

Assessment of Deflation Risk in Thailand

The trend of continual declining inflation experienced worldwide brought back issues of deflation risk, after the issue was considered by the MPC in the previous *Report* (October 2002 issue), focusing on the analysis of causes of low inflation. According to the definition given in the October 2002 issue, deflation is a sustained reduction in the general price level or negative headline inflation. Generally, it occurs in tandem with a slowdown in economic activity. However, there is no unanimous conclusion regarding how many months of negative inflation would determine a deflation phenomenon. In general, 1-3 consecutive months of negative headline inflation are not regarded as being in a deflationary state.

In the first half of 2003, headline inflation expanded by 1.8 per cent, increasing from the average of 0.6 per cent last year, due to the increase in crude oil and farm prices. Given no pressures from the demand side, the MPC viewed that headline inflation tended to decline if retail oil and farm prices were to fall, as a result of the abolishment of the domestic oil price stabilization measure, and an increase in farm products, respectively. Besides, deflation risks in major industrial countries and regional economies brought about the concern on deflation risk in Thailand, the Bank of Thailand, therefore, constructed the Index of Deflation Vulnerability as a tool to assess deflation risks.

Index of Deflation Vulnerability

Index of Deflation Vulnerability (IDV) is constructed on a quarterly basis, following the methodology used by the International Monetary Fund.^{1/} This index is calculated by assessing key indicators of deflationary pressure as follows:

1) Price indicators comprise headline inflation, core inflation, and a year-on-year change in GDP deflator. Low level of price indicators would undermine incentive to produce and consequently weaken employment and income.

2) Excess capacity utilization indicators consist of current output gaps, change in output gaps, and an average real GDP growth. High excess capacity utilization would deter incentives for new investment.

3) Asset market and real exchange rate indicators are composed of the SET index and real effective exchange rate. If asset prices drop, public wealth and spending would lessen. For the real exchange rate, its appreciation would deteriorate trade competitiveness, leading to revenue reduction. Furthermore, it will put downward pressure on the price level.

4) Credit and money indicators consist of money supply growth, year-on-year credit growth, and accumulative credit growth. These indicators reflect developments in the real sector. Low expansion in credit and money growths implies low economic expansion and high deflation risks.

^{1/} Kumar, Manmohan S., et al. (2003) Deflation: Determinants, Risks, and Policy Options- Findings of an Interdepartmental Task Force, IMF Occasional Paper No. 221.

To construct the index, each indicator is determined with a binary score, 1 or 0 according to the predetermined criteria^{2/}. If the value of each indicator exceeds a predetermined threshold, a score of 1 will be given, reflecting possible risks of deflation, 0 otherwise. For instance, if the real effective exchange rate appreciates by 7 per cent (year on year basis), which is more than its criteria of 4 per cent, the exchange rate indicator is given a score of 1.

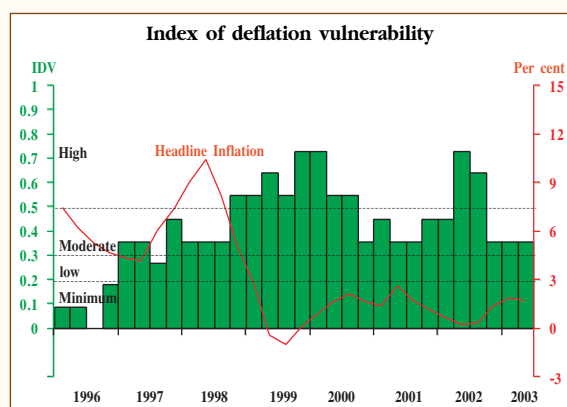
After scoring all indicators, the total scores are aggregated and normalized^{3/} to yield the IDV ranging between 0 to 1. The index with the score closer to 1 indicates a higher risk of deflation. The IMF categorized the level of risk by the IDV level as shown in the table.

As the figure depicts, deflation risks in Thailand rose after the crisis in 1997 and mostly remained in the low to moderate deflation risk range. However, since 1996, Thailand experienced high level of deflation risk twice. The first detection occurred in 1999-2000 due to

Deflation risk classification

Index of Deflation Vulnerability (IDV)	Deflation risk
IDV < 0.2	Minimum
0.2 ≤ IDV ≤ 0.3	Low
0.3 ≤ IDV ≤ 0.5	Moderate
IDV > 0.5	High

Source: International Monetary Fund



Source: Bank of Thailand

declining general price level and asset prices, excessive output gap, real baht appreciation and contraction in credits and money. The second detection occurred in mid-2002 as a result of declining price level, real baht appreciation and low growth of money and credit expansion. At present (Q2 2003) deflation risk in Thailand remains moderate because of low core inflation (averaging 0.2 per cent) and sluggish growth of money and credit expansion.

Deflation risks assessment outlook

In 3-6 months ahead, although there are possibilities that inflation will remain low, the upward trend of economic growth as well as credit and money supply expansions under a low interest rate environment would become key factors keeping the risks of deflation low to moderate.

^{2/} The criteria of risk assessment was determined, by the IMF, on the characteristics of countries that experienced or are facing deflation.

^{3/} The index can be normalized using 2 methods; equal-weighted and weighted. The later scheme weighs the index in favour of asset price indicators, which requires classification of countries by capital market size. For the above IDV, the unweighted scheme was employed.