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PURPOSES
AND FUNCTIONS

Monetary Policy and the Taiwan Economy

Chapter 2 Monetary Policy and the Taiwan Economy

The CBC's monetary policy directly influences the level of bank reserves and money market interest rates, and through various channels, the effects of monetary policy are transmitted throughout the economy. External trade and international capital flows may also influence domestic interest rates and NT dollar exchange rates, and hence impact Taiwan's highly open economy. Therefore, to understand how monetary policy is related to the Taiwan economy, one must understand the financial system, the international dimensions of monetary policy, the role of reserve money in monetary policy operations, and the channels through which monetary policy affects total output.

Section 1 The Financial System and Monetary Policy

The financial system includes financial markets and intermediaries. The former mainly consist of equity, bond, and money markets. The latter include banks, community financial institutions, and life insurance companies. The financial system facilitates the transfer of funds from lenders to borrowers, which can be arranged directly in financial markets or indirectly through financial intermediaries.

The soundness of the financial system is essential to the transmission of monetary policy. When the system is healthy and efficient, monetary policy can be effectively carried out. If the financial system turns unhealthy, then the effect of monetary policy will be limited. For instance, between 2001 and 2002, when banks' nonperforming loan ratios were relatively high, banks' lending attitudes turned conservative, which weakened the effect of the expansionary monetary policy the CBC adopted at the time.

The structure of the financial system also affects the effectiveness of monetary policy. In the past decade, Taiwan's financial system has undergone a structural change—borrowers have become more reliant on financial markets to raise funds. As funds increasingly flow through markets rather than banks, monetary policy may become less effective since its operations rely heavily on the central bank's control over bank reserves.

Besides facilitating the transmission of monetary policy, the financial system also provides payment services. Banks accept transaction deposits and pay upon depositors' demand. They also provide fund remittance and transfer services. The CBC facilitates cash transactions by issuing currency and oversees the system of large-value interbank payments. To ensure the security and efficiency of the payment system, the CBC has continued to promote the modernization of the payment system and urge banks to raise the scope and efficiency of their payment services to the public.

A sound financial system is essential to the transmission of monetary policy and the functioning of payment systems. Yet, to ensure its soundness requires close monitoring because the system possesses two inherent problems, maturity mismatch and asymmetric information.

In terms of maturity mismatch, the traditional banking business involves taking deposits, which are short-term in nature, and making loans, which are of a long-term nature. Maturity mismatch in assets and liabilities may generate liquidity risk and interest risk. Poor risk management by an individual bank could set off a chain reaction leading to a banking crisis.

Asymmetric information refers to the situation where one party has superior information over the others. The better informed can take advantage of this situation to pursue its own interest at the expense of the others. Common problems arising from the presence of asymmetric information are adverse selection and moral hazard. In the case of adverse selection, borrowers with high credit risks are more likely to be granted loans because they are willing to pay higher interest rates. In the case of moral hazard, borrowers getting loans have incentives to make risky investments hoping for better returns.

Adverse selection and moral hazard could be simultaneously present in banks. Banks are lenders to loan-seekers and, at the same time, borrowers to their depositors. High-risk banks tend to attract deposits by offering favorable interest rates, and pursue high returns by making high-risk investments with borrowed funds.

Promoting financial stability and ensuring sound banking operations are part of the CBC's operational objectives. The CBC started to undertake banking examination when it resumed operations in Taiwan in 1961. The Central Deposit

Insurance Corporation (CDIC) began to share the responsibility after its establishment in 1985. The Ministry of Finance (MOF) also participated following the deregulation of bank entry in 1991. In line with the trend of financial integration, the Financial Supervisory Commission (FSC) was set up in July 2004 and the supervision and regulation of banks, securities houses and insurance companies have since been re-delegated to the FSC. However, the CBC still retains the authority to conduct target examinations on financial institutions and adopt corrective measures when necessary in order to ensure the effectiveness of monetary policy and financial stability.

Section 2 International Dimensions of Monetary Policy

Taiwan is a highly open economy, and therefore, external trade is a significant part of its real economic activity. Its financial environment is also increasingly internationalized after a series of liberalization measures on international capital flows were put in motion starting from 1987. With growing external trade and capital flows, Taiwan's economic and financial conditions are becoming more closely linked to the rest of the world than ever before. New opportunities and risks have emerged as a result. The adverse impacts of the Asian financial crisis between 1997 and 1998 and the bursting of the global IT bubble in the early 2000s demonstrated the growing influence external shocks have on the Taiwan economy, and the importance of taking international factors into account in the formulation of monetary policy.

Taiwan has run a sustained trade surplus. The trade surplus expanded sharply in the late 1980s and early 2000s. Capital movements have increased over time and become volatile. In periods when Taiwan records a trade surplus or capital inflow, the supply of foreign currencies and demand for NT dollars tend to rise. As a result, the NT dollar appreciates against foreign currencies, NT dollar deposits increase, and the level of monetary aggregates rises.

If the CBC purchases foreign currencies from banks to stabilize the exchange rate, new liquidity is injected into the banking system. Bank deposits and monetary aggregates further expand through the money multiplier effect. Domestic interest rates tend to fall, which may stimulate private consumption and investment. Depositors searching for higher returns may turn to stock or real estate markets. The booming asset markets in turn attract more capital inflows, which might eventually lead to a financial bubble and pose a threat to economic and financial stability. A large trade deficit or capital outflow might trigger the reverse process.

On some occasions, foreign exchange market intervention needs to be accompanied by monetary policy operations. For example, in case of irrational exchange rate movements, the CBC may intervene in the foreign exchange market and conduct open market operations at the same time to offset the impact of foreign exchange intervention on domestic liquidity. Such a strategy is known as sterilized intervention. In addition to open market operations, the CBC may adjust required reserve ratios and take deposits from banks for sterilization.

Due to increasing external influence on the Taiwan economy, the CBC has incorporated international dimensions into its monetary policy decisions. For instance, the CBC shifted to an expansionary monetary policy in order to stimulate domestic demand as foreign demand turned sluggish during the Asian financial crisis and when the global IT bubble burst.

Finally, when monetary policy adjustments in other countries change the relative rates of return on domestic and foreign assets, domestic financial conditions are likely to be affected by the resulting cross-border capital movements. Therefore, the CBC usually takes monetary policy adjustments in other countries into consideration when formulating its own policy.

Box: Weathering the Asian Financial Crisis

The outbreak of the Asian financial crisis in 1997 was closely associated with international capital movements. Internationalization of financial markets has been a global trend since the 1980s. The rise of information and communication technology makes flows of information and transactions more convenient and faster in financial markets. However, this also means that news or rumors can quickly spread, and the adverse effects of a panic on one market can disseminate in a very short period of time and eventually affect the whole world.

Short-term capital flows are volatile in nature. If a country's foreign exchange rate is inflexible, then the expectation of currency appreciation could lead to a surge in capital inflows. Surging capital inflows could give rise to excessive growth in bank credit and the money supply, as well as speculative bubbles in real estate and stock markets. Once the bubbles burst, sudden reversals of capital flows result in a currency crisis, as well as a collapse of the financial system, and eventually undermine the economy. This phenomenon was actually observed across a number of Asian economies during the Asian financial crisis in 1997 and 1998.

In the case of Taiwan, after the outbreak of the Asian financial crisis in 1997, the CBC stepped in the foreign exchange market from July to October to curb depreciation expectations of the NT dollar. As a result of heavy intervention, foreign exchange reserves fell by US$7 billion within four months. At the same time, monetary conditions tightened, interest rates went up and stock prices fell sharply.

As the Asian financial crisis showed no signs of abating, the CBC decided to change its policy approach in order to shield the asset markets and the real economy from the damage caused by the prolonged monetary tightness. In mid-October 1997, the CBC ceased to defend the exchange rate, and at the same time lowered required reserve ratios. The NT dollar consequently exhibited a sharp downward trend from mid-October onwards and reached a low of 34.4 against the US dollar in mid-January 1998, depreciating by 17 percent within three months.

In addition to implementing a flexible exchange rate policy, the CBC fended off speculative attacks in the foreign exchange market by prohibiting domestic institutional investors from engaging in non-delivery forward (NDF) transactions to block speculators' access to NT dollar funds. As a result, the downward pressure on the NT dollar was largely relieved, and the exchange rate of the NT dollar fluctuated between 32.0 and 34.9 during the remainder of the crisis period. Monetary conditions have become moderately easy. As Asian currencies rebounded strongly in September 1998, the CBC implemented a more relaxed monetary policy to stimulate domestic demand.

The CBC's policy actions largely mitigated the negative impacts of the Asian financial crisis on the Taiwan economy. The event also demonstrated the close economic ties among Asian countries and the growing influence of international capital flows on the policies of Asian central banks.

Section 3 Reserve Money and Monetary Policy

Reserve money is also known as high-power money or monetary base. The implementation of monetary policy usually directly affects reserve money, and this effect initiates a series of financial responses through which monetary policy influences the economy. Thus, reserve money is a fulcrum for monetary policy operations. As for the CBC, reserve money is the operational target variable of its monetary policy operations. This section introduces the concept of reserve money from the uses and sources sides.

1. Uses of Reserve Money

On the uses side, reserve money consists of reserves held by banks and currency held by the nonbank public. In general, the uses of reserve money are jointly determined by the demands of the public and banks as well as the reserve requirements set by the CBC.

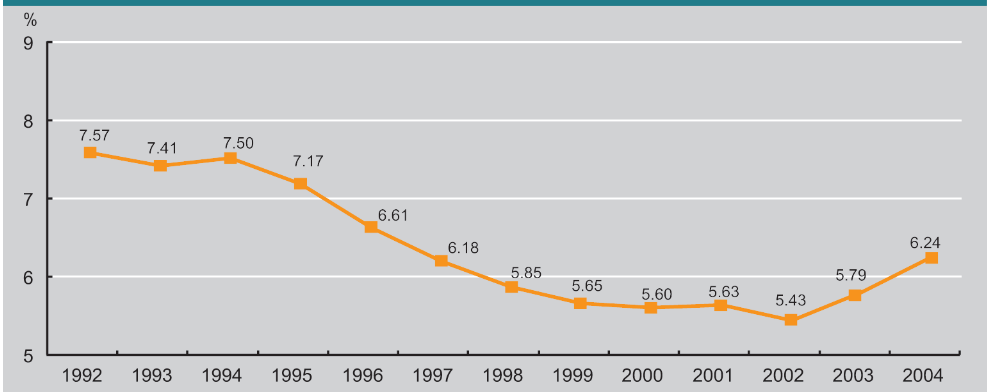
(1) Reserves Held by Banks

Reserves held by banks, including cash held in banks' vaults and reserves deposited with the CBC, are defined by the sum of required and excess reserves. Required reserves are the reserves that banks are required to keep at the CBC or in their vaults against deposits taken. Required reserve ratios are set by the CBC. The CBC realigned its reserve requirements to lower ratios in the mid-1990s, mainly to adjust the reserve requirement structure and raise the competitiveness of banks. It lowered the ratios again during the Asian financial crisis and after the bursting of the global IT bubble as part of an expansionary monetary policy. Excess reserves are the difference between actual reserves and required reserves. The interbank call-loan rate is the opportunity cost for banks to hold excess reserves and is negatively related to excess reserves.

(2) Currency Held by the Nonbank Public

In Taiwan, currency held by the nonbank public constituted about 30 to 40 percent of reserve money during the past decade. The nonbank public's demand for currency depends principally on income and responds to both long-run growth and cyclical movements of the economy. The public's demand for currency may also experience seasonal swings, such as a surge before the Chinese Lunar New Year holidays. In the past decade, the increasing use of credit cards, debit cards and charge cards has gradually reduced the public's demand for currency. Chart 2-1 displays a downward trend in the ratio of currency held by the nonbank public to nominal GDP between 1992 and 2002. However, it shows how the ratio went up in 2003 and 2004 as a result of large declines in deposit rates.

Chart 2-1 Currency Held by the Nonbank Public to Nominal GDP



Source: 1. Financial Statistics Monthly, the Republic of China, Central Bank of China.
2. Statistical Abstract of National Income, the Republic of China, Directorate-General of Budget, Accounting and Statistics, Executive Yuan.

2. Sources of Reserve Money

Reserve money is a liability of the CBC. Changes in the CBC's asset or other liability items may affect the level of reserve money. Some of these items are under the control of the CBC and reflect monetary policy actions, including the CBC's holdings or issues of securities. Other items, such as government deposits, respond to decisions made outside the CBC. How various items on the CBC's balance sheet affect reserve money is described below.

(1) Foreign Assets

Foreign assets are the largest asset item on the CBC's balance sheet, and their share in total assets exceeded 80 percent in the past ten years. When the CBC purchases foreign currencies from banks and invests them abroad, both its foreign asset holdings and the balance of banks' reserve accounts at the CBC rise. As a result, the level of reserve money expands. Conversely, reserve money contracts when the CBC sells foreign currencies to banks.

(2) Claims on Banks

The CBC's claims on banks include the following items: (a) discounts of eligible bills with maturities not exceeding 90 days for industrial and commercial bills and 180 days for agricultural bills, (b) temporary accommodations not exceeding 10 days, (c) secured accommodations not exceeding 360 days, (d) foreign currency accommodations, and (e) foreign currency call loans. Banks may apply on their own initiative to the CBC for the amount of credit they need. As for foreign currency credit, the CBC always uses its own foreign assets to accommodate banks' demand; therefore, such accommodations do not influence the level of reserve money. In contrast, an increase in the CBC's NT dollar accommodations to banks expands bank reserves and the level of reserve money, and the opposite occurs when banks repay the CBC. In the past decade, due to abundant liquidity of banks, the CBC's accommodations in the domestic currency have declined, and accommodations in foreign currencies have become the major type of the CBC's claims on banks.

(3) Holdings of Securities

The CBC's securities portfolio mainly comprises repurchase agreements (RPs) in government securities or in negotiable certificates of deposit (NCDs) issued by the CBC. The CBC's purchase and sale of securities, commonly referred to as open market operations, are a means by which the CBC can affect reserve money at its discretion. When there is a temporary shortage of cash in the banking system, the CBC may offer to buy RPs from banks. Under such circumstances, banks transfer ownership of securities to the CBC in exchange for cash. This raises the level of reserves in banks' accounts at the CBC and thus expands the level of reserve money. Conversely, when there is a temporary oversupply of liquidity in the banking system, the CBC may offer to sell RPs, and the reverse occurs.

(4) Government Deposits

The central government maintains balances at the CBC to meet payment obligations. When the government makes payments, the balance of government deposits at the CBC decreases and consequently causes reserve money to expand. When the government receives taxes or proceeds of securities issued, the balance of government deposits at the CBC increases, which causes reserve money to contract.

(5) Securities Issued by the CBC

When there is excess liquidity, the CBC may issue securities such as certificates of deposit (CDs) or NCDs to mop up liquidity. Consequently, the balances of banks' reserve accounts at the CBC and reserve money fall. The reverse occurs when securities issued by the CBC mature.

(6) Redeposits

The CBC may allow banks or the Postal Savings System to deposit their excess liquidity with the CBC. These types of deposits are different from reserve deposits and are known as redeposits. The maturities of redeposits are mostly one year or six months. The interest rates on redeposits, linked to corresponding banks' deposit rates, are usually higher than those on NCDs. When the CBC allows banks or the Postal Savings System to increase their redeposits with the CBC, their balances in reserve accounts at the CBC fall and so does the level of reserve money, and vice versa.

The above-mentioned are the major items on the CBC's balance sheet, which reflect a broad range of the functions that the CBC performs. Through changes in these items, reserve money is affected. In common with other Asian central banks, the CBC owns a high level of foreign assets, which serve as the major source of reserve money. The CBC's most typical operation is to drain excess liquidity to keep reserve money from over expanding.

Section 4 The Transmission of Monetary Policy

Monetary policy influences economic activity mainly by affecting the cost and availability of money and credit to those who produce and consume the nation's output. The CBC's control of the supply of bank reserves interacts with the banking system's demand for reserves to determine the interbank call-loan rate. Depending on the outlook for economic growth, inflation and credit demand, interest rates with varying maturities, credit risk, and tax status are determined in the financial markets. Given choices of interest rates and maturities, holders of assets and those who make savings from current income allocate their capital among money and other assets and choose between consumption and savings. Interest rates also affect borrowing decisions of households, businesses and the government. Furthermore, monetary policy may influence spending decisions by affecting the availability of credit. Through a series of financial and economic responses, the effect of monetary policy is transmitted to total output, employment, and prices. The following paragraphs describe how an expansionary monetary policy affects economic activity through various transmission channels.

1. Interest Rate Channel

When the CBC conducts an expansionary monetary policy, short-term nominal interest rates, such as the interbank call-loan rate, drop first. Medium- and long-term nominal interest rates tend to follow. As the expected inflation rate is adjusted upwards, the real interest rate is likely to fall. The lower real interest rate boosts consumption and investment, which in turn raises the price level and total output.

2. Bank Credit Channel

The CBC's expansionary policy influences bank credit in two ways: increasing bank funds available for making loans (the bank lending channel) and improving borrowers' financial positions, making banks more willing to lend (the balance sheet channel). For example, when the CBC releases funds through open market operations, it increases banks' excess reserves, or funds available for banks to extend loans. This may also push asset prices upwards and thus improve potential borrowers' net worth, value of collateral and financial positions, making banks more willing to lend. The increased availability of bank loans boosts consumption and investment.

3. Wealth Channel

An expansionary monetary policy may raise asset prices, such as stock prices and housing prices, and consequently increase the wealth of the general public and hence consumer spending.

4. Relative Asset Price Channel

This channel is based on the concept of imperfect substitutability among assets. Money is an imperfect substitute for financial and real assets, such as stocks, bonds and real estate. When money supply increases as a result of an expansionary policy, individuals will adjust their portfolios by increasing their holdings of financial and real assets, which may lead to a rise in consumption and investment.

5. Exchange Rate Channel

An expansionary monetary policy brings domestic interest rates down as it adds to the appeal of foreign fixed income assets relative to domestic ones, which weakens the domestic currency. As the domestic currency depreciates against foreign currencies, export competitiveness improves, thereby promoting exports.

In sum, when economic activity slows down and credit demand shrinks, the CBC may adopt an expansionary monetary policy to boost consumption and investment by affecting asset allocations and spending decisions in different sectors of the economy. During the buoyant phase of the business cycle, to keep inflation in check, the CBC may raise interest rates to restrain growth in money and credit. By affecting the cost and availability of financing in the financial system, monetary policy can be used to keep credit-financed spending in line with the economy's production capacity.