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## Rebasing of the Consumer Price Index (Base Year 2009 = 100)

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### Introduction

The Singapore Department of Statistics (DOS) has completed the rebasing of the Consumer Price Index (CPI) to base year 2009. The CPI is rebased once every five years to reflect the latest consumption pattern and composition of goods and services consumed by resident households. The main data source for this latest rebasing was the Household Expenditure Survey (HES) conducted between October 2007 and September 2008.

This article presents the 2009-based CPI and highlights the changes in the weighting pattern, methodology and inflation rates between the 2004-based and 2009-based CPI.

### Definition and Coverage of CPI

The CPI measures the price changes in a fixed basket of consumption goods and services commonly purchased by the households over time.

The CPI basket covers only consumption expenditures incurred by resident households. Non-consumption expenditures such as loan repayments, income and property taxes, purchase of houses<sup>1</sup>, shares and other financial assets etc are excluded.

### The 2009-Based CPI Weighting Pattern

As households tend to spend more on some items and less on others, weights are used to ensure that the CPI reflects the relative

1 Housing price is not considered in the CPI as the purchase of a house is generally regarded as a capital investment rather than a consumption expenditure. Instead, the CPI measures the cost to the homeowner of utilising the flow of services provided by their homes, i.e. based on "rental equivalence approach".

importance of each item in the CPI basket, as a proportion of household expenditure.

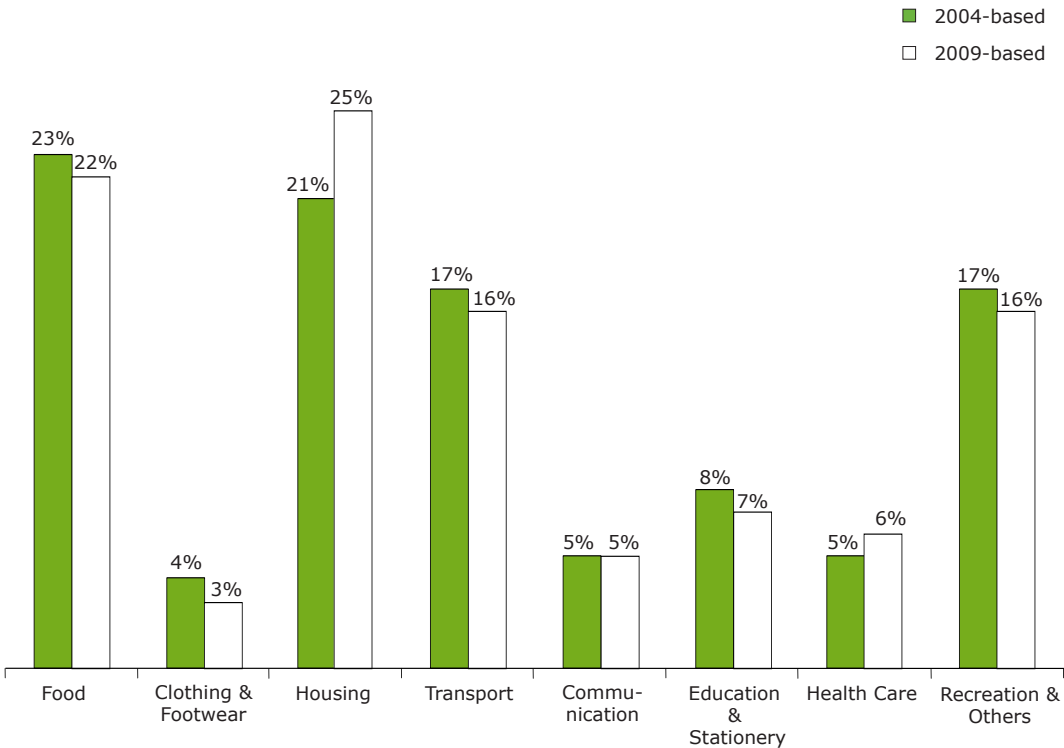
The weighting pattern for the 2009-based CPI was derived from the expenditure values collected from the HES 2007/08. These expenditure values were further updated to price level in 2009, taking into account price changes from 2007/08 to 2009. Chart 1 presents the weighting pattern for 2004-based and 2009-based CPI.

Housing and food were the two most important main groups in the 2009-based CPI basket. Housing share increased from 21 per cent in the 2004-based CPI to 25 per cent in the 2009-based CPI, reflecting higher expenditure

on both rented and owner-occupied housing (OOH). Food was ranked second, despite its weight declining slightly from 23 per cent in 2004-based CPI to 22 per cent in 2009-based CPI. Within the food group, households spent proportionately less on “non-prepared meals” and more on “prepared meals”.

The shares of transport as well as recreation & others fell 1 percentage point each to 16 per cent in the 2009-based CPI. The decline in transport share reflected lower weights for cars, road tax and public road transport. Lower expenditure on holiday expenses and government levy on domestic maids contributed to the decline in the weight for recreation & others.

CHART 1 CPI WEIGHTING PATTERN, 2004-BASED AND 2009-BASED CPI



Compared with the 2004-based CPI, the share of education & stationery fell from 8 per cent to 7 per cent in 2009-based CPI due to lower weights for personal computers and overseas university tuition fees. Health care share went up from 5 per cent in 2004-based CPI to 6 per cent in the 2009-based CPI as a result of higher expenditure on specialized medical treatment and dental services as well as pharmaceutical products and medical insurance premiums. Communication retained its share at 5 per cent in the 2009-based CPI.

### **Expanded Coverage of Items and Outlets**

During the rebasing exercise, the CPI basket of goods and services as well as the sample of outlets were reviewed and updated to reflect current consumption patterns.

The goods and services included for pricing in the CPI are representative of those commonly purchased by the majority of the households. For the 2009-based CPI, the number of brands selected was expanded to 6,500, from 5,170 in the 2004-based CPI. Some examples of new items included were surgical operation and procedures, home medical and nursing services, budget airfares, bundled packages (fixed-line, mobile and broadband services) and compressed natural gas.

The outlets covered in the CPI included a wide range of retailers and service providers commonly patronised by shoppers. The total number of outlets selected for pricing in the 2009-based CPI was increased to 4,200, from 3,000 outlets in the 2004-based CPI.

### **Methodological Improvements**

Methodological changes were also introduced in the 2009-based CPI, taking into account recommendations by the International Labour Organisation (ILO) and other countries' best practices.

#### *(a) Inclusion of One-Person Households*

The coverage for the 2009-based CPI was expanded to include one-person households in the derivation of the weighting pattern. This group of households was included to reflect its increasing share in the total resident households.

#### *(b) Adopting More Timely Pricing Indicator for Owner-Occupied Housing (OOH) Costs*

For the computation of OOH index in the housing group, DOS has adopted the rental equivalence approach which measures the shelter cost in terms of the expected rental the owner would have to pay if he were a tenant of the premise (i.e. imputed rental).

In the 2004-based CPI, the Annual Value (AV) was the pricing indicator used to track changes in OOH costs as it coincided with the concept of imputed rental. However, as the Inland Revenue Authority of Singapore (IRAS) usually reviews AVs of residential properties only once a year, changes in rentals cannot be reflected in the monthly CPI in a timely manner. For the 2009-based CPI, rental data which are available on a monthly basis from IRAS are used as the pricing indicator for OOH costs instead. This will enable changes in OOH costs to be reflected in the CPI on a more timely basis.

## Revision of the 2009 Inflation Rate

The 2009 inflation rate had been revised to 0.6 per cent based on the 2009-based CPI (Table 1). The rate based on the 2004-based CPI was 0.2 per cent.

TABLE 1 PERCENT CHANGE IN CPI, 2009 OVER 2008

Main Group	Per Cent	
	2004-based	2009-based
<b>All Items</b>	<b>0.2</b>	<b>0.6</b>
Food	2.3	2.3
Clothing & Footwear	1.1	0.8
Housing	-0.3	1.7
Transport	-3.6	-3.2
Communication	1.6	0.2
Education & Stationery	0.3	0.8
Health Care	2.9	2.0
Recreation & Others	-0.1	-0.3
<b>All Items less Accommodation</b>	<b>-0.5</b>	<b>-0.5</b>

The revised 2009 inflation rate reflected better the price changes experienced by the households in 2009 as it encompassed more up-to-date weighting pattern and composition of goods and services, as well

as methodological improvements. Excluding accommodation costs, the CPI fell by 0.5 per cent in 2009, both before and after rebasing.

Among the main groups, the CPI for housing in 2009 rose by 1.7 per cent under the 2009-based CPI instead of the 0.3 per cent decline under the 2004-based CPI. The use of monthly rental data from IRAS instead of AV as a pricing indicator for OOH costs enabled the 2009-based housing CPI to reflect more timely the month-to-month changes in OOH costs, in tandem with the underlying market rental trend.

Other major groups also recorded differences in inflation rates. Transport and education & stationery registered relatively higher rates under the 2009-based CPI while clothing & footwear, communication, health care and recreation & others experienced relatively lower inflation rates under the 2009-based CPI.

## Conclusion

The CPI has been rebased to base year 2009 to reflect more up-to-date weighting pattern and composition of goods and services, as well as methodological improvements.

Details on the rebasing of the CPI can be found in the Information Paper on "The Rebasing of the Consumer Price Index (Base Year 2009 = 100)", available for free downloading from the SingStat website at

<http://www.singstat.gov.sg/pubn/papers/economy/ip-e36.pdf>