elevate vulnerable groups and bring them out of the cycle of poverty.

Table 2.8 Amount received by number of recipients in the AES programme by administrative district, 2006–17

District	2016		2017	
	Number of recipients	Amount (RM)	Number of recipients	Amount (RM)
Seberang Perai Tengah	214	614,810	267	900,872
Seberang Perai Utara	695	2,159,897	661	2,232,647
Seberang Perai Selatan	158	495,780	181	662,315
Timur Laut	140	253,990	178	639,565
Barat Daya	168	560,116	191	749,641
Penang	**1,411**	**4,084,593**	**1,478**	**5,185,040**

Source: State Economic Planning Division, Penang, 2018.

The AES had spent a total of RM29.2 million since its inception in 2009, and has helped to lift more than a thousand households out of poverty. In 2017, the district with the highest number of recipients was Seberang Perai Utara, with a total of 661 households receiving aid. This is expected, as Seberang Perai Utara had the highest of proportion of B40 households within the district. With the lowest proportion of B40 households at 39.8%, Timur Laut had the least number of households needing financial aid, with 178 households registered for the programme for 2017. Seberang Perai Utara received the largest amount of aid, consistent with its number of recipients, while Timur Laut had the least amount of aid dispersed with the fewest recipients.

It should be noted that all districts, with the exception of Seberang Perai Utara, recorded an increase in their respective number of AES recipient households in 2017. The most significant increase was found in Seberang Perai Tengah, with an increase of 53 households. Seberang Perai Utara marked decline of 34 households from the previous year. However, the amount of aid had grown from 2016, as with every other district.

2.6 The labour market

The current state of the labour market

Penang's labour market remained stable, with minor frictional unemployment[9]. Although both numbers of labour force and employed persons has declined, the state maintained its unemployment rate far below the national unemployment rate of 3.4%. Youth unemployment remains prevalent but Penang still performs far better than the national average. The job market is highly concentrated in the manufacturing sector.

The labour force participation rate declined to 67.5% in 2017, 1.5 percentage points lower than in 2016. Total number of employed persons also dropped by less than 1% from 827,400 people in 2016 to 822,200 in 2017. The services sector made up the largest proportion of employment, accounting for about 55%, followed by the manufacturing (36.4%) and construction (5.9%) sectors. While the size of employment in other economic sectors was declining, the manufacturing sector grew by 9.8% in 2017 (Table 2.9).

The proportion of workforce with tertiary education softened by 0.2% to 32% in 2017 while those employed in high-skill positions rose by 1.1% to 33.4% in 2017. Nevertheless, Penang still has one of the largest share of highly educated workforce in the country with more non-tertiary graduates accepting high-skill positions (See Box 2.3).

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[9] Frictional unemployment is a short-term effect on the employment market where job seekers leave their old jobs voluntarily while waiting to resume work in new jobs.

Table 2.9 Employment by industry in Penang, 2016 and 2017

Industry	('000)		% share	
	2014	2016	2014	2016
Agriculture, forestry, and fishing	10.5	10.2	1.3	1.2
Mining and quarrying	0.1	0.4	0.0	0.0
Manufacturing	272.5	299.2	32.9	36.4
Electricity, gas, steam, and air conditioning supply	5.3	1.9	0.6	0.2
Water supply; sewerage, waste management, and remediation activities	3.3	6.4	0.4	0.8
Construction	61.3	48.4	7.4	5.9
Services	465.8	449.6	56.3	54.7
Wholesale and retail trade; repair of motor vehicles and motorcycles	127.6	135	15.4	16.4
Transportation and storage	42.6	40.5	5.1	4.9
Accommodation and food and beverage service activities	79.2	69.1	9.6	8.4
Information and communication	7.8	7.4	0.9	0.9
Financial and insurance/takaful activities	19.6	15.5	2.4	1.9
Real estate activities	7.0	5.6	0.8	0.7
Professional, scientific, and technical activities	19.6	21.4	2.4	2.6
Administrative and support service activities	32.8	29.2	4.0	3.6
Public administration and defence; compulsory social security	29.1	32.4	3.5	3.9
Education	47.2	40.3	5.7	4.9
Human health and social work activities	33.6	30.9	4.1	3.8
Arts, entertainment and recreation	5.5	5.5	0.7	0.7
Other service activities	14.2	16.8	1.7	2.0
Activities of households as employers	8.4	6.1	1.0	0.7
Total	**827.4**	**822.2**	**100.0**	**100.0**

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

In 2017, the number of unemployed persons plummeted by 4.4%, leading to an unemployment rate of 2.1%. Penang recorded the third-lowest rate of unemployment in the country after Putrajaya (1.8%) and Malacca (0.9%). However, among the top developed states, Penang was ranked the lowest in workforce that were not employed (Figure 2.15).

The unemployment situation is largely attributed to an increased number of youth unemployment and a bigger number of tertiary educated workforce that are unemployed. Penang's rate of youth unemployment increased from 5.5% in 2016 to 6.9% in 2017, while the unemployed workforce with tertiary education rose from 2.6% in 2016 to 2.8% in 2017. Nevertheless, these rates are considered low as compared to the national average of 10.8% for youth unemployment and 4.2% for labour force with tertiary education[11] last year.

Gender disparity in the workforce still remains evident. In 2017, Penang's male and female labour force participation rates softened to 79.2% and 55.7%, respectively. However, the state's female workforce residing in urban areas had a bigger representation in Malaysia than males, where the female workforce contributed 7.1% has compared to 6.8% for male workforce in urban areas.

More women were employed in professional and clerical support positions compared to men. As can be seen in Table 2.10, most men worked as plant and machine operators and assemblers (20.1%), followed by service and sales workers (18%) and technicians and associate professionals (16.3%). Meanwhile, the majority of women were employed as service and sales workers (22.9%), followed by plant and machine operators and assemblers (20%) and professionals (16.8%).

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[10] Youth unemployment refers to youth labour force aged between 15 and 24 who are available to work but are not employed.
[11] According to the 2016's Graduate Tracer Study by Ministry of Higher Education, over half of unemployed graduates were from arts and social sciences programmes.

Figure 2.15 Unemployment rate by major developed states in Malaysia, 2008–17
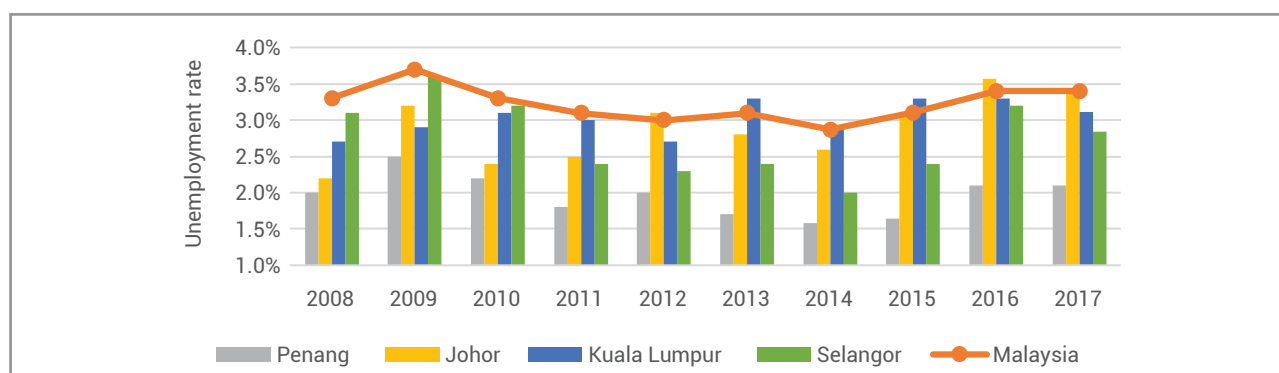
Source: Derived from the Labour Force Survey published by Department of Statistics, Malaysia.

Table 2.10 Employed persons by main occupational groups and gender in Penang, 2017

Main occupational groups	('000)		% share	
	Male	**Female**	**Male**	**Female**
Managers	36.1	10.5	7.4	3.1
Professionals	54.0	56.3	11.1	16.8
Technicians and associate professionals	79.5	38.0	16.3	11.3
Clerical support workers	18.4	55.5	3.8	16.5
Service and sales workers	87.5	76.9	18.0	22.9
Skilled agricultural, forestry, livestock, and fishery workers	8.5	0.2	1.7	0.1
Craft and related trades workers	64.1	12.4	13.2	3.7
Plant and machine operators and assemblers	97.8	67.1	20.1	20.0
Elementary occupations	40.4	19.1	8.3	5.7
Total	**486.4**	**335.9**	**100.0**	**100.0**

Source: Labour Force Survey, Department of Statistics Malaysia.

Women were highly employed in human health and social work activities; education, financial, and insurance activities; and professional, scientific, and technical activities. While both men and women accounted for the largest proportion of their employment in manufacturing industries, men outnumbered the number of women employed in manufacturing industries, construction, and wholesale and retail trade.

Box 2.3 More non-tertiary educated workforce working in high-skill jobs
by Ong Wooi Leng, Socioeconomics and Statistics Programme

As a primary source of labour supply, Malaysia's public universities produced an average of 116,764 graduates per year in the past decade from 2008–17, with an average annual growth rate of 3.1%. Social sciences, business, and law continued to have the largest number of graduates produced by public universities, or about one-third of total graduates. This was followed by engineering, manufacturing, and construction (22.3%) and science, mathematics, and computer (16.8%).

An increase in the production of tertiary-educated graduates signifies an increase in tertiary-educated labour force. Penang's share of labour force with tertiary education has increased by fourfold from 8.7% in 1990 to 32.3% in 2017, with a substantial rise after 2000. The state's labour force was the fifth-largest labour force with tertiary education in the country, constituting the third largest share of labour force with tertiary education in the country.

While labour with no formal and primary education dropped significantly, secondary-educated labour remained as the largest proportion of the workforce in Penang and Malaysia.

The employment market is also progressing towards university graduate hires. The aggregate supply of tertiary-educated labour has to keep pace with the increase in demand for highly skilled labour. However, this gap has gradually been closed, indicating an oversupply of tertiary-educated labour.

As can be seen in Figure 2.16, before 2014, some high-skilled occupations did not appear to employ all tertiary-educated labour. Workers with secondary education were also qualified to work in high skilled positions. Since 2014, the supply of labour with tertiary education exceeded the number of those hired in high skilled positions. This means that not all labour with tertiary education worked in high-skilled occupations. In fact, an increasing share of tertiary-educated hires has not been absorbed into high-skilled jobs, though the number of employed labour with tertiary education has doubled.

Figure 2.16 Tertiary educated and high-skill employment in Penang, 2010−17
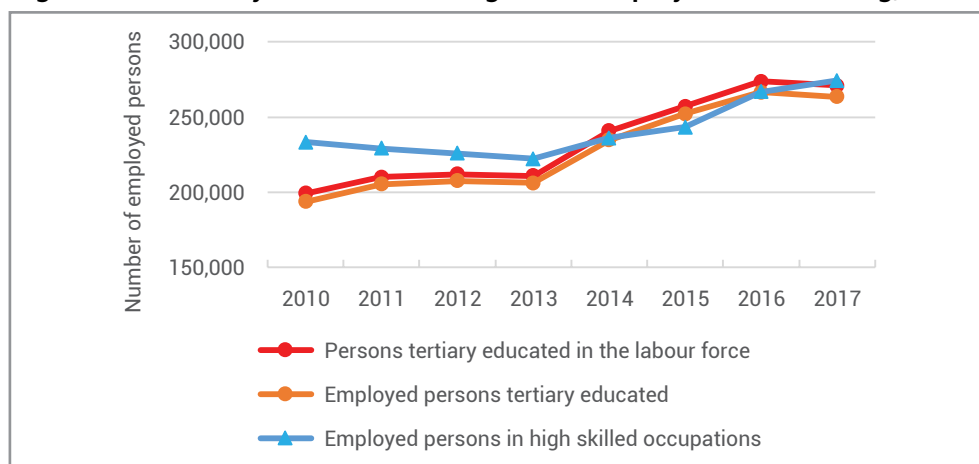
Source: Authors' calculations based on Labour Force Survey, Department of Statistics, Malaysia.

Job market

Employee recruitment continued to accelerate due to positive business performances and private investment. Based on the latest data from the Ministry of Human Resources, JobsMalaysia reported that the number of job vacancies proliferated by 68%, with the manufacturing sector recording the highest number of vacancies in 2017.

According to 2017 Penang Skilled Workforce Study by the Penang Institute, JobStreet's job vacancy analysis shows that a majority of job advertisements searched for experienced workers to fill senior executive and above positions. Meanwhile, high-demand vacancies require five or more years of work experience. High-tech manufacturing companies topped in staff recruitment need, accounting for over half of total vacancies in Penang. Nearly one-third of these vacancies were related to product development and manufacturing processes, with high demand for R&D, product, and design engineers.

Junior positions, on the other hand, are largely required in the precision engineering and automation industry, with specific hard skills in basic machine design, PLC (programmable logic controllers) programming, and CNC (computer numerical control) machining. It takes an average of about two months to search for suitable candidates. Skills in demand include industry- and job-specific skills, as well as achievement skills[12], and relationship and services skills[13]. According to job advertisements, soft skills are particularly in demand at large corporations, and also when the position levels are higher. For example, positions for senior managers would require high proficiency in achievement skills than managers and senior executives.

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[12] Achievement skills include problem-solving skills, being proactive, result-oriented, and self-motivated.
[13] Relationship and service skills comprise communication skills, interpersonal skills, team-building spirit, being a team player, and customer-oriented.

Coupled with the strong expansion in approved manufacturing investment, the number of planned employment opportunities increased by a quarter in 2017 from the total number of jobs created in 2016. E&E products continues to make up the largest proportion of employment to be generated in the economy, representing nearly 40%, followed by scientific and measuring equipment (16.1%) and textile products (10.2%).

Labour recruitment

Based on the same study by the Penang Institute, software design positions take the longest to fill. Network engineers and software development engineers or developers may take up to six months to recruit, with high demand for SAP (systems applications and products in data processing) consultants and Java programmers in IT and global business services (GBS) industries. Some of the skills required are somewhat niche and specialised, hence the longer period needed to fill these positions.

In contrast, recruitment difficulties are less prevalent in human resource positions. These vacancies take the least amount of time to fill; they can be filled within a month. The majority of the openings are for junior and senior executive positions.

Investment in skills training to reduce skill deficiencies within the organisation would be key to retaining employees, but it also opens up job opportunities for employees. The cost of attrition is non-bearable by some companies as it allows employees to become more mobile in the job market.

Worker retrenchment

Employee retrenchment has significantly improved. The number of retrenched workers decreased to about 1,000 persons in 2017, a significant decline of nearly 74% after retrenchment levels peaked a year earlier at 4,045 persons (Figure 2.17). The manufacturing sector accounted for the most retrenchment activities at 74%, followed by the services sector (36%).

This shows that some reorientation of business operation strategies has occurred, along with improved business structures, especially among MNCs. According to the Penang Labour Department, the reasons for retrenchment include reducing the cost of production through automation in the manufacturing process, outsourcing part of operational processes for to save cost.

Likewise, the number of workers participating in the Voluntary Separation Scheme (VSS) significantly declined by about 83% to 146 persons in 2017. Despite the fact that manufacturing industries contributed over 60% of the total VSS workers, employers implemented fewer VSS programmes, and fewer employees were needed to be cut.

Salaries and wages

Penang recorded the highest growth in median monthly salaries and wages among the most developed states in Malaysia. Its median monthly salaries and wages increased by 8% to RM2,160 in 2017 (2016: 5.3%; RM2,000) compared to Kuala Lumpur (6.0%), Selangor (3.2%), and Johor (2.3%).

Figure 2.17 Number of retrenched workers in Penang, 2008−17
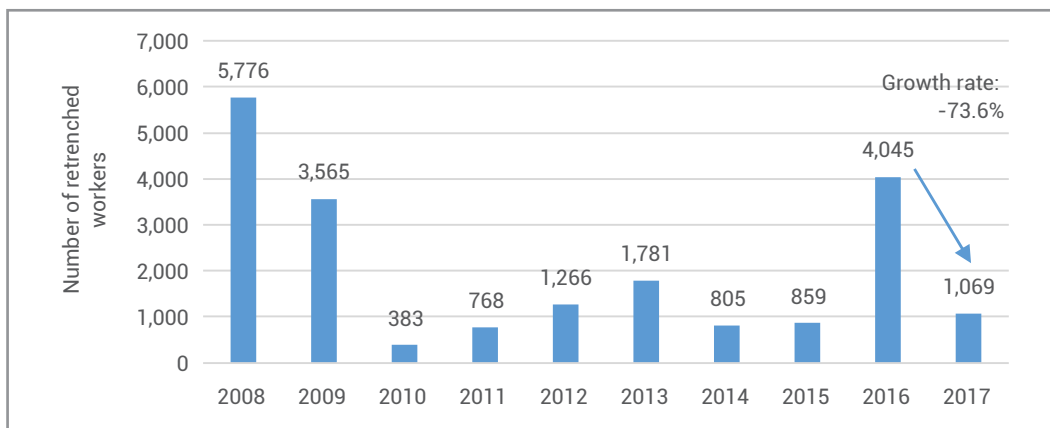
Source: Penang Labour Department.

Internal migration

A positive net migration was again recorded in Penang for 2015−16. Net migration increased by nearly 43% to 12,000 persons, marking the second-largest number of in-migrants exceeding the number of out-migrants after Selangor (Figure 2.18). Meanwhile, Kuala Lumpur had the most number of persons moving out of the territory. Penang also had the highest positive migration effectiveness ratio at 58.4%, indicating that for every 100 inter-state migrants, the number of people migrating in and out increased by 58 persons. In contrast, the population in Kuala Lumpur shrank by 93 people for every 100 inter-state migrants.

In 2015−16, about half of migrants aged 15−64 who moved to Penang had tertiary education; about one-fourth of in-migrants worked in sales and services areas, followed by plant and machine operators and professional occupations. Two-thirds were employed in the services sector.

Foreign workers

As of February 2018, Penang received about 130,000 foreign workers, accounting for 7.4% of the entire foreign workforce in the country. One-third of these workers are employed in the manufacturing sector, followed by construction (12.9%), services (11.7%), and domestic help (5.7%). Male foreign workers dominate in all sectors except domestic help.

Given the insufficient information gathered as of this writing, it is difficult to analyse the nationality of foreign workers in Penang. However, at the national level, the majority of foreign workers are from Indonesia, Nepal, and Bangladesh as of February 2018, or about 40%, 22%, and 15% of the total foreign workers, respectively. Most Bangladeshi and Nepalese workers are employed in the manufacturing sector, while Indonesian workers are employed in the farming industry.

While the number of foreign workers is high, the number of approved temporary work passes has reduced significantly since 2014. The number of temporary work visit passes approved by the Penang Immigration Department halved in 2015 from 164,885 persons in 2014, and further declined to 23,735 in 2016, before increasing by 24.5% to 29,550 in 2017.

Figure 2.18 Net migration by state in Malaysia, 2014−15 and 2015−16
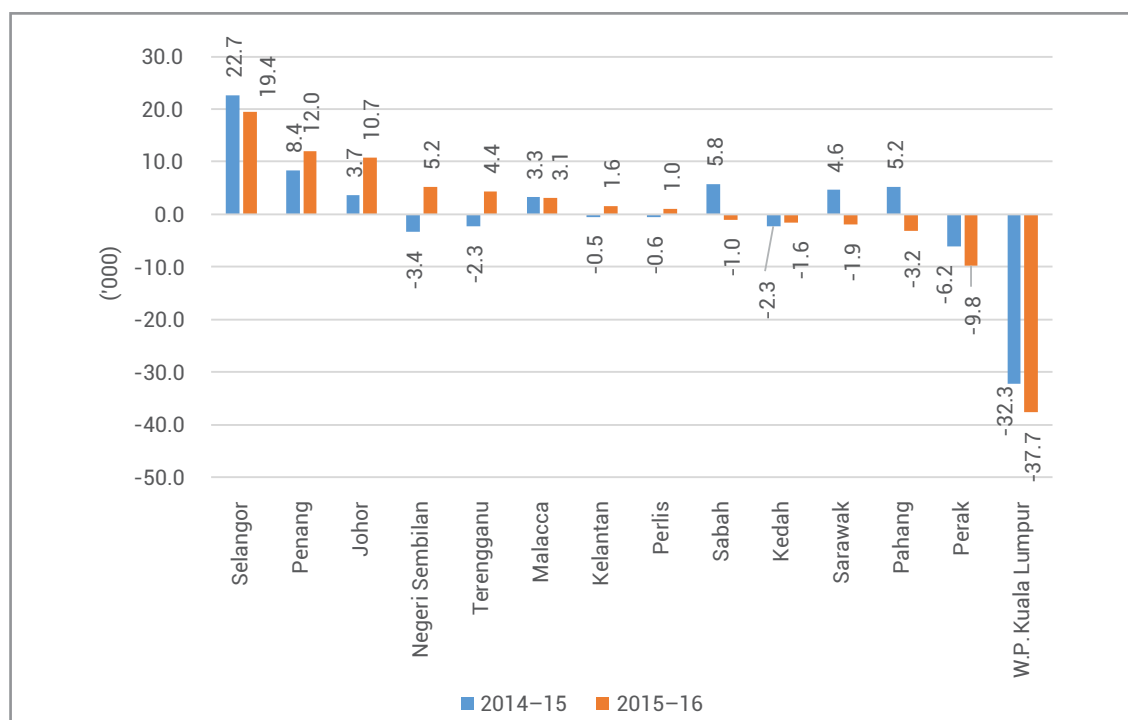
Source: Migration Survey Report 2016, Department of Statistics, Malaysia.

2.7 Prospects for 2018

Penang's economic performance and GDP growth is expected to continue growing and improving in 2018, in the light of increasing foreign direct investments in the state's manufacturing sector. The services sector is also expected to contribute to economic growth due to its steady expansion and the rapid development of the state's SSO activities. Advancements in the global and domestic economy will have a positive impact on Penang's economy due to the state's position as an export hub.

The significant increases in Penang's total volume of external trade in 2017 is expected to continue in 2018. Machinery and transport equipment accounted for the largest export and import commodity in the first two months of 2018, and this is expected to remain going forward. Additionally, as a hub for the E&E industry, Penang's external trade position and trade balance is projected to remain strong, buoyed by the consistent growth in the world semiconductor market in 2018.

The abolishment of the GST and reinstatement of the SST is predicted to have a positive effect on prices, in particular on food and beverage, retail, and property prices. The lowering of input costs will lead to lower prices for consumers.

Household income will continue to improve, owing to the booming digital economy. On top of annual increments in wages and salaries, income generated from digital activities, including ride-sharing and e-commerce, are likely to increase the household income of Penangites in 2018. Part-time income earned from being ride-sharing drivers are relatively well received by groups such as housewives, full-time and part-time workers, and unemployed youth. Household expenditure is projected to modestly increase due to the abolishment of the GST in the second half of 2018. The purchasing power of households may increase as consumers can now spend more on food and travel.

In 2018, the labour market condition is expected to remain stable with low retrenchment activity and unemployment rate. The job market remains resilient due to the expansion of manufacturing operations in Batu Kawan and the upcoming opening of the IKEA shopping complex. Positive business performance and high increments in approved private investments, particularly in the manufacturing sector, will lead to increasing demand for recruitment and employment. However, there is higher demand for high-skilled and experienced workers, predominantly within the high-tech manufacturing industries, relating to product research and development as well as manufacturing and engineering processes. Fresh graduates and non-tertiary educated workers may still struggle to gain steady employment. Therefore, the state's and the industry's investment in skills training is vital in overcoming skills deficiencies and raising the employability of graduates.

In terms of income distribution, Timur Laut is expected to continue retaining the highest income share in the state, as well as having the highest proportion of T20 households as it is the capital of the state and a highly populated urban area. With the projected growth of Penang's economy, the Gini coefficient is forecast to gradually decrease, thus bridging the income gap and reducing poverty.