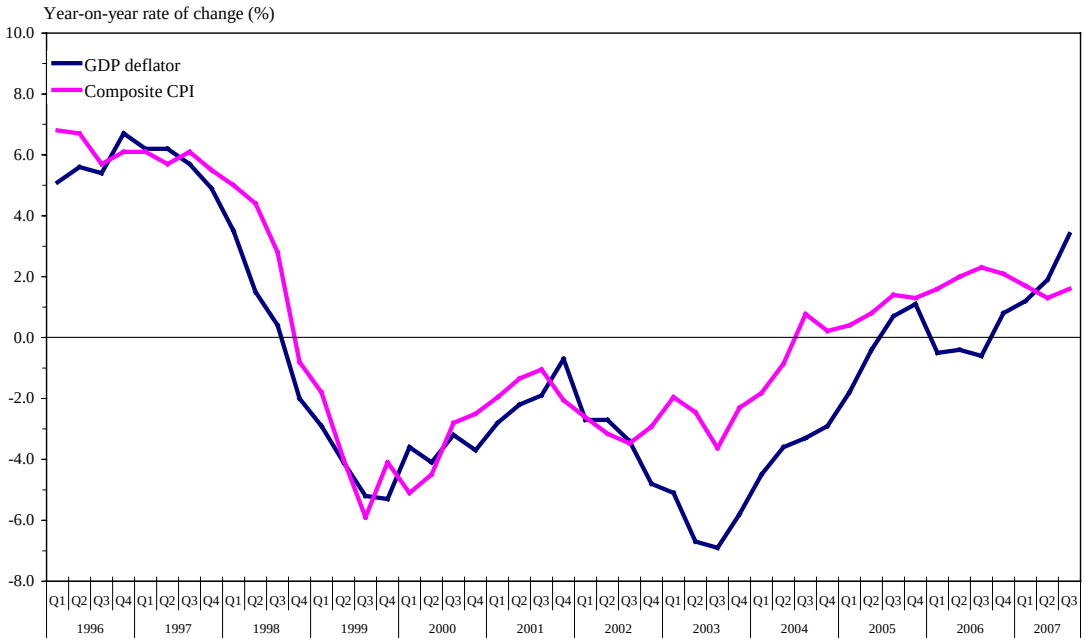
Box 6.1

The GDP deflator and terms of trade

Two commonly used measures of inflation are the *CPI* and the *GDP deflator*. As shown in Chart 1, the two indicators in general exhibited similar year-on-year movements between 1996 and late 2002. Both of them saw year-on-year declines from late 1998 as Hong Kong entered into a period of deflation when the effects of the Asian financial turmoil set in. However, while the former returned to positive as consumer price deflation faded out in the second half of 2004, the latter, which is a broader measure of inflation, remained negative until the third quarter of 2006 except for a short while in the second half of 2005. The terms of trade is the major factor that accounts for the different movements of the GDP deflator and the CPI.

Chart 1: Movements of GDP deflator and CPI showed large discrepancies between end 2002 and end 2006



Note: The GDP deflator refers to the new series derived from the chained-dollar measures of GDP.

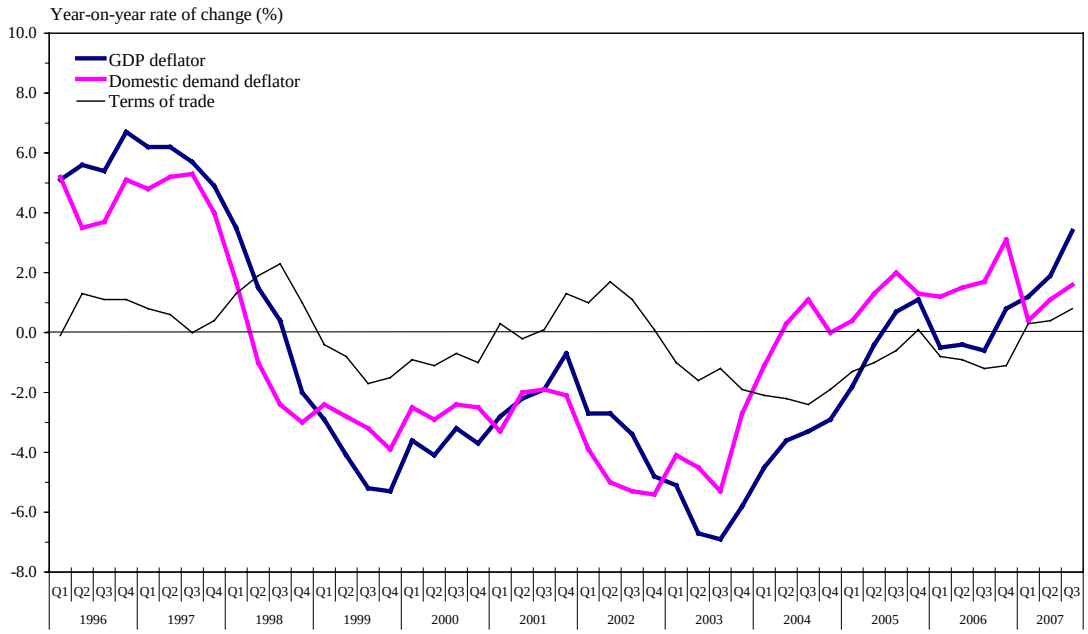
The GDP deflator is a measure of the overall change in prices of the economy. While the CPI reflects movements in the prices of consumer goods and services only, the GDP deflator covers also price changes related to government consumption, investment, and exports and imports of goods and services. Unlike the CPI which is constructed based on observed prices collected through a retail price survey, the GDP deflator and its expenditure components are not direct measures of price changes. They are *implicit* price deflators derived by dividing current-dollar values by the corresponding chained-dollar values (see Box 1.1 for explanation on the chained-dollar measures of GDP).

Among the GDP components, *private consumption expenditure* accounts for some 60% of the GDP. Hence, the movements of the GDP deflator are highly correlated to those of the CPI. Apart from consumer prices, another important factor which affects the GDP deflator is the terms of trade, which is the ratio of the price of exports to that of imports. Since it is only the *net exports of goods and services* (i.e. exports deducting imports) that enters into the final GDP figure, the prices of exports and imports have offsetting effects on the GDP deflator – the price of exports has a positive relationship while that of imports a negative relationship with the GDP deflator. Thus, the movements of the GDP deflator are affected by the *relative* movements of import and export prices.

Box 6.1 (Cont'd)

The effect of the terms of trade may be illustrated by examining the difference between the movements of the GDP deflator and the *domestic demand deflator*, the latter derived by taking out the trade components of GDP (Chart 2). In general, it is observed that the GDP deflator has a larger rate of change than the domestic demand deflator when the terms of trade is improving (i.e. showing a year-on-year increase) and vice versa when the terms of trade is deteriorating (i.e. showing a year-on-year decrease).

Chart 2: Difference in movements of GDP deflator and domestic demand deflator reflects the effects of terms of trade



Note: The GDP deflator and domestic demand deflator refer to the new series derived from the chained-dollar measures of GDP.

The terms of trade is affected by a number of factors including movements in exchange rates, changes in the composition of traded goods and services, and changes in traders' profit margin. Since trade in goods has a much larger value than trade in services, the overall terms of trade tends to be more influenced by trade in goods than trade in services. The terms of trade in goods exhibits more volatile movements due to changes in the mix of goods imported and exported as well as changes in their prices.

During 2003 to 2006, i.e. the period when the GDP deflator registered a notably lower rate of change than the CPI, two components in particular imposed an unfavourable effect on the terms of trade in goods. The first component was fuel, which though only accounted for less than 5% of total import value (and a negligible share of total export value), contributed to the deterioration in the terms of trade due to the soaring import prices of oil. (Interested readers may refer to Box 6.1 of the *Third Quarter Economic Report 2006* for a more detailed analysis on this.) The second component was raw materials and semi-manufactures, which registered a faster rate of average annual increase in its import prices, at 3.3%, than its re-export prices, at 1.0% over the period concerned.

A turnaround in the terms of trade was observed in the first three quarters of 2007, partly benefiting from waning negative drag of high oil prices over the period (Table 6.3). In particular, the increase in import prices of fuel was 2.6% in 2007 Q1-Q3, much smaller than that of 16.6% in 2006. Also relevant was the moderation in the pace of increase in import prices of raw materials and semi-manufactures (2.4% in 2007 Q1-Q3 vs 3.2% in 2006). Looking forward, however, the recent resurgence in oil price and the continued weakening of the Hong Kong dollar are likely to push up overall import prices further, thereby possibly posing a renewed drag on the terms of trade in the coming quarters