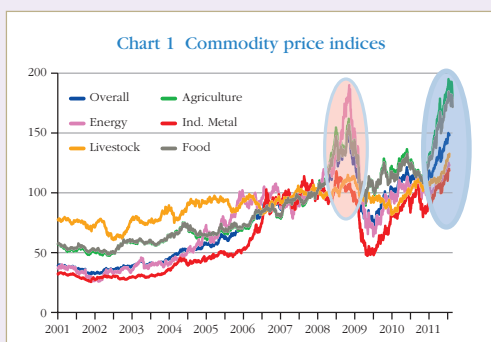


Global commodity prices: implications on Thailand

Commodity prices, particularly agricultural and food prices, have rebounded strongly since end-2010 (Chart 1). This could imply risks to the macro economy, notably a deteriorating pace of growth, worsening income distribution and rising inflation that could in turn induce monetary policy response to curb price pressures.



Source: USB Constant Maturity Commodity Index (CMCI), Bloomberg (rebased to 2007 = 100).

Looking ahead, commodity prices are expected to remain on an upward trend as well as become more volatile, supported by burgeoning demand from income and population growth.^{1/} Meanwhile, supply is likely to be slow to respond, being constrained by diminishing natural resources. Other supply-side uncertainties also play a role, including global warming, natural disasters, and civil unrests in some North African countries that could spill over to other major oil producers, exerting an upward pressure on crude prices while undermining the investment in and the

expansion of oil fields and crude production. Feedback loops also seem to become more powerful, as reflected by the stronger linkages between price and untraditional factors. These include investment in the commodity futures markets that helps drive price up and in turn invite more speculative investment,^{2/} product hoarding, depreciation of the U.S. dollar that induces commodity exporters to raise prices to preserve revenue in local currency terms,^{3/} and competing demands for bio-fuel and food production.^{4/}

Thailand is vulnerable to higher oil prices but benefits from rising world food prices

Thailand is a net oil importer, with the net value of oil imports in 2010 accounting for as much as 7 percent of nominal GDP. With a very low price elasticity of demand for oil, *ceteris paribus*, a 10 percent rise in oil price will initially dent nominal GDP by about 0.7 percent. The rise in oil price can also create a fiscal burden when the government cuts the excise tax rates, in addition to using the Oil Fund, to subsidize retail oil prices in order to relieve the adverse impact on the macro economy.

Conversely, Thailand appears to benefit from higher prices of agricultural commodities and food.^{5/} In 2009, Thailand's export share of these products in the world markets stood at 2.5 percent, up from 2.2 percent in 2007.^{6/} The value of net exports of these products

^{1/} The income elasticity of demand for food is relatively high for low-income countries. Therefore, the rapid growth of income per capita in developing countries will result in a rapid rise in demand for food and exacerbate the price surge.

^{2/} Evidence on the extent to which non-commercial trades contribute to the rise in commodity prices is still inconclusive. However, according to the Institute of International Finance (February 2011), since 2005, the correlation coefficient between the net long position of non-commercial trade and corn price has been 0.65, while the correlation with oil price has been around 0.37.

^{3/} The Food and Agriculture Organization (2008) found that a 1 percent fall in the U.S. dollar against all currencies would result in a rise in the U.S. dollar denominated agricultural prices by 0.8-0.9 percent.

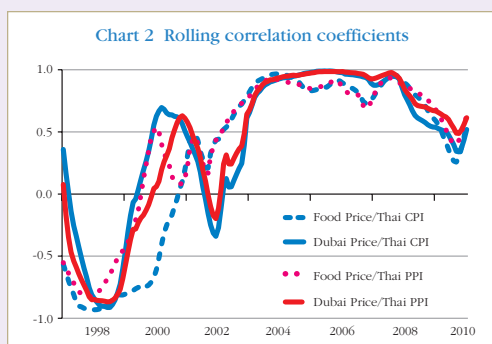
^{4/} According to the World Bank (2010), a 10 percent increase in energy prices is associated with a rise in metal prices, food prices and fertilizer prices by 2.5, 2.7 and 5.5 percent, respectively.

^{5/} Thailand is regarded as a food-secured country, as reflected by the Food Vulnerability Index. The FVI is calculated as $100 - [(0.25 \times \text{GDP per capita}) + (0.5 \times \text{net food exports}) - (0.25 \times \text{share of food in expenditure})]$. The higher the value of the FVI, the higher is the country's vulnerability to rising food prices. The FVI of Thailand is 99.6, ranked 55th from a total of 80 countries. Bangladesh is the most vulnerable country (FVI = 101.5) while New Zealand is the least vulnerable (FVI = 97.7). China's food vulnerability position ranks 22nd (FVI=100.4).

^{6/} Compiled from Trade Map data of the International Trade Center.

accounted for 6.3 percent of nominal GDP in 2010. Given a low price elasticity of demand, *ceteris paribus*, the first round impact of a 10 percent rise in prices would add 0.63 percent to nominal GDP. Such gain, however, cannot fully offset the loss in nominal GDP from the same percentage rise in world oil prices. Hence, in order for Thailand to reap more benefits from the upward trend in world agricultural and food prices and maintain her food-supply security, more emphasis should be placed on technological improvement in agricultural and food production and management as well as on a wider promotion of agricultural and food exports.

The relationships between world commodity prices and domestic producer and consumer prices are becoming stronger

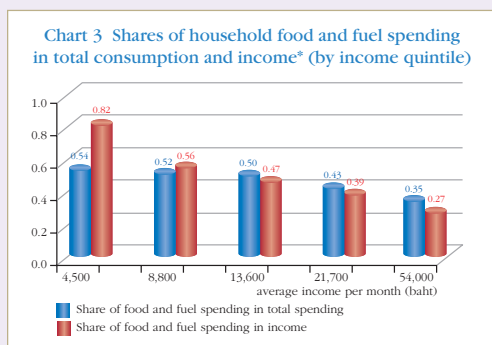


Source: The Bank of Thailand

The rolling correlations between world oil and food prices and domestic producer and consumer prices started rising again as the world emerged from the crisis, led by strong recoveries of emerging economies (Chart 2). This suggests that from now on an increase in world oil and food prices is likely to spill over more rapidly to domestic production costs and inflation. Meanwhile, a persistent rise in oil and food prices has a significant direct impact on households in Thailand as the share of food (raw and processed food) in their consumption basket is as high as

35 percent on average. Looking more closely by quintile groups, households that are most affected by higher oil and food prices are those in the bottom three quintiles (bottom 60 percent of all households) with monthly income of 13,600 baht or less, as their expenses on food and oil items are relatively high, accounting for 62 percent of their total expenditure (Chart 3). As a result, this can potentially worsen the country's income distribution as real disposable income of the low-income groups can erode more rapidly than that of the high-income groups with a smaller share of food and oil in their total spending.

A tighter monetary policy stance may be necessary to dampen upside risks to inflation

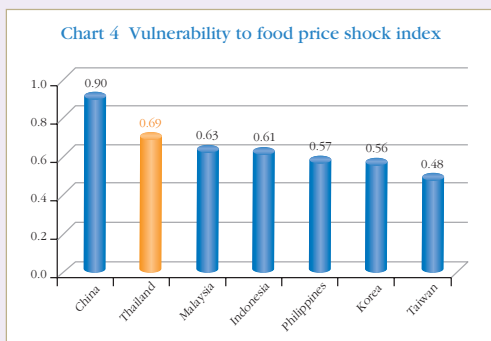


Note: *Fuel covers only items relating to freight and transportation

Source: Data from Socio-Economic Survey (SES) 2010 Q1 by the National Statistical Office and calculations by the Bank of Thailand. Weights of households in each income quintile are used to derive population estimates.

Some people have suggested that a rise in prices of necessity goods with low price elasticity, such as food, already forces households to spend less on other goods as they spend more on food, and thus the effect is merely a change in relative prices. Therefore, monetary policy should not respond to food-induced inflation. However, a central bank in reality has to take the surrounding economic conditions and consumers' spending behavior into consideration when making a decision because these factors can dictate the pass-through of food inflation to other components of the CPI^{7/}. Key considerations include: (1) the

^{7/} According to the BOT's calculation of the variance decomposition of headline inflation, using data from 2000 to 2010, the volatility of oil and food prices contributes to the volatility of headline inflation by 19.5 and 13.9 percent, respectively. In addition, a 1 percent increase in world oil price leads to a 0.25 percent increase in headline inflation, while a 1 percent increase in world food price leads to a 0.42 percent rise in headline inflation.



Source: Citigroup Global Markets and The Bank of Thailand

strength of the relationship between food prices and the overall CPI, with a stronger link suggesting a higher degree of price pass-through; (2) degree of the current economic momentum, as measured by the output gap, with more robust demand conditions also suggesting a stronger price pass-through; and (3) the current monetary policy stance, as measured for example by the difference between a country's monetary condition index and its 10-year average, with a loose monetary policy stance more likely to encourage a surge in inflation pressures overall.

These three considerations should be viewed jointly as they have interacting effects on one another. In particular, a high correlation between food prices and the CPI plus a robust growth in demand and a simultaneously loose monetary policy can greatly increase the chances that food inflation can pose risks to overall inflation pressures. In such setting, there is more need for a central bank to tighten monetary policy.

Indicators for the three aspects above can be used to construct a composite index called the Vulnerability to Food Price Shock Index^{8/}, or VFPSI, to assess which countries are most vulnerable to food price shocks and hence might consider a possible monetary policy response. It is found that the VFPSI for Thailand in 2010 Q3 is rather high, at 0.69, second only to China (Chart 4). This justifies the adoption of a tighter monetary policy even though inflation pressures initially emerged from the rise in food prices.

Similarly, a country's vulnerability to oil or energy price shocks can be assessed using the same method. Given that the correlation between headline inflation and energy inflation is relatively high^{9/} while Thailand's output gap is narrowing and the monetary policy stance is still relatively eased, the country is vulnerable and a monetary policy response can be considered.

Conclusion

Changes in global commodity prices can affect domestic income and prices. Thailand can reap benefits from the rises in world agricultural and food prices as the country is a net exporter of these products. However, production costs and the cost of living would meanwhile increase, lowering the purchasing power of households, especially those in the low-income groups, implying the possibility of deteriorating income distribution.

Monetary policy may need to tighten in response to a sustained increase in food and oil prices, provided there are surrounding conditions that facilitate the price pass-through to other components of the CPI: a robust demand growth and a currently eased monetary policy stance. Other policies, especially supply-side policies, are also crucial to help increase production capacity in the agricultural and manufacturing sectors, improve food supply chain management, and create balance between food and energy crop production. This can be an effective approach to improve food security and increase the opportunity to reap more benefits from the rise in world agricultural and food prices, easing the burden from higher import prices of oil.

^{8/} The index for each country is calculated by normalizing the scores across each country's variables (Z-score (Z)); computing the deviation of the country's Z-score from the group-Max and Min values, which is calculated as $SCORE_{ic} = (Z_{ic} - \text{Min}(Z_i)) / (\text{Max}(Z_i) - \text{Min}(Z_i))$; then adding up the three scores, equally weighted, to obtain the VFPSI. The higher the value of the VFPSI, the more vulnerable the country is to food price shocks and hence justifies a possible monetary policy response.

^{9/} Correlation between Thailand's headline inflation and energy inflation during 2001-2010 is 0.78, while that of headline and food inflation is 0.6.