The Buffeting of Thailand by the Unholy Trinity of Avian Influenza, Tsunami, and the Oil Price Shock

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Abstract
The analysis of three recent shocks to the Thai economy suggests several lessons for economic management. The adverse consequences of the external shocks dissipate when economic agents adjust their behavior to the new environment. Appropriate policy responses are crucial in shortening the duration of an economy's deviation from its pre-shock growth path. Any intervention, either in energy or exchange rate markets, to maintain fixed prices will inevitably be costly and ineffective. Any attempt to cover up a brewing crisis will destroy public confidence, aggravate the situation, and deepen the crisis. Therefore, transparency in economic management is essential.

1. Introduction

This paper addresses the issue of external shocks on the Thai economy. Avian influenza (AI) broke out in Thailand in December 2003 and killed 14 people in the following 12 months. The Thai poultry industry had just recovered from the loss of generalized system of preferences (GSP) status in Europe in 1999 and the import ban on Thai chicken in 2002 resulting from the detection of antibiotic residues. The spread of AI caused heavy damage to the industry because of massive culling and a temporary decline in domestic consumption.[1] The fear subsided by October 2004, and domestic chicken consumption returned to its rising trend. The Ministry of Finance estimated that AI reduced GDP growth by 0.1 percentage points in 2004 (see Table 1). However, AI appeared again in August 2005.

1 Weekly production of chicken dropped to 35 percent of the pre-crisis level.

Table 1. Estimates of the economic costs of the three shocks

	Crisis year	GDP growth (percent)	Financial loss (billion baht)	Loss of life
Avian influenza	2004	−0.1	20	14
Tsunami	2005	−0.3	65	5,400
Oil shock	2005	−2.0	90	

Sources: *Estimates are from the Ministry of Finance, the Bank of Thailand, and the Tourism Authority of Thailand.*

AI has caused less damage in Thailand than the tsunami that hit six southern provinces of Thailand on December 26, 2004, killing 5,394 people—half of them foreign visitors.[2] The tourism industry was badly affected, in particular, the hotel business on the Andaman Coast. Fisheries were also affected by the tsunami, as a result of the destruction of fishing boats and shrimp farms. Estimates show that the tsunami reduced GDP growth in 2005 by 0.3 percentage points (see Table 1).

The oil price shock of 2005 did not lead to loss of life, but its impact on economic growth in Thailand was the greatest among the three recent shocks. Table 1 reports that it caused a decline of 2 percentage points in the GDP growth of 2005. In addition, the oil fund deficit caused by an existing oil price subsidy carried a fiscal cost of more than 90 billion baht. The oil price shock had an adverse direct impact on the tourism industry by raising the cost of traveling. The slowdown in world output growth aggravated the slump in the industry.

2. Highly pathogenic avian influenza

The first outbreak of H5N1 highly pathogenic avian influenza (HPAI) or bird flu was reported in Thailand in January 2004. However, some critics have claimed that the government had initially tried to cover up the outbreak, which may have actually occurred in December 2003 or before. By denying the existence of the bird flu, according to these critics, the Thai authorities had aggravated the problem by not mobilizing the public health system and private citizens to prevent the disease from spreading. Disclosure of the virus's existence was possibly delayed by as much as three months. The motivation behind the cover-up, the critics allege, was the fear of damaging the poultry export industry and creating unnecessary panic in Thailand. In the end, more than 30 million birds were culled, at a cost of more than 20 billion baht. As noted previously, the impact of HPAI was a 2004 GDP growth rate that was lower by 0.1 percentage points.

2 For an analysis of the economic impact of the tsunami on Sri Lanka and Indonesia, see Athukorala and Resosudarmo (2005) and Asian Development Bank (2005).

This alleged Thai government behavior is related to the transparency issue, a long-standing problem that goes back to information on international reserves. Prior to the 1997 currency crisis, the Thai public did not know the true level of international reserves held by the Bank of Thailand. It was misled into a belief that the country could maintain a fixed exchange rate and therefore did not protect the reserves against currency depreciation. The moral of these two incidents is that the sooner the public is informed, the better it can deal with shocks.

After the January 2004 outbreak, domestic consumption of chicken fell sharply as the public panicked about the virus. Major importers banned imports of raw chicken from Thailand. The government tried to regain public confidence by providing information regarding the safety of cooked chicken. When the second AI outbreak took place in August 2005, domestic consumption was not affected. People understood that cooking could contain the virus. Annual production of broilers in 2005 was expected to increase by 18 percent to 820 million birds, because exports of cooked chicken to Europe had soared.

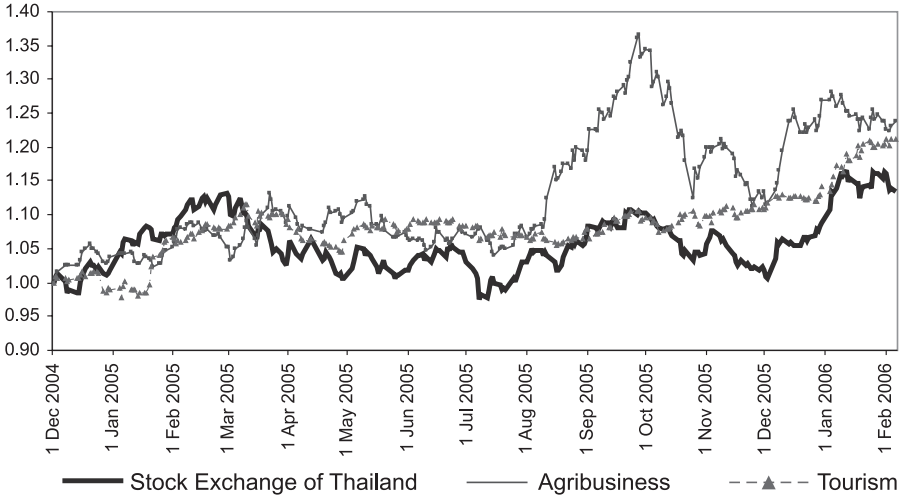
Prior to the outbreak of bird flu, in late 2003, Thailand produced 23 million birds per week. At the height of the 2004 crisis, the production dropped to 8 million birds per week. The Thai poultry industry has recovered slowly from the crisis. Production of chicken in August 2005 was around 17 million birds a week.

Share prices indicate expected profitability of pertinent industries. Bright prospects for Thai poultry and processed-food industries are indicated by rising share prices of agricultural business since August 2005 (see Figure 1). The capital gains in the agribusiness sector outperformed the Stock Exchange of Thailand (SET) index. The return of GSP status to Thailand in 2005 prompted a rapid increase in Thailand's shrimp exports to the EU. (GSP status was granted to Thailand six months in advance of the original schedule [1 January 2006] to lessen the impact of the tsunami on the Thai economy in 2004.)

An important issue is whether damage from AI is specific to the poultry industry. If the bird flu were to mutate, would the resulting influenza epidemic be akin to that which killed 50 million people in 1918? The Asian flu killed 2 million people in 1957, and the Hong Kong flu killed 1 million people in 1968. That there would be a global disaster on the scale of that which occurred in 1918 might be an overstatement.[3]

3 The Department of Disease Control's worst-case scenario was that 40 percent (26 million) Thais would suffer from AI and 1 percent of those infected (260,000 people) would die.

Figure 1. External shocks and share prices (1 December 2004 = 1)



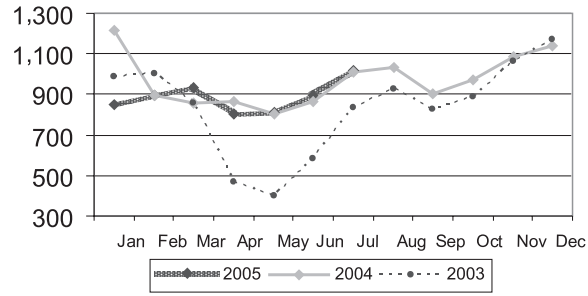
Source: *Stock Exchange of Thailand.*

However, international cooperation is essential to contain the crisis before it becomes widespread.[4] Similar to the way the IMF and developed countries offered help to the crisis-hit Asian countries in 1997–98, the World Health Organisation and countries with resources can help prevent the virus from spreading. Even a weak pandemic, like the SARS epidemic in 2003, can lead to quarantines and travel restrictions that can bring global transportation to a halt and destroy tourism industries.

The best prevention method is for countries to cooperate by pooling financial resources to contain the first human-to-human transmission. Thailand has proposed a regional animal hygienic fund, contributing 300,000 dollars to contain any outbreaks of bird flu, foot and mouth disease, and swine cholera. The Thai government has also set up 11 centers to produce quick and efficient testing for H5N1. In addition, there are surveillance and rapid-response teams of 750,000 volunteers who perform community-based surveillance of the disease and detention of the sick. Without cooperation from the public at the village level, the government will not succeed in

4 The H5N1 strain that decimated poultry in Southeast Asia was found in October 2005 in birds from the Danube delta, which is Europe's largest wetland area for migratory wild birds from Russia, Scandinavia, Poland, and Germany.

Figure 2. International tourist arrivals in Thailand (thousands)



Source: *Tourism Authority of Thailand.*

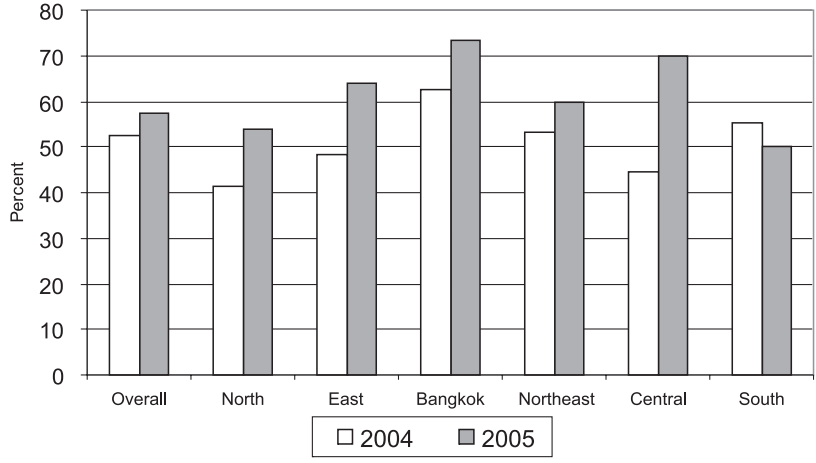
preventing any potential epidemic from occurring. The established surveillance system can detect outbreaks and control them quickly, but Thailand does not have the capability to develop vaccines to treat them. When compared to the magnitude of the potential pandemic, the perception of the threat may be so low that the government's funding is inadequate for prevention.

3. The tsunami and its economic impacts

The tourism industry accounted for 6.4 percent of Thailand's GDP in 2004. Thailand, ranked 17th on the list of global tourist destinations, has a world market share of 2.9 percent. Thailand's Andaman Coast was the top tourist destination in Asia in 2002. The Thai tourism industry has recently undergone various shocks, however. The number of tourists dropped sharply in May 2003 because of the fear of SARS. In the first quarter of 2004, after the bird flu broke out in Thailand, the number of visitors declined, before stabilizing in the second quarter. There was a rebound in tourism during the high season in the last quarter of 2004; then came the tsunami on December 26, killing nearly 5,400 people and destroying seaside properties and villages.

Figure 2 illustrates that the tsunami's impact on tourism in Thailand has now subsided and that the number of foreign visitors has gradually increased from its deepest slump in April 2005. The tourism industry has gradually recovered as tourists have regained confidence and realized that the tsunami was a one-time disaster, unlikely to occur again in the near future, and affected only particular areas in Thailand. The rebound in the tourism industry follows a pattern similar to that which

Figure 3. Hotel occupancy rate by region, January–August



emerged after the loss in confidence caused by SARS[5] and HPAI. By July 2005, Thailand had witnessed a rebound in the number of tourists to near pre-tsunami levels.

One of the reasons why the tsunami's impact on the Thai tourism industry was less severe than it might have been was that tourists simply changed their destinations from Andaman areas to other parts of Thailand. Between January and August 2005, there was an increase in hotel occupancy rates throughout the country except in the south, where occupancy rates declined (Figure 3). Beach tourists switched their destinations from southern beaches to other beaches in the east of Thailand. It is clear now that the fear of sustained tsunami damage to the Thai tourism industry was exaggerated.

The 0.3 percentage point drop in 2005 GDP growth that is attributed to the tsunami damage underestimates the actual economic damage because it does not include the tsunami's long-term adverse environmental impacts. According to the Food and Agriculture Organisation, the tsunami will have long-term negative impacts on coastal ecosystems and the socioeconomic activities of local communities. The dense

5 SARS started in Guangdong province in China in November 2003, and by August 2003, it had spread to 29 countries and caused 916 deaths. Siu and Wong (2004) reported that fear and panic subsided quickly once the outbreak was brought under control, and the Hong Kong economy rebounded rapidly.

mangroves that saved thousands of lives from the tsunami have been damaged. Delayed effects from saline water intrusion are destroying sandy beach forests and freshwater swamp forests. Salination of farmlands and erosion of coastlines have had a serious impact on villagers and local communities that rely on agriculture, fisheries, and tourism.

Because many Thai shrimp farms were destroyed by the tsunami, the Thai government appealed to the world community to allow affected shrimp farmers to have better access to world shrimp markets. In response, the EU cut tariff rates on imported shrimp from Thailand.[6] Retroactive to August 2005, the tariffs were reduced from 12 to 4.2 percent for fresh shrimp and from 20 to 7 percent for processed shrimp. Additionally, the limit on shrimp imports from Thailand into the EU was removed.

In July 2005, Japan offered to cut the tariff rates on 20 agricultural products to zero to assist Thai farmers hit by drought and the tsunami. Processed shrimp, boiled pork, tropical fruits, and vegetables are included on the proposed list of zero-tariff products. These products have been subject to tariff rates between 5 and 12 percent. The value of the exports that would be exempted from the tariff amounts to 10 billion baht. In April 2005, the U.S. government considered the removal of antidumping duties on Thai shrimp but ultimately decided the following November to maintain the duties.

In the aftermath of the loss of life and devastation caused by the tsunami, the Thai government has several rehabilitation plans to revive the tsunami-hit areas. It allocated a budget of 2.6 billion baht to restore infrastructure and tourism sites in the six tsunami-hit provinces, with an October 2005 completion deadline. By the start of the peak tourist season in November 2005, tsunami detection buoys had been installed in the Indian Ocean, at a cost of 100 million baht, to restore the confidence of tourists in the six provinces. There are, however, problems due to delays in construction, budget disbursement, and coordination among many agencies supervising the rehabilitation. Such problems related to disaster management do not seem to be specific to developing countries.

Figure 1 shows that the share prices of the tourism industry suffered a decline in the aftermath of the tsunami. Nevertheless, the sector's share prices rebounded within a month after panic selling subsided. The stronger performance of the tourism sector

6 After the removal of Thailand from the EU GSP list in 1998, Thai shrimp exports to the EU declined from 272 million euros to 28.4 million euros in 2003.

Table 2. Macroeconomic impact of the three oil price shocks (percent)

	First oil shock		Second oil shock			Third oil shock	
	1973	**1974**	**1978**	**1979**	**1980**	**2004**	**2005**
GDP growth	9.9	4.4	10.4	5.3	4.8	6.1	4.5
Inflation	15.5	24.3	7.9	9.9	19.7	2.7	4.5
Current account/GDP	−0.5	−0.6	−2.8	−4.9	−6.4	4.5	−4.8
Trade balance/GDP	−1.7	−2.4	−3.1	−4.4	−6.1	2.3	−2.1
World oil price index	3.3	11.6	12.9	30.1	35.9	37.7	54.2

Sources: *Bank of Thailand, International Monetary Fund.*

relative to the SET index bodes well for the recovery of the tourism industry in Thailand.

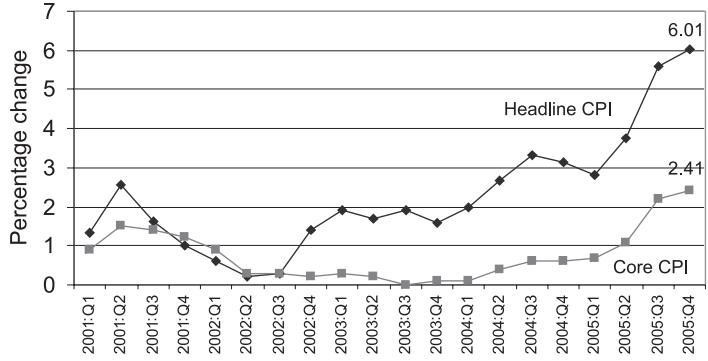
4. The 2005 oil price shock

Table 2 compares macroeconomic impacts of the oil price shocks of 1974, 1979, and 2005 on Thailand. The respective increases in oil prices from the years preceding the crisis years were 252 percent, 133 percent, and 44 percent. The first oil shock hit Thailand when it was least prepared, resulting in a decline in output growth by more than 5 percentage points in 1974. Inflation that year reached a record high of 24 percent. The shock in 1973 did not result in negative output growth because the commodity boom raised Thailand's exports in that year. Nevertheless, the world recession in 1974, accompanied by restrictive monetary policies in many countries, led to a slowdown in world trade. Similarly, the second oil shock also cut the country's GDP growth rate, from 10.4 percent in 1978 to 5.3 percent in 1979 and then to 4.8 percent in 1980. Inflation rose to almost 20 percent in 1978. The second shock led to a higher current account deficit of 6.4 percent of GDP in 1980, up from 2.8 percent in 1978.

Since the 2005 oil price shock was smaller than the previous two oil price shocks, the GDP growth rate in 2005 was only 2.4 percentage points lower than in 2004. One additional reason that the negative impact was the smallest in 2005 was that the world had learned how to cope with oil price rises in the years since 1973. It is noteworthy that the shift in the trade balance was comparatively large; the trade balance swung from positive 4.5 percent of GDP to negative 2.5 percent. Imports of oil increased sharply in the first half of 2005 because subsidies kept domestic oil prices below international oil prices. The effect of the oil price shock on interest rates would become more apparent in 2006 as inflationary expectations slowly built up.

Oil is a key commodity whose price affects all sectors in the economy. The oil price can be thought of as a benchmark for households in forming their inflationary ex-

Figure 4. Inflationary impact of the third oil price shock



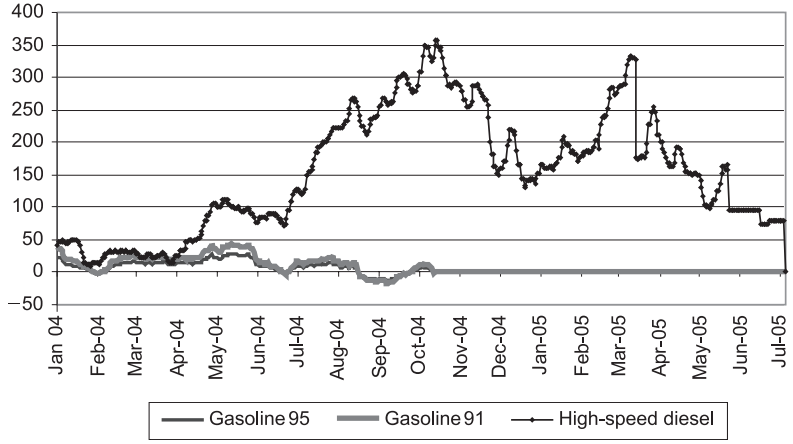
Source: *Bank of Thailand.*

pectations. An increase in headline inflation feeds back to core inflation through upward revision of inflationary expectations. Even though the core consumer price index (CPI) excludes oil and fresh food prices, the impact of the third oil price shock on core inflation is still evident (Figure 4). Explicit inflation targeting, a fashionable monetary policy mechanism adopted by many countries after the abandonment of a fixed-exchange-rate regime, is ineffective when Thailand is hit by a massive oil price shock. Core inflation tracks headline inflation closely as inflation expectations have gained momentum. It will be very difficult, if not impossible, to decelerate inflation in Thailand when economic growth remains above 5 percent.

Aside from liquefied petroleum gas, Thailand must import oil to cover almost all of its oil needs. According to the International Energy Agency, Thailand consumes more than twice the oil per unit of GDP than the average developed country consumes. However, this does not necessarily imply that Thailand's usage of oil is less efficient than that of developed countries. Thailand is an oil-intensive economy because Thailand's share of manufacturing output is high. The service sectors in developed countries account for higher shares of GDP, and so these economies are not oil intensive. Thailand's high dependency on imported oil implies that its economy is more vulnerable to oil price shocks than those of other countries.

As its degree of openness (measured by the ratio of foreign trade to GDP) has been rising, Thailand has become more vulnerable to fluctuations in world output. The demand for Thai exports, as well as income from tourism, depend very much on world economic activity. A slowdown in world GDP growth caused by an oil price

Figure 5. Oil subsidies per day (million baht)



Source: *Energy Policy and Planning Office.*

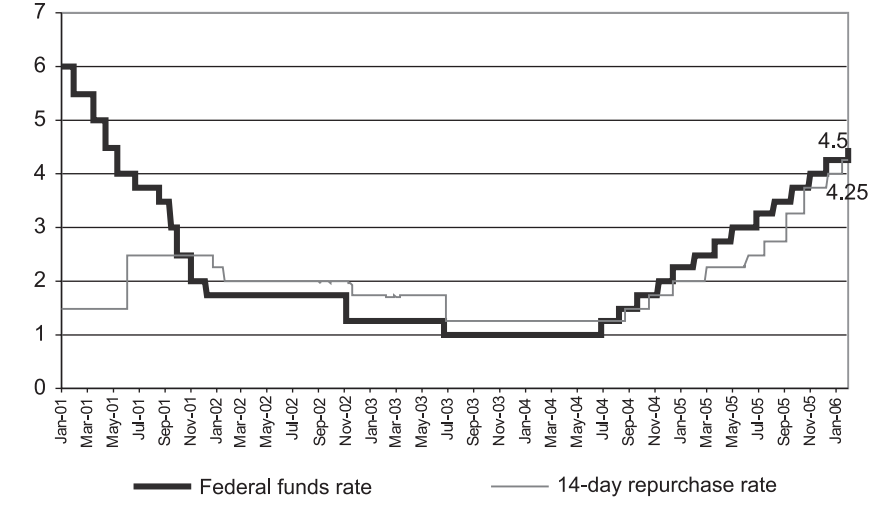
hike would decrease the demand for Thai exports of goods and services. There is a high correlation between world GDP and Thailand GDP growth rates.

The inflationary impact of the 2005 oil price shock was delayed by extension of existing oil price subsidies by the Thai government. Controls were removed from gasoline prices in October 2004, much earlier than from diesel prices, because of the fear that higher costs in the transportation sector, which depends on diesel, would lead to higher inflation. Figure 5 reports the size of the state subsidy on each type of oil in the 2004–05 period. A fixed-price strategy might not be unreasonable in the face of an oil price increase that is only temporary. Because commodity prices ratchet up with inflationary expectations, fixing energy prices temporarily to prevent the building up of inflationary expectations can buy time for growth-oriented policy with a minimal sacrifice in economic efficiency. Nevertheless, it has become clear that the 2005 rise in oil prices is permanent.[7]

The Thai government's attempt to prolong the subsidy on diesel fuel can be thought of as a ploy to appease the public prior to the general election in early 2005. The diesel price was adjusted marginally in February and March 2005 and finally freed from controls in June 2005, when it became clear that Thailand's oil fund was in

7 The Dubai oil price increased to $56.7 a barrel in September 2005, an increase by 60 percent from a year before.

Figure 6. Federal funds and repurchase rates



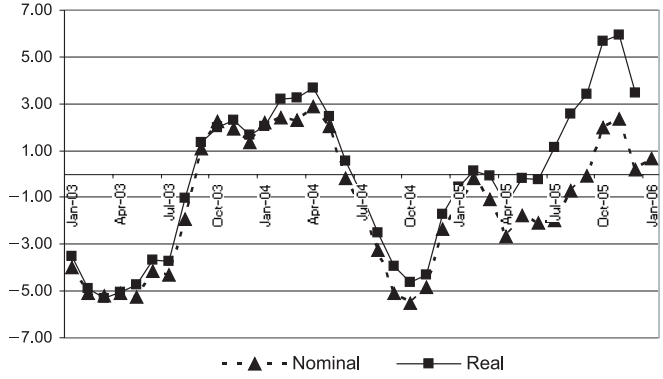
Sources: *Bank of Thailand, Federal Reserve.*

deficit of more than 90 billion baht. The freeing of gasoline prices while diesel prices remained fixed created a distortion in the energy price structure for more than a year, leading to inefficient uses of diesel. In the end, domestic oil prices could not be kept artificially low to cushion domestic prices from external shocks. The gasoline and diesel subsidies only delayed increases in domestic prices.

A plan to subsidize the use of gasohol by encouraging the production of palm oil (which is mixed with gasoline to form gasohol) raises more questions than it provides answers to the problem of oil shocks. It involves new issues regarding farm productivity, replacement of rubber plantation areas, and the effectiveness of the palm oil price support program. Similarly, a proposed plan to encourage production of ethanol by restricting the export of molasses would entail more problems to the sugar industry than it would provide alternative sources of energy.

The oil price shock caused the U.S. Federal Reserve Bank to raise the federal funds rate in late 2004 to fight inflation. Figure 6 shows that the Thai central bank kept the 14-day repurchase rate higher than the federal funds rate until July 2004 and equal to the federal funds rate until October 2004. Since then, the Thai repurchase rate has been lower than the federal funds rate. This negative gap between domestic and foreign interest rates since October 2004 suggests that the Bank of Thailand considers

Figure 7. Real and nominal effective exchange rate (% change year-on-year)



Source: *Bank of Thailand.*

capital outflow not to be a threat and currency depreciation to be necessary to stimulate exports.

In my opinion, the Bank of Thailand should raise interest rates above the federal funds rate and establish a positive real interest rate in order to curb investment spending that might be complementary to public spending on megaprojects (and thus generate higher inflation) in the future. As the core inflation rate is poised to rise above the inflation target of 3.5 percent, the Bank of Thailand cannot deny its responsibility and accountability for breaching the target. It is my opinion that Thai monetary policymakers will not be able to earn sufficient credibility to pin down inflation expectations once they fail to maintain core inflation within the target range of 0 to 3.5 percent. Since an inflation target is not binding, the Thai monetary policy committee might choose a variant of an inflation-targeting scheme that involves announcing the optimal long-run inflation rate that the monetary policy committee has judged as the best for the long-run operation of the economy.

External shocks in such form as oil price hikes, tsunami, and avian influenza lead economic agents to revise and lower their expectations about expected incomes, thereby affecting consumption and investment decisions. Investment expenditures and purchases of durable consumer goods may be delayed until investors and consumers regain their sense of stability and calm after assessing the bad news for an economy hit by external shocks. During such an adjustment period, the availability of cheap credit might not be sufficient to stimulate demand. My assessment is that a

large part of the slowdown in Thailand's GDP growth in 2005 was the result of hesitant consumers during the period of uncertainty caused by rising oil prices.

Figure 7 shows that since 2004, the real effective exchange rate in Thailand has appreciated more (or depreciated less) than the nominal effective exchange rate, as inflation has gained momentum since the government's abandonment of oil price subsidies. Because the Thai central bank maintained a stable exchange rate within a narrow range of fluctuations, there has been a loss of export competitiveness. Maintaining baht stability might have temporarily offset inflationary pressure from oil price hikes, but it created price distortions for all commodities. In the long run, the baht must depreciate according to inflation differentials to maintain international competitiveness. Any intervention, in either energy or exchange rate markets to maintain fixed prices, would inevitably be costly and ineffective.

5. Concluding remarks

Appropriate policy responses to various economic shocks are very important. The establishment of realistic exchange rates and positive real interest rates by reducing the degree of price intervention will induce economic agents to adjust properly to cushion the impact of external shocks. Nominal exchange rates must be allowed to depreciate to maintain competitiveness. Price controls must be employed temporarily to avoid market disruptions and to calm inflationary expectations.

In dealing with shocks, transparency is also required to build confidence and encourage cooperation between the private and public sector. Exports of Thai chicken rose in 2005 around 30 percent from the level in 2004 because of the confidence gained by importing countries. Importers from the EU and Japan now inspect chicken-processing plants in Thailand regularly. Whenever AI strikes anywhere in the world, there will always be an increase in the demand for Thai food products because of the Thai reputation of high standards in food safety. Thus transparency can be rewarding. On the other hand, any attempt to cover up a brewing crisis will destroy public confidence, aggravate the situation, and deepen the crisis.

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