

BOX ARTICLE 3.1

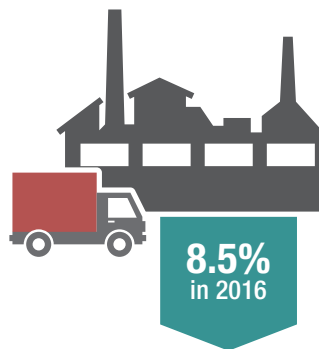
Business Costs of Singapore's Manufacturing and Services Sectors

In 2016, the unit business cost (UBC) for the manufacturing sector fell sharply on the back of a decline in all components of the UBCI, while the unit business cost for the services sector registered a slower pace of increase.

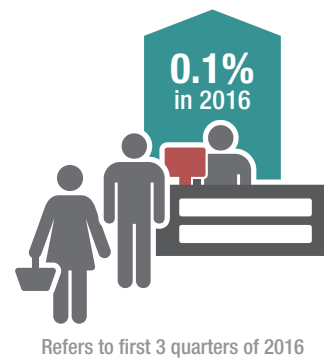
Definition of UBC:



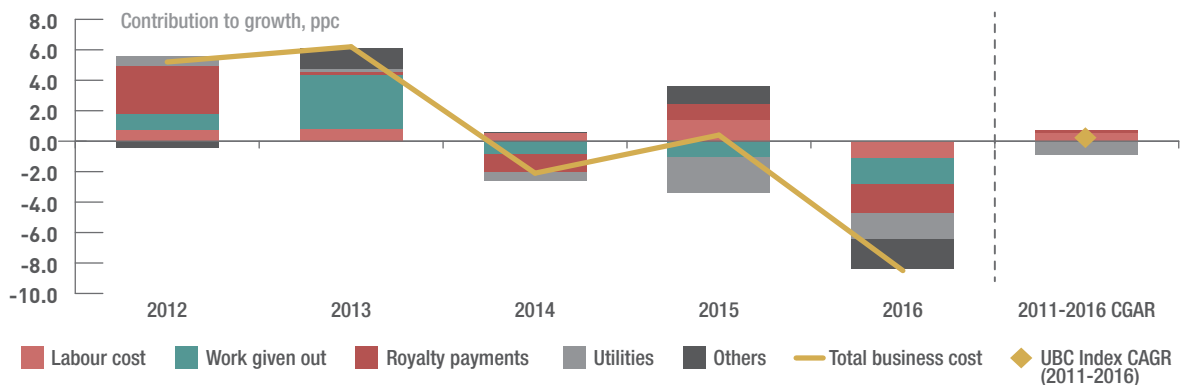
UBC FOR MANUFACTURING



UBC FOR SERVICES



Labour cost, work given out, royalty payments and utilities were the key drivers of business cost changes in the manufacturing sector in the last five years.



Looking ahead, overall unit labour cost and utilities cost are likely to increase, while rental cost is expected to continue to ease.

UNIT LABOUR COST



Wages are expected to rise at modest pace

UTILITIES COST



Uptick in global oil prices

RENTAL COST

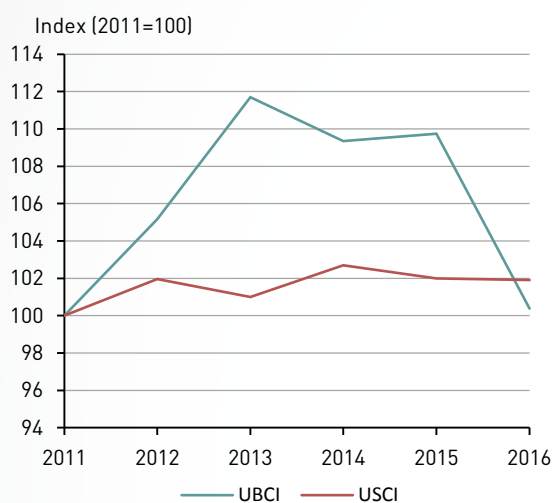


Strong supply of industrial and commercial space coming on-stream

Unit business costs in both the manufacturing and services sectors moderated in recent quarters

Over the five-year period from 2011 to 2016, the unit business cost index for the manufacturing sector (UBCI) rose marginally by 0.1 per cent on a compounded annual growth rate (CAGR) basis, while that for the services sector (USCI) increased by 0.4 per cent on a CAGR basis (Exhibit 1).^{1,2} However, more recently, the UBCI declined throughout the four quarters of 2016, bringing the UBCI for the year to a level that is 8.5 per cent lower than that in 2015 (Exhibit 2). Although the USCI rose in the first three quarters of 2016³, the increase of 0.1 per cent year-on-year over this period is a more moderate pace of increase than the average increase seen in the four years before, at 0.5 per cent per annum.

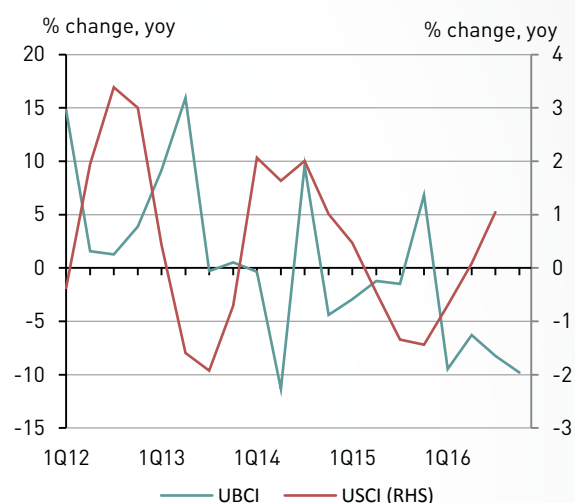
Exhibit 1: Manufacturing Sector UBCI and Services Sector USCI



Source : Department of Statistics, Monetary Authority of Singapore

Note: Due to rebasing to Base Year 2010=100, the UBCI series starts in 2010. The USCI series is also rebased to 2012=100.

Exhibit 2: Year-on-Year (YoY) % Change of the UBCI and USCI



We next examine the business cost structure of the manufacturing and services sectors before discussing the drivers of recent business cost trends.

Labour cost, work given out and royalty payments are the main components of business costs in the manufacturing sector, while non-production taxes only account for a very small share

In the manufacturing sector, labour cost, work given out and royalty payments constitute the largest components of total business costs. These three components account for around 67 per cent of the business costs of large enterprises and 68 per cent of the business costs of small- and medium-sized enterprises (SMEs) in the sector.⁴

¹ Only operating expenses (except material costs and depreciation) are included in business costs. This follows the definition adopted by the Department of Statistics (DOS) in its computation of the Unit Business Cost for Manufacturing. See DOS' Information Paper, "Methodological Review on the Unit Business Cost Index for Manufacturing Industry (Base Year 2010=100)". The manufacturing UBCI series based on the revised methodology is available from 1Q10.

² The USCI is estimated by MAS to assess cost conditions in the services sector. It is a composite index of proxy cost indicators for each component of business cost, combined using the weights derived from the 2012 Input-Output tables.

³ Latest available USCI is up to 3Q16.

⁴ Based on SPRING's definition, SMEs refer to firms with annual sales turnover of not more than S\$100 million or employment size of not more than 200 workers.

The other services cost components, including utilities, fuel, rental of building/premises and charges paid to other firms for inland transportation and ocean/air/other freight, make up a smaller share of business costs, at 12 per cent for large enterprises and 11 per cent for SMEs. Notably, non-labour production taxes⁵, which include property, road and other indirect taxes, account for around 1 per cent or less of the business costs of both the large enterprises and SMEs in the sector.

Details of the cost structure of the large enterprises and SMEs in the manufacturing sector, as well as in the various manufacturing clusters, are in Annex A, Exhibit A1.

Similarly, labour cost constitutes a major cost component for the services sectors

Labour cost constitutes a major cost component for the services sectors, with its share of total business costs ranging from around 15 per cent for firms in the transportation & storage and finance & insurance sectors, to more than 30 per cent for firms in labour-intensive sectors such as retail trade and accommodation & food services. Across all services sectors, except for the transportation & storage sector, the labour cost share of total business costs is larger for SMEs than for large enterprises.

On the other hand, utilities cost is a relatively small cost component for services sectors, accounting for less than 1 per cent of total business costs for most sectors. A key exception is the accommodation & food services sector, where utilities cost constitutes around 5 per cent of total business costs. Similarly, rental cost generally accounts for a small share of business costs for most services sectors. Key exceptions include the retail trade and accommodation & food services sectors, where the rental cost share of business costs for SMEs is 30 per cent and 22 per cent respectively.

Like in the manufacturing sector, non-labour production taxes account for less than 1 per cent of total business costs for most services sectors. Even for the business services and accommodation & food services sectors, where the share of non-labour production taxes is the highest, it is small at around 2 per cent or less.

Further details of the cost structure of the large enterprises and SMEs in the various services sectors are in Annex A, Exhibit A2.

Labour cost, work given out, royalty payments and utilities were the key drivers of business cost changes in the manufacturing sector in the last five years

As labour cost, work given out and royalty payments constitute a large part of business costs in the manufacturing sector, they were some of the key drivers of UBCI changes in the past five years (Exhibit 3). In particular, the contribution of manufacturing unit labour cost (ULC) to the average increase in UBCI between 2011 and 2016 (i.e., 0.1 per cent per annum) was positive at 0.5 percentage-points (pp).

Utilities cost also contributed significantly to UBCI changes over the five-year period despite its relatively small share in total business costs due to the sharp changes in oil prices. In 2015, for example, utilities cost contributed -2.4pp to the 0.4 per cent increase in UBCI on the back of a drop in electricity tariffs due to sharply lower global oil prices, as well as greater competition in the wholesale and retail electricity markets with the increase in new generation capacity.⁶ Between 2011 and 2016, the contribution of utilities cost to the average annual increase in UBCI was negative, at -0.9pp.

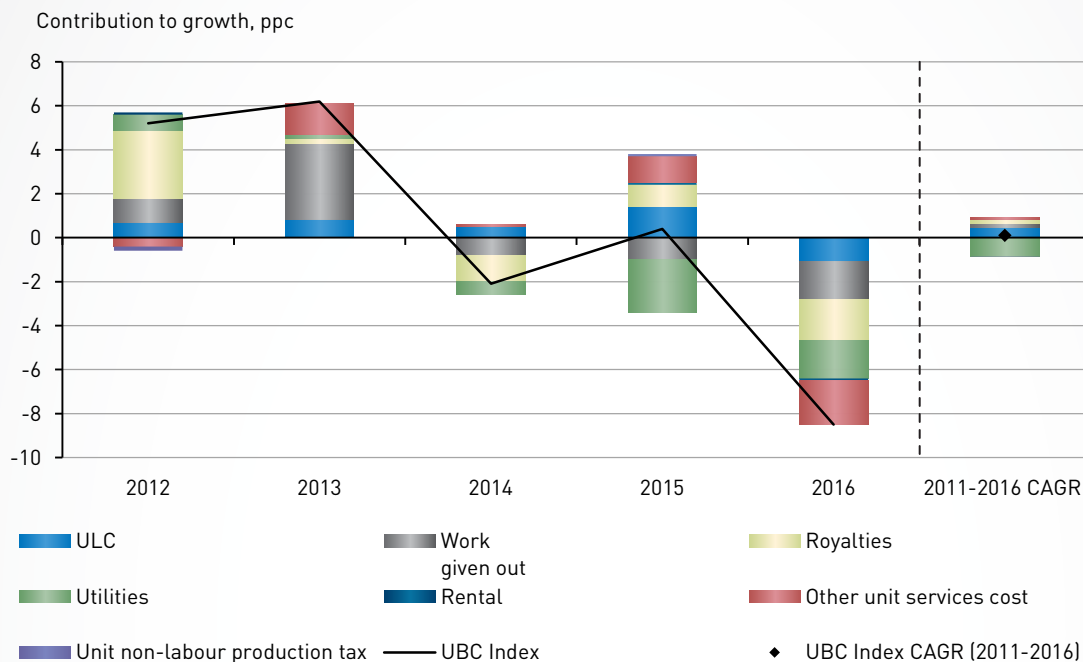
⁵ "Government Rates and Fees" has been renamed as "Non-Labour Production Taxes". Labour-related taxes on production (e.g., foreign worker levy) are classified under labour cost. Taxes on income (e.g., corporate income tax) are excluded. For details, refer to information paper on "Methodological Review on the Unit Business Cost Index for Manufacturing Industry (Base Year 2010=100)" http://www.singstat.gov.sg/docs/default-source/default-documentlibrary/publications/publications_and_papers/labour_employment_wages_and_productivity/ip-e39.pdf.

⁶ The UK Brent spot prices fell by 2.8 per cent in 2013, 9.1 per cent in 2014, 47 per cent in 2015 and 16 per cent in 2016.

The other cost components like rentals and unit non-labour production taxes had a relatively small impact on business costs from 2011 to 2016 due to their low share of business costs.

For 2016, all components of the UBCI contributed to the 8.5 per cent decline in the UBCI. In particular, the ULC, work given out, royalty payments and utilities cost contributed the most to the decline.

Exhibit 3: Contribution to UBCI Changes by Key Cost Components



Source : Department of Statistics

Note: "Other unit services cost" consists of sub-components such as professional fees, advertising, commission and agency fees, sundry expenses etc

For the services sectors, the ULC was also a key positive contributor to the increase in USCI, accounting for 0.9pp of the average USCI increase of 0.4 per cent per annum from 2011 to 2016, even as most of the other broad cost components (e.g., other services costs) contributed negatively to the increase.⁷ Similarly, in the first three quarters of 2016, the ULC contributed 2.0pp to the 0.1 per cent year-on-year increase in the USCI.

We next describe in greater detail the recent trends in labour, rental and utilities costs, as well as the outlook for these cost components.

High remuneration growth and weak productivity growth led to an increase in ULC over the last five years

From 2011 to 2016, the overall ULC for the economy increased at a CAGR of 2.7 per cent. This came on the back of a 3.0 per cent per annum increase in total labour cost (TLC) per worker and weak real labour productivity growth (gross real value-added per worker) of 0.3 per cent per annum (Exhibit 4).⁸ (An increase in TLC per worker raises the ULC, while an increase in real labour productivity reduces the ULC.)

⁷ Detailed cost component breakdowns for the USCI are not available.

⁸ Changes in overall ULC can be decomposed as the difference of the change in TLC per worker and the change in gross real value-added per worker (i.e., excluding taxes on products). The official real VA per worker statistics for the overall economy are computed based on GDP at 2010 market prices (i.e., including taxes on products). Growth in gross real VA per worker is similar to the growth in real VA per worker, and may be used to approximate labour productivity growth. Based on the decomposition, an increase in TLC per worker will raise ULC, while an improvement in labour productivity will lead to a fall in ULC.

In turn, the increase in TLC per worker was primarily due to higher remuneration per worker.⁹ Over the last five years, remuneration per worker increased by 3.0 per cent per annum amidst a tight labour market, and contributed around 2.9pp to the rise in TLC per worker.¹⁰ By contrast, the increase in foreign worker levy (FWL) only accounted for 0.3pp of the increase in TLC per worker, and this was largely offset by the increase in wage subsidies per worker provided by the government (around -0.3pp contribution).¹¹

At the sectoral level, most sectors registered positive ULC growth in recent years (Exhibit 5). The ULC for the services sectors as a whole rose by 2.3 per cent on a CAGR basis from 2011 to 2016, in part due to weak productivity growth. Among the services sectors, the ULC growth was the strongest for sectors with negative productivity growth, such as accommodation & food services (4.4 per cent per annum) and business services (4.1 per cent per annum). Manufacturing ULC also increased by 1.9 per cent on a CAGR basis from 2011 to 2016. However, in the latest year of 2016, the manufacturing ULC declined by 4.5 per cent due to productivity gains in the sector.

Exhibit 4: Decomposition of ULC Growth Growth for Overall Economy, 2011-2016 CAGR

	2011-2016 CAGR [% p.a.]
ULC	2.7
TLC per worker	3.0
Remuneration per worker	2.9 pp
FWL per worker	0.3 pp
Wage subsidies per worker	-0.3 pp
Other labour costs	0.1 pp
Gross real labour productivity	0.3

Exhibit 5: ULC Growth by Sectors, 2011-2016 CAGR



Source: MTI Staff estimates using data from Department of Statistics and Ministry of Manpower

For 2017, the ULC for the overall economy is likely to face continued upward pressures. Wages are expected to continue to rise, albeit at a more modest pace given dampened hiring expectations in several sectors which could persist into the early part of 2017. At the same time, productivity growth in 2017 is likely to be moderate, as the improvement in external economic outlook is expected to be marginal.

Over the longer term, it is important to continue with efforts to raise productivity, so as to sustain wage growth without eroding our competitiveness.

⁹ The TLC comprises remuneration and other labour-related costs, including the skills development levy, foreign worker levy, wage subsidies, and recruitment and net training cost.

¹⁰ Growth in remuneration per worker moderated from 3.2 per cent per annum from 2011 to 2015, to 2.4 per cent in 2016 as tightness in the labour market eased.

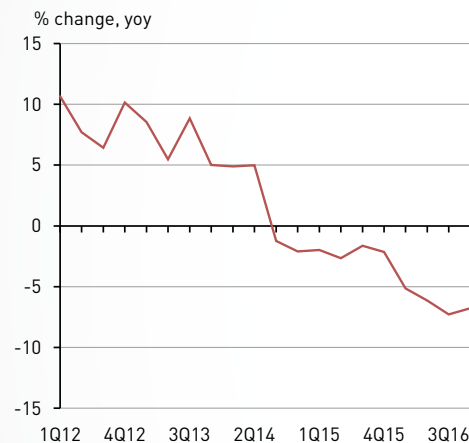
¹¹ Examples of wage subsidies provided to companies include the Special Employment Credit and the Wage Credit Scheme. These subsidies are generally applicable only for the Singaporean workers hired by these companies.

Pressure on industrial and commercial rentals is likely to continue to ease due to the strong supply coming on-stream

From 2011 to 2016, rentals of industrial space rose at a CAGR of 1.6 per cent. This was due to the increase in rentals seen in the earlier years of this period (Exhibit 6). Since the third quarter of 2014, industrial rentals have been on a decline. For instance, in the fourth quarter of 2016, industrial rentals fell by 6.8 per cent year-on-year, continuing the 7.3 per cent decline in the preceding quarter. For 2016 as a whole, industrial rentals decreased by 6.3 per cent, extending the 2.1 per cent decline in 2015. The decline in industrial rentals in 2016 generally came on the back of a fall in the occupancy rate of industrial space, although there was a slight uptick in the occupancy rate in the last quarter of 2016 (Exhibit 7).

For 2017, a strong supply of industrial space is expected to come on-stream. In total, an additional 2.4 million gross square metres of industrial space is expected to be completed within the year, significantly higher than the average annual increase of 1.8 million gross square metres of industrial space in the past five years (Annex B, Exhibit B1). On the other hand, as reflected in recent falls in the occupancy rate, the demand for industrial space may not increase at the same pace as supply. Against this backdrop, downward pressures on industrial rentals are likely to continue in the year ahead.

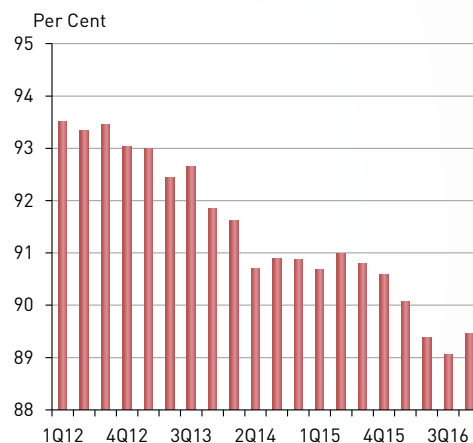
Exhibit 6: Industrial Rental Index



Source : JTC Corporation

Note: Both the industrial rental index and the industrial occupancy rate cover multiple-user factory space, single-user factory space, business parks and warehouses

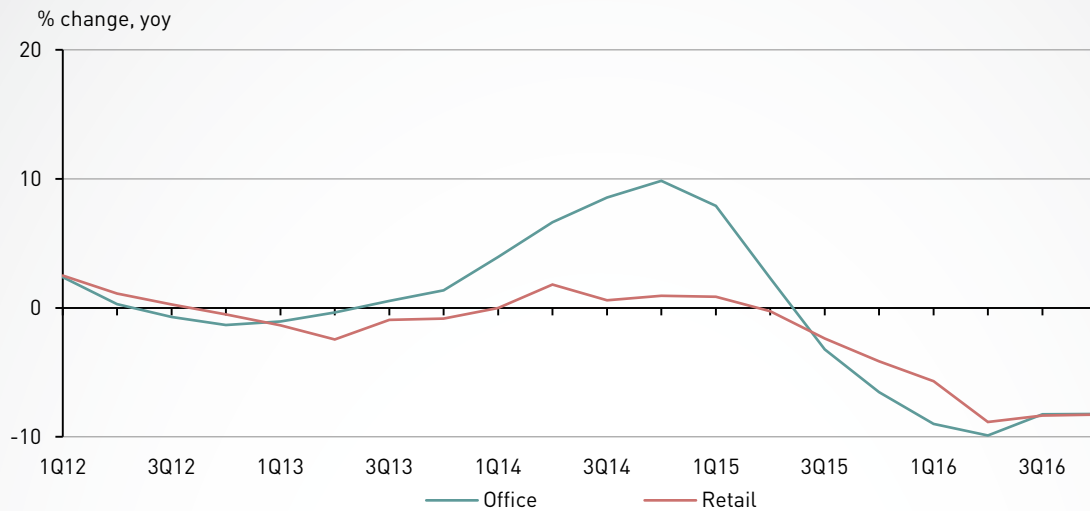
Exhibit 7: Industrial Occupancy Rate



As for commercial space, the rentals of retail and office space declined by 1.9 per cent and 0.4 per cent respectively on a CAGR basis in the five-year period from 2011 to 2016. This was on account of the fall in retail and office rentals since the second and third quarters of 2015 respectively (Exhibit 8), due to lacklustre demand and an increase in the supply of retail and office space.

In 2017, cautious sentiments and manpower constraints among retailers could continue to weigh on the demand for retail space. Similarly, there may not be a significant increase in demand for office space given sluggish business conditions in some services segments like banking. On the other hand, there remains a large supply of retail and office space in the pipeline. In particular, 0.17 million gross square metres of retail space and 0.37 million gross square metres of office space are expected to come on-stream within the year, significantly higher than the average annual increases of 0.12 million and 0.10 million gross square metres of retail and office space respectively between 2011 and 2016 (Annex B, Exhibit B2). Taken together, these factors are likely to result in continued downward pressures on retail and office rentals in 2017.

Exhibit 8: Office and Retail Rental Indices



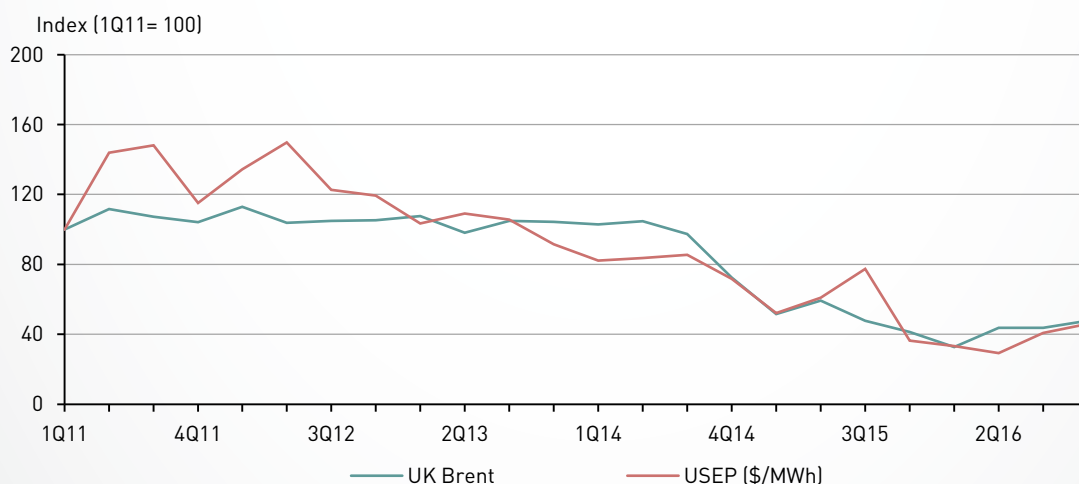
Source : Urban Redevelopment Authority
 Note: Retail rental index is only available from 1Q11

An expected increase in global oil prices could translate to slightly higher utilities cost in 2017

The cost of utilities borne by manufacturers is closely linked to electricity tariffs,¹² which are in turn influenced by movements in global oil prices.¹³ Oil prices also contribute to business costs indirectly through transportation costs.

Following a period of sustained increases, global oil prices started to decline in 2013 (Exhibit 9). In 2016, the UK Brent averaged US\$44 per barrel, 15 per cent lower than the average price of US\$52 per barrel in 2015. Lower oil prices, along with increased competition in the wholesale and retail electricity markets, contributed to a 22 per cent per annum fall in the average wholesale electricity price between 2011 and 2016.¹⁴ This in turn helped to lower utilities cost for businesses over this period.

Exhibit 9: Global Oil Prices and Uniform Singapore Energy Prices



Source : International Monetary Fund, Energy Market Company

¹² Electricity cost accounts for 86% of the utilities cost in the manufacturing sector.

¹³ About 90 per cent of our electricity is generated from natural gas, the price of which is indexed to oil prices. This is the common market practice in Asia. As fuel cost is a key cost component accounting for around half of the electricity tariff, the tariff moves in tandem with oil prices.

¹⁴ The Uniform Singapore Energy Price (USEP) is the average wholesale energy price in the National Electricity Market of Singapore (NEMS).

For 2017, the US Energy Information Administration (EIA) is forecasting that oil prices will average around US\$55 per barrel, an increase compared to 2016 levels.¹⁵ The projected increase in oil prices is expected to translate to slightly higher utilities cost for businesses.

Conclusion

Between 2011 and 2016, unit business costs for both the manufacturing and services sectors increased, driven to a large extent by ULC increases in the respective sectors. However, in 2016, the unit business cost for the manufacturing sector fell sharply on the back of a decline in all components of the UBCI, while the unit business cost for the services sector registered a slower pace of increase.

Looking ahead, the ULC for the overall economy is likely to face upward pressures in 2017 as wages are expected to continue to rise, albeit at a slower pace, while productivity growth is expected to remain moderate. An uptick in global oil prices could also lead to slightly higher utilities cost this year. However, the strong supply of industrial and commercial space coming on-stream would continue to help to rein in rental costs in 2017.

Contributed by:
Economics Division
Ministry of Trade and Industry

REFERENCES

Singapore Department of Statistics (2014), "Methodological Review on the Unit Business Cost Index for Manufacturing Industry (Base Year 2010=100)" November. http://www.singstat.gov.sg/docs/default-source/default-document-library/publications/publications_and_papers/labour_employment_wages_and_productivity/ip-e39.pdf.

U.S. Energy Information Administration (2017), "Short-Term Energy Outlook (STEO)" February. <https://www.eia.gov/outlooks/steo/>.

¹⁵ EIA Short-Term Energy Outlook Report, 7 February 2017

ANNEX A: BUSINESS COST STRUCTURE OF LARGE ENTERPRISES AND SMEs IN THE MANUFACTURING AND SERVICES SECTORS

Exhibit A1: Business Cost Structure of the Manufacturing Sector by Firm Size, 2015

	Total		Electronics		Chemicals		Biomedical Services Manufacturing		Precision Engineering		Transport Engineering		General	
	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs
Labour Cost	20.4	34.4	15.1	8.2	18.1	28.2	16.2	16.5	21.5	44.0	34.6	44.5	40.3	48.3
Services Cost	79.2	65.0	84.7	91.7	81.2	70.5	83.6	83.1	78.2	55.5	64.9	54.9	58.7	50.7
Work given out	20.4	20.0	26.2	38.9	6.4	2.1	3.1	16.5	7.0	15.0	42.2	36.1	7.6	12.4
Royalty payments	26.3	13.9	35.1	20.2	4.9	4.1	50.3	45.8	42.5	20.2	2.0	0.6	3.1	1.4
Utilities	3.9	3.2	3.6	0.6	9.4	11.3	1.4	1.4	1.7	2.5	1.6	1.1	6.5	3.2
Fuel	5.1	1.6	0.7	0.0	29.7	9.4	0.7	0.2	0.1	0.3	0.4	0.4	2.4	1.1
Rental of building/ premises	0.8	2.5	0.4	0.7	0.9	1.6	0.4	1.1	0.6	2.7	1.3	2.9	3.6	4.8
Charges paid to other firms for inland transportation and ocean/air/other freight	2.5	3.9	1.7	2.2	5.5	12.6	1.2	3.8	2.6	2.1	1.4	1.1	6.8	4.1
Others	20.2	19.9	17.2	29.2	24.5	29.4	26.3	14.3	23.7	12.8	16.1	12.8	28.6	23.8
Non-Labour Production Taxes	0.3	0.6	0.2	0.1	0.7	1.3	0.2	0.4	0.2	0.5	0.5	0.6	1.0	0.9

Source: Economic Development Board

Exhibit A2: Business Cost Structure of the Services Sector by Firm Size, 2015

	Wholesale Trade		Retail Trade		Accommodation & Food Services		Transportation & Storage		Finance & Insurance		Information & Communications		Business Services	
	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs	Large Enterprises	SMEs
Labour Cost	20.0	22.3	33.4	38.7	40.9	43.6	16.5	9.1	15.0	15.9	14.5	34.5	23.5	27.5
Services Cost	77.8	75.5	59.4	56.2	50.3	47.7	73.1	85.2	83.1	83.0	80.8	59.1	70.5	64.3
Utilities	0.3	0.3	3.1	1.6	5.0	5.1	0.9	0.2	0.1	0.1	0.5	1.4	0.4	1.2
Freight & Transport	14.2	30.8	1.4	1.8	0.9	0.3	34.5	56.5	-	-	-	0.7	-	4.1
Financial Services	2.0	1.6	2.1	2.3	1.1	1.6	0.7	0.7	3.2	5.6	0.4	0.2	0.1	0.7
Communications	0.7	0.5	0.5	0.8	0.4	0.5	0.5	0.3	0.3	0.3	3.2	8.7	0.3	0.4
Renting of Premises	4.4	4.5	32.7	29.7	15.3	22.3	1.0	1.9	1.1	1.4	1.2	3.9	1.0	3.3
Professional Services	3.8	3.7	1.5	2.2	1.0	1.2	0.9	0.7	2.8	2.7	11.1	6.9	3.3	3.5
Other Services	52.3	34.2	18.2	17.7	26.6	16.8	34.7	24.9	75.5	72.9	64.4	37.2	65.4	51.0
Advertising & Entertainment	6.3	6.1	5.6	4.1	3.7	2.6	0.6	0.3	1.6	0.5	3.2	8.0	1.7	3.6
Admin & Management Fees	11.5	7.0	3.8	2.0	3.6	3.7	2.6	4.4	6.1	8.7	11.7	6.3	2.7	7.4
Contract labour & work given out	7.7	2.2	1.3	3.1	2.3	2.7	2.0	1.7	0.6	0.4	3.0	8.8	36.5	20.8
Commission	9.0	5.4	1.0	3.0	0.9	1.1	3.7	1.8	3.7	7.2	7.9	1.8	0.7	2.0
Royalties	10.7	5.4	1.2	0.8	6.6	0.8	0.1	-	1.3	0.2	30.9	5.2	1.4	1.5
Maintenance & repairs	0.9	1.0	2.7	1.9	3.4	2.9	5.7	1.9	0.6	0.4	1.1	1.9	1.1	2.4
Fuel	-	0.1	-	0.1	0.1	-	13.9	9.8	-	-	-	-	-	0.2
Others	6.2	7.0	2.6	2.6	6.1	2.9	6.1	4.9	61.6	55.5	6.7	5.2	21.4	13.0
Non-Labour Production Taxes	0.2	0.3	0.6	0.6	1.6	1.1	0.7	0.3	0.2	0.3	0.4	0.3	1.2	2.1

Notes:

- SMEs refer to enterprises with operating receipts of not more than \$100 million or employment of not more than 200 workers. Large enterprises refer to enterprises with operating receipts of more than \$100 million and employment of more than 200 workers.
- The cost components do not sum to 100% as depreciation cost is excluded.
- "-" refers to nil or negligible.

Source: Department Of Statistics and Monetary Authority of Singapore

ANNEX B: SUPPLY OF INDUSTRIAL AND COMMERCIAL SPACE

Exhibit B1: Supply of Industrial Space

	Total	2017	2018	2019	2020	2021	>2021
Factory Space ('000 sqm gross)							
Total	3,250	1,520	743	646	281	60	-
Under Construction	2,381	1,326	428	564	63	-	-
Planned	869	194	315	82	218	60	-
Warehouse Space ('000 sqm gross)							
Total	1,144	923	97	74	50	-	-
Under Construction	1,094	912	81	65	36	-	-
Planned	50	11	16	9	14	-	-
Total Industrial Space	4,394	2,443	840	720	331	60	-

Source: JTC Corporation

Exhibit B2: Supply of Commercial Space

	Total	2017	2018	2019	2020	2021	>2021
Office Space ('000 sqm gross)							
Total	786	367	185	20	138	36	40
Under Construction	617	367	185	5	60	-	-
Planned	169	-	-	15	78	36	40
Retail Space ('000 sqm gross)							
Total	595	169	229	62	109	5	21
Under Construction	482	169	229	47	33	4	-
Planned	113	-	-	15	76	1	21
Total Commercial Space	1,381	536	414	82	247	41	61

Source: Urban Redevelopment Authority