

3 Labour Market and Inflation

Underlying Domestic Cost and Price Pressures Persist

Domestic cost pressures continued to build up as a result of the tight labour supply and strong demand for workers. However, the pass-through of costs to consumer prices has been uneven. While price increases remained substantial in the non-tradable services sectors, they have been subdued in other industries, reflecting in part the effects of competitive pressures in final markets. Meanwhile, external sources of inflation have been mostly benign, although prices of imported food have risen fairly sharply due to regional production disruptions. Overall, MAS Core Inflation averaged slightly over 2% in the first three quarters of this year.

The labour market should remain tight, given strong manpower needs in the non-tradable sectors amid restrictions on foreign labour inflows. Economy-wide wage growth will likely be around the historical average, but wage pressures will be stronger in certain industries. Likewise, price adjustments will continue to be significant for the non-tradable services, though constrained for items for which demand conditions are less favourable. Healthcare inflation over the coming quarters will be dampened by the recently enhanced subsidies, notably those under the Pioneer Generation Package (PGP), which has resulted in a one-off reduction in the price levels of the affected medical and dental services. Overall imported inflation should remain modest with price pressures expected to be subdued in most of Singapore's major trading partners. Global oil prices have fallen sharply recently, but there remains considerable uncertainty over the profile going forward. Non-cooked food inflation, however, could remain elevated temporarily until the expected decline in global food commodity prices filters through more significantly to domestic prices in H2 2015.

MAS Core Inflation on a year-ago basis could rise slightly into early 2015 before easing to about 2% by year-end, though this profile is subject to the actual outturn in oil prices over the next few months. For the whole year, it is projected to average 2–2.5% in 2014 and 2–3% in 2015. CPI-All Items inflation will remain subdued, reflecting weakness in COE premiums and housing rentals, and is projected to come in at 1–1.5% in 2014 and 0.5–1.5% in 2015.

Over the next few years, the continued growth of industries, such as financial services, information & communications and professional services, will create job opportunities in the non-tradable industries. Singapore may well follow the experience of the advanced economies, where the relevance of skills, rather than academic qualifications, determines the employability and wages of workers.

3.1 Labour Market

Labour Market will Remain Tight

Total employment expanded at a slower pace in H1 2014 as inflows of foreign labour eased. The domestic-oriented sectors led job creation, while the external-facing sectors saw uneven employment growth. On the whole, the labour market remained tight and continued to exert upward pressure on wages, particularly in the non-tradable sectors where demand conditions were favourable. Hiring sentiment is firm, but labour demand will continue to come up against supply constraints over the next few quarters. Overall wage growth in 2014 and 2015 is likely to stay around its historical average. Coupled with a modest offset from productivity growth, unit labour cost (ULC) will rise further.

Employment growth slowed as inflows of foreign labour eased.

Overall employment gains slowed to 56,000 in H1 2014, from 62,600 in the corresponding period last year. In particular, growth in the foreign workforce fell sharply, following consecutive rounds of tightening measures. As firms looked to locals to fill job vacancies, the local share of employment gains rose to a high of 73% in H1 2014. (Chart 3.1)

As shown in Chart 3.2, the inflow of foreign labour has moderated across all categories in recent years. Notably, the two rounds of increases in the Employment Pass minimum qualifying salary in July 2011 and January 2012, and the cut in the services S Pass sub-Dependency Ratio Ceiling (sub-DRC) in July 2013 have led to a slowdown in the rise of Employment Pass Holders and S Pass Holders respectively.

Meanwhile, the number of Work Permit Holders (WPHs) had continued to expand over 2011–13, underpinned by strong labour demand in the construction sector. However, WPH growth started to ease in H1 2014, in light of the sharp cumulative increase in foreign worker levies for the construction sector, as well as the expiry of the grace period for complying with the cuts in the Dependency Ratio Ceiling (DRC) announced in 2012.¹

Chart 3.1
Local and Foreign Share of Employment Gains (%)

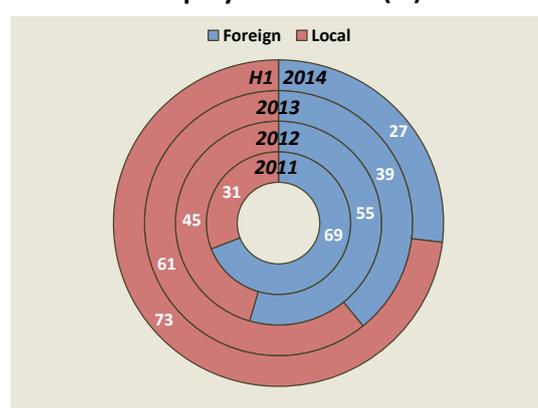
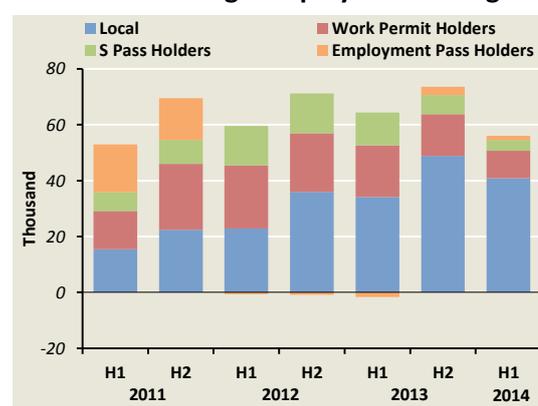


Chart 3.2
Local and Foreign Employment Changes



¹ In July 2012, the manufacturing and services DRCs were cut from 65% to 60% and 50% to 45% respectively, while the S Pass sub-DRC for all sectors was cut from 25% to 20%. Firms were given two years to comply.

Hiring was driven by the domestic-oriented sectors ...

Overall job creation in H1 2014 was led by sustained demand for workers in the construction and domestic-oriented services sectors, as a result of ongoing infrastructure development and investment in social services. (Chart 3.3)

The construction sector added a considerable 9,100 workers, supported by public infrastructure projects, such as the Ng Teng Fong General Hospital, expansion works at Changi Airport, as well as Stage 2 of the Downtown MRT Line.

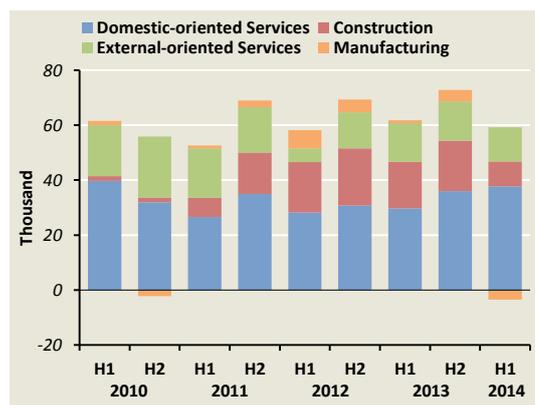
At the same time, the opening of new shopping malls, such as Orchard Gateway and Kallang Wave Mall, supported hiring in the retail trade, food & beverage services and administrative & support services sectors. (Chart 3.4) Employment gains in the latter could also reflect an increase in resident workers who were enticed to join the cleaning & landscaping industry following the implementation of the Progressive Wage Model (PWM). The headcount expansion in this segment picked up sharply, from a quarterly average of 400 in Q1 2013 – Q1 2014 to 1,900 in Q2.² Together, these three services sectors accounted for 17%, or 9,500 of the new jobs created in H1 2014, about 2,000 more than that in the same period in 2013.

Meanwhile, the community, social & personal services (CSP) sector expanded employment by a substantial 16,500, underpinned by initiatives to boost long-term capacity in childcare centres and pre-school facilities, as well as in healthcare and tertiary education institutes.

... while employment growth was uneven in the external-oriented segments.

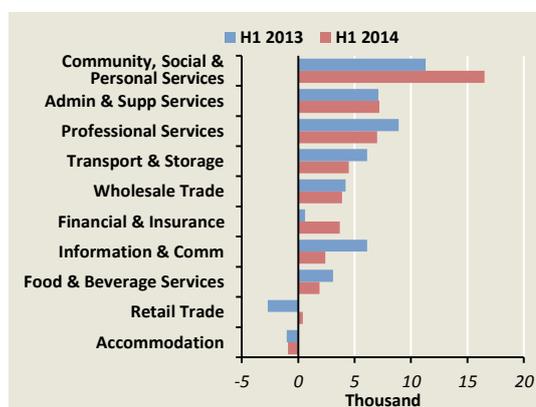
In comparison, employment growth in the external-oriented sectors was mixed. On the one hand, the manufacturing sector shed 3,500 workers in the first half of this year, after adding 4,200 workers in H2 2013. (Chart 3.3) The petrochemicals cluster released a large number of foreign workers following the completion of new LNG processing facilities while hiring in the other manufacturing clusters was constrained by the DRC cuts.

Chart 3.3
Employment Changes by Sector



Source: EPG, MAS estimates

Chart 3.4
Employment Changes in the Services Sector



² Under the PWM, general cleaning businesses are required to pay resident cleaners a basic monthly salary of at least \$1,000 in order to obtain a license to operate. The PWM came into effect on 1 April 2014, but companies were given until 1 September 2014 to comply.

Labour demand in the air transport & supporting services segment was also weak given the decline in visitor arrivals, especially after the MH370 incident.

On the other hand, the financial & insurance sector saw moderate job growth, despite the offshoring of some mid- and back-office functions, supported by firm demand for relatively complex activities such as risk management and compliance.

On the whole, the labour market remained tight ...

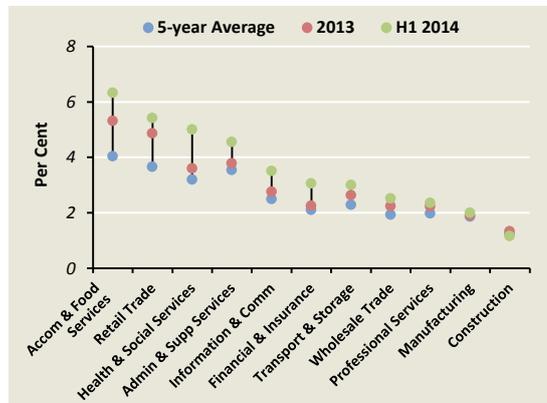
Reflecting the strong labour demand in the domestic-oriented sectors, the seasonally adjusted overall and resident unemployment rates stayed low, at 2.0% and 2.8% respectively in H1 2014, even as the resident labour force participation rate likely reached a new high. Indeed, EPG’s Labour Market Pressure Index (LMPI), a summary statistic that combines the information content of a wide range of indicators, suggests that the labour market remained tight in H1 2014. (See Box B.)

The rise in job vacancy rates in H1 this year shows a clear increase in the level of unmet labour demand. While vacancy rates picked up in almost all sectors, they were highest in the non-tradable services sectors, such as accommodation & food services and retail trade. (Chart 3.5) At the same time, the overall redundancy rate has stayed low since the introduction of the foreign labour tightening measures in 2010, suggesting that firms may have held on to their workers in view of the increasing difficulty in finding suitable replacements. (Chart 3.6)

... but wage pressures varied across sectors.

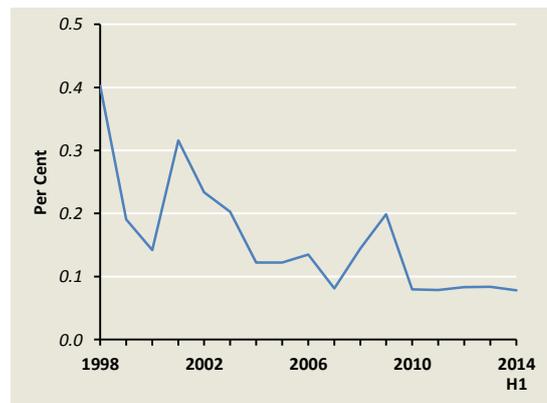
Notwithstanding the tight labour market, resident wage growth eased to 3.0% in H1 2014, from 4.3% in 2013. However, this masked the strong wage pressures in the non-tradable sectors. At the same time, there was no cost offset from productivity. Overall labour productivity fell by 0.3% y-o-y in H1 2014 after rising by 0.8% in the second half of 2013, due to the weak performance in the services and construction sectors. (Chart 3.7) Consequently, ULC rose more significantly by 3.1% in H1 2014, compared to 1.2% in H2 2013.

**Chart 3.5
Job Vacancy Rates by Sector**



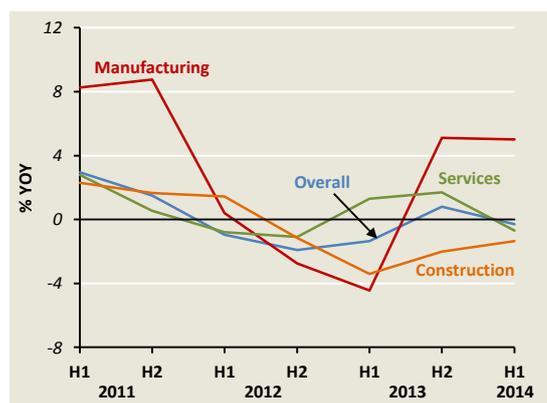
Source: EPG, MAS estimates

**Chart 3.6
Overall Redundancy Rate**



Source: EPG, MAS estimates

**Chart 3.7
Productivity Growth by Sector**



**Strong labour demand will continue to come up
against labour supply constraints ...**

Labour demand is likely to remain firm, underpinned by strong hiring intentions in the domestic-oriented sectors. For instance, the latest *ManpowerGroup Employment Outlook Survey* shows that the majority of firms plan to increase headcount, broadly unchanged from the last few quarters. (Chart 3.8)

The addition of new MOE kindergartens, senior care centres, as well as the opening of the Ng Teng Fong General Hospital and Jurong Community Hospital, will support hiring in the health & social services segment over the next few quarters. Additionally, ongoing work on the Downtown/Thomson-East Coast MRT Lines and Changi Airport Terminal 4, together with public housing projects and the revamp of Jurong Lake District, will boost the demand for workers in the construction sector. In turn, these projects will underpin employment growth in the upstream architectural & engineering services segment.

Meanwhile, the expected launch of Big Box, Capitol Piazza and Seletar Malls towards the end of 2014, totalling an estimated 750,000 sq. ft. of retail space, will increase job opportunities in retail trade, food & beverage services, and cleaning services.

The employment outlook has also turned more positive for the financial & insurance sector, especially for risk management, compliance and front-office relationship functions.

In contrast, hiring intentions in the manufacturing sector remain weak, given the uneven growth trajectory of the global economy. However, the transport engineering industry is expected to recruit due to the increasing interest globally in offshore oil exploration.

While hiring intentions remain generally firm, companies, especially those in the domestic-oriented services sectors, may continue to experience difficulties in filling positions due to the tight labour market. Foreign labour inflows are likely to be subdued as tightening measures become progressively more binding. At the same time, the scope for further increases in the resident labour force is limited, given the already high labour force participation rate.

**Chart 3.8
Net Employment Outlook**



Source: ManpowerGroup

... keeping wage growth firm.

Pay increments are likely to remain firm in the domestic-oriented sectors where labour supply constraints are relatively more binding and demand is robust. Wage increases could stay strong in the administrative & support services sector, due to the implementation of the PWM for cleaners and security guards. The expansion in healthcare facilities will also put some upward pressure on wages. However, wage growth in the tradable sectors is likely to remain modest, given continued uncertainty about the external environment. On the whole, aggregate wage growth will continue to be dragged down by the increase in the proportion of part-timers in the workforce and the compositional shift in employment from the tradable sectors to the domestic-oriented industries, which have lower wages on average. (Chart 3.9) Taking these factors into account, the economy-wide resident wage growth is expected to be around its 10-year historical average of 3.7% in 2014 and 2015.

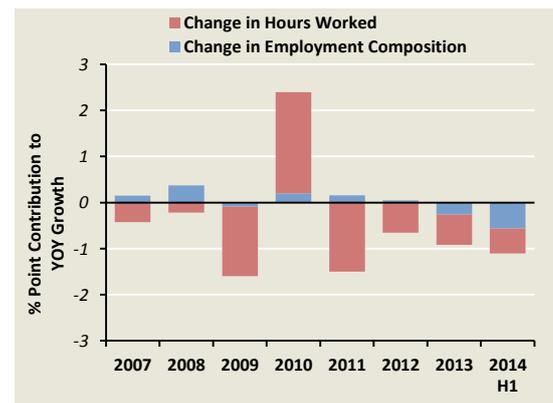
Meanwhile, productivity growth will be constrained in the short term, given the lack of a strong cyclical rebound. It will also take time for firms to reduce their reliance on workers, especially in construction and services. Accordingly, ULC is expected to rise moderately in the near term, even with government subsidies, such as the Wage Credit Scheme.

There will be new job opportunities in the non-tradable sectors as higher relative incomes drive demand for in-person services.

On the whole, there has been no evidence of a pickup in structural unemployment, with the seasonally adjusted long-term unemployment rate remaining below its historical trend. Moreover, the job finding probability, estimated based on Shimer's (2007) methodology³, has remained broadly stable, suggesting that unemployed workers in Singapore are still able to find jobs if they wish to work. (Chart 3.10) Indeed, about 70% of the retrenched workers in 2013 have found re-employment in other sectors, highlighting the flexibility of the labour market.

³ Shimer, R (2007), "Reassessing the Ins and Outs of Unemployment", *NBER Working Paper* No. 13421. Due to the lack of disaggregated data, the estimates in Chart 3.10 could overstate the actual job finding probability as they do not account for transitions in and out of the labour force. Nonetheless, as shown by Shimer, trends over time are typically similar regardless of whether transitions are factored in.

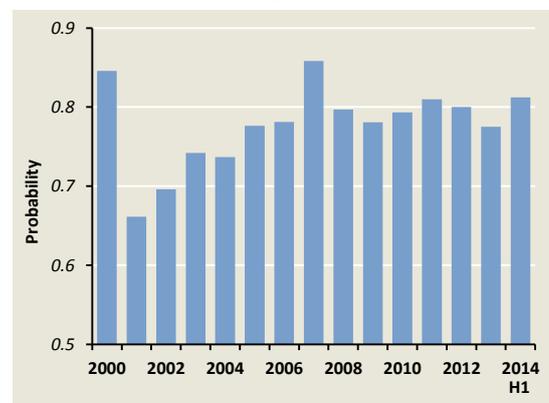
Chart 3.9
Factors Affecting Wage Growth



Source: EPG, MAS estimates

Note: Contribution from change in employment composition is derived by taking the difference between actual wage outturn and a counterfactual wage growth if employment shares were fixed at Q1 2007 levels.

Chart 3.10
Job Finding Probability



Source: EPG, MAS estimates

Following Moretti (2010)⁴, EPG's estimates show that the employment multiplier—which measures the number of jobs created in the rest of the economy for every job created in a particular sector—is relatively strong for financial & insurance, information & communications and professional services. For every job created in these sectors, four jobs are added in the rest of the economy. As explained in Moretti (2012)⁵, since wages are relatively higher in the financial & insurance, information & communications and professional services, employment increases there tend to boost demand for in-person services—such as restaurants and hairdressers. Thus, there will be new job opportunities over the next few years in the non-tradable sectors even as the manufacturing sector creates more skilled jobs as it moves into higher value-added activities.

The acquisition of a relevant set of skills will be increasingly important in supporting employment and wages.

Employment and wage outcomes for workers will increasingly be determined by skills—a combination of knowledge, application and experience, rather than pure academic qualifications. Notably, researchers have found an earnings return of 5–11% to apprenticeship training in countries such as Germany, the UK and Austria.⁶ Other advanced economies, such as the US and Canada, have also begun to adopt apprenticeship systems in industries ranging from heavy manufacturing to healthcare and IT services.

For Singapore, ensuring that skills acquired in schools match those required by employers is, therefore, a key challenge. In this regard, the recently announced SkillsFuture Council, comprising representatives from the government, employers, unions and the education sector, will help to build a continuing education system that will enable workers to acquire skills that are relevant for industries in the future and maximise their potential.

⁴ Moretti, E (2010), "Local Multipliers", *American Economic Review: Papers & Proceedings*, Vol. 100(2), pp. 373–377.

⁵ Moretti, E (2012), *The New Geography of Jobs*, Mariner Books.

⁶ See Pischke, J-S and Wachter, T V (2004), "Grouped Data Estimates of the Returns to Apprenticeship Training in Germany", manuscript; McIntosh, S (2005), "The Returns to Apprenticeship Training", *Journal of Education and Work*, Vol. 18(3), pp. 251–282; and Fersterer, J and Winter-Ebmer, R (2003), "Are Austrian Returns to Education Falling Over Time?", *Labour Economics*, Vol. 10(1), pp. 73–89 for Germany, UK and Austria respectively.

Box B Labour Market Pressures and Inflation: A Principal Components Approach

The unemployment rate is often used as a measure of slack in the labour market and hence, of underlying wage and price pressures in the economy. A low unemployment rate is indicative of a tight labour market and heightened wage and price pressures. This negative relationship between the unemployment rate and wage inflation has traditionally been captured in different variants of the wage Phillips Curve.

Nonetheless, the literature has often questioned the adequacy of the unemployment rate as a measure of labour market tightness. For instance, it does not take into account changes in the duration of unemployment, shifts in the labour force participation rate and firms' hoarding of labour. As such, the unemployment rate could mask the true underlying conditions in the labour market. Indeed, in a recent study, Zmitrowicz and Khan (2014) found that changes in the unemployment rate have substantially overstated the improvement in the US job market since the Great Recession of 2007–09, given the concomitant decline in the labour force participation rate and under-utilisation of labour (labour hoarding).

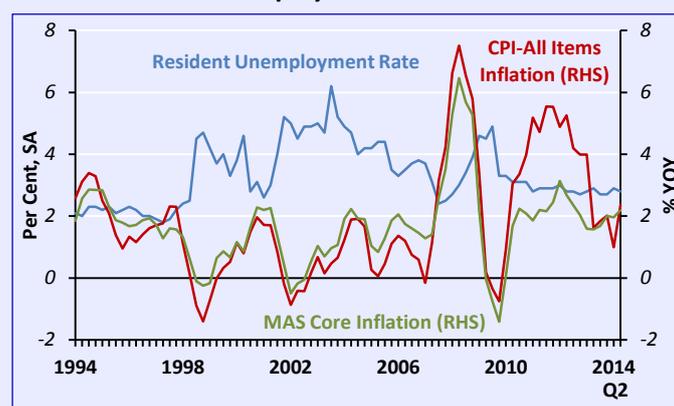
The inadequacy of the unemployment rate as a robust predictor of future wage pressures suggests the need for a more comprehensive measure of labour market conditions. In the recent empirical literature, researchers have extracted the information present in various labour market indicators using Principal Components Analysis (PCA). A number of these studies have found that the PCA-based summary measure has higher predictive power for wage inflation than the unemployment rate.^{1/}

A Summary Indicator of Labour Market Pressure for Singapore

In Singapore, the resident unemployment rate is an important indicator of inflation trends. Nonetheless, two characteristics of the Singapore economy may reduce its effectiveness in signalling wage and price pressures. First, there is a significant share of foreign workers in the domestic labour force. The retrenchment of such workers during economic downturns helps to moderate the rise in the resident unemployment rate. Second, countercyclical policy measures have been actively used during downturns. For example, the government reduced the CPF employer contribution rates during the recessions of 1998 and 2001, and introduced the Wage Credit Scheme at the onset of the Global Financial Crisis (GFC) in 2008–09. These policy measures kept the resident unemployment rate lower than what it would have been. (See also Special Feature C.)

Chart B1, which plots the resident unemployment rate and the inflation rate over the period from 1994 to 2014, shows a breakdown in the expected inverse relationship between these two variables after 2010. Notably, the tightening of the foreign labour policy has kept the resident unemployment rate lower than it would have been recently, while inflation continued to be influenced by cyclical factors. This suggests that the resident unemployment rate could have become less informative about underlying price pressures in the economy.

**Chart B1
Resident Unemployment Rate and Inflation**



^{1/} See for example, Senda (2009) in the case of Japan, and Zmitrowicz and Khan (2014) for the US and Canada.

Following the literature, a summary indicator of labour market activity in Singapore was derived using PCA from a large set of variables (listed in Table B1) related to both labour demand and labour supply over the period Q1 1994 – Q2 2014. From the original variables, the PCA generates a new set of variables called principal components (PCs), each being a linear combination of the original variables and uncorrelated with one another. By construction, the first PC accounts for the largest proportion of the variation in the data, with subsequent PCs explaining decreasing fractions. Hence, in this Box, the first PC is extracted and used as the Labour Market Pressure Indicator (LMPI) for Singapore.^{2/}

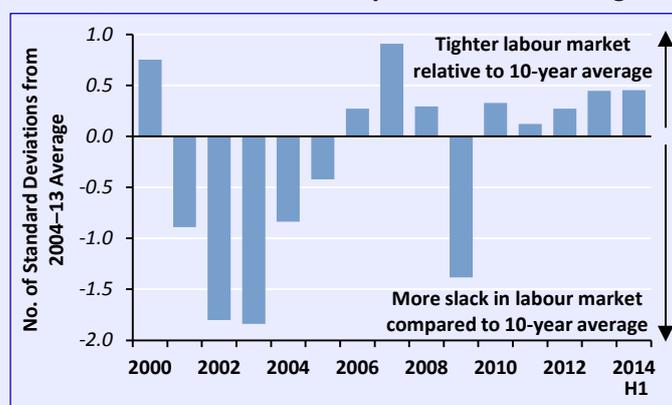
Table B1
List of Labour Market Series

Series
Business Expectations of Manufacturing/Services Sector (Numbers Employed)
Average Monthly Recruitment, Resignation and Retrenchment Rates
Average Weekly Total Paid Hours Worked
Average Weekly Paid Overtime Hours Worked
Resident Employment Growth, by Sector
Labour Productivity Growth, by Sector
ULC Growth, by Sector
Unemployment Rate by Residency
Resident Labour Force Participation Rate
Job Vacancy-to-Unemployed Ratio and Job Vacancy Rate, by Sector
Long-term Unemployment Rate

Labour Market Pressure Indicator vis-à-vis the Resident Unemployment Rate

Both the resident unemployment rate and the LMPI suggest that the labour market has been tight since the rebound from the GFC and the commencement of the foreign worker tightening measures in 2010. While the overall and resident unemployment rates have remained below their natural rates since 2010, as discussed in Box A of the April 2013 *Review*, an indicative measure based on the deviation of the LMPI from its historical trend shows that labour market tightness has increased over the past few years, and is now 0.5 standard deviation higher than its historical average. (Chart B2) The relative usefulness of the LMPI in predicting wage and inflationary pressures is further evaluated below.

Chart B2
Deviation of LMPI from 10-year Historical Average



Source: EPG, MAS estimates

^{2/} An alternative way of constructing the LMPI is to take the average of the first few PCs, weighted by their respective proportion of variation explained. Kaiser's (1960) criterion to identify the "more important" PCs, based on eigenvalues that are greater than one, results in a selection of the first six PCs. However, the performance of the resultant LMPI is not significantly different from that constructed using only the first PC. Thus, for simplicity, only the first PC is used in this study.

Predictors of Wage Growth and Core Inflation

A Philips Curve framework is adopted to predict wage growth and price inflation, as follows:

$$x_{t+1} = \alpha x_t + \beta y_t + \gamma z_t + \varepsilon_t,$$

Where x is the y-o-y resident nominal wage growth or core inflation rate, y is the measure of labour market pressure (either the LMPI or resident unemployment rate) and z is a vector of control variables.^{3/} In the wage model, the control variables comprise the employer CPF contribution rate and a measure of wage growth expectations, defined as the sum of estimated trend inflation and trend labour productivity growth following Barnes *et al.* (2007). In the inflation model, the control variable is inflation expectations, which is proxied by a one-step ahead forecast generated by an Autoregressive Moving Average (ARMA) model.

Table B2 compares both models on the basis of their out-of-sample performance for one-step, four-step and eight-step ahead forecasts over the sample period Q1 1994 to Q2 2014. The results show that the LMPI outperforms the resident unemployment rate as a predictor of wage growth and core inflation in most cases, based on two commonly used indicators of forecast accuracy—the Root Mean Squared Error (RMSE) and Mean Absolute Error (MAE). Results from the modified Diebold-Mariano (MDM) test also show that the difference in forecast accuracy is significant, implying that LMPI performed better than the resident unemployment rate in predicting both wage and price inflation.^{4/} The LMPI works well as it is able to take into account other variables that may react more quickly than the resident unemployment rate to changing economic conditions. For example, during a crisis, firms may practice labour hoarding and reduce hours worked, instead of cutting back on headcount. Accordingly, the LMPI will show a moderation in labour market conditions even while the unemployment rate remains low.

Table B2
Forecasting Performance

	LMPI (RMSE)	Unemp Rate (RMSE)	LMPI (MAE)	Unemp Rate (MAE)	MDM test
Wage (1-step)	1.87 [#]	2.41	1.39 [#]	1.64	LMPI
Wage (4-step)	2.66 [#]	4.21	2.11 [#]	3.13	LMPI
Wage (8-step)	2.44 [#]	4.68	2.01 [#]	3.48	LMPI
Core (1-step)	0.63 [#]	0.66	0.46	0.43 [#]	LMPI
Core (4-step)	0.64 [#]	0.71	0.49 [#]	0.50	LMPI
Core (8-step)	0.64 [#]	0.72	0.49 [#]	0.55	LMPI

Note: # denotes the model with the smaller RMSE/MAE. The shaded column denotes the better performing model as indicated by the MDM test.

Sum-up

Recent studies have shown that incorporating information from a wide array of labour market indicators is useful for assessing actual labour market conditions, as opposed to relying solely on the unemployment rate. In the case of Singapore, the LMPI summary indicator is helpful in augmenting the current assessment of labour market conditions, and can be used as a leading indicator of wage and price inflation.

^{3/} Appropriate lags are chosen for all variables in the model based on the Schwarz Bayesian Information Criterion.

^{4/} The Diebold-Mariano (1995) test is based on the null hypothesis of equal accuracy among competing forecasts. The MDM test (Harvey *et al.*, 1998) is used here since it provides a finite sample correction to the variance estimator of the original test statistic and follows a Student's t -distribution.

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3.2 Consumer Price Developments

Unevenness in the Pass-through of Cost Pressures

Core inflation came in higher in recent quarters amid uneven cost pass-through across sectors. Going forward, imported food inflation will be kept firm by regional factors before easing in H2 2015 in line with developments in global food prices. Given the build-up in domestic costs, slightly more than half of the items in the core inflation basket could see price increases that are stronger than their historical average. Core inflation is projected to rise slightly into early 2015 and then ease in H2. Meanwhile, CPI-All Items inflation will remain subdued, reflecting weakness in car prices and housing rentals.

Underlying price pressures remain firm, while headline inflation has moderated.

Since the April policy review, domestic cost pressures have continued to build amid the tight labour market. While this has translated into generally higher consumer prices, the cost pass-through has been uneven across items in the CPI basket. In addition, inflation was dampened by the introduction of healthcare subsidies, including those under the PGP in September. As a result, MAS Core Inflation moderated slightly to 2.1% in Q3 2014, after increasing from 2.0% in Q1 to 2.2% in Q2. (Chart 3.11) Meanwhile, CPI-All Items inflation was volatile due to base effects associated with car prices, rising from 1.0% in Q1 2014 to 2.4% in Q2, before falling to 0.9% in Q3. On average, car prices have contributed negatively to inflation so far this year, while imputed rentals on owner-occupied accommodation fell on a year-ago basis in Q3. (Chart 3.12)

On a sequential basis, core inflation remained above its historical average in Q2 2014 but moderated in Q3 2014 due to the one-off impact from higher healthcare subsidies. CPI-All Items inflation eased further to -0.3% q-o-q in Q3 2014 from 0.1% in Q2 2014, reflecting the weakness in car prices and housing rentals.

External price developments have been broadly benign, although regional food prices have risen.

Global commodity prices have fallen since the last policy review. (Chart 3.13) Initial fears of supply disruptions arising from the military conflict in Iraq had pushed up the West Texas Intermediate (WTI) oil benchmark from US\$99 in Q1 to US\$105 in June, but the outages did not materialise and prices retracted to US\$93 in September. Further, the surge in North

Chart 3.11
CPI-All Items Inflation and
MAS Core Inflation

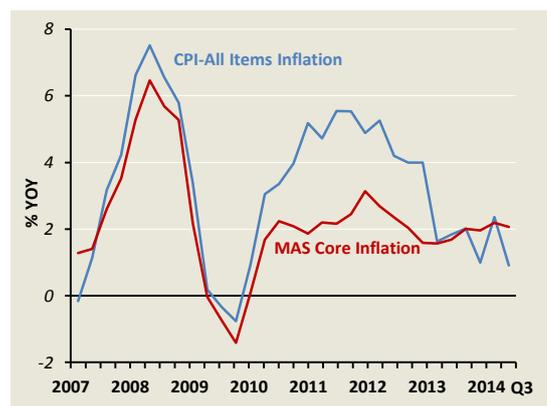
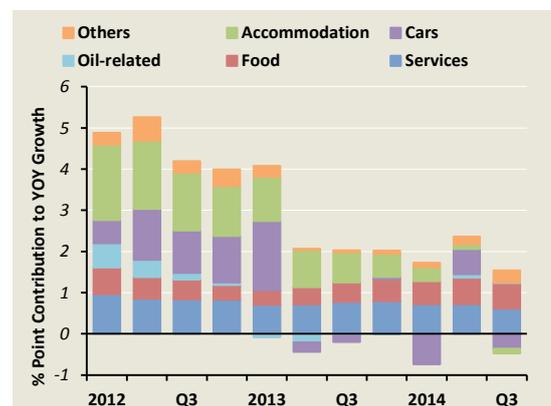


Chart 3.12
Contribution to CPI-All Items Inflation



American oil production, together with excess supplies in the Atlantic Basin and North Sea due to sluggish demand from Europe, exerted downward pressure on global oil prices.

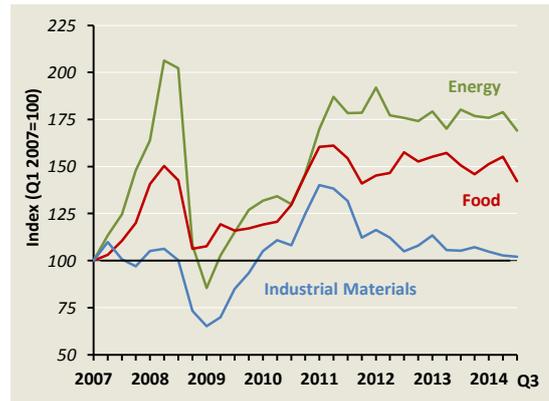
Meanwhile, global food commodity prices have declined since mid-2014 on expectations of abundant crop harvests in the Northern Hemisphere.

Inflation in both the developed and emerging economies has also remained generally subdued on account of lingering uncertainties over economic growth in these countries. While overall foreign wholesale price inflation was elevated at 6.3% in H1 2014, this was mainly due to higher inflation in Malaysia and Indonesia as a result of the scale back in government subsidies. (Chart 3.14) Excluding these two import sources, wholesale price inflation among Singapore's major trading partners was modest at 1.1% in H1 2014.

Singapore's overall import inflation came in at -1.8% y-o-y in Jul-Aug 2014 following the +0.4% outturn in Q2, reflecting the weak global prices and the continued appreciation of the S\$NEER. (Chart 3.14) This was despite relatively firm imported food inflation, due primarily to higher costs of selected food items as a result of regional production disruptions. In particular, the prices of eggs, vegetables and fruits, for which Singapore remains reliant on regional supplies, rose sharply in recent months.⁷

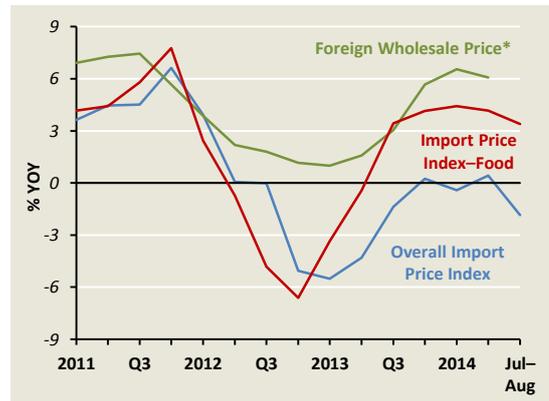
Reflecting these developments, non-cooked food CPI inflation stayed elevated at around 3%, while retail prices of oil-related items rose by a modest 0.3% y-o-y in Q3 compared to 1.7% in Q2.

Chart 3.13
Global Commodity Prices in US\$



Source: IMF

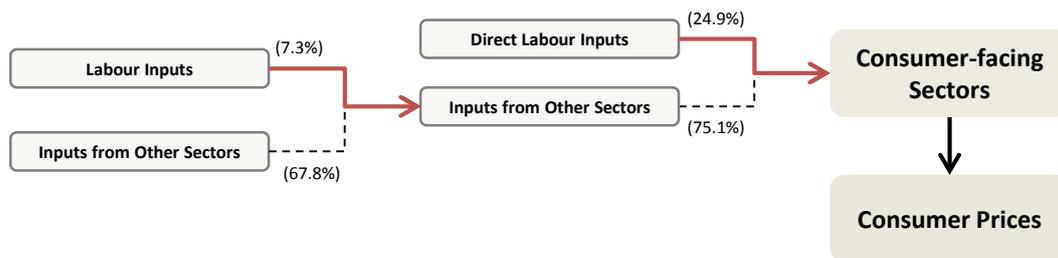
Chart 3.14
Foreign Wholesale and Import Prices



* EPG, MAS estimates. Weighted by average import shares for 2007-11.

⁷ In particular, the prices of dairy products & eggs were 4.5% higher y-o-y in Q3 2014 while vegetable and fruit prices were up by 3.9% and 9.3%, respectively. The rise in egg prices was mainly on account of a temporary supply shortfall which, in turn, was due to the ban on imports from three Malaysian farms after their supplies were found to contain bacterium that causes food poisoning. Vegetable and fruit prices have increased since late last year due to adverse weather conditions in Malaysia and Thailand.

Figure 3.1
The Impact of Labour Cost on Consumer Prices*



* EPG, MAS estimates. Figures in parentheses are based on the 2010 Input-Output tables and are expressed in terms of shares of total operating costs for consumer-facing sectors. In the healthcare industry, for instance, apart from the employment of healthcare workers (direct labour inputs), inputs from other sectors, such as utilities, medical supplies and the rental of premises, are also required.

Notwithstanding higher labour costs, the pass-through has been uneven.

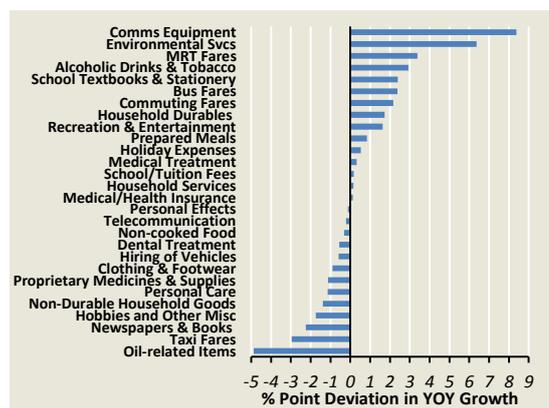
On the domestic front, cost pressures continue to build due to the tight labour market. Higher labour costs affect consumer-facing firms both directly and indirectly via the costs of supplies and services inputs from other sectors. (Figure 3.1) Based on the 2010 Input-Output tables, EPG estimates that direct labour costs account for a quarter of total costs in the consumer-facing sectors, including food & beverage, education, healthcare and recreation, while indirect labour costs make up another 7.3%.

However, the pass-through of costs to consumer prices has been uneven. Price increases were particularly evident in the non-tradable services sectors, including environmental services, recreation & entertainment and prepared meals. (Chart 3.15)

In comparison, price adjustments in some segments have been weak. The price of household services declined as foreign maid agencies recently lowered recruitment fees, given more intense competition. Prices of clothing & footwear and personal care items also came under downward pressure, likely on account of competition from online stores.

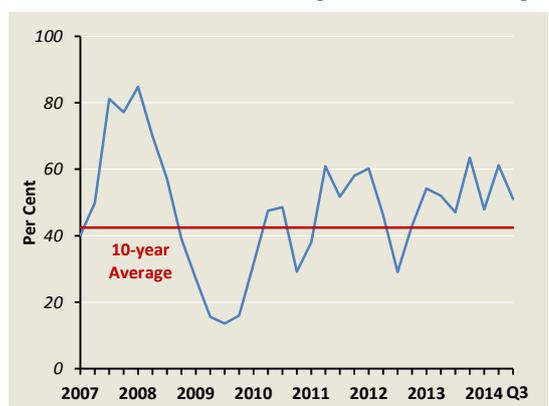
On the whole, slightly more than half of the items in the core inflation basket experienced sharper price increases in Q3 2014 relative to their historical trends. (Chart 3.16) In particular, services inflation, excluding

Chart 3.15
% Point Deviation in Y-O-Y Inflation in Apr–Sep 2014 from 2004–13 Average



Source: EPG, MAS estimates

Chart 3.16
Share of Core CPI Basket with Sequential Price Increases Exceeding 2004–13 Average



the influence of administrative measures⁸, picked up to 2.4% in Q3 2014, from 1.9% in Q4 2013.

Prices for non-core CPI items fell.

While leasing demand, based on rental transaction volumes, continued to grow in recent quarters (Chart 3.17), the large number of new residential units in the market put downward pressure on rentals. In the private residential property segment, the vacancy rate has risen to its highest since Q1 2006. (Chart 3.18) Correspondingly, imputed rentals on owner-occupied accommodation contributed -0.1% point to overall inflation in Q3, after adding 0.2% point in H1 2014 and 0.8% point in 2013.

Car COE premiums have corrected since the last policy review in April 2014, primarily due to the larger supply. However, owing to the low base a year ago when premiums plunged following the imposition of financing restrictions on motor vehicle loans, car prices rose strongly by 7.2% y-o-y in Q2 after declining by 7.4% in the preceding quarter. More recently, the base effects reversed, leading to a 4.1% fall in car prices in Q3.

Going forward, external price developments should remain broadly benign ...

Price influences emanating from Singapore's major trading partners will remain generally subdued, given near-term global economic uncertainties and persistent labour market slack in the developed countries. The exceptions are some of the regional economies, which will likely see higher inflation due to the introduction of a consumption tax and further scale back in fuel subsidy.

Global oil prices are also expected to dampen domestic inflation, given ample supplies. The US EIA forecasts the WTI oil price benchmark to average US\$95 in 2015, down from US\$98 in 2013 and 2014. However, concerns about oversupply in the oil markets have risen recently, with the WTI oil price having fallen by around 10% since the beginning of October to slightly above

Chart 3.17
Number of HDB Flats Sublet

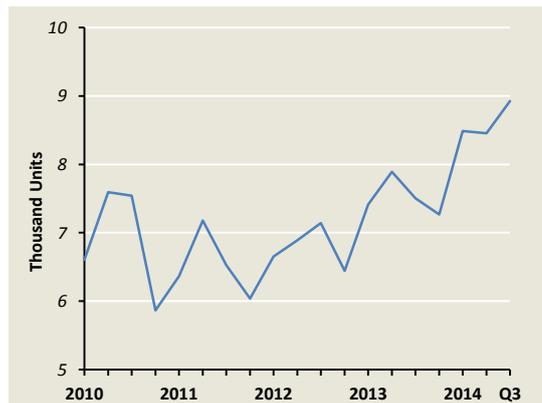
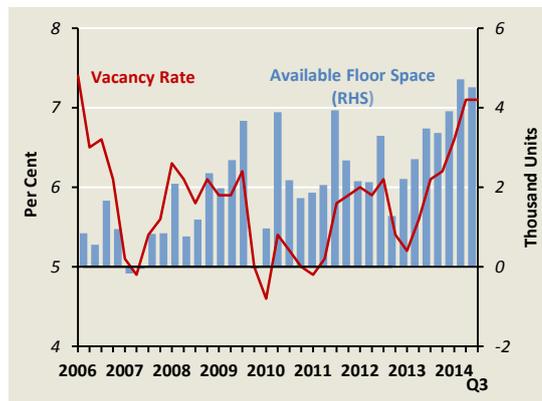


Chart 3.18
Private Residential Property Vacancy Rate and Increase in Available Floor Space



⁸ In 2013, a mandatory weekly rest day for foreign domestic workers resulted in an increase in the cost of household services, while medical insurance premiums rose after MediShield coverage was enhanced. In early 2014, the government increased subsidies for independent school and kindergarten education. From 1 September 2014, lower- to middle-income Singaporeans can receive higher subsidies for subsidised Specialist Outpatient Clinics (SOC) services at the public hospitals. Singaporeans who qualify for the PGP can enjoy an additional 50% off subsidised services fees at the polyclinics and SOC. Pioneers can also enjoy special subsidies at private General Practitioners and dental clinics participating in the Community Health Assist Scheme (CHAS).

US\$80, and there remains significant uncertainty over the price profile going forward.

... although there could be some temporary upward pressures on food prices.

For food commodities, the import prices of selected items that are sourced from the region could continue to see some upward pressures over the near term. While Singapore has increasingly diversified its food sources over the years, as shown by a decline in the Herfindahl-Hirschman index for food imports, we remain reliant on the region for items such as fruits and vegetables. (Chart 3.19) The relatively low unit value of these products makes it less viable to source from more distant countries. (Chart 3.20) In comparison, Singapore is less reliant on regional supplies for meat products which have higher unit values.

Notwithstanding specific regional factors, the outlook for global food prices is generally benign as the threat of a prolonged and intense bout of El Niño weather conditions has eased and the outlook for crop harvests has improved substantially, particularly in the northern hemisphere. Thus, while domestic non-cooked food inflation will remain elevated over the next few months, it is expected to ease in H2 2015 when weak global food prices pass through more strongly.

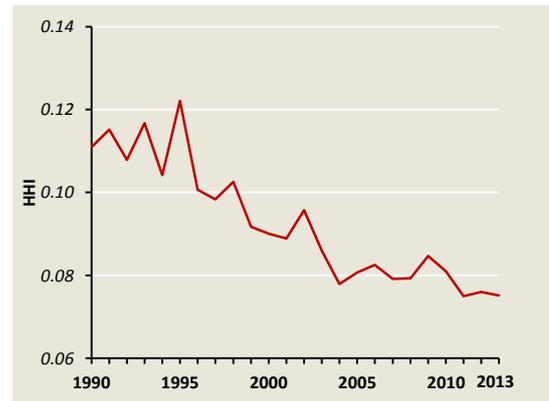
Meanwhile, cooked food prices will continue to be driven up by domestic cost pressures. For the year as a whole, overall food inflation is expected to average around 3% in both 2014 and 2015, compared to 2.1% in 2013.

Domestic factors will continue to be the main driver of inflation.

As explained earlier in this Chapter, the labour market will remain tight, and this will, in turn, continue to put upward pressures on wage costs. Nonetheless, the pass-through of costs to consumer prices is expected to remain uneven.

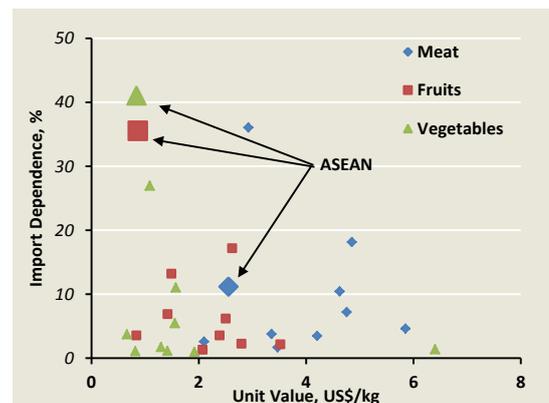
Strong wage growth in the labour-intensive non-tradable sectors, such as education, healthcare and prepared meals, will likely be passed on to consumer prices, given firm demand conditions. The increase in some of these prices, could, however, be mitigated by administrative measures. Notably, subsidies for essential medical and dental services have

Chart 3.19
Herfindahl-Hirschman Index (HHI) for Singapore's Food Imports*



* HHI is computed by taking the square of the market share of each import source country, and then summing across countries. A higher HHI indicates less diversified sources of food supplies.

Chart 3.20
Unit Import Value and Singapore's Import Dependence for Top 10 Sources for Fruits, Vegetables and Meat



Source: UN Comtrade

Note: Each data point represents Singapore's import dependence against the unit import value, for the specific consolidated food categories supplied from each of the top 10 import sources.

been enhanced for 450,000 Singaporeans under the PGP since 1 September 2014.

This resulted in a one-off reduction in the level of affected prices and will dampen inflation for the coming year. Indeed, healthcare subsidies are estimated to have lowered healthcare inflation by 1.7% points in September 2014 on a year-ago basis. Excluding the impact of administrative measures, services inflation is expected to rise to 2.3% in 2015, from 2.2% in 2014.

However, some segments of the retail industry could face difficulty in raising prices. Indeed, turnover per establishment has increased more modestly in the retail segment recently, compared to food & beverages and healthcare services. (Chart 3.21)

Car prices and rentals are expected to dampen inflation in 2015.

Car COE premiums could correct in tandem with the anticipated increase in COE supply in 2015. However, the decline is likely to be moderate as the expansion in quotas will be led mainly by a pickup in COE de-registrations, which also suggests an increase in replacement demand. This is in contrast to the mid-2000s when the rise in quotas was due to both a high level of car de-registrations and a substantial increase in the vehicle population.⁹ (Chart 3.22)

Residential property rentals could also moderate as foreign worker inflows continue to be subdued and a large number of newly completed housing units comes on-stream. Imputed rentals on owner-occupied accommodation are thus expected to edge down modestly into 2015.

For the year as a whole, the contributions of car prices and imputed rentals to CPI-All Items inflation will be slightly negative in both 2014 and 2015 after coming in at 0.3% point and 0.8% point respectively in 2013.

Chart 3.21
Turnover per Establishment for Selected Sectors, 2012

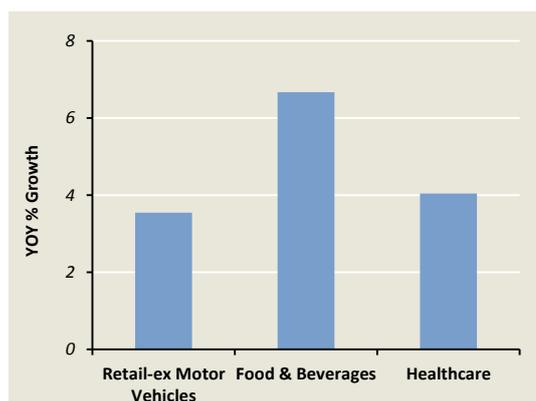


Chart 3.22
Car COE Quota and De-registrations

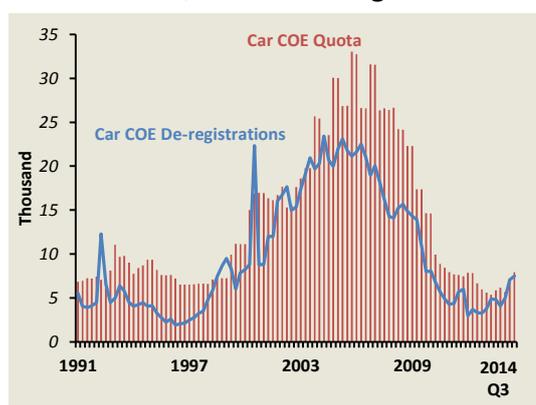
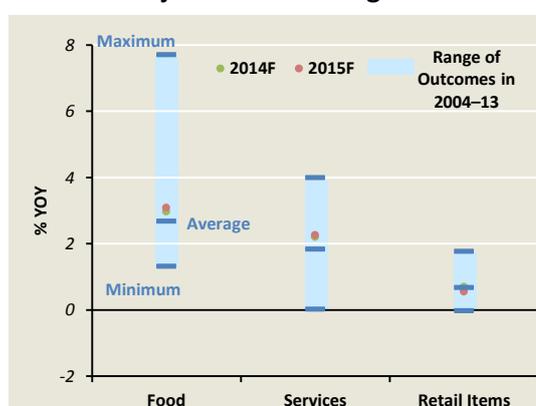


Chart 3.23
Y-O-Y Inflation Forecasts of Major Core CPI Categories



⁹ The Land Transport Authority's permissible vehicle population growth currently stands at 0.5% per annum and will be lowered to 0.25% from February 2015 to January 2018. In comparison, the car population growth averaged 4.4% y-o-y in 2004-13.

Underlying price pressures will be stronger than overall inflation in the year ahead.

In sum, there will continue to be pockets of inflationary pressures. While overall imported inflation should be generally benign, the costs of imported raw food from the region could pass through to higher domestic food inflation in the short term. Domestic cost pressures, mainly emanating from the tight labour market, will remain the primary source of inflation. However, the extent of cost pass-through to consumer prices is likely to be uneven across sectors. While services and food inflation could come in slightly above trend over the forecast horizon, industry dynamics could continue to constrain price adjustments for retail items. (Chart 3.23)

Taking all these developments into consideration, sequential core price increases should pick up to around its historical average. (Chart 3.24)

On a year-ago basis, core inflation is expected to rise slightly into early next year before easing in H2. This profile is, however, subject to some uncertainty depending on the actual outturn of oil prices over the next few months. (Chart 3.25) For the year as a whole, MAS Core Inflation is expected to average 2–2.5% in 2014 and 2–3% in 2015.

Meanwhile, overall inflationary pressures should be alleviated by weak COE premiums and housing rentals. (Chart 3.26) CPI-All Items inflation could ease to below 0.5% in Q4 2014, due to the high base a year ago when COE premiums surged. Subsequently, it could rise slightly with the dissipation of the base effects. Thus, overall inflation is expected to come in at around 0.5–1.5% in 2015, compared to 1–1.5% in 2014.

Chart 3.24
Sequential Q-O-Q Inflation Forecasts

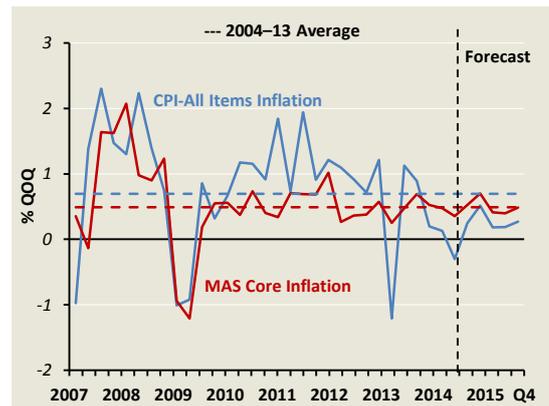


Chart 3.25
Y-O-Y Inflation Forecasts

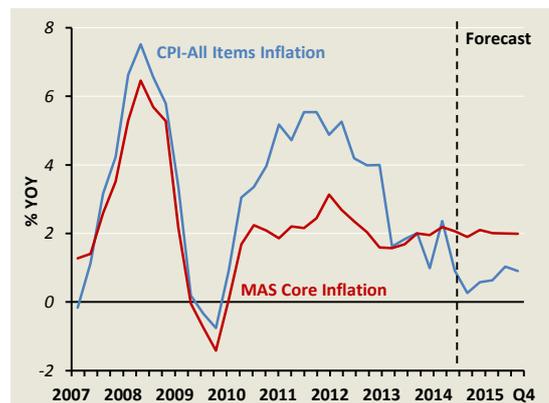


Chart 3.26
Contribution to Annual CPI-All Items Inflation

