Economic Survey of SINGAPORE

THIRD QUARTER 2015

MTI MINISTRY OF TRADE AND INDUSTRY SINGAPORE

November 2015

Ministry of Trade and Industry
Republic of Singapore

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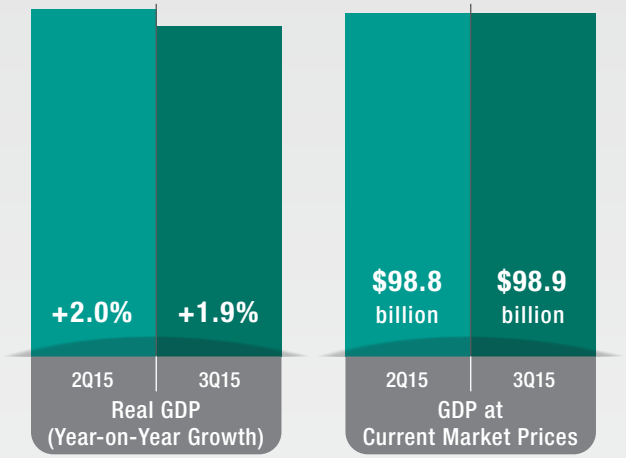
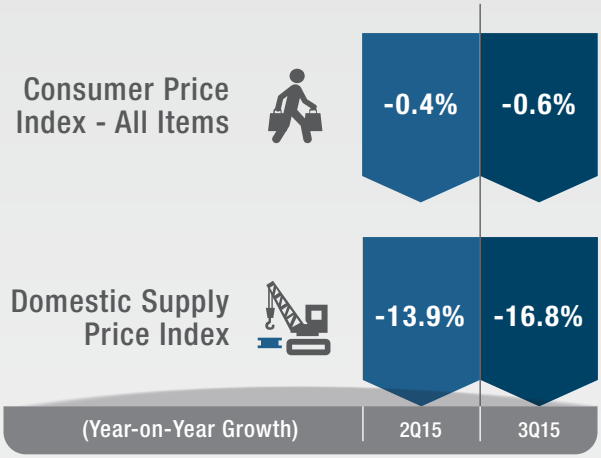
MAIN INDICATORS OF THE SINGAPORE ECONOMY

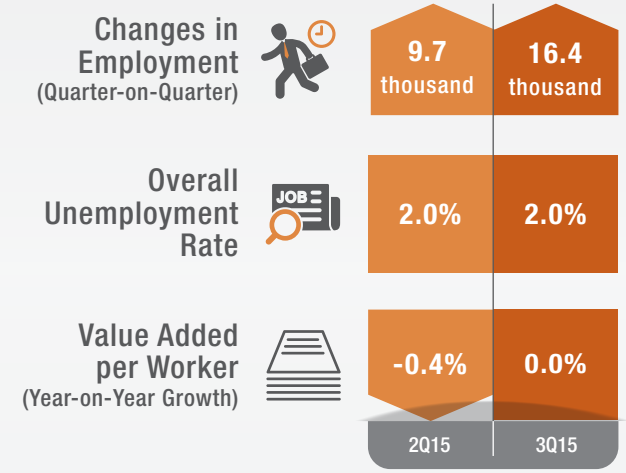
OVERALL ECONOMY



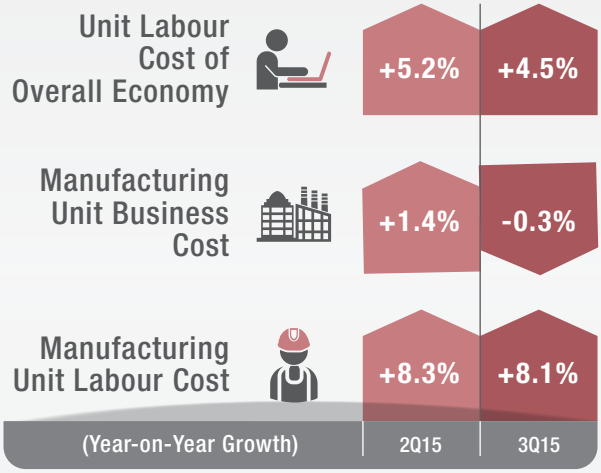
PRICES



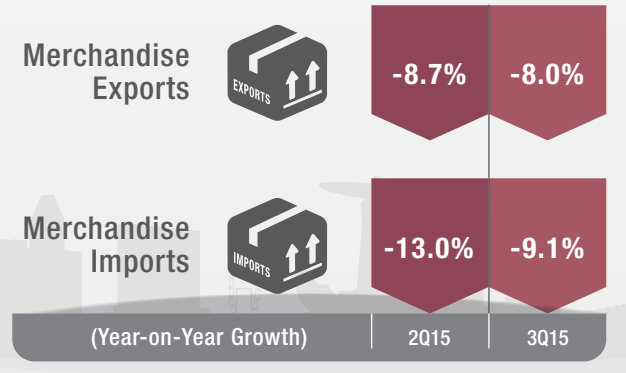
LABOUR MARKET



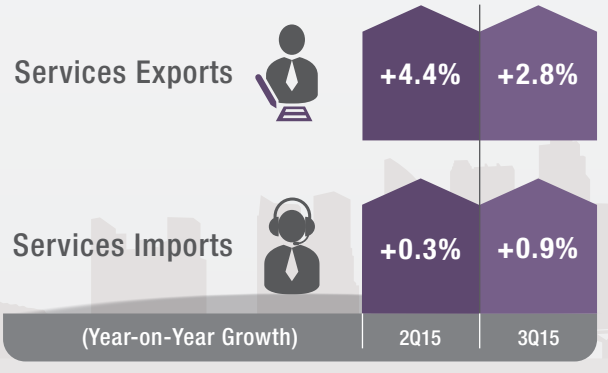
COSTS



MERCHANDISE TRADE



SERVICES TRADE



CHAPTER 1
The Singapore Economy

CHAPTER 1

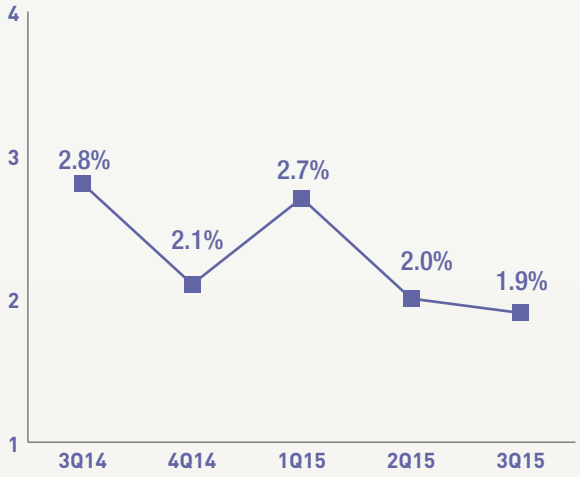
THE SINGAPORE ECONOMY

ECONOMIC PERFORMANCE

Real GDP grew by

1.9% in 3Q15

Quarterly Growth (Year-on-Year)



Main Drivers of Growth in 3Q15

WHOLESALE & RETAIL TRADE

1.2%-point contribution

FINANCE & INSURANCE

0.6%-point contribution

In total, these sectors accounted for **97%** of GDP growth

LABOUR MARKET

RESIDENT UNEMPLOYMENT RATE

3.0% in 3Q15

EMPLOYMENT (Q-O-Q CHANGE)

+16,400 employed

Sectors with the Highest Employment Growth in 3Q15

OTHER SERVICES INDUSTRIES	BUSINESS SERVICES	CONSTRUCTION
+6,200 employed	+4,800 employed	+3,800 employed

PRODUCTIVITY

VALUE ADDED PER WORKER

0.0%

Sectors with the highest Value Added per Worker Growth in 3Q15

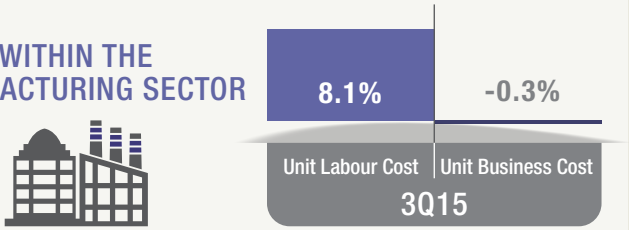
WHOLESALE & RETAIL TRADE	FINANCE & INSURANCE
+6.6%	+1.6%

COSTS

Overall Unit Labour Cost grew by

4.5% in 3Q15

WITHIN THE MANUFACTURING SECTOR

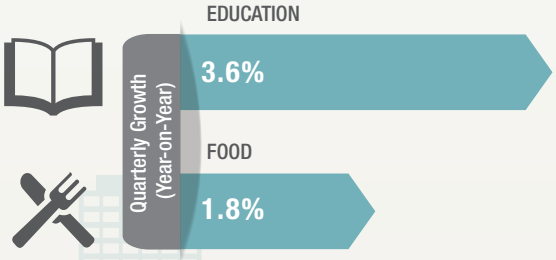


PRICES

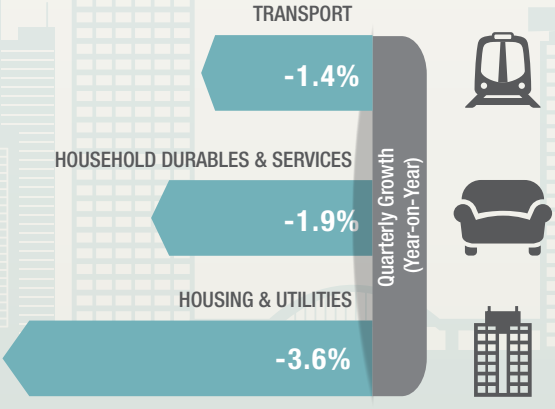
The Consumer Price Index (CPI) declined by

0.6% in 3Q15

CATEGORIES WITH PRICE INCREASES



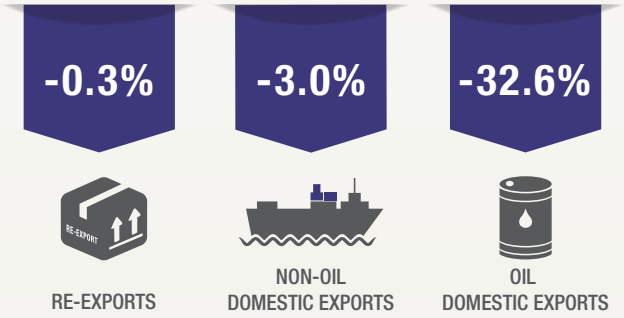
CATEGORIES WITH PRICE DECLINES



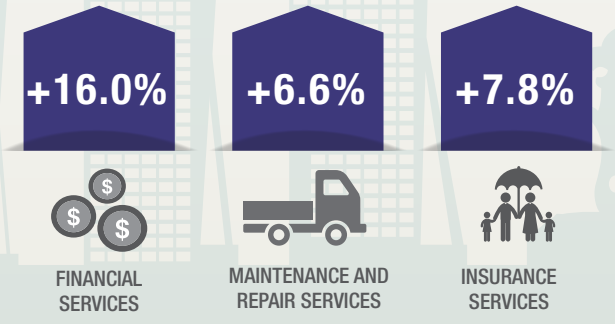
INTERNATIONAL TRADE

Total Merchandise Exports declined by

8.0% in 3Q15



Main Drivers of Services Export Growth were...



OVERVIEW

In the third quarter of 2015,

- The economy expanded by 1.9 per cent compared to the same period last year, led by growth in the wholesale & retail trade and finance & insurance sectors.
- Overall employment rose by 16,400 on a quarter-on-quarter basis, faster than the gains of 9,700 in the preceding quarter, supported by an increase in employment in the services and construction sectors. However, the employment gains were lower when compared to the gains in the third quarter of 2014.
- The labour market remained tight as the overall unemployment rate stayed unchanged from the rate in the previous quarter. The number of redundancies also fell for the third consecutive quarter.
- The Consumer Price Index (CPI) declined by 0.6 per cent compared to the same quarter a year ago.

OVERALL PERFORMANCE

The economy expanded by 1.9 per cent in the third quarter, marginally slower than the 2.0 per cent growth in the second quarter (Exhibit 1.1). On a quarter-on-quarter seasonally-adjusted annualised basis, the economy grew by 1.9 per cent, a reversal from the 2.6 per cent contraction in the previous quarter.

Among the key sectors of the economy, the manufacturing sector recorded the weakest performance, contracting by 6.2 per cent, extending the 4.8 per cent decline in the previous quarter. The contraction was primarily due to a decline in the output of the transport engineering, electronics and precision engineering clusters.

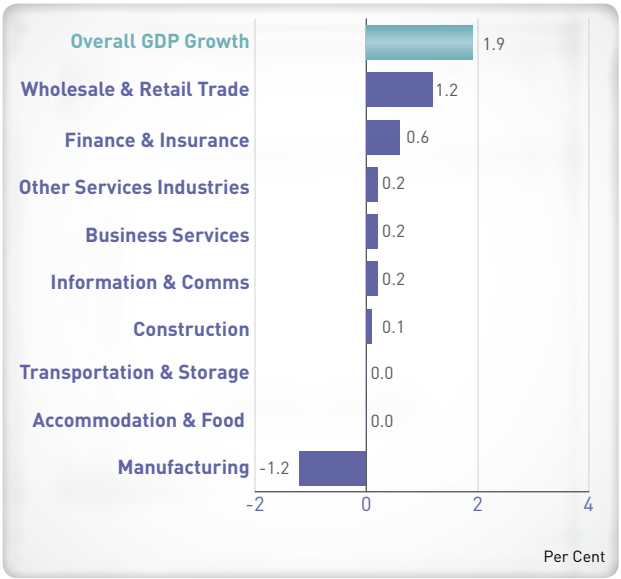
The services producing industries performed better, with all sectors registering expansions. The wholesale & retail trade sector posted the strongest growth of 6.8 per cent, followed by the finance & insurance (4.8 per cent), information & communications (4.8 per cent), other services (2.2 per cent) and business services (1.5 per cent) sectors. The accommodation & food services and transportation & storage sectors also recorded positive growth of 0.9 per cent and 0.3 per cent respectively.

Meanwhile, the construction sector grew by 1.6 per cent, moderating from the 2.2 per cent growth in the second quarter.

Exhibit 1.1: GDP and Sectoral Growth Rates in 3Q 2015

The sectors that contributed the most to economic growth in the third quarter were the wholesale & retail trade and finance & insurance sectors (Exhibit 1.2). Together, they accounted for about 97 per cent of overall GDP growth.

Exhibit 1.2: Percentage-Point Contribution to Growth in Real GDP in 3Q 2015 (By Industry)



SOURCES OF GROWTH

Total demand rose by 4.1 per cent in the third quarter, accelerating from the 0.6 per cent growth in the previous quarter (Exhibit 1.3). The expansion was supported by both external and domestic demand. External demand rose at a faster pace of 3.2 per cent, compared to the 1.1 per cent growth in the previous quarter. Meanwhile, domestic demand increased by 6.6 per cent, a rebound from the 0.6 per cent decline in the second quarter.

Domestic demand was driven by consumption expenditure, which grew by 6.7 per cent following the 3.4 per cent growth in the previous quarter. Both private and public consumption contributed to the rise in consumption expenditure. Changes in inventories also supported growth, rising by 1.6 per cent, a reversal from the 2.9 per cent contraction in the previous quarter.

Growth in gross fixed capital formation moderated to 0.2 per cent, from 4.1 per cent in the previous quarter, weighed down by both public and private investments. Public investments contracted by 1.1 per cent, a sharp reversal from the 11 per cent growth in the previous quarter. On the other hand, private investments registered modest growth of 0.5 per cent, slower than the 2.4 per cent growth in the previous quarter.

*Exhibit 1.3: Changes in Total Demand**

Per Cent

	2014		2015		
	III	IV	I	II	III
Total Demand	-0.9	0.4	0.9	0.6	**4.1**
External Demand	-0.3	0.2	4.4	1.1	**3.2**
Total Domestic Demand	-2.6	0.8	-8.2	-0.6	**6.6**
Consumption Expenditure	1.5	2.4	3.7	3.4	**6.7**
Public	-0.2	3.3	4.9	1.5	**12.5**
Private	1.9	2.2	3.3	3.8	**5.2**
Gross Fixed Capital Formation	-5.6	1.2	-2.2	4.1	**0.2**
Changes in Inventories	-1.0	-0.8	-7.2	-2.9	**1.6**

** For inventories, this refers instead to change as a percentage of GDP in the previous year.*

LABOUR MARKET

Employment[1]

Overall employment rose by 16,400 on a quarter-on-quarter basis in the third quarter, faster than the gains of 9,700 in the previous quarter. However, this represented a slower rate of increase as compared to the employment gains of 33,400 in the third quarter of 2014 (Exhibit 1.4).

The increase in employment in the third quarter brought the total number of employed persons in September 2015 to 3,644,000, 1.7 per cent higher than a year ago. The rate of increase over the year was slower compared to that recorded in June 2015 (2.2 per cent).

[1] *Based on preliminary estimates.*

Exhibit 1.4: Changes in Total Employment, Quarter-on-quarter Basis

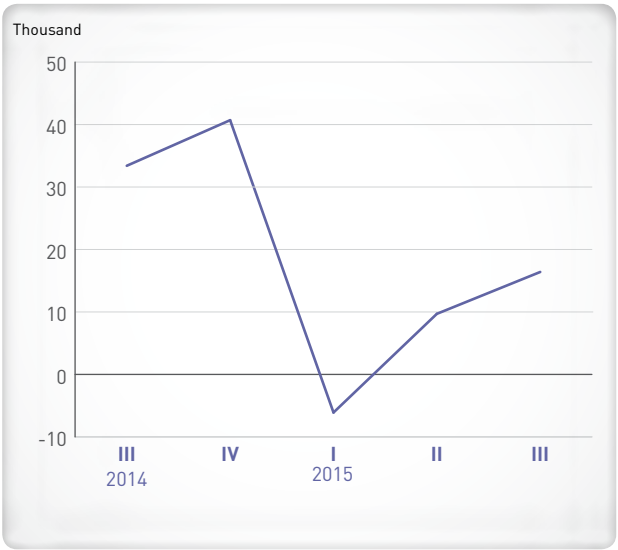


Exhibit 1.5: Changes in Employment by Industry in 3Q 2015, Quarter-on-quarter Basis

At the sectoral level, employment in the services and construction sectors expanded on a quarter-on-quarter basis in the third quarter, while manufacturing employment continued to decline (Exhibit 1.5).

Services employment rose by 17,000 in the third quarter, higher than the previous quarter's increase (6,500) but lower compared to the gains a year ago (29,400) (Exhibit 1.5). While most services sectors saw employment gains, employment in the wholesale & retail trade sector contracted by 1,900, primarily due to weakness in employment in the retail trade segment. At the same time, employment growth continued to be supported by hiring in the business services sector (4,800), particularly in the professional services and administrative & support services segments, and the other services sector (6,200), which likely benefited from a ramp-up in healthcare operations at the Ng Teng Fong Hospital, Jurong Community Hospital and Yishun Community Hospital.

The construction sector employed 3,800 more workers in the third quarter compared to a quarter ago. However, this was lower than the employment gains seen in the preceding quarter (7,600) on the back of a slowdown in construction activities.

Meanwhile, employment in the manufacturing sector contracted (-4,300) for the fourth consecutive quarter, owing to the weak overall performance of the sector. In particular, employment in the marine & offshore engineering segment continued to decline as rig-building activities remained weak amidst low global oil prices.

Hiring Expectations

Manufacturers have become more cautious in their hiring outlook, with a net weighted balance of 6 per cent of firms expecting to hire fewer workers in the fourth quarter as compared to the third quarter. This is in contrast to the hiring expectations in the same period last year where a net weighted balance of 6 per cent of firms expected to hire more workers. With the exception of the biomedical manufacturing cluster, all manufacturing clusters expected lower levels of hiring.

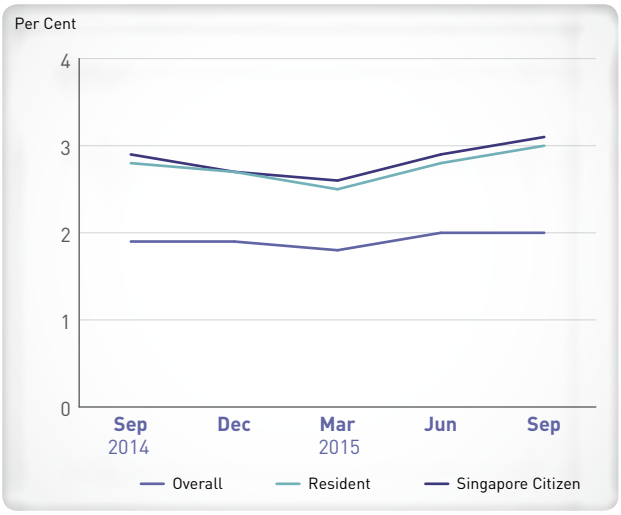
For the overall services sector, a net weighted balance of 12 per cent of firms expected an increase in hiring in the fourth quarter over the third quarter. This is in part because of a seasonal step-up in hiring due to year-end festivities, with hiring expectations being especially strong in the retail trade, accommodation and food & beverage services sectors. However, the hiring outlook for the overall services sector has moderated slightly as compared to the same period last year, where a net weighted balance of 15 per cent of firms expected an increase in hiring.

Unemployment and Redundancy[2]

While employment gains in the third quarter moderated compared to the same period last year, various labour market indicators suggest that the labour market remained tight.

First, the overall unemployment rate remained low at 2.0 per cent in September, unchanged from the rate in the preceding quarter (Exhibit 1.6). The resident and citizen unemployment rates also remained low, although they both rose marginally, by 0.2 percentage-points, to 3.0 per cent and 3.1 per cent respectively in September.

Exhibit 1.6: Unemployment Rate (Seasonally Adjusted)

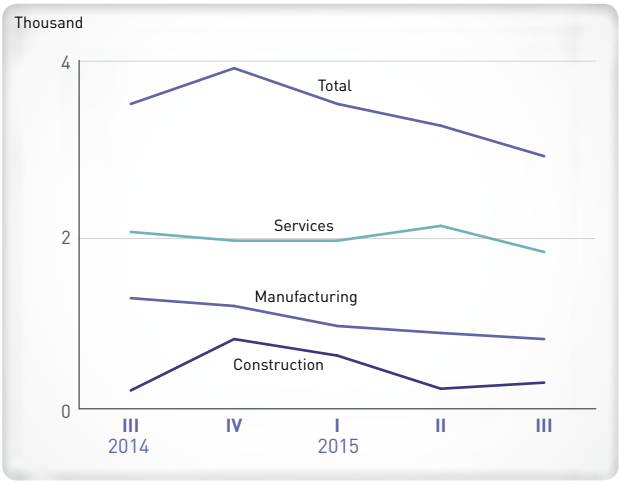


An estimated 56,600 residents, including 51,100 Singapore citizens, were unemployed in September 2015. The seasonally-adjusted figures were 66,800 for residents and 59,800 for citizens.

Second, fewer workers were made redundant in the third quarter (2,900) compared to the preceding quarter (3,250). Redundancy levels were also lower than that seen in the third quarter of 2014 (3,500) (Exhibit 1.7).

Across broad sectors, redundancies in both the services (from 2,100 to 1,800) and manufacturing (from 870 to 800) sectors fell on a quarter-on-quarter basis. These declines more than offset the increase in layoffs in the construction sector (from 230 to 300).

Exhibit 1.7: Total Redundancies



In summary, employment expanded in the third quarter, albeit at a significantly slower pace as compared to the same period last year. Hiring expectations were also lower on a year-on-year basis. Nonetheless, the labour market remained tight, with the overall unemployment rate remaining low and total redundancies on a decline.

COMPETITIVENESS

Productivity

Labour productivity, as measured by value-added per worker, was unchanged (0.0 per cent growth) in the third quarter compared to the same period a year ago (Exhibit 1.8). This represented an improvement from the five consecutive quarters of negative growth.

The wholesale & retail trade (6.6 per cent) and finance & insurance (1.6 per cent) sectors achieved the highest productivity growth rates in the third quarter. By contrast, the manufacturing (-3.4 per cent), business services (-2.5 per cent) and accommodation & food services (-2.0 per cent) sectors saw the sharpest declines in productivity.

Export-oriented sectors as a whole recorded higher productivity growth than domestically-oriented sectors. On a year-on-year basis, the productivity of export-oriented sectors improved by 1.2 per cent in the third quarter, while that of the domestically-oriented sectors fell by 1.0 per cent.[3]

[2] Figures pertain to private sector establishments each with at least 25 employees and the public sector.

[3] Based on MTI estimates. Export-oriented sectors refer to manufacturing, wholesale trade, transportation & storage, accommodation, and finance & insurance. Domestically-oriented sectors refer to construction, retail trade, food & beverage services, information & communications, business services and other services industries.

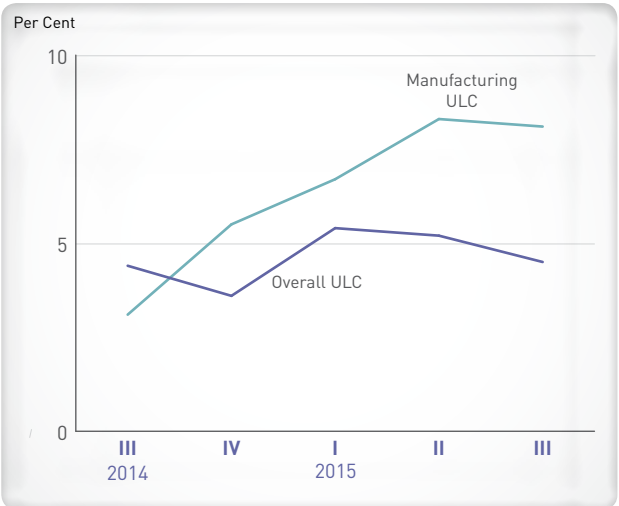
Exhibit 1.8: Change in Value Added per Worker for the Overall Economy and Sectors in 3Q 2015

Unit Labour Cost and Unit Business Cost

Overall unit labour cost (ULC) for the whole economy rose by 4.5 per cent in the third quarter compared to the same period a year ago (Exhibit 1.9). This was a slower pace of increase as compared to the 5.2 per cent growth in the preceding quarter. Overall ULC rose in the third quarter on the back of an increase in labour costs even as productivity growth remained weak.

Manufacturing ULC rose by 8.1 per cent in the third quarter, marginally lower than the 8.3 per cent increase registered a quarter ago. The rise in manufacturing ULC can be attributed to a significant decline in manufacturing productivity and an increase in labour costs.

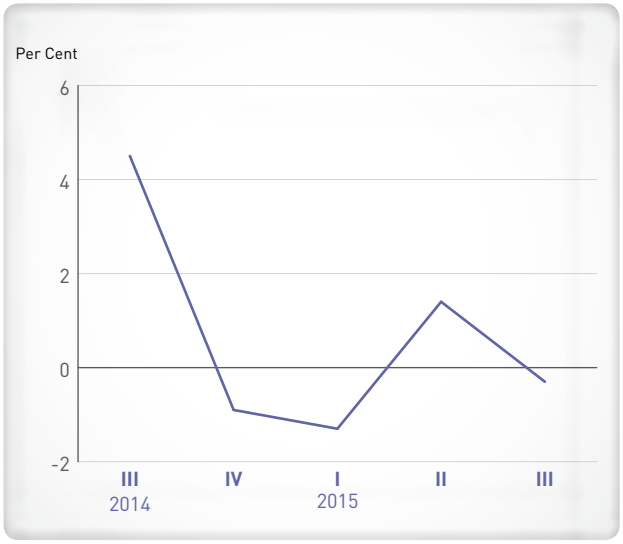
Exhibit 1.9: Changes in Unit Labour Cost



Unit business cost (UBC) in the manufacturing sector declined by 0.3 per cent in the third quarter, reversing the 1.4 per cent increase in the previous quarter (Exhibit 1.10).

The fall in manufacturing UBC was mainly driven by a decline in services cost, which outweighed the increase in manufacturing ULC.

Exhibit 1.10: Changes in Unit Business Cost for Manufacturing

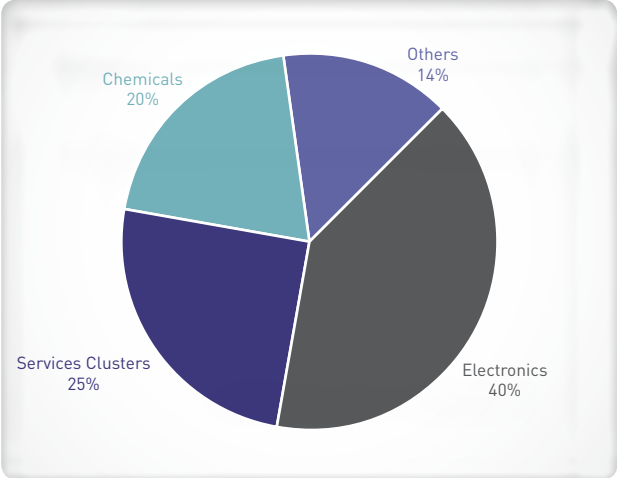


Investment Commitments

Investment commitments in terms of total fixed asset investments (FAI) and total business expenditure (TBE) amounted to $3.7 billion and $1.6 billion respectively in the third quarter (Exhibit 1.11 and Exhibit 1.12).

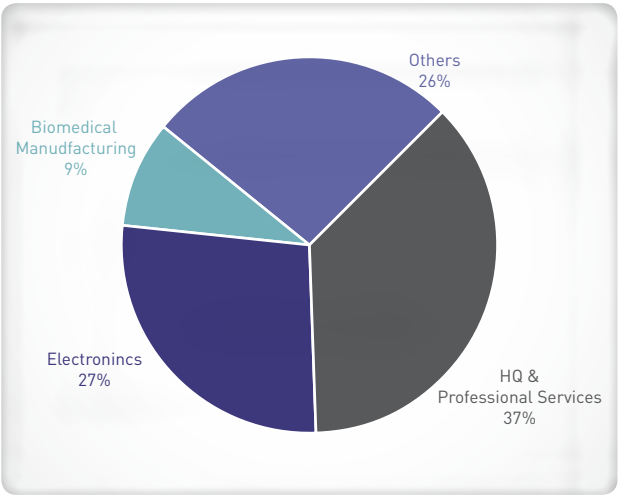
In terms of FAI, the largest contribution came from the electronics cluster, which garnered $1.5 billion in commitments, mainly from the semiconductors segment. This was followed by the services clusters, which attracted $0.9 billion in commitments. Investors from the United States were the biggest foreign contributor to FAI, accounting for $1.4 billion (38 per cent) of total FAI commitments.

Exhibit 1.11: Fixed Asset Investments by Industry Cluster in 3Q 2015



In terms of TBE, the headquarters & professional services cluster attracted the highest amount of commitments, at $605 million. This was followed by the electronics cluster, with $447 million in commitments. Similar to the case for FAI, investors from the United States were the largest foreign source of TBE, accounting for $544 million (33 per cent) of total TBE commitments.

Exhibit 1.12: Total Business Spending by Industry Cluster in 3Q 2015



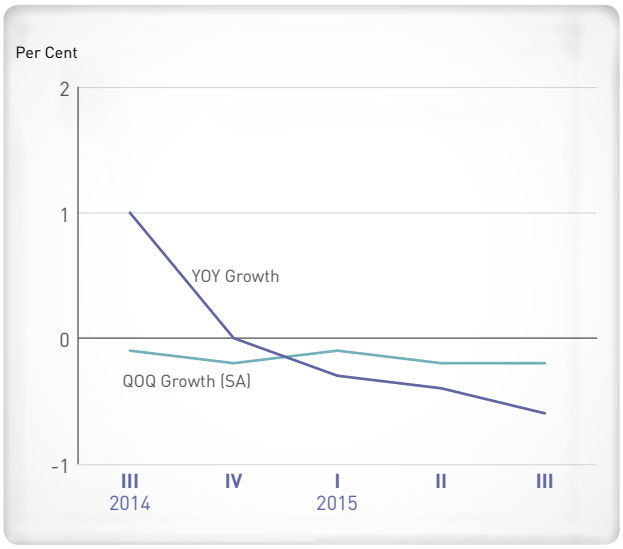
When fully realised, these commitments are expected to generate value-added of $4.4 billion and more than 2,100 skilled jobs.

PRICES

Consumer Price Index

The Consumer Price Index (CPI) fell by 0.6 per cent on a year-on-year basis in the third quarter, following the 0.4 per cent decline in the previous quarter (Exhibit 1.13). On a quarter-on-quarter seasonally-adjusted basis, the CPI fell by 0.2 per cent, the same pace of decline as in the preceding quarter.

Exhibit 1.13: Changes in Overall CPI



Food was the largest positive contributor to CPI inflation in the third quarter, with prices rising by 1.8 per cent on a year-on-year basis (Exhibit 1.14). This was due to price increases for restaurant meals and hawker food, as well as non-cooked food items such as fruits, milk, bread, cakes and pastries.

Education costs rose by 3.6 per cent due to higher fees at commercial institutions, universities, polytechnics, childcare centres, kindergartens and playgroups, which more than offset the effect of the waiver of national examination fees for Singaporeans. Recreation & culture costs rose by 0.4 per cent as the higher costs of holiday travel more than offset the lower admission charges to places of interest. Clothing & footwear costs rose by 0.7 per cent on account of more expensive footwear.

Exhibit 1.14: Percentage Changes in CPI over Corresponding Quarter of Previous Year

	2014		2015		Per Cent
	III	IV	I	II	III
All Items	1.0	0.0	-0.3	-0.4	**-0.6**
Food	2.8	2.7	2.3	1.9	**1.8**
Clothing & Footwear	-1.0	-1.9	-1.0	-0.6	**0.7**
Housing & Utilities	-0.3	-1.5	-2.5	-3.8	**-3.6**
Household Durables & Services	1.7	1.1	1.6	-0.7	**-1.9**
Health Care	2.7	1.9	0.2	-0.3	**-0.1**
Transport	-0.6	-3.6	-3.2	0.1	**-1.4**
Communication	-0.1	1.0	1.6	1.0	**-0.6**
Recreation & Culture	1.6	0.1	0.1	-0.1	**0.4**
Education	3.4	3.1	3.4	3.1	**3.6**
Miscellaneous Goods & Services	1.6	1.4	0.8	-0.3	**-0.3**

The price gains in these CPI categories were outweighed by price declines in the other categories. In particular, housing & utilities posed the largest drag on headline inflation, with prices declining by 3.6 per cent on the back of a fall in accommodation costs, electricity tariffs and gas tariffs, which more than offset higher housing maintenance charges and refuse collection fees. Transport costs fell by 1.4 per cent as lower road tax, as well as petrol and car prices outweighed the effect of higher bus & train fares and more expensive motorcycles & scooters. The prices of household durables & services declined by 1.9 per cent as concessionary levies for foreign domestic workers fell by more than the increase in salaries paid to these workers.

Communication costs dipped by 0.6 per cent because of the lower costs of telecommunication services. The prices of miscellaneous goods & services fell by 0.3 per cent due to a fall in the prices of personal effects and personal care items. Healthcare costs also inched lower by 0.1 per cent as the prices of outpatient services fell by more than the increase in the prices of hospital services as well as medical products, appliances & equipment.

INTERNATIONAL TRADE

Merchandise Trade

Singapore's total merchandise trade contracted by 8.5 per cent in the third quarter compared to the same period a year ago, easing from the 11 per cent decline in the preceding quarter (Exhibit 1.15). The contraction was mainly attributed to a 34 per cent drop in oil merchandise trade.

Exhibit 1.15: Growth Rates of Total Merchandise Trade, Merchandise Exports and Merchandise Imports (In Nominal Terms)

	2014			2015		Per Cent
	III	IV	Ann	I	II	III
Merchandise Trade	-3.5	-4.8	0.3	-10.5	-10.7	**-8.5**
Merchandise Exports	-1.4	-3.8	1.1	-5.4	-8.7	**-8.0**
Domestic Exports	-0.7	-6.6	-0.3	-11.5	-11.6	**-14.6**
Oil	-3.3	-17.7	0.5	-34.7	-31.3	**-32.6**
Non-Oil	1.1	0.5	-0.7	4.8	2.1	**-3.0**
Re-Exports	-2.3	-0.6	2.6	1.5	-5.4	**-0.3**
Merchandise Imports	-5.7	-6.0	-0.6	-16.1	-13.0	**-9.1**
Oil	-5.5	-18.0	-1.7	-44.2	-34.7	**-34.1**
Non-Oil	-5.8	-0.6	-0.1	-2.0	-2.9	**2.4**

Total merchandise exports declined by 8.0 per cent in the third quarter, following the 8.7 per cent contraction in the preceding quarter. This marked the fifth consecutive quarter of decline and was largely caused by the 15 per cent drop in domestic exports.

The fall in domestic exports was due to continued weakness in oil domestic exports. In particular, oil domestic exports declined sharply by 33 per cent in the third quarter, as low oil prices continued to depress the nominal value of oil exports. In volume terms, oil domestic exports increased by 10 per cent.

Non-oil domestic exports (NODX) posted its first decline after four consecutive quarters of growth, contracting by 3.0 per cent in the third quarter. The decline in NODX was due to a contraction in non-electronic NODX, which outweighed the gains in electronic NODX.

Total merchandise imports declined by 9.1 per cent in the third quarter, mainly due to the continued decline in oil imports. Oil imports decreased by 34 per cent as the weakness in oil prices depressed the nominal value of oil imports. In volume terms, oil imports increased by 20 per cent. Non-oil imports grew by 2.4 per cent in the third quarter, driven by growth in both electronic and non-electronic imports.

Services Trade

Total services trade expanded by 1.9 per cent in the third quarter, compared with the 2.3 per cent increase in the second quarter (Exhibit 1.16). Services exports rose by 2.8 per cent, slower than the 4.4 per cent growth in the previous quarter. The increase in services exports can be attributed to expansions in the exports of financial services, maintenance & repair services and insurance services. Meanwhile, services imports increased by 0.9 per cent, faster than the 0.3 per cent growth in the preceding quarter.

Exhibit 1.16 Growth Rates of Total Services Trade, Services Exports and Services Imports (In Nominal Terms)

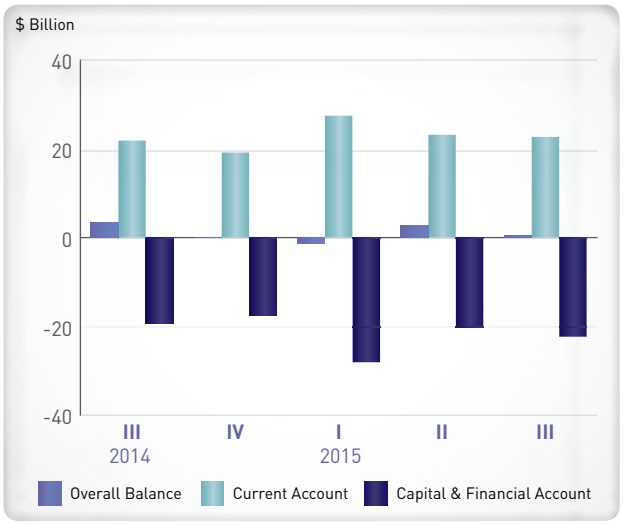
Per Cent

	2014			2015		
	III	IV	Ann	I	II	III
Total Services Trade	1.5	-0.3	2.4	0.6	2.3	**1.9**
Services Exports	3.0	0.8	3.6	0.9	4.4	**2.8**
Services Imports	0.1	-1.4	1.2	0.2	0.3	**0.9**

BALANCE OF PAYMENTS

The overall balance of payments surplus declined to $0.5 billion in the third quarter, from $2.7 billion in the preceding quarter (Exhibit 1.17). The fall was largely due to a wider capital and financial account deficit, while the current account surplus also declined slightly.

Exhibit 1.17: Balance of Payments



Current Account

The current account surplus fell by $0.5 billion to $23 billion in the third quarter. This mainly reflected a reduction in the goods surplus, which was only partially offset by an increase in the services surplus, as well as a reduction in the primary income deficit.

The goods surplus fell by $1.7 billion to $26 billion in the third quarter, as the exports of goods contracted and imports remained broadly unchanged.

By contrast, the services balance registered a larger surplus of $1.3 billion compared to $0.4 billion in the preceding period. Net payments for travel services declined, while net receipts for maintenance & repair and financial services rose.

Capital and Financial Account

The deficit in the capital and financial account widened to $22 billion in the third quarter from $20 billion in the previous quarter. This was caused by a rise in net outflows in both portfolio investment and "other investment" accounts, which more than offset the increase in net inflows for direct investment.

Net portfolio outflows increased by $7.5 billion to $20 billion in the third quarter. Domestic deposit-taking corporations' purchases of foreign securities exceeded their sales, following four quarters of net disposals. This occurred even as the domestic non-bank private sector reduced its net purchases of securities abroad.

Meanwhile, "other investment" net outflows rose marginally by $0.5 billion to $20 billion in the third quarter. The reversal from net outflows to net inflows into the local non-bank private sector was broadly offset by higher net outflows from deposit-taking corporations.

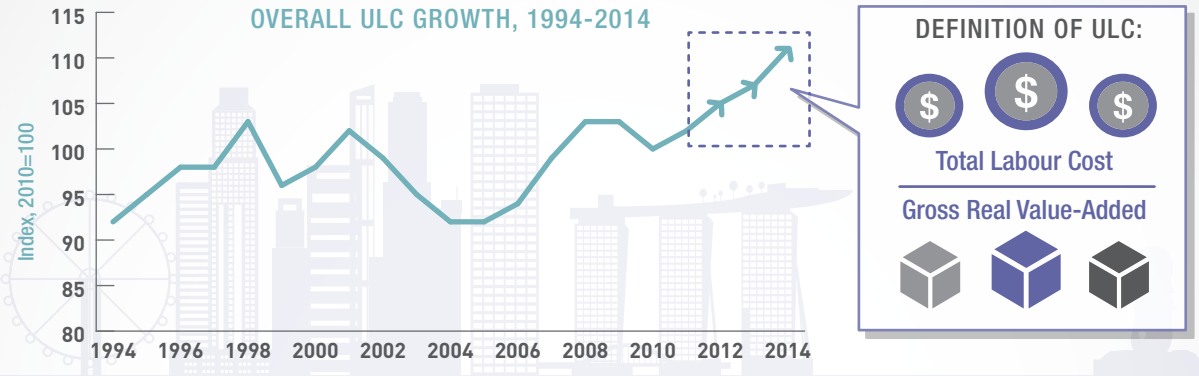
An increase in foreign direct investment into Singapore and a reduction in domestic firms' direct investment abroad resulted in the net inflows of direct investment rising from $5.1 billion in the second quarter to $11 billion in the third quarter.

BOX ARTICLE 1.1

A Decomposition Analysis of Singapore's Unit Labour Cost

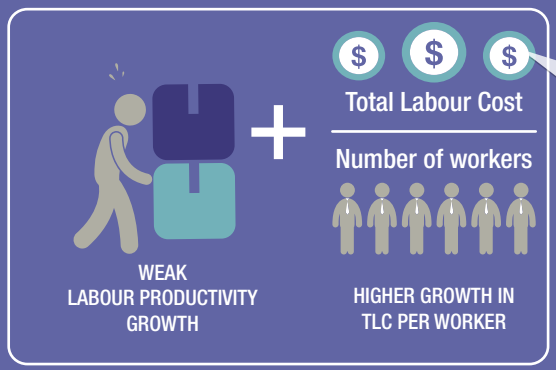
Unit Labour Cost (ULC) is a measure of a country's cost competitiveness. ULC increases can be decomposed into changes in Total Labour Cost (TLC) per worker and labour productivity.

Singapore's ULC has increased over the past few years.

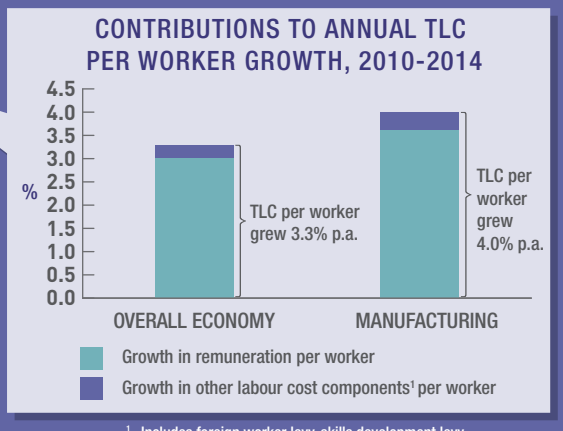


FINDINGS

Finding 1: The recent increase in ULC was a result of weak labour productivity growth coupled with rising TLC per worker.



Finding 2: TLC per worker growth was driven by the growth in remuneration per worker amidst a tight labour market.



[1] Includes foreign worker levy, skills development levy, wage subsidies, and recruitment and net training cost.

It remains vital to press on with our productivity drive, so as to mitigate the impact of wage cost increases, and ensure that Singaporeans' wages and living standards continue to improve.

This article examines the drivers of recent trends in Unit Labour Cost (ULC) for the overall economy and the manufacturing sector. In particular, the changes in ULC are decomposed into the contributions of changes in labour productivity[1] and Total Labour Cost (TLC) per worker.[2] Changes in TLC per worker are in turn further decomposed into the contributions of different labour cost components.

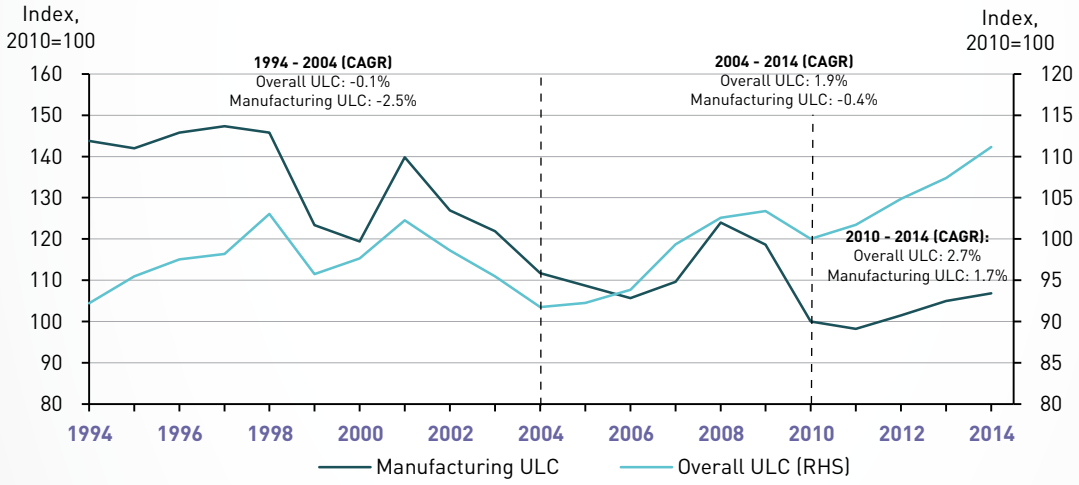
Singapore's ULC has increased in recent years

ULC is defined as the TLC per unit of gross real valued-added (VA), and is commonly seen as a measure of cost competitiveness. In Singapore, the ULC is collected at the economy-wide level and also for the manufacturing sector.

Mirroring the trends in other developed economies, the overall ULC in Singapore has risen in recent years.[3] From 2004 to 2014, the overall ULC rose at a compounded annual growth rate (CAGR) of 1.9 per cent, compared to the 0.1 per cent per annum (p.a.) decline in the earlier decade (Exhibit 1). Notably, the pace of increase in the overall ULC accelerated to 2.7 per cent p.a. in the most recent four years following the Global Financial Crisis, i.e., from 2010 to 2014.

Similarly, the manufacturing ULC has risen in recent years (1.7 per cent p.a. from 2010 to 2014), in contrast to the declines of 2.5 per cent p.a. and 0.4 per cent p.a. from 1994 to 2004 and 2004 to 2014 respectively.

Exhibit 1: Changes in overall and manufacturing ULC, 1994 – 2014



Source: Singapore Department of Statistics

[1] In this article, labour productivity is proxied by gross real value-added (VA) per worker.

[2] The decomposition framework used follows the earlier work done by Kaonang and Teo (2009).

[3] Other developed economies and China have also seen their ULC increase over the past 10 years. For example, the ULC in the United States and United Kingdom rose by 1.5 per cent p.a. and 1.9 per cent p.a. respectively between 2004 and 2014. China's ULC increased by 5.2 per cent p.a. over this period.

The ULC increases can be decomposed into changes in TLC per worker and labour productivity

Mathematically, the ULC can be decomposed into TLC per worker and the inverse of gross real VA per worker (a proxy of labour productivity)[4]:

$$\text{ULC} = \frac{\text{TLC}}{\text{Gross Real VA}} \qquad \text{[Equation 1a]}$$

$$\text{ULC} = \frac{\text{TLC}}{\text{Worker}} \times \frac{\text{Worker}}{\text{Gross Real VA}} \qquad \text{[Equation 1b]}$$

ULC = TLC per worker × Inverse of Real Labour Productivity

From Equation 1b, a change in the ULC can be approximated as the sum of the change in TLC per worker and the change in the inverse of labour productivity:

$$\%\Delta\text{ULC} \approx \%\Delta\frac{\text{TLC}}{\text{Worker}} + \%\Delta\frac{\text{Worker}}{\text{Gross Real VA}} \qquad \text{[Equation 2]}$$

%ΔULC ≈ Change in TLC per worker + Change in Inverse of Labour Productivity

Based on the above equation, a rise in the ULC can be due to an increase in TLC per worker and/or a decline in labour productivity. Conversely, a decline in the ULC can be driven by a fall in TLC per worker and/or an increase in labour productivity.

Using this decomposition framework, we can see that the increase in ULC in recent years has been mainly caused by rising TLC per worker amidst a tight labour market

The results of the decomposition analysis for both the overall ULC and manufacturing ULC over the period of 1994 to 2014 are presented in Exhibit 2A and Exhibit 2B respectively.

Exhibit 2A: Decomposition of annual changes in overall ULC, 1994 – 2014

Period	ULC growth (%)	Contribution to ULC growth (pp)	
		TLC/Worker	Inverse of Gross Real VA/Worker[1]
	(a) ≈ (b)+(c)	(b)	(c)
1994 – 1999	0.7	2.2	-1.5
1999 – 2004	-0.9	3.0	-3.9
2004 – 2009	2.4	1.4	1.0
2009 – 2014	1.5	4.3	-2.8
2010 – 2014[2]	2.7	3.3	-0.6

[4] Gross real VA at 2010 basic prices (i.e., excluding taxes on products) is used for the computation of ULC. The official labour productivity (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 hence can be used to approximate labour productivity growth.

Exhibit 2B: Decomposition of annual manufacturing ULC growth, 1994 – 2014

Period	ULC growth (%) (a) ≈ (b)+(c)	Contribution to ULC growth (pp)	
		TLC/Worker (b)	Inverse of Gross Real VA/Worker[1] (c)
1994 – 1999	-3.0	3.3	-6.5
1999 – 2004	-2.0	2.3	-4.3
2004 – 2009	1.2	-0.4	1.6
2009 – 2014	-2.1	5.5	-7.7
2010 – 2014[2]	1.7	4.0	-2.3

Notes for Exhibits 2A and 2B:

1. Calculated based on gross VA at 2010 basic prices. As Worker/VA is approximately the inverse of labour productivity, a negative (positive) rate of growth in Worker/VA implies a rise (decline) in labour productivity.

2. Strong gross real VA per worker growth in 2010 for the overall economy (12.0 per cent), due to the recovery from the Global Financial Crisis, resulted in a lower ULC growth rate. To exclude the impact of the recovery year, ULC growth from 2010 to 2014 was included in the Exhibits.

3. Numbers may not sum due to rounding and as this is a first-order approximation.

Source: Singapore Department of Statistics and Ministry of Manpower

As can be seen, the increase in ULC in recent years for both the overall economy and the manufacturing sector was primarily due to a rise in the TLC per worker, even as labour productivity growth remained weak.

From 2010 to 2014[5], the overall ULC increased by 2.7 per cent p.a. (Exhibit 2A). More than 84 per cent[6] of this can be attributed to the increase in TLC per worker. In particular, TLC per worker rose by 3.3 per cent p.a. over this period, higher than the growth rates of 1.4 to 3.0 per cent p.a. seen in the earlier 5-year periods (i.e., 1994-1999, 1999-2004 and 2004-2009). This has in turn come on the back of tight labour market conditions, with the unemployment rate remaining low and vacancies remaining high during this period. At the same time, labour productivity growth (as approximated by gross real VA per worker growth) has been weak, coming in at only 0.6 per cent p.a. from 2010 to 2014.[7]

For the manufacturing sector, the pace of increase in TLC per worker similarly accelerated to 4.0 per cent p.a. between 2010 and 2014, from -0.4 to 3.3 per cent p.a. in the earlier 5-year periods (Exhibit 2B). The increase in TLC per worker outpaced the productivity gains of 2.3 per cent p.a., resulting in the manufacturing ULC increasing by 1.7 per cent p.a. over the same period.

The increase in TLC per worker can be further decomposed into the contributions from remuneration and other labour-related cost increases

The TLC comprises remuneration and other labour-related costs, including the skills development levy (SDL)[8], foreign worker levy (FWL), wage subsidies[9], and recruitment and net training cost. A change in the TLC can thus be derived as the sum of the changes in each of these cost components (Equation 3):

[5] This time period excludes the strong rebound experienced in 2010 following the Global Financial Crisis.

[6] Computed as |b|/(|b|+|c|), where b and c respectively refer to the growth contributions of (i) TLC per worker, and (ii) inverse of real labour productivity to the increase in ULC respectively.

[7] Based on the official VA per worker statistics, labour productivity grew by 0.3 per cent p.a. over this period.

[8] The SDL is paid by employers for all their employees up to the first $4,500 of the employees' gross monthly salary. All SDL collected are channelled to the Skills Development Fund (SDF), which is used, among other things, to support workforce upgrading programmes and provide training grants to employers when they send their employees for training subsidised by the Workforce Development Agency (WDA).

[9] Wage subsidies refer to subsidies provided to companies to reduce labour cost. Examples of wage subsidies include the Special Employment Credit and Temporary Employment Credit. These subsidies lower the TLC.

$$\Delta TLC = \Delta Remuneration + \Delta SDL + \Delta FWL + \Delta Wage\ subsidies + \Delta Recruitment\ and\ net\ training\ cost \quad [Equation\ 3]$$

From Equation 3, changes in TLC per worker can be further decomposed as follows:

$$\%\Delta \frac{TLC}{Worker} = \frac{\Delta TLC}{\Delta TLC} \times \%\Delta \frac{TLC}{Worker} \quad [Equation\ 4a]$$

$$\%\Delta \frac{TLC}{Worker} = \sum_i \frac{\Delta(\frac{X_i}{worker})}{\Delta(\frac{TLC}{worker})} \times \%\Delta \frac{TLC}{Worker} \quad [Equation\ 4b]$$

where X_i references each of the five components that make up the TLC, and $\frac{\Delta(\frac{X_i}{worker})}{\Delta(\frac{TLC}{worker})} \times \%\Delta \frac{TLC}{Worker}$ refers to the percentage-point (pp) contribution of each of these components to TLC per worker growth.

Growth in remuneration per worker accounted for the bulk of the increase in TLC per worker over the past two decades

From the decomposition analysis, the increase in TLC per worker for the overall economy over the past 20 years was largely driven by a rise in remuneration per worker (Exhibit 3A).[10] The growth in remuneration per worker alone accounted for 92 per cent[11] of the increase in TLC per worker between 1994 and 2014. More recently, from 2010 to 2014, it contributed 3.0-pp (or 82 per cent) to the 3.3 per cent increase in TLC per worker, while FWL contributed only 0.5-pp to the increase. In addition, wage subsidies reduced TLC per worker by 0.2-pp over the same period.

For the manufacturing sector, the increase in remuneration per worker was similarly the main driver of the rise in TLC per worker over the past 20 years, accounting for about 93 per cent of its increase (Exhibit 3B). In the most recent period, from 2010 to 2014, the increase in remuneration per worker contributed 3.6-pp (or 83 per cent) to the 4.0 per cent growth in TLC per worker in the sector. Comparatively, the increase in FWL contributed a far lower 0.5-pp to the rise in TLC per worker.

Exhibit 3A: Decomposition of annual growth in TLC per worker for the overall economy, 1994 – 2014

Period	TLC/Worker growth (%)	Contribution to TLC/Worker growth (pp)				
		Remuneration /Worker	SDL/Worker	FWL/Worker	Wage subsidies/ Worker	Recruitment & net training cost/Worker
	(a) = sum of (b) to (f)	(b)	(c)	(d)	(e)	(f)
1994 – 1999	2.2	2.2	0.0	0.0	0.0	0.1
1999 – 2004	3.0	3.1	0.0	-0.2	0.0	0.0
2004 – 2009	1.4	2.0	0.0	0.1	-0.7	0.0
2009 – 2014	4.3	3.6	0.0	0.4	0.3	0.0
2010 – 2014	3.3	3.0	0.0	0.5	-0.2	0.0

[10] The increases in SDL per worker and recruitment and net training cost per worker were found to have a negligible impact on the increase in TLC per worker.

[11] Computed as |b|/(|b|+|c|+|d|+|e|+|f|), where b, c, d, e and f respectively refer to the growth contributions of (i) remuneration per worker, (ii) SDL per worker, (iii) FWL per worker, (iv) wage subsidies per worker, and (v) recruitment and net training cost per worker to TLC per worker growth respectively.

Exhibit 3B: Decomposition of annual growth in TLC per worker for the manufacturing sector, 1994 – 2014

Period	TLC/Worker growth (%)	Contribution to TLC/Worker growth (pp)				
		Remuneration /Worker	SDL/Worker	FWL/Worker	Wage subsidies/ Worker	Recruitment & net training cost/Worker
	(a) = sum of (b) to (f)	(b)	(c)	(d)	(e)	(f)
1994 – 1999	3.3	3.6	0.0	-0.4	0.0	0.1
1999 – 2004	2.3	2.3	0.0	0.0	0.0	0.0
2004 – 2009	-0.4	0.2	0.0	0.2	-0.7	0.0
2009 – 2014	5.5	4.5	0.0	0.5	0.4	0.1
2010 – 2014	4.0	3.6	0.0	0.5	-0.1	0.1

Note for Exhibits 3A and 3B:

1. Numbers may not sum due to rounding.

Source: Singapore Department of Statistics, Ministry of Manpower and MTI Staff estimates

Productivity-driven growth remains vital in ensuring sustainable wage increases for Singaporeans

In summary, the ULC increases in recent years were largely due to the rise in TLC per worker, which had outpaced the gains in labour productivity. The increase in TLC per worker was in turn primarily due to wage increases amidst a tight labour market. By contrast, the contributions of other labour cost components like FWL, SDL and recruitment and net training cost to increases in TLC per worker were small.

Going forward, wage cost pressures are likely to persist, given continuing tight labour market conditions. As such, it remains vital for us to press on with our productivity drive, as it is only by raising productivity that we will be able to mitigate the impact of wage cost increases and remain competitive. Over the longer term, raising productivity is also the key to sustaining wage growth for Singaporeans.

The Government will continue to work with businesses, unions and workers to boost productivity growth in the economy, and enhance the quality of our workforce through various SkillsFuture initiatives, so as to ensure that the wages and living standards of Singaporeans continue to improve.

Reference

Kaonang, R. and Teo E. (2009), "Box Article: Trends in Singapore's Unit Labour Cost During Recessions", Economic Survey of Singapore First Quarter 2009, pp. 11-16.

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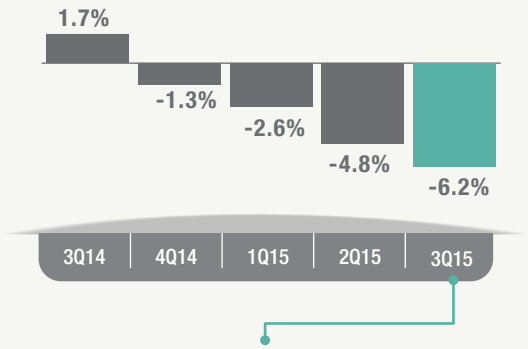
Ministry of Trade and Industry

CHAPTER 2
Sectoral Performance

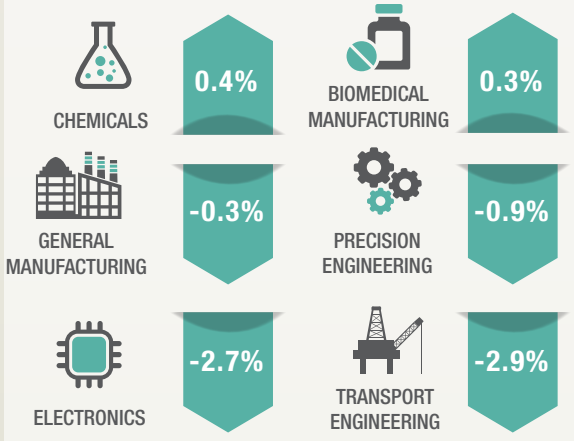
CHAPTER 2
SECTORAL PERFORMANCE

MANUFACTURING

Real Growth

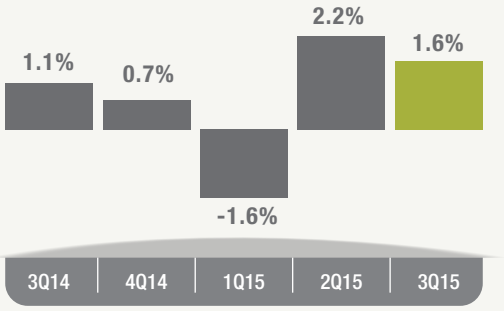


Clusters in Manufacturing Sector %-point contribution in 3Q15

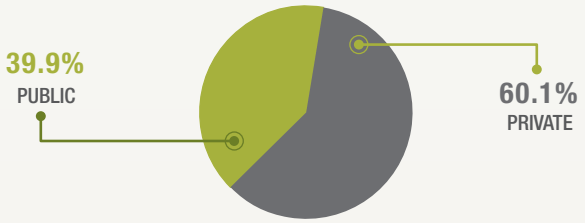


CONSTRUCTION

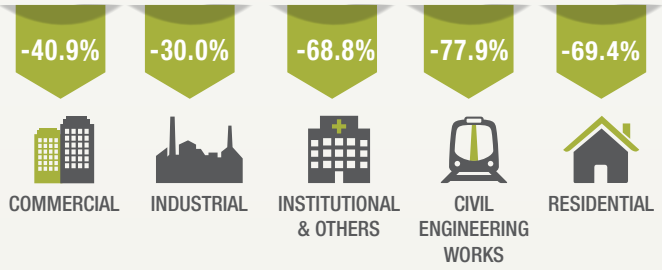
Real Growth



Certified Payments in 3Q15

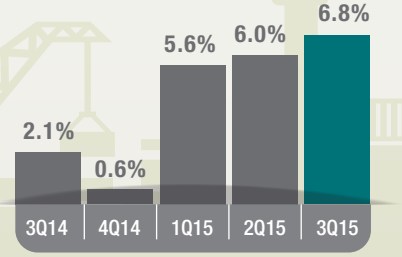


Contracts Awarded in 3Q15

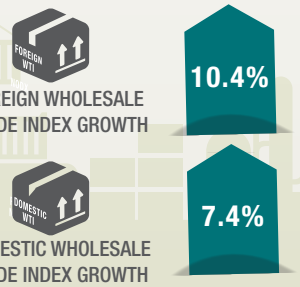


WHOLESALE & RETAIL TRADE

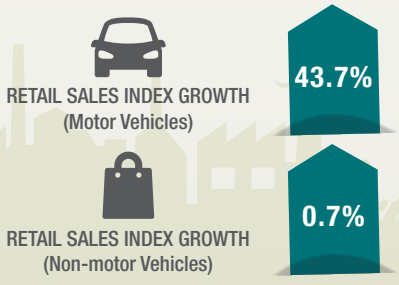
Real Growth



Wholesale Trade

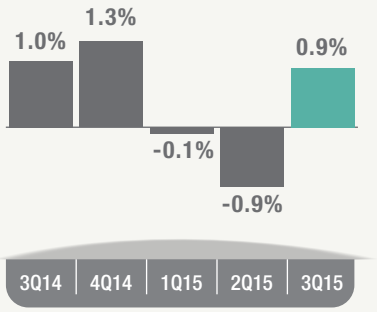


Retail Trade



ACCOMMODATION & FOOD SERVICES

Real Growth



Accommodation

Performance of hotels

LUXURY

UPSCALE

MID-TIER

ECONOMY

Gross lettings growth: 8.7%

Room revenue growth: 4.8%

Food Services

Performance of F&B (Sales growth)

FAST FOOD 2.9%

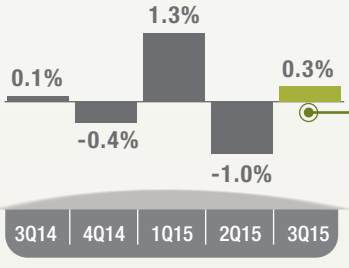
CATERING -3.4%

OTHERS -3.6%

RESTAURANTS -9.5%

TRANSPORTATION & STORAGE

Real Growth



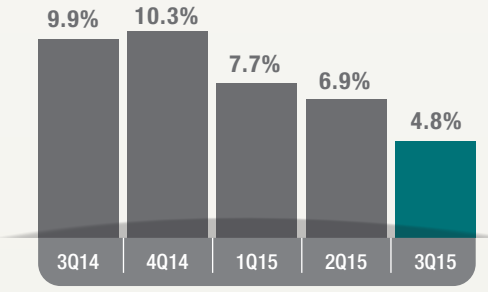
TOTAL SEA CARGO HANDLED GROWTH -0.6%

MOTOR-VEHICLE POPULATION GROWTH -1.4%

AIR PASSENGERS HANDLED GROWTH 6.4%

FINANCE & INSURANCE

Real Growth



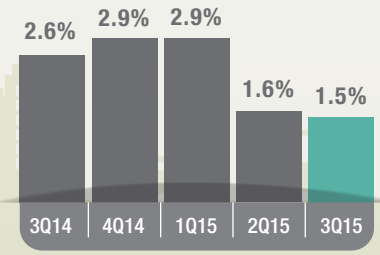
Growth of bank loans & advances to non-bank customers in 3Q15

-1.0% LOANS TO BUSINESSES

+3.1% CONSUMER LOANS

BUSINESS SERVICES

Real Growth



Private Residential Real Estate

35.9% UNITS TRANSACTED (Y-O-Y CHANGE)

-1.3% PRICE INDEX (Q-O-Q CHANGE)

OVERVIEW

In the third quarter of 2015,

- Manufacturing output contracted by 6.2 per cent, extending the 4.8 per cent decline in the previous quarter. The contraction was mainly due to a fall in the output of the transport engineering and electronics clusters.
- The construction sector registered growth of 1.6 per cent, moderating from the 2.2 per cent expansion in the previous quarter. The slowdown came on the back of a moderation in growth in public sector construction activities.
- The wholesale & retail trade sector expanded by 6.8 per cent, higher than the 6.0 per cent growth in the preceding quarter. Growth was supported by both the wholesale trade and retail trade segments.
- Supported by the air transport segment, the transportation & storage sector grew marginally by 0.3 per cent, a reversal from the 1.0 per cent decline in the preceding quarter.
- The accommodation & food services sector recorded growth of 0.9 per cent, compared to the 0.9 per cent contraction in the previous quarter. Growth came on the back of a recovery in visitor arrivals to Singapore.
- Growth in the finance & insurance sector eased to 4.8 per cent, from 6.9 per cent in the preceding quarter, weighed down by sluggish credit demand from regional economies and volatile market conditions.
- The business services sector expanded by 1.5 per cent, moderating slightly from the 1.6 per cent growth in the previous quarter. Growth in the sector was weighed down by a slowdown in the real estate and professional services segments.

MANUFACTURING

Manufacturing output contracted by 6.2 per cent on a year-on-year basis in the third quarter, extending the 4.8 per cent decline in the previous quarter (Exhibit 2.1). The drop in manufacturing output was primarily due to a decline in the output of the transport engineering and electronics clusters (Exhibit 2.2). Although the chemicals and biomedical manufacturing clusters saw higher output, it was not sufficient to offset the decline in output in the other clusters.

Exhibit 2.1: Manufacturing Growth Rates

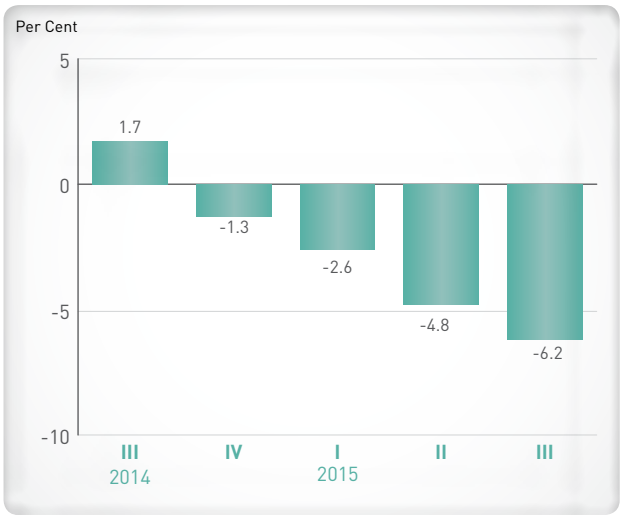
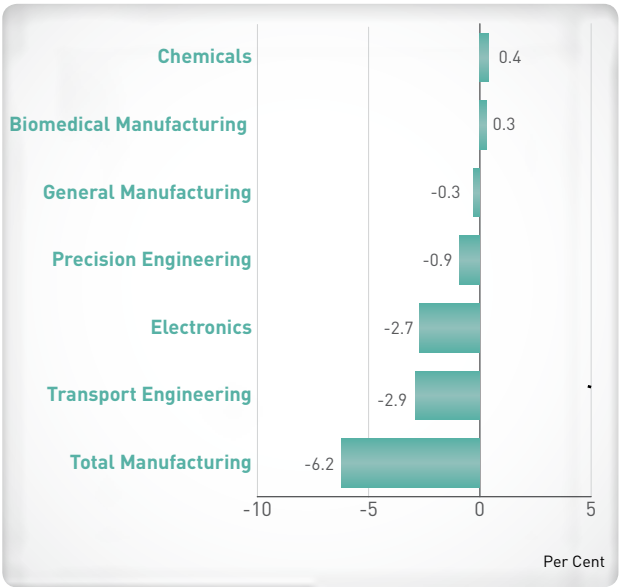


Exhibit 2.2: Percentage-Point Contribution to Manufacturing Sector's Growth in 3Q 2015



In the **chemicals** cluster, output increased by 3.7 per cent in the third quarter, with all segments, except for the other chemical products segment, posting output gains. In particular, growth was led by the specialty chemicals and petrochemicals segments, which grew by 7.2 per cent and 2.0 per cent respectively, on the back of capacity expansions. Growth was further supported by the petroleum segment, which grew by 4.1 per cent.

The **biomedical manufacturing** cluster grew by 1.3 per cent in the third quarter, supported by a robust expansion in the medical technology segment (17 per cent), which came on the back of higher export demand for medical devices and supplies. On the other hand, the pharmaceuticals segment fell by 2.5 per cent due to a different product mix which resulted in a lower volume of active pharmaceutical ingredients produced.

The **general manufacturing** industries shrank by 2.9 per cent in the third quarter, with all segments within the cluster registering declines in output. The food, beverages & tobacco segment contracted by 3.6 per cent due to lower export demand. At the same time, the output of the miscellaneous industries and printing segments declined by 1.9 per cent and 4.8 per cent respectively. The weak performance of the miscellaneous industries was due to lower output in construction-related products, such as metal doors, windows, grilles & gratings and wooden furniture & fixtures.

The **precision engineering** cluster contracted 7.6 per cent in the third quarter. In particular, the machinery & systems segment shrank by 8.6 per cent, weighed down by a lower volume of mechanical engineering work, as well as lower production of process control equipment. In addition, the semiconductor equipment manufacturing firms in the segment were affected by a slowdown in global demand. The precision modules & components segment contracted by 6.3 per cent due to a fall in the production of industrial rubber and fabricated metal products.

Output in the **electronics** cluster fell by 9.2 per cent in the third quarter, with all segments, except the other electronic modules & components segment, recording lower output. The semiconductors, computer peripherals and data storage segments posed the biggest drag on the cluster, contracting by 12 per cent, 22 per cent and 5.4 per cent respectively. The poor performance of the semiconductors segment could be attributed to weak global semiconductor demand due to the softening of the PC and mobility devices markets. On the other hand, the other electronic modules & components segment recorded output growth of 44 per cent on the back of an expansion in capacity and higher demand for components used in communication devices.

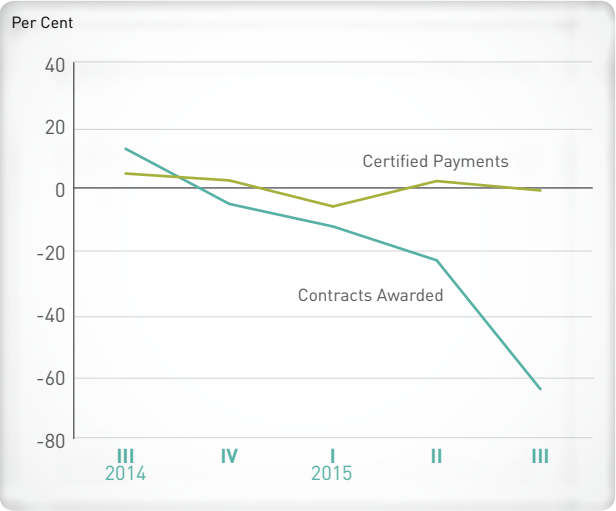
The **transport engineering** cluster posted a sharp 16 per cent contraction in the third quarter. This was largely because of a 24 per cent fall in the output of the marine & offshore engineering segment which had come on the back of a lower level of rig building and ship building activities. On the other hand, the aerospace segment expanded by 5.2 per cent, largely due to a low base effect.

CONSTRUCTION

The construction sector expanded by 1.6 per cent in the third quarter, moderating from the 2.2 per cent growth registered in the previous quarter. The slowdown in growth came on the back of a contraction in public sector construction activities, which was in turn due to lower output from public residential building works and public institutional and other building works.

Nominal certified progress payments declined by 0.8 per cent, reversing the 2.2 per cent growth recorded in the previous quarter (Exhibit 2.3). This was largely due to weaker progress payments in public sector construction works. In particular, public certified progress payments declined by 3.3 per cent, reversing the 14 per cent expansion in the previous quarter, weighed down by a contraction in public residential building works (-7.1 per cent) and public institutional and other building works (-15 per cent). Nevertheless, the private civil engineering segment (32 per cent) posted robust growth, largely due to higher progress payments from projects related to berths construction and cabling works.

Exhibit 2.3: Changes in Contracts Awarded and Certified Payments



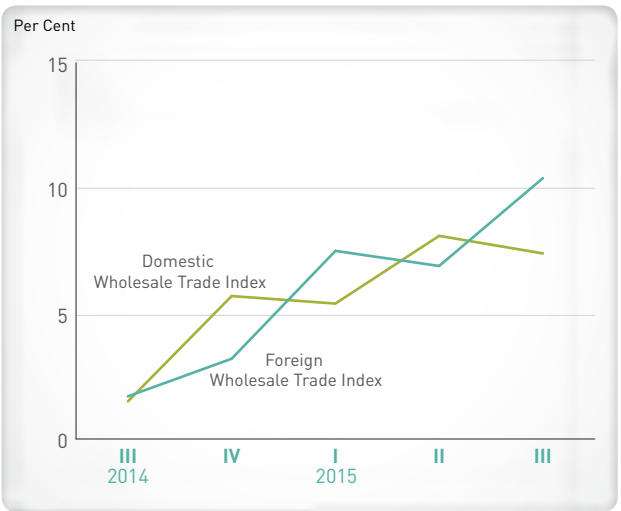
Similarly, construction demand in terms of contracts awarded continued to weaken in the third quarter, declining by 64 per cent, extending the 23 per cent fall in the previous quarter (Exhibit 2.3). The pullback in demand follows from a slowdown in both public sector (-70 per cent) and private sector (-54 per cent) construction demand. In particular, public sector contracts awarded for civil engineering (-77 per cent), residential building (-63 per cent), and institutional and other building (-77 per cent) developments contracted sharply in the third quarter. Similarly, private sector contracts awarded continued to decline, with residential building (-79 per cent), civil engineering (-80 per cent) and commercial building (-59 per cent) developments weighing heavily on construction demand.

WHOLESALE & RETAIL TRADE

The wholesale & retail trade sector grew by 6.8 per cent in the third quarter, extending the 6.0 per cent expansion in the previous quarter.

The wholesale trade segment was boosted by an increase in both domestic and foreign wholesale trade sales volume. In particular, the domestic wholesale trade index rose by 7.4 per cent, following the 8.1 per cent increase in the previous quarter. The strong performance in domestic wholesale trade was due to a surge in the sales of petroleum and petroleum products (14 per cent), chemicals & chemical products (39 per cent) and telecommunications & computers (18 per cent).

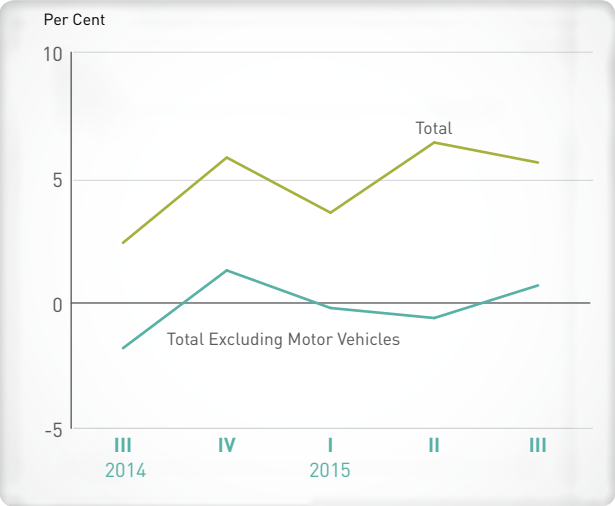
Exhibit 2.4: Changes in Wholesale Trade Index at Constant Prices



Similarly, the foreign wholesale trade index rose by 10 per cent in the third quarter, accelerating from the 6.9 per cent rise in the previous quarter. Growth was driven by improvements in the sales of petroleum & petroleum products (21 per cent), metals, timber & construction materials (10 per cent) and general wholesale trade (8.8 per cent).

Overall retail trade sales volume also recorded resilient growth of 5.6 per cent in the third quarter, extending the 6.4 per cent expansion in the second quarter (Exhibit 2.5). Growth was supported by a surge in the volume of motor vehicle sales (44 per cent), which was in turn due to a substantial increase in the supply of Certificate of Entitlements. Excluding motor vehicles, retail sales volume increased at a much slower pace of 0.7 per cent over the same period. The increase in retail sales volume (excluding motor vehicles) was due to improved non-discretionary goods sales. For instance, the sales of medical goods & toiletries and department store goods rose by 8.1 per cent and 3.6 per cent respectively.

Exhibit 2.5: Changes in Retail Price Index at Constant Prices

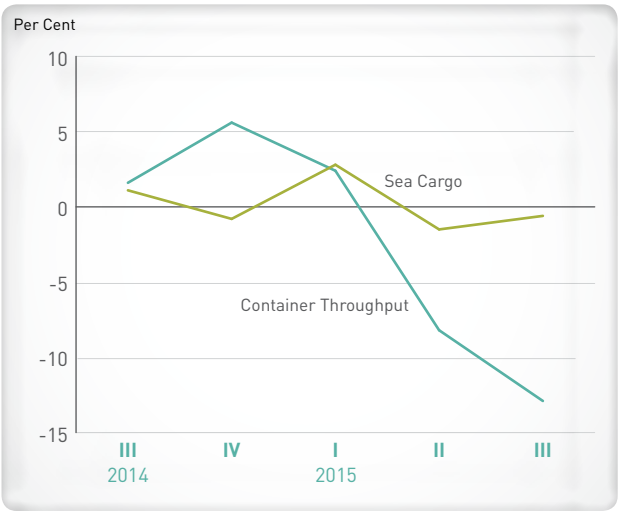


TRANSPORTATION & STORAGE

The transportation & storage sector expanded marginally by 0.3 per cent in the third quarter, an improvement in performance compared to the 1.0 per cent decline in the previous quarter.

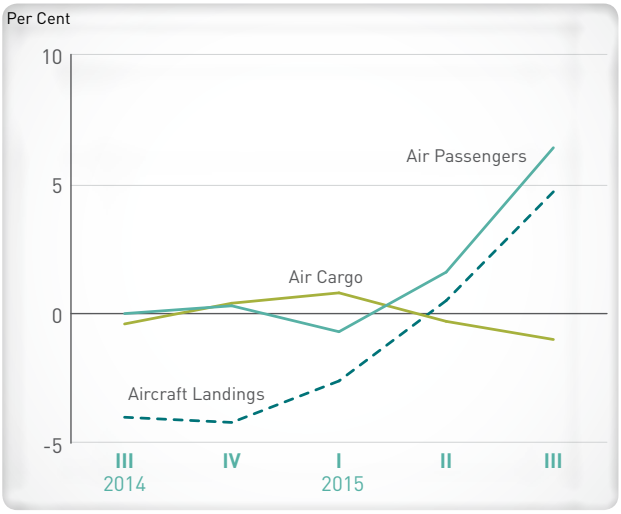
The performance of the water transport segment remained sluggish, as the volume of total sea cargo handled contracted by 0.6 per cent, following the 1.5 per cent contraction in the preceding quarter. This was in turn due to a 13 per cent slump in total container throughput at Singapore's ports in the third quarter, which was worse than the 8.2 per cent decline in the second quarter (Exhibit 2.6). The poor performance in container throughput was partly due to weak Asia-Europe trade, and partly due to the formation of two major shipping liner alliances this year which had led to a consolidation of capacity and network coverage outside of Singapore.

Exhibit 2.6: Changes in Container Throughput and Sea Cargo Handled



On the other hand, the performance of the air transport segment improved in tandem with the higher air passenger volume handled at Changi Airport. Specifically, air passenger traffic posted healthy growth of 6.4 per cent in the third quarter, faster than the 1.6 per cent increase in the second quarter (Exhibit 2.7). The increase in air passenger movements was supported by continued improvements in passenger volumes on the Thailand, China and Malaysia routes. By contrast, total air cargo shipments handled at Changi Airport fell by 1.0 per cent, extending the 0.3 per cent dip in the preceding quarter.

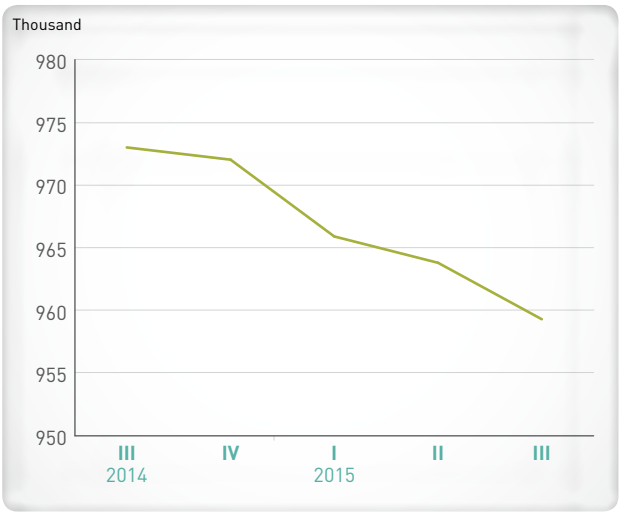
Exhibit 2.7: Changes in Air Transport



The number of aircraft landings registered an increase of 4.7 per cent in the third quarter to reach 43,745, a strong pick-up from the 0.5 per cent growth in the previous quarter.

As of September 2015, the total number of vehicles registered with the Land Transport Authority fell by 1.4 per cent to a total of 959,314 (Exhibit 2.8). These comprised 581,208 private and company cars, 26,013 rental cars, 28,479 taxis, 17,956 buses, 144,109 motorcycles and scooters, and 161,549 goods vehicles and other vehicle types.

Exhibit 2.8: Motor Vehicles Registered

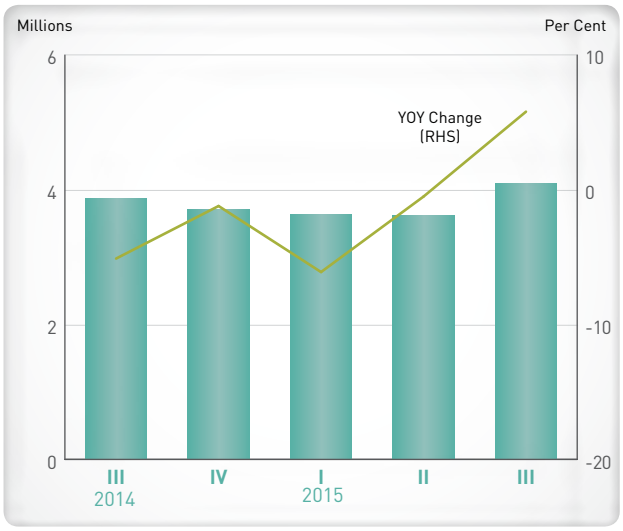


ACCOMMODATION & FOOD SERVICES

Riding on the back of a recovery in visitor arrivals, the accommodation & food services sector grew by 0.9 per cent in the third quarter, a reversal from the 0.9 per cent contraction in the previous quarter.

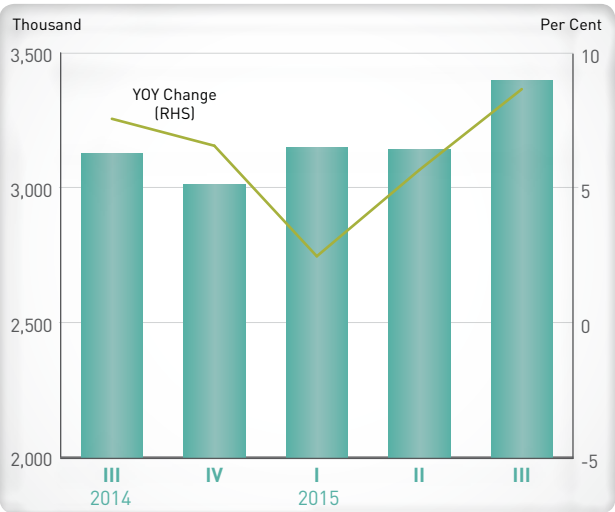
Total visitor arrivals rebounded from the 0.5 per cent decline in the second quarter to record an expansion of 5.8 per cent in the third quarter (Exhibit 2.9). The improvement in visitor arrivals stemmed mainly from a 44 per cent surge in Chinese arrivals, which was higher than the 40 per cent increase recorded in the previous quarter. The recovery in Chinese arrivals was in turn due to improved demand for the Singapore-Malaysia-Thailand travel itineraries, as well as a ramp up in promotional efforts by STB. In addition, the Indonesia inbound market showed signs of bottoming out as it shrank at a slower pace of 5.3 per cent compared to the 12 per cent contraction in the preceding quarter.

Exhibit 2.9: Visitor Arrivals



In line with the pick-up in visitor arrivals, the average occupancy rate of gazetted hotels rose by 0.4 percentage-points to reach 89 per cent in the third quarter, despite an 8.2 per cent increase in overall room supply. Gross lettings also expanded at a faster pace of 8.7 per cent compared to the 5.7 per cent growth in the second quarter [Exhibit 2.10].

Exhibit 2.10: Gross Lettings (Room Nights)



On the other hand, the volume of sales of food & beverages fell by 5.2 per cent in the third quarter, the eighth consecutive quarter of decline [Exhibit 2.11]. Specifically, restaurants and other eating places recorded drops in sales volume of 9.5 per cent and 3.6 per cent respectively, extending the 9.3 per cent and 4.1 per cent declines in the second quarter.

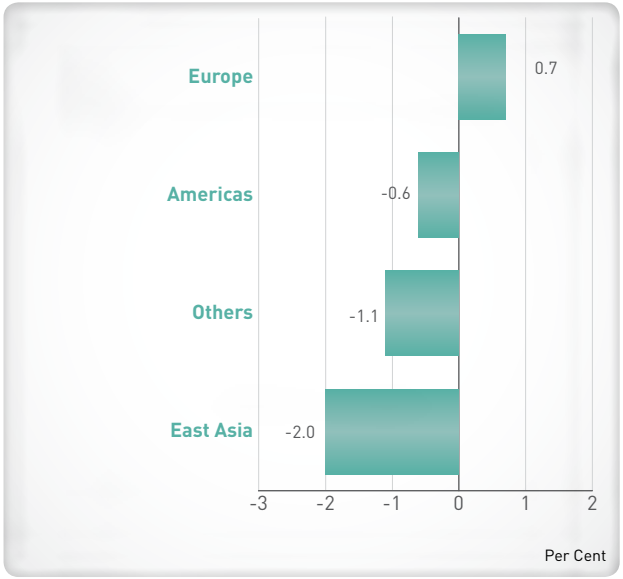
Exhibit 2.11: Changes in Food & Beverage Services Index at Constant Prices

FINANCE & INSURANCE

The finance & insurance sector grew by 4.8 per cent in the third quarter, moderating from the 6.9 per cent growth in the preceding quarter.

Notably, Asian Currency Unit (ACU) non-bank lending fell by 3.7 per cent in the third quarter, extending the 2.3 per cent decline in the previous quarter. This was largely due to a further reduction in the credit extended to non-bank customers in East Asia, amidst weaknesses in the regional economies, including China (Exhibit 2.12). Meanwhile, volatile financial market conditions led to a risk-off mode in capital markets. Against this backdrop, Domestic Banking Unit (DBU) net fees and commissions declined as fund raising and mergers & acquisition activities eased. The fund management industry's growth was likewise dampened, with Asia ex-Japan equity funds seeing significant outflows during the quarter.

Exhibit 2.12: Percentage-point Contribution to Growth of ACU Loans & Advances to Non-Bank Customers by Region in 3Q 2015



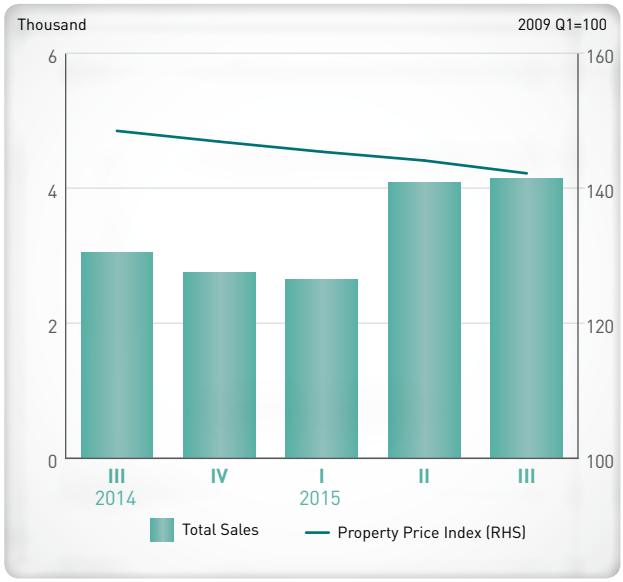
Nevertheless, the life insurance industry was a bright spot within the sector. This was likely due to a surge in the uptake of annual premiums and single premium investment-linked policies alongside new product launches.

BUSINESS SERVICES

The business services sector expanded by 1.5 per cent in the third quarter, similar to the 1.6 per cent growth seen in the previous quarter. Growth in the sector was dampened by a slowdown in the real estate and professional services segments. The slowdown in the real estate segment was in turn due to the continued weakness in the private residential property market.

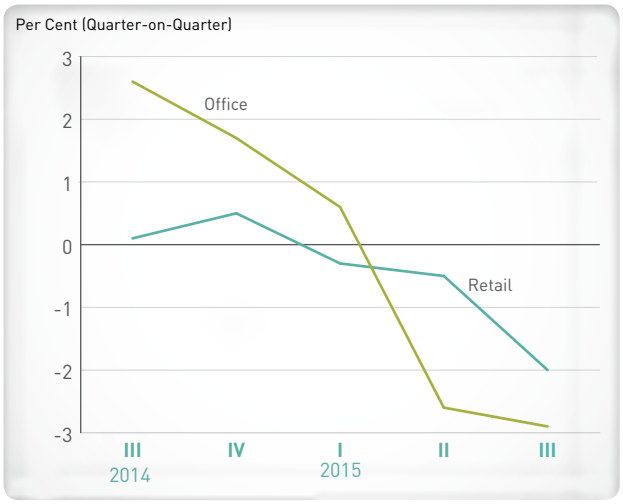
Prices in the private residential property market fell by 1.3 per cent on a quarter-on-quarter basis in the third quarter, following the 0.9 per cent decline in the previous quarter. This was also the eighth consecutive quarter of decline. By contrast, total sales transactions for private residential units rebounded, rising by 36 per cent year-on-year in the third quarter after registering ten consecutive quarters of decline (Exhibit 2.13).

Exhibit 2.13: Total Sales Transaction for Private Residential Units and Private Residential Property Price Index



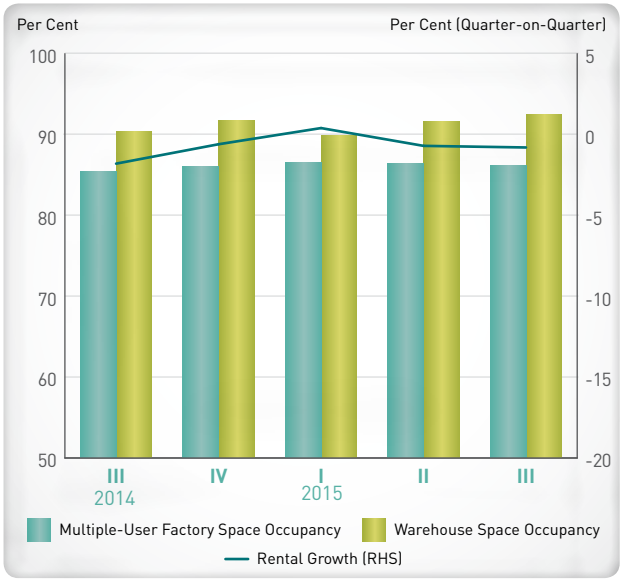
For the private retail space segment, rentals fell by 2.0 per cent quarter-on-quarter, extending the 0.5 per cent decline in the previous quarter, as retailers face an increasingly challenging operating environment on the back of tight labour market conditions. Similarly, rentals in the office space segment continued to soften in the third quarter, declining by 2.9 per cent quarter-on-quarter, following the 2.6 per cent decline in the previous quarter. Notwithstanding the weaker rental growth, occupancy rates in the office space segment remained stable at 90 per cent, similar to that in the previous quarter (Exhibit 2.14).

Exhibit 2.14: Changes in Rentals of Private Sector Office and Retail Spaces



In line with an increase in supply, overall rentals in the industrial space market fell by 0.8 per cent on a quarter-on-quarter basis in the third quarter, extending the 0.7 per cent decline in the previous quarter. The occupancy rate for private multiple-user factory space remained stable at 86 per cent in the third quarter. By contrast, the occupancy rate for private sector warehouse space improved slightly to 93 per cent, from 92 per cent in the previous quarter (Exhibit 2.15).

Exhibit 2.15: Occupancy Rate and Rental Growth of Private Sector Industrial Space



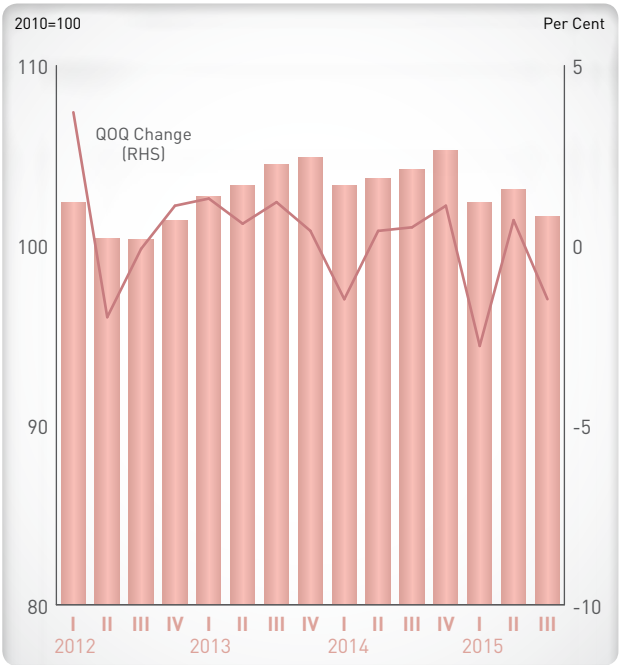
CHAPTER 3
Economic Outlook

CHAPTER 3
ECONOMIC OUTLOOK

LEADING INDICATORS

The near-term outlook for Singapore remains challenging, with the composite leading index (CLI) pointing to slower growth. The CLI declined by 1.5 per cent on a quarter-on-quarter basis in the third quarter of 2015, reversing the 0.7 per cent expansion in the previous quarter (Exhibit 3.1).

Exhibit 3.1: Composite Leading Index Levels and Growth Rate



Of the nine components within the CLI, five of them declined compared to the previous quarter, namely wholesale trade, the US Purchasing Managers' Index, non-oil sea cargo handled, domestic liquidity and stock price. On the other hand, the components that improved were the stock of finished goods and money supply. The rest of the components – non-oil retained imports and new companies formed – remained unchanged.

CONCLUSION

Economic Outlook for 2015

Global economic conditions have remained sluggish, with full-year growth for 2015 likely to come in weaker than in 2014. In line with the sluggish external environment, the Singapore economy grew at a slower pace of 2.2 per cent in the first three quarters of 2015, compared to 3.2 per cent over the same period a year ago. Growth was weighed down primarily by the weak performance of the manufacturing sector.

For the rest of the year, Singapore's GDP growth is expected to remain resilient amidst a challenging external environment. Sectors such as wholesale trade and finance & insurance are likely to continue to post modest growth, even as the manufacturing sector is expected to remain weak. On the other hand, growth in domestically-oriented sectors like business services and information & communications is likely to remain firm.

Taking these factors into consideration, the Ministry of Trade & Industry expects the Singapore economy to grow by "**close to 2.0 per cent**" for the whole of 2015.

Economic Outlook for 2016

Global growth is expected to improve in 2016, supported by a strengthening of growth in the advanced economies and improvements in most emerging market and developing economies. The US economy is expected to grow at a faster pace in 2016, supported by domestic demand, while the Eurozone is projected to grow at a similar pace as in 2015. In Asia, China's economic growth is expected to moderate further in 2016 due to the continued rebalancing of the economy away from industrial production and investment-driven growth towards services and consumption-driven growth. Meanwhile, ASEAN economies are generally expected to remain resilient in 2016.

Even though global growth is expected to improve, the continued slowdown in the Chinese economy, the services-driven nature of growth in the US, as well as the trends of in-sourcing in China and the US may mean that external demand for Singapore and regional countries may not see a significant uplift next year. Domestically, the labour market is also expected to be tight, with the unemployment rate remaining low.

Against this backdrop, the growth outlook for the Singapore economy in 2016 is modest. While sectors such as finance & insurance and wholesale trade are expected to support growth, the manufacturing sector is likely to remain weak. Sector-specific factors may also weigh on the growth of some sectors. For instance, sustained low oil prices will continue to dampen rig building activities in the marine & offshore segment. Growth in labour-intensive sectors such as retail and food services may also be weighed down by labour constraints.

At the same time, downside risks to the global growth outlook remain. In China, there is a risk that ongoing reforms to rebalance the economy may falter, leading to a significant drop in demand. The impact could also be amplified through the financial system, thereby leading to an abrupt and sharp fall in China's growth. With low commodity prices, the anticipated normalisation of US monetary conditions and volatility in the Chinese stock market, regional countries could face sudden and large capital outflows, resulting in added pressures on their currencies and asset markets.

Taking into account the above factors, and barring the materialisation of downside risks, the Singapore economy is expected to grow at a modest pace of "**1.0 to 3.0 per cent**" in 2016.

FEATURE ARTICLE


Res URate
Inclusive Growth
Income mobility
social capital
PROGRESSIVE SOCIETY
Demographics
skills & education
TFR

FEATURE ARTICLE

IMPACT EVALUATION OF SPRING'S CAPABILITY DEVELOPMENT GRANT SCHEME

BACKGROUND

The Capability Development Grant (CDG) scheme supports SMEs in building their capabilities and enhancing their competitiveness...

BUILDING CAPABILITIES

ENHANCING COMPETITIVENESS

... by defraying up to 70% of qualifying project costs for initiatives in 10 project areas

Brand & Marketing Strategy Development

Business Excellence

Business Strategy Innovation

Financial Management

Productivity Improvement

Service Excellence

Technology Innovation

Enhancing Quality & Standards

Intellectual Property & Franchising

Human Capital Development

Between 2005 and 2012, around 1,200 firms have tapped on the CDG to complete 1,904 projects

around **1,200** firms

HAVE COMPLETED

1,904 projects

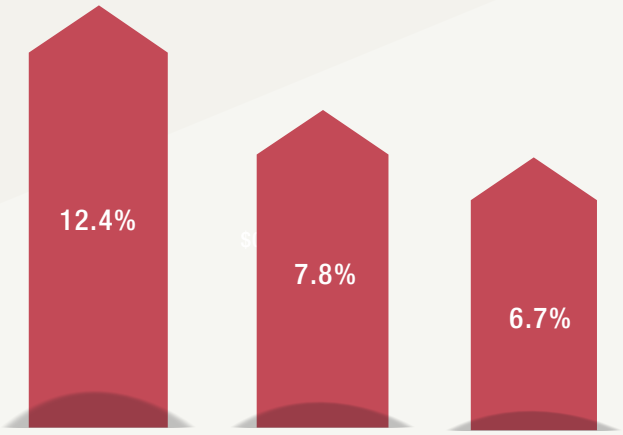
FINDINGS

The overall impact of the CDG scheme on firms' revenue was positive and statistically significant. On average, as compared to pre-treatment periods, firms' revenues were 9.3% higher after joining the CDG scheme

9.3% increase in revenues

RESULTS IN

The Productivity Improvement projects had the largest impact of 12.4% on firms' revenue, compared to 7.8% for Technology Innovation projects and an average of 6.7% for the remaining 8 project areas



PRODUCTIVITY IMPROVEMENT

TECHNOLOGY INNOVATION

OTHER PROJECT AREAS

EXECUTIVE SUMMARY

- The Capability Development Grant (CDG) scheme is a financial assistance programme administered by SPRING that aims to help local firms, especially small- and medium-sized enterprises (SMEs), build capabilities and become more competitive. This study evaluates the impact of the scheme on the revenue of firms that participated in the scheme.

- Our findings show that firms' revenues were, on average, 9.3 per cent higher after embarking on projects supported by the CDG scheme. Across the various project areas, productivity improvement projects were found to have the largest impact on revenue, at 12.4 per cent on average, compared to 7.8 per cent for technology innovation projects and 6.7 per cent for other types of projects.

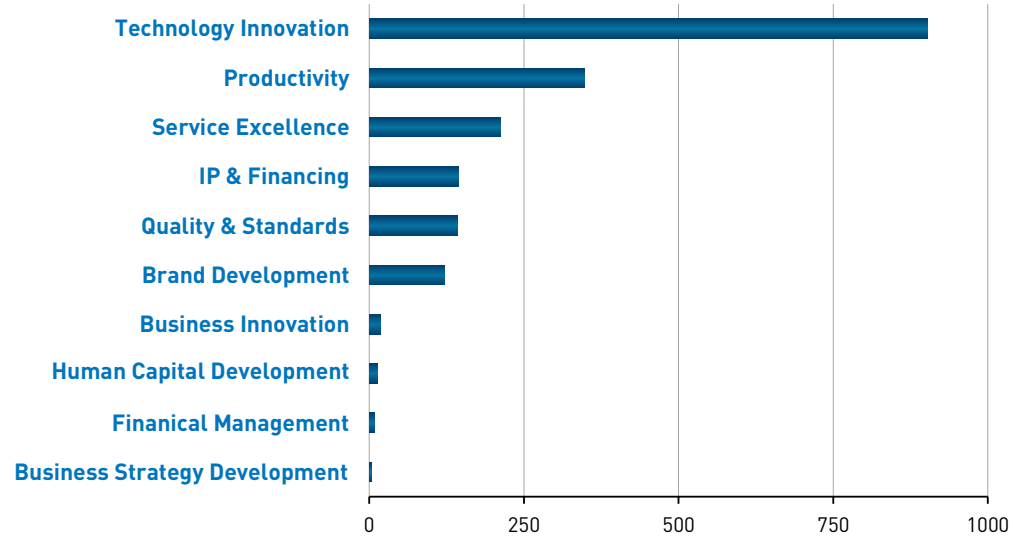
The views expressed in this paper are solely those of the authors and do not necessarily reflect those of the Ministry of Trade and Industry or the Government of Singapore.[1]

INTRODUCTION

The Capability Development Grant (CDG) scheme is a financial assistance programme administered by SPRING that aims to help local firms, especially small- and medium-sized enterprises (SMEs), build capabilities and become more competitive. Currently, the CDG scheme helps firms to develop capabilities across 10 project areas by defraying up to 70 per cent of the qualifying project costs.[2] On top of financial assistance, SPRING also works with CDG firms to understand the areas for improvement and scope the projects based on their needs. Between 2005 and 2012, around 1,200 firms completed a total of 1,904 projects under the CDG scheme. Of the completed projects, the majority were technology innovation and productivity improvement projects (Exhibit 1).[3]

Given that the CDG scheme is one of the key financial assistance schemes targeted at SMEs in Singapore, this study seeks to evaluate the impact of the scheme on the revenue performance of firms. Apart from quantifying the overall impact of the CDG scheme, the study also examines whether the effectiveness of the scheme varies across different project development areas.

Exhibit 1: No. of Successfully Completed CDG Projects, by Project Development Areas



[1] *We would like to thank Yong Yik Wei, Andy Feng and Kenny Goh for their useful suggestions and comments. We are also grateful to Koh Lee Huang and her team (Planning Unit, SPRING) for their inputs to this study. All remaining errors belong to the authors.*

[2] *SPRING's enhanced funding support of up to 70 per cent would be effective for three years until 31 March 2018.*

[3] *Other project areas include: Service Excellence, Intellectual Property and Financing, Quality and Standards, Brand Development, Business Innovation, Human Capital Development, Financial Management and Business Strategy Development. Refer to Exhibit A1 in Annex A for the description of each development area.*

LITERATURE REVIEW

In the literature, a key empirical issue that studies evaluating the impact of firm-level assistance programmes have to address is that of selection bias. This is because participation in such programmes is typically not random, with firms likely to self-select into the programmes based on factors that cannot be observed in the data, such as the presence of better managers. To the extent that these unobservable characteristics of firms also affect the firm-level outcomes that the studies are trying to quantify, a comparison of the outcomes of assisted and unassisted firms would lead to biased results. For instance, if firms that participate in an assistance programme are better managed than the firms that do not participate, the difference in outcomes between the two groups may be due to differences in managerial quality rather than the programme itself.

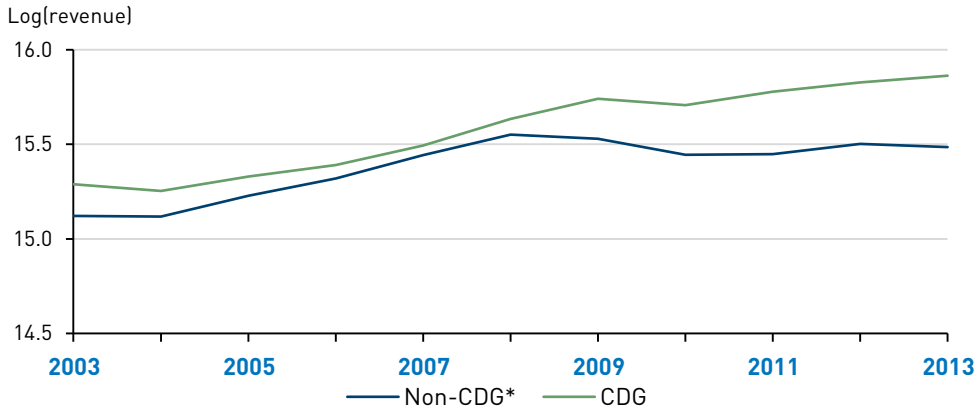
Using a variety of econometric methods to overcome the selection bias problem, studies overseas have found mixed results in terms of the impact of firm-level assistance programmes on SMEs.[4] For example, a UK study on a programme that provides advisory and support services (e.g., referral and brokerage) to SMEs found that the programme had no impact on sales[5], while another UK study on a programme that provides direct consultancy services suggested a sales impact of up to 10 per cent per annum for mid-sized SMEs[6].

DATA AND EMPIRICAL METHODOLOGY

Our study uses an anonymised dataset that tracks individual firms annually from 2001 to 2013. The dataset contains firm-level characteristics, such as the revenue of the firm, the remuneration paid out by the firm, and the industry in which the firm is in. The dataset also includes data pertaining to SPRING's CDG scheme, such as the project development area and the year of CDG grant application for individual projects undertaken by the firms.

Like other studies overseas, a key empirical issue that our study has to address in order to quantify the causal impact of the CDG scheme is that of selection bias. Using propensity score matching (PSM), we compare firms who participated in the CDG scheme with similar firms that did not, and find that CDG firms exhibited different revenue trends, especially during and after the economic downturn in 2008/9 (Exhibit 2). The resilience of the CDG firms during the recession suggests that there may be unobservable quality differences between the two groups of firms. As such, a simple comparison of the revenue of the firms that participated in the CDG scheme with that of firms that did not could overstate the impact of the scheme.

Exhibit 2: Unobservable quality differences remain between CDG and non-CDG firms despite application of the PSM methodology



*Non-CDG firms are control firms formed by one of the PSM specification.

[4] *See Angrist and Pischke (2009) for a formal discussion of the selection problem and econometric methods to overcome it.*

[5] *See Mole, Hart, Roper, Saal (2008) for details.*

[6] *See Wren and Storey (2002) for details.*

To overcome this selection bias, we restrict our sample to the 1,200 firms that had embarked on projects under the CDG scheme between 2005 and 2012. We then exploit differences in the timing of when they embarked on the projects to evaluate the impact of the CDG scheme on their revenue. In essence, this empirical strategy uses the firms that embarked on projects under the CDG scheme later as the control group for those that did so earlier. By comparing changes in the revenue of the firms after they had embarked on the projects, with the changes experienced by firms in the control group, we are able to isolate the causal impact of the scheme.

In order to ensure that other firm-level differences that could affect firms' revenue are controlled for in our analysis, we also include firm fixed-effects as well as firm-level linear time trends in our regressions. The former would help to remove the effect of time-invariant firm-level characteristics on the revenue of firms, while the latter would account for variations in revenue trends that may arise due to age or product cycle differences between firms.

To determine whether the above empirical strategy is valid, we conduct a parallel trends test to examine whether the revenue trends of firms that embarked on projects under the CDG scheme earlier were similar to those that embarked on projects later. Exhibit 3 below shows that there are no statistically significant differences in revenue trends in the three years before participation in the CDG scheme across the various cohorts of firms. This suggests that our empirical approach is valid.

Exhibit 3: Regression Results for Parallel Trend Test

Dependent variable: Log(revenue)	
3 years before CDG	-0.0348
2 years before CDG	-0.0126
1 year before CDG	0.0341
Year effects	Yes
Industry*year interaction	Yes
Firm-fixed effects	Yes
Firm time trends	Yes
R-squared	0.66
Number of observations	12,661

, ** and * indicate significance at the 90%, 95%, and 99% levels, respectively.*

Notes: The CDG variables listed above are 3 dummy variables. These dummy variables take on a value of 1 in each of the 3 years before participation in the CDG scheme.

We next run the following regression to tease out the causal impact of the CDG scheme on firms' revenue:

$$Y_{it} = \beta_0 + \beta_1 CDG_{it} + \alpha SME_{it} + \gamma_t + \gamma_t * X_i^{Industry} + \delta_i + trend_{it} + \varepsilon_{it} \quad (1)$$

Where:

Y_{it} is the log revenue of firm i in time t;
CDG_{it} is a dummy variable that takes on a value of 1 from the year that firm i participates in the CDG scheme, and 0 otherwise;
SME_{it} is a dummy variable that takes on a value of 1 if the firm is an SME in time t, and 0 otherwise[7];
γ_t is a vector of year dummies that captures effects that are common to all firms in the specific year;
$\gamma_t * X_i^{Industry}$ is a vector of year dummies interacted with industry type to capture different industry business cycles;
δ_i denotes the firm time-invariant fixed effects;
$trend_{it}$ is a firm-specific linear time trend to capture firm-level differences in revenue trends; and
ε_{it} is the error term assumed to be uncorrelated with the independent variables in all time periods.

[7] SPRING defines SMEs as firms that have annual sales turnover of not more than S$100 million and/or employment size of not more than 200 workers. As our dataset does not capture information on the employment size of firms, we define the SME status for the firms in our study using the revenue criteria.

The coefficient β_1 is the coefficient of interest. It measures the average change in the revenue of the firms in the years after they had embarked on a project under the CDG scheme.

To further investigate if the impact of the CDG scheme varies across project areas, we run a similar regression specification as equation (1), except that the treatment dummy variable is replaced with dummy variables that denote the specific project development area for each project that the firm participates in:

$$Y_{it} = \beta_0 + \beta_1 Prod_{it} + \beta_2 Tech_{it} + \beta_3 Others_{it} + \alpha SME_{it} + \gamma_t + \gamma_t * X_i^{Industry} + \delta_i + trend_{it} + \varepsilon_{it} \quad (2)$$

Where:

$Prod_{it}$ is a dummy variable that takes on a value of 1 from the year that firm i takes part in a productivity improvement project , and 0 otherwise;

$Tech_{it}$ is a dummy variable that takes on a value of 1 from the year that firm i takes part in a technology innovation project, and 0 otherwise;

$Others_{it}$ is a dummy variable that takes on a value of 1 from the year that firm i takes part in a project in one of the other 8 project areas, and 0 otherwise[8]; and

All other variables are as defined in equation (1).

RESULTS AND DISCUSSION

Our findings suggest that participation in the CDG scheme has a positive and significant impact on the revenue of firms (Exhibit 4). These findings are robust to the inclusion of variables that control for macroeconomic factors, industry business cycles and firm-level revenue trends. In the most stringent specification (Column (3) in Exhibit 4), we find that the impact of CDG on firms' revenue was 9.3 per cent. This means that the revenue of firms increased by 9.3 per cent on average after embarking on projects supported by the CDG scheme.

Exhibit 4: Regression Results

Dependent variable: Log(revenue)			
	(1)	(2)	(3)
CDG_{it} (β_1)	0.607***	0.153***	0.093***
Year effects	No	Yes	Yes
Industry*year interaction	No	Yes	Yes
Firm-fixed effects	No	Yes	Yes
Firm time trends	No	No	Yes
R-squared	0.14	0.26	0.66
Number of observations	12,661	12,661	12,661

*, ** and *** indicate significance at the 90%, 95%, and 99% level, respectively.

In terms of the impact by project areas, we find that projects in all areas had a positive impact on firms' revenue, although the magnitude of the impact varied across the areas (Exhibit 5). Specifically, productivity improvement projects were found to have the largest impact on firms' revenue, at 12.4 per cent on average, compared to 7.8 per cent for technology innovation projects and 6.7 per cent for projects in the remaining eight project areas.

[8] *The remaining eight development areas have been pooled together because of small sample sizes.*

Exhibit 5: Impact of Different CDG Project Areas on Firms' Revenue

Dependent variable: Log(revenue)	
Productivity Improvement (β_1)	0.124***
Technology Innovation (β_2)	0.078**
Others (β_3)	0.0672*
Year effects	Yes
Industry*year interaction	Yes
Firm-fixed effects	Yes
Firm time trends	Yes
R-squared	0.66
Number of observations	12,661

, ** and * indicate significance at the 90%, 95%, and 99% level, respectively.*

One concern with the results above is that the CDG grants could have been reported by firms as revenue in their income statements, thus artificially inflating their revenue and hence the estimated impact. We therefore conduct robustness checks by deducting the grant amount received by each firm from its revenue, and repeat the regression analysis using the reconstructed dependent variable. We find that the results are robust to this adjustment. Although the estimated impact of the CDG scheme on firm revenue is now lower, it remains positive and statistically significant at 6.7 per cent.

CONCLUSION

In summary, this study finds that the CDG scheme has been effective in helping firms to raise their revenue, with firms that embarked on productivity-related projects under the scheme enjoying the largest increase in revenue. This suggests that SMEs will benefit from tapping on the CDG scheme to upgrade their capabilities and streamline their business processes. Going forward, as part of the wider national effort to boost productivity in Singapore, SPRING will continue to support firms, particularly SMEs, through the CDG and other productivity-related schemes.

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ANNEX A: CDG DEVELOPMENT AREAS

Exhibit A1: 10 Development Areas of the CDG Scheme

Brand & Marketing Strategy Development	Raise your company's profile, emphasise your value proposition and take your brand global
Business Strategy Innovation	Use a structured approach to convert knowledge and ideas into new or improved products, processes, services or business models to gain a competitive advantage
Business Excellence	Improve your management systems for better organisational performance
Enhancing Quality Standards	Adopt standards to improve your processes, raise competitiveness, enhance business credibility and enter new markets
Financial Management	Improve your financial management capabilities and better manage your financial resources
Human Capital Development	Invest in human capital and put in place strategies to attract, develop and retain your talents
Intellectual Property & Franchising	Protect your intellectual property to safeguard your business and gain a competitive advantage
Productivity Improvement	Improve workflow processes and optimise resource allocation to maximise productivity
Service Excellence	Enhance service delivery and adopt service innovation to delight your customers
Technology Innovation	Strengthen your technology innovation capabilities to improve your product and services

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ISSN 2382 6541