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Macroeconomic and Monetary Policy Management
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**Country Paper on Macroeconomic and Monetary
Policy Management¹**

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¹ The views expressed here are those of the author and do not necessarily reflect those of the CBC.

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I. Macroeconomic Assessment and Forecasting

1.1 External environment scanning

Taiwan has been hit hard by the global financial and economic crisis of the world. According to the official forecasts, Taiwan's real GDP is projected to contract by 4.25% in 2009 (Chart1), the worst since 1961. The quarterly economic growth is expected to exhibit an upward trend this year, and return to positive territory in the fourth quarter.

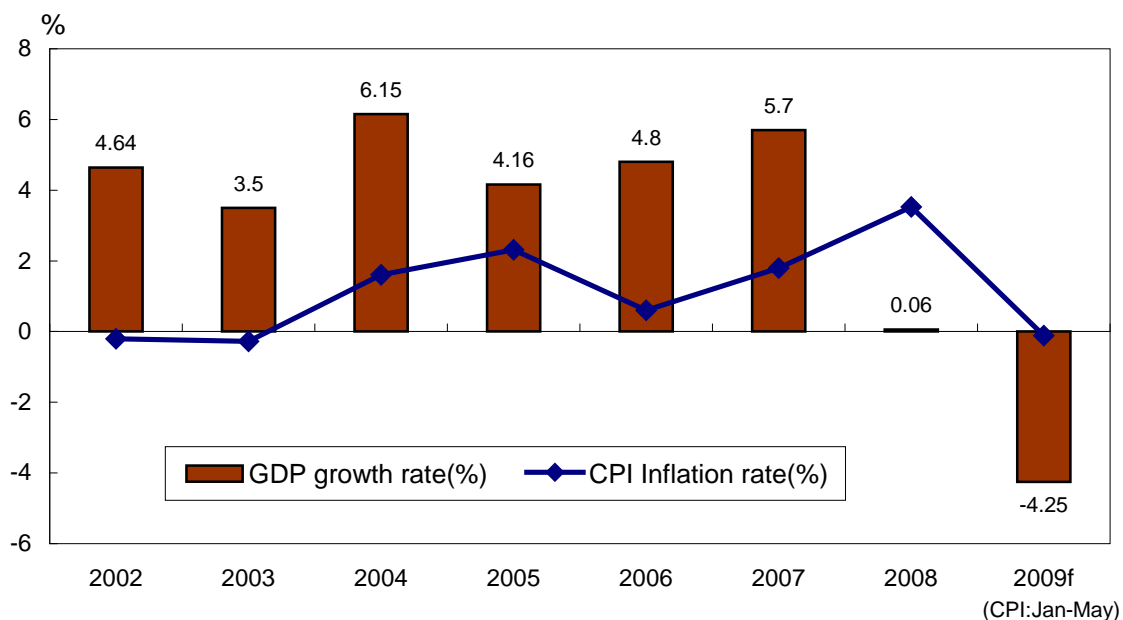
Why has Taiwan seen output slump faster than in other countries, even faster than in the US—where the financial crisis started? It's mainly because of the collapse in trade and Taiwan is a trade-dependent economy. Moreover, Taiwan's exports are overly concentrated on specific products and markets. It is no surprising, therefore, that exports this year are projected to fall sharply. By contrast, the US economy depends heavily on domestic demand, with private consumption comprising 70% of its GDP. A small open economy like Taiwan would be more likely to be worse-affected by a global economic turmoil that hampered world trade.

The output slump also sent Taiwan's jobless rate toward 6%. In April 2009, the unemployment rate rose to 5.76% and the number of unemployed persons surged to 625,000. Among those unemployed, workers "being laid-off due to the closing or shrinking of businesses" comprised more than half of those losing their jobs. As unemployment rate usually lags behind economic activities, it is very likely that Taiwan's jobless rate will increase in the coming months. Based on IMF's latest predictions, Taiwan's average unemployment rate will climb to 6.3% for the year 2009.

Regarding the domestic prices, the CPI inflation showed a dramatic change in mid-2008: After increasing at more than 3% (yoy) for eleven consecutive months, the inflation rate reached a high of 5.81% in July 2008 and decelerated afterwards, finally turned negative in February 2009. The annual change for CPI in May 2009, compared with the same month of the previous year, was negative 0.08% (Chart1). What caused the CPI inflation a complete turnaround is a drop in commodity prices following the deterioration of the global economy. At the same time, the retail oil prices slid drastically due to reduced cost of imported petroleum. According to the latest

forecasts by the DGBAS, CPI will fall 0.84% in 2009. To summarize, inflation risks will subside temporarily this year and the specter of deflation is looming ahead

Chart 1 Taiwan's Economic Growth Rate and CPI Inflation Rate

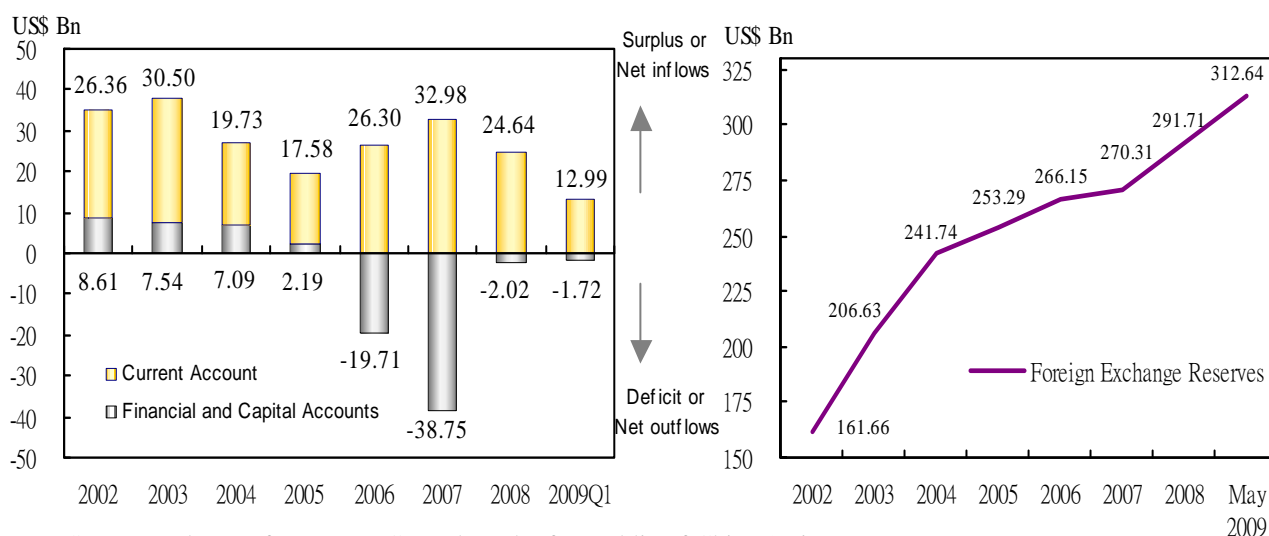


Source: News Release May 2009, the DGBAS, Executive Yuan

As for the financial markets, the New Taiwan dollar has depreciated by around 13% against the US dollar from June 2008 to March 2009. Meanwhile, to prop up the economy, the government has actively adopted an expansionary fiscal policy, while the CBC has consistently pursued an easy monetary policy. The CBC adopted various measures to ensure sufficient market liquidity and reduce the funding costs. These include: cutting key policy rates seven times since September 2008, to 1.25%; lowering required reserve ratios in September 2008; expanding the scope of repurchase agreement operations; helping to strengthen the Small and Medium Enterprise Credit Guarantee Fund to share banks' credit risk; requesting banks to switch the frequency of lending rate reviews from quarterly to monthly to more promptly reflect the CBC's rate cuts. As a result, the short-term interest rates have approached zero. For example, in April 2009, the commercial paper rate and interbank rate fell to 0.16% and 0.13%, respectively. The easy monetary conditions are for the

time being helpful in facilitating Taiwan’s economic recovery. For the first quarter of 2009, the overall balance of payments registered a surplus of US\$11.27 billion again due to an increase in current account surplus combined with a relatively low net capital outflow (**Chart 2**).

Chart 2 Balance of Payments and Foreign Exchange Reserves



Source: Balance of Payment, Central Bank of Republic of China (Taiwan)

Are there any “green shoots” of recovery coming out so far amid the bad signs stated above? There might be some: (1) Although the business cyclical indicators (compiled by the CEPD) released in May 2009 still showed a bottom in economy, it has climbed up at a slow pace gradually. (2) The stock market rebounded strongly in the past few months: Taiwan stock index has increased over 40% since the start of 2009. (3) Export orders increase month by month in 2009. (4) Taiwan's consumer confidence index (CCI) in May rose slightly from last month, the third consecutive gains after ten months of decline.

1.2 Domestic economic conditions assessment

Effective macroeconomics supervision needs to persistently supervise the financial changes. It contains collecting related statistics, surveying the private

sectors regularly, developing the indicators, analyzing the causes of changes, forecasting and conducting stress tests, and assessing possible risks (such as vulnerability, persistency, and competitiveness, etc.). Finally, we could propose response measures (monetary policy, fiscal policy and exchange rate policy).

Due to the broad range of supervision, which includes real, monetary, external, fiscal and financial sectors (table1), and contains short and mid-term macroeconomic and financial indicators, international guidelines and compliance with financial regulations. These indicators provide the CBC with various and adequate information to monitor the financial changes. Besides, the CBC must cooperate with domestic government departments (such as Ministry of Finance, Financial Supervision Commission and DGBAS, etc.) and other regional central banks tightly.

Table1 · Major indicators of CBC's supervision

Section	Major Indicators
Real	Price, Salary, Macro-demand and production, Potential output gap, Growth of production, Willingness to invest, Labor and Employment situation, and Unemployment rate.
Financial & Monetary	Reserve money, Money stock, Velocity of money circulation, Bank loan, Real interest rate, and Interest rate spread.
External	Growth of imports and exports, Terms of trade, Capital account, Financial account, External debt, International reserve assets, Real exchange rate, and Economic and Financial situations in the region.
Fiscal	Contents of government revenue and expenditure, Aggregate government debt, and Tax system.

1.3 Baseline Scenario

In order to more accurately estimate and forecast macroeconomic condition, the CBC has developed its own Keynesian-based Macroeconomic model, which contains a variety of variables such as CPI, interest rate, bank loan, unemployment rate...etc. Additionally, the CBC collects lots of information and statistics from domestic (e.g. the DGBAS) and foreign institutions(e.g. IMF, Global Insight). The CBC takes both the model's outcome and major institutions' forecasts into consideration to build a baseline scenario. The most challenge in building a baseline scenario is about setting future exogenous variables, as the financial and macroeconomic conditions have changed unexpectedly and dramatically in recent years. Therefore, the forecast performance is sometimes not so good.

Based on the baseline scenario, the CBC also refers to additional information, which contain the CBC's inside survey (e.g. Survey of the Financial Conditions of Private Enterprises) and other information. (e.g. credit and cash card loan balance, the sales revenue of retail and food industry, customs trade statistics, etc.). These additional information usually could help the CBC strengthen its' forecast ability effectively.

1.4 Forecasting key macroeconomic variables

The CBC uses econometric models to estimate some macroeconomic variables, such as potential output, monetary aggregates, and inflation. We adopt a wide range of financial and economic indicators which are highly related to these variables. However, some institutional factors, such as tax cut or raise, external supply shock (eg. oil and raw material prices' volatilities), changes of the economic or industrial structure, or weather factors, such as typhoons and heavy rainfall, challenge our forecast accuracy. Public expectation is also a difficult issue in macroeconomic forecasting in Taiwan. Because of some restrictions of the model, the CBC uses other ways (such as previous experience, the information we collect, etc.) to adjust our estimation.

1.5 Forecast evaluation

The CBC staff undertake forecast evaluations regularly and irregularly. Everytime after completing estimation and forecast, The CBC staff compare the latest outcome to the previous one. We find and analyze what the major differences and reasons are, and assess how accurate our previous forecast performances are. We also apply econometric quantitative statistics (such as MAE, MAPE, RMSPE,etc) to evaluate our out-of-sample forecast performance.

1.6 Assessment/Forecast frequency

There are different data frequencies for macroeconomic assessment/forecast in the CBC. For example, the CBC's M2 growth target zone assessment/forecast is yearly, Macroeconomic growth assessment/forecast is quarterly. Inflation and Interest rate assessment/forecast are monthly. The CBC often release information by press conference or on its Website on a predetermined time. But not all of these assessments/forecasts are published, some assessments/forecasts are merely for internal reference.

1.7 Future development in the CBC with regards to macro assessment and forecasting

In order to cope and adjust with more and more skittish economic environment, and to grasp and forecast future economic conditions effectively, the CBC will continue to strengthen to develop econometric and quantitative methods (e.g.DSGE model). In recent years, the CBC also focuses on financial stability assessment, for the sake of building an early warning mechanism.

II. Monetary Policy Framework and Operations

2.1 Monetary policy objectives & strategy and Institutional arrangement & Governance

1. Monetary policy objectives & strategy

The CBC's monetary policy objectives include: to promote financial stability, to guide sound banking operations, to maintain the stability of the internal and external value of the currency, and to foster economic development within the scope of the aforementioned objectives.

(1) To Promote Financial Stability

The promotion of financial stability contains two aspects: first, to prevent large fluctuations in financial asset prices, and second, to prevent systemic risk by providing necessary liquidity. To maintain financial stability, the CBC closely monitors international and domestic economic developments, and adopts response measures when necessary. In addition, as the lender of last resort, the CBC provides the necessary liquidity to prevent systemic risk.

(2) To Guide Sound Banking Operations

Another responsibility of the CBC is to promote the soundness of banking operations by monitoring the performance and operations of banks and, when necessary, undertaking financial reforms. In recent years, financial deregulation and technological advancement have sped up the process of financial integration and innovation. Therefore, the CBC's task to strengthen the soundness of banking operations has become increasingly challenging.

(3) To Maintain the Stability of the Internal and External Value of the Currency

Maintaining the internal stability of the currency refers to maintaining price stability at home. Stable prices reduce economic uncertainty and help economic agents to plan and carry out economic activities such as production, consumption, savings and investment.

The stability of the external value of the currency refers to the stability of the NT

dollar exchange rate. Because the Taiwan economy is highly open and its ratio of external trade to GDP is relatively high, large swings in the NT dollar exchange rate may adversely affect economic and financial conditions. Therefore, the CBC regards managing large swings in the NT dollar exchange rate as one of its operational objectives.

(4) To Foster Economic Development

In addition to achieving the three objectives mentioned above, the CBC may implement expansionary monetary policy to help stimulate economic growth during economic downturns. However, such a policy has only a transitory effect and should not be depended upon to stimulate long-term economic growth.

2. Institutional arrangement & Governance

The executive body of the the CBC consists of the Board of Directors, the Board of Supervisors, and the Governor and Deputy Governors. Their respective functions are policy formulation, supervision and implementation. In practice, the Boards of Directors and Supervisors convene a joint meeting at the end of each quarter. The Board of Directors makes monetary policy decisions. Interim meetings and telephone consultations may take place when events of significant importance occur. After each meeting, the Governor hosts a press conference, and a press release will be available on the CBC's website.

2.2 Policy trade-off & Monetary policy rule

The CBC pursues multiple operational objectives that may not be perfectly matched. Of these objectives, price and financial stability and sound banking operations are fundamental to sustaining long-term economic growth. Therefore, when formulating monetary policy, the CBC emphasizes these three objectives, and within their scope, strives to foster economic development.

The CBC adopts money growth rate rule and interest rate rule for its policy reference. For monetary growth rate rule, the CBC takes M2 growth target zone as its intermediate target. For interest rate rule, the CBC takes Taylor's rule as its interest rate reference in open market operations. Because of financial innovation and liberation in recent years, the transmission channel of money policy form intermediate

to final target sometimes becomes weak and hard to control. Therefore, in addition to these rules, the CBC sometimes has to take appropriate adjustments.

2.3 Current global crisis's impact on monetary policy

Taiwan government has actively adopted an expansionary fiscal policy, while the CBC has consistently pursued an easy monetary policy. These coordinated policy efforts are helping to stimulate the economy. The CBC has cut the policy rates seven times by a total of 237.5 basis points since September 2008. With an efficient interest rate channel of monetary policy transmission, both long-term and short-term market interest rates have fallen, significantly reducing the burden of mortgage borrowers and enterprises. Currently, money market rates and the deposit and lending rates of banks are at historic lows and lower than the levels in major countries. Therefore, the CBC judged that the current stance of monetary policy was appropriate. In the future, the CBC will continue to conduct policy based on the latest information. With easy funding conditions and a strengthened Small and Medium-sized Enterprise Credit Guarantee Fund sharing banks' credit risk, the CBC would urge banks to fulfill their intermediary function by meeting the funding needs of well-managed enterprises.

The exchange rate affects exporters and importers differently, making it difficult to satisfy both sides. The exchange rate is determined by market forces. However, when seasonal or irrational factors cause the NT dollar exchange rate to become more volatile than can be explained by economic fundamentals, the CBC will step in to maintain an orderly market. Relative to the currencies of major countries, the NT dollar remains stable against the US dollar.

In view of recent developments in domestic and global economies, the CBC expanded the scope of Repo facility operations in September 25, 2008. Eligible counterparties include banks, bills finance companies, Chunghwa Post, securities firms and insurance companies. The term of the facility is set within 180 days to provide market access to longer-term liquidity (see Table 2).

Table2 Comparison of Existing Repo Facility and Expanded Repo Facility

	Existing Repo Facility	Expanded Repo Facility
Eligible counterparties	1. banks 2. bills finance companies 3. Chunghwa Post 4. securities firms <u>that are eligible dealers for the CBC's open market operations</u> (The above counterparties may conduct repo transactions with the CBC directly)	1. banks 2. bill finance companies 3. Chunghwa Post 4. <u>securities firms</u> 5. <u>insurance companies</u> (Securities firms and insurance companies <u>that are not eligible dealers</u> for the CBC's open market operations may conduct repo transactions with the CBC indirectly through the intermediary of eligible dealers)
Term	Within 30 days	Within <u>180 days</u>
Rate	Variable rates based on market rates and the issuing rates of the CBC's CDs	Variable rates based on market rates and the issuing rates of the CBC's CDs
Collateral	As stipulated in Article 26 of the Central Bank Act, but mainly NCDs issued by the CBC and government bonds	As stipulated in Article 26 of the Central Bank Act, but <u>mainly CDs and NCDs issued by the CBC and government bonds</u>
Application	As announced by the CBC	1. As announced by the CBC 2. Financial institutions may also apply for the CBC's approval when needs arise

2.4.1 Transmission Channels of Monetary Policy

Before 1997, in Taiwan monetary policy influences economic activity mainly through the credit channel and the exchange rate channel. However, in line with the development of financial markets, the importance of direct financing has increased relative to indirect financing. This development has gradually undermined the credit channel of monetary policy. On the other hand, the interest rate channel has become more important, although we still adopt monetary targeting regime. To enhance the

interest rate channel, open market operations are used not only to manage liquidity, but also to maintain interest rate stability. Policy rate adjustment is announced as a signal of monetary policy stance and also the benchmark of market rates and bank rates.

The global financial crisis set off by the US housing bust has severely undermined the financial system in the US and Europe. In comparison, Taiwan's financial system remains relatively stable, financial intermediation functions normally, and problems such as liquidity shortage and undercapitalization are absent. Financial conditions stay accommodative enough to meet the demand of economic activities. Monetary policy transmission isn't affected by the global financial crisis apparently.

In addition, to prevent the downward rigidity in banks' prime lending rates from hampering the transmission mechanism of monetary policy, the Bank has introduced a number of measures in 2002, including the introduction of adjustable rate mortgages (ARMs) and the new Base Rate system that links lending rates to benchmark market interest rates, such as the central bank's discount rate, the interbank overnight call-loan rate or the commercial paper rate. The whole reform is to make lending rates more responsive to market conditions and interest rate pricing more transparent and improve the effectiveness of monetary policy.

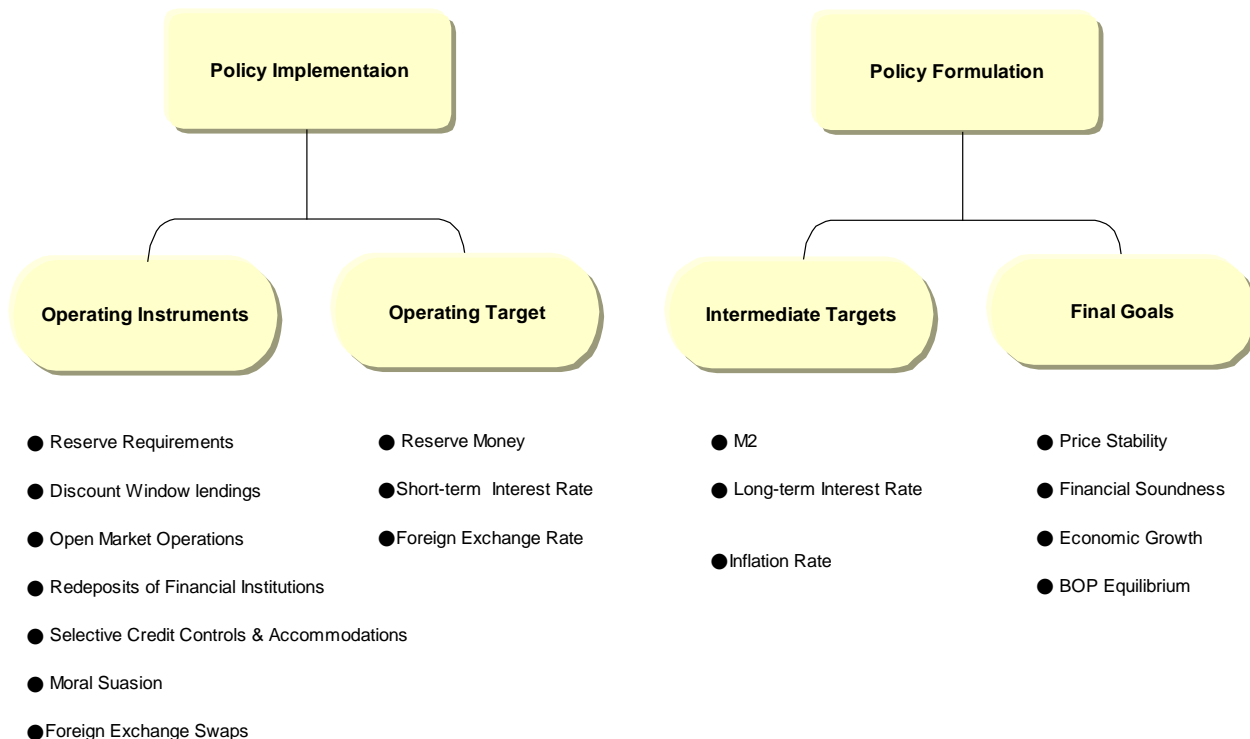
2.4.2 Basic Framework of Monetary Policy

1. Policy framework

In practice, the CBC adopts a monetary policy framework where it periodically checks whether operating targets have been achieved in the short run, and in turn measures intermediate targets to assess how effectively monetary policy is being transmitted to achieve its final policy objectives (Chart 3).

Since the mid-1980s, the CBC has adopted a framework of monetary targeting. Similar to most other countries, the CBC chooses a monetary aggregate (M2) to be the intermediate target and reserve money to be the operating target. Since 1992, the CBC has been publishing intermediate targets on a yearly basis.

Chart 3 Basic Framework of the CBC's Monetary Policy



(1) Intermediate Targets

The CBC selects the M2 monetary aggregate as the intermediate target. The CBC estimates money demand using econometric methods in December of each year to determine the target zone of M2 growth for the coming year. The target zone serves as a guide for monetary policy operations throughout the year. The annual growth rate of M2 was 2.67 percent in 2008, lower than the previous year's 4.25 percent and remaining within the Bank's target range of 2 percent to 6 percent. The CBC decided to set the target zone of M2 growth at 2.5% to 6.5% for 2009. Taking into account factors affecting the demand for money, the decision is intended to signify an easy monetary policy stance.

(2) Operating Target

For policy implementation, the CBC chooses reserve money as the operating target for its daily operations. This variable is directly managed through tools of monetary policy and is closely related to the intermediate target, M2.

To accommodate rapidly changing economic and financial conditions, the CBC not only relies on numerical targets for money and credit but also uses a wide range of financial and economic indicators in the formulation and implementation of monetary policy. Financial indicators include short-, medium-, and long-term interest rates, exchange rates, excess reserves, bank deposits and credit, monetary aggregates, and the balance of payments. Economic indicators cover imports and exports, industrial production, the rates of economic growth rates, inflation, and unemployment.

Policy considerations are forward-looking. Therefore, in addition to compiling key statistics, the CBC conducts seminars and surveys. New information derived from these activities expands the CBC's knowledge in current economic and financial conditions and provides useful references to monetary policymaking.

2. The CBC's Monetary Policy Instruments

The CBC uses various monetary policy instruments to achieve its policy goals. These instruments include reserve requirements, discount windows, open market operations, financial institution redeposits, selective credit management and moral suasion. The CBC initially affects reserve money and interbank call-loan rates, which in turn affect various monetary aggregates, interest rates and other financial and economic variables, and eventually achieves final monetary policy goals.

(1) Reserve Requirements

Financial institutions are subject to reserve requirements established by the CBC. This policy measure, however, is seldom adopted as a small change in required reserve ratios can have a great impact on the monetary aggregates and market interest rates. On several occasions when the CBC adjusted required reserve ratios, it also conducted open market operations to lessen the impacts.

In addition to adjusting required reserve ratios as one of its monetary policy measures, the CBC also continuously reforms the reserve requirement system in line with the changing financial environment, regulatory needs, and international practice. Major improvements of the system that have either been completed or are still underway include the following:

- a. Except July 2008, required reserve ratios have been lowered gradually on a timely

basis. Table 3 displays the required reserve ratios on various types of bank liabilities between 2000 and 2008.

- b. The gap between the required reserve ratios on demand deposits and time deposits has been narrowed in order to remove distortion.
- c. Reserve liabilities have been broadened from bank deposits to all kinds of bank liabilities.
- d. In December 2000, the CBC began to impose reserve requirements on newly taken demand and time deposits denominated in foreign currencies. The purpose was to curb foreign exchange speculation by forcing banks to maintain an appropriate level of foreign currency liquidity at the CBC. The ratio was initially set at 5 percent, then reduced to 0.125 percent in June 2002. Because of a wide gap between the required reserve ratios on NT dollar deposits and foreign currency deposits, the CBC raised the required reserve ratio on foreign currency deposits to 5 percent in June 2007, lessening the impacts of reserve requirements in guiding the flow of funds. However, the CBC reduced the ratio to 0.125 percent again in April 2008 to lower banks' funding costs and narrow the interest rate spread between NT dollar deposits and foreign currency deposits.

Table 3 Reserve Ratios on Bank Liabilities

Unit : %

Types of Deposits	Checking Deposits	Demand Deposits	Savings Deposits		Time Deposits	Foreign Currency Deposits	Other Liabilities
			Demand	Time			
Date (mm-dd-yyyy)							
10.01.2000	13.5	13	6.5	5	6.25	0	0
12.08.2000	13.5	13	6.5	5	6.25	5	0
12.29.2000	13.5	13	6.5	5	6.25	10	0
10.04.2001	10.75	9.775	5.5	4	5	5	0
11.08.2001	10.75	9.775	5.5	4	5	205	0
06.28.2002	10.75	9.775	5.5	4	5	0.125	0
06.22.2007	10.75	9.775	5.5	4	5	5	0

04.01.2008	10.75	9.775	5.5	4	5	0.125	0
07.01.2008	12.00	11.025	6.75	4.75	5.75	0.125	0
09.18.2008	10.75	9.775	5.5	4	5	0.125	0

Source: Financial Statistics Monthly, Central Bank of the Republic of China (Taiwan).

(2) Discount Window

The CBC implements its discount window policy by either changing the discount rate or providing credit to banks. Three types of credit are available: discounts, accommodations with collateral, and accommodations without collateral. Changes in the discount rate signal the CBC's policy stance. However, its effect on market interest rates may not be significant if not accompanied by other monetary policy tools.

a. Discounts

A bank may apply for discounts by sending the eligible bills to the CBC to secure the loan. Eligible bills include banker's acceptances, trade acceptances, and promissory notes collateralized against Treasury Bills or government bonds.

b. Short-term Accommodations

To make up for a reserve deficiency, a bank may apply for short-term accommodation by drawing promissory notes payable to the CBC. The promissory note should be secured by adequate collateral, either bills eligible for discounts or securities approved by the CBC. Banks may also borrow without collateral, but at a higher lending rate.

In the last few years, banks have seldom used the discount window for borrowing since the banking system has had ample liquidity. Despite this, the adjustment of the discount rate is still important in signaling shifts in the CBC's monetary policy stance to the financial system and the general public.

From October 2004 to June 2008, the CBC has raised the discount rate for 16 times to maintain price stability and economic growth. Due to the global financial crisis, the CBC cut it 7 times by a total of 237.5 basis points since September 2008 (Table 4). These measures help to guide efficient fund allocation, and safeguard long-term financial stability.

Table 4 Discount Rate Adjustments

Unit: %

Date (mm-dd-yyyy)	Rediscount Rate	Accommodation rate with Collateral	Accommodation rate without Collateral
06.27.2003	1.375	1.750	3.625
10.01.2004	1.625	2.000	3.875
12.31.2004	1.750	2.125	4.000
03.25.2005	1.875	2.250	4.125
07.01.2005	2.000	2.375	4.250
09.16.2005	2.125	2.500	4.375
12.23.2005	2.250	2.625	4.500
03.31.2006	2.375	2.750	4.625
06.30.2006	2.500	2.875	4.750
09.29.2006	2.625	3.000	4.875
12.29.2006	2.750	3.125	5.000
03.30.2007	2.875	3.250	5.125
06.22.2007	3.125	3.500	5.375
09.21.2007	3.250	3.625	5.500
12.21.2007	3.375	3.750	5.625
03.28.2008	3.500	3.875	5.750
06.27.2008	3.650	4.000	5.875
09.26.2008	3.500	3.875	5.750
10.09.2008	3.250	3.625	5.500
10.30.2008	3.000	3.375	5.250
11.10.2008	2.755	3.125	5.000
12.12.2008	2.000	2.375	4.250
01.06.2009	1.500	1.875	3.750
02.19.2009	1.250	1.625	3.500

Source: Financial Statistics Monthly, Central Bank of the Republic of China (Taiwan).

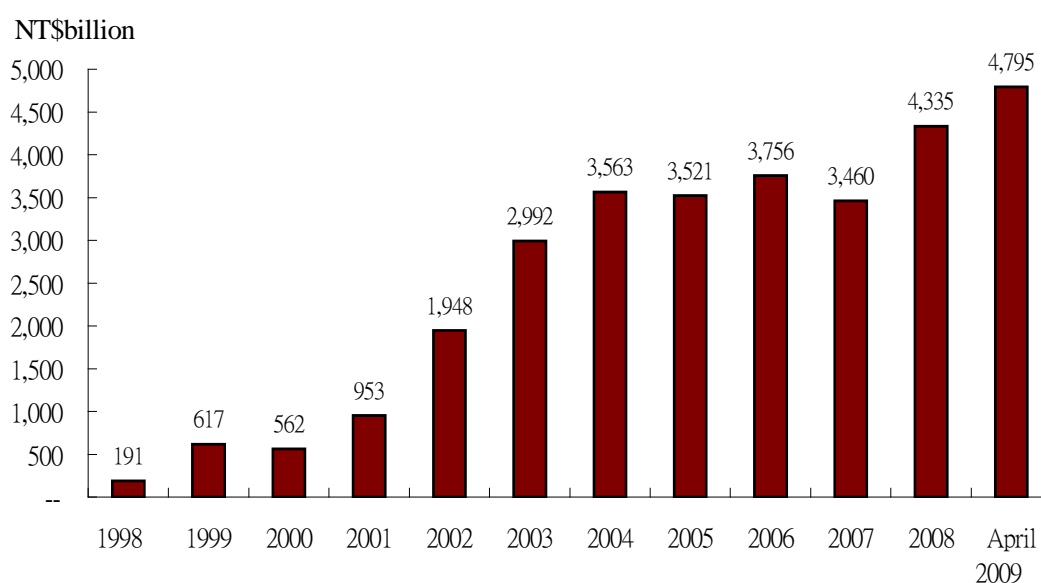
(3) Open Market Operations

Among all monetary policy tools, open market operations, i.e. buying and selling securities by the CBC for its own account in the open market, are the most important and flexible tool of the CBC. Open market operation instruments include government securities, and certificates of deposit (CD) and negotiable certificates of deposit (NCD) issued by the CBC. The CBC can directly influence the amount of reserves and the level of interbank call-loan market interest rates through such operations.

The issuance maturities of CD/NCDs are 30-, 91-, 192-, and 364-days. The CBC flexibly arranges maturities of CD/NCDs based on its outlook for fund conditions in

the banking system. Since 1999, CD/NCDs have become the CBC's most frequently used and important open market operation instruments to reduce excess liquidity derived from continuous trade surplus and foreign capital inflows. The outstanding balance at the end of April 2009 reached NT\$4.80 trillion (Chart 4). In addition, with a substantial amount of foreign exchange assets, the CBC also uses foreign exchange swaps with banks as an operation tool to reduce excess liquidity of banks.

Chart 4 Outstanding Balance of CD/NCDs Issued by CBC



Source: Financial Statistics Monthly, Central Bank of the Republic of China (Taiwan)

(4) Financial Institution Redeposits

Accepting the financial institution redeposits has been an important tool used to absorb excess liquidity and control monetary growth during recent years in Taiwan. A predominant portion of deposits kept by the CBC is from the Postal Savings System.

(5) Selective Credit Management

There are two types of selective credit management policy in Taiwan: selective preferential loans and selective credit controls.

a. Selective Preferential Loans

Selective preferential loans refer to the provision of credit to financial institutions directed by the CBC for the purpose of financing selective categories of policy-related

loans. In accordance with specific economic development objectives, credit for such purposes has been extended on favorable terms to certain borrowers.

b. Selective Credit Controls

Selective credit controls refer to measures taken by the CBC to restrict certain types of credit extended by financial institutions. For example, during the second half of the 1980s, Taiwan experienced asset price inflation which was mainly characterized by soaring stock and real estate prices. To battle against this asset inflation, the CBC once imposed a series of selective credit controls on bank loans secured against vacant plots of land and on loans made to investment companies, in addition to raising required reserve ratios and the discount rate.

3. Major issues and challenges in conducting and implementing monetary policy

Although monetary targeting has run smoothly for the past 17 years in Taiwan, there are increasing challenges. These include the emergence of new financial products and increasing cross-border capital flows. The former will blur the definition of money and affect the stability of money demand, while the latter will pose a challenge not only to monetary control, but also to exchange rate stability.

The rapid development of complicated financial derivatives also brings new challenges to financial stability and monetary policy transmission. What the Bank could do for this is to identify and evaluate the related risk exposures of financial institutions as well as the impact on the transmission channels to other sectors.

4. Communication and transparency in enhancing central bank's credibility

Proper communication and transparency could enhance central bank's credibility. The CBC holds press conference after "Monetary policy decisions of the board meeting" and "Monetary policy decisions of the executive directors meeting". In addition, updated information about policy and operations regarding foreign exchange, banking, issuing, treasury, economic research are also available on the CBC's website. If there is any misunderstanding about the CBC, we usually clarify instantly.

5. Financial market surveillance

The Financial Supervisory Commission, Executive Yuan (FSC) is inaugurated to be the sole statutory financial supervisor and is conferred upon the authority of

supervision of all financial institutions including banks, securities and insurance companies on 1st July 2004.

From then on, the CBC stopped carrying out regular full-scope on-site examinations of individual financial institutions. To facilitate the implementation of the central bank's policies, the CBC retains the authority to carry out target examinations on issues related to monetary, credit and foreign exchange policies and payment system. In addition to on-site target examinations, the CBC implements off-site monitoring to identify the weakness of individual financial institution and to grasp the whole picture of financial system in order to respond appropriately in a timely manner.

To adapt to the new role of financial supervision and to accord with the international development of enhancing central bank's financial stability assessment function, the CBC revised "The Organic Regulations of the Departments and Offices of The Central Bank of China" in December 2005. Financial stability assessment became one of the duties of the Department of Financial Inspection of the CBC. The CBC will compile the financial soundness indicators based upon the Compilation Guides for FSIs issued by the IMF and build up the financial stability assessment framework that is consistent with the nature of our financial system, with reference to the IMF, European Central Bank and other central banks' macro-prudential analytical methodologies. The CBC issued its first financial stability report in June 2008.

2.5 Institutional Arrangement for Macroeconomic Policy Coordination

1. Operational Arrangements for Coordination of Monetary Management and Fiscal Management

The CBC acts as the fiscal agent of the government. The fiscal and depository services it provides to the government are critical to treasury management and implementation of monetary policy. The central government could make its fiscal management more accurately because it could effectively control the dynamics of budget implemented by each agency according to the latest information on treasury transactions provided by the CBC. As the transaction amount of the treasury funds is

large, it has a significant influence on the level of reserve money of the CBC. Therefore, as a fiscal agent, the CBC could utilize the latest information on treasury transactions to implement its monetary policy more promptly and efficiently through open market operations.

Debt management is the responsibility of the Ministry of Finance (MOF). The CBC provides services related to the issuance, redemption, and servicing of central government bonds and treasury bills. However, the CBC is prohibited by law from financing the central government by purchasing central government bonds in the primary market and lending one year and above loans to the central government. On the other hand, the CBC may buy and sell securities through open market operations to keep financial markets stable. Because the CBC uses this measure as an important tool of implementing its monetary policy, not financing the government, it does not influence the independence of the CBC.

2.Operational Arrangements for Coordination of Monetary Management and

Exchange Rate Management

The objectives of stable exchange rates, capital mobility, and monetary policy autonomy could not be achieved simultaneously by central banks. It is called the “Impossible Trinity”. As capital controls have been largely lifted, if the CBC pursues monetary policy autonomy, the resulting interest rate gap could easily lead to cross-border capital movement at the expense of exchange rate stability. This will affect domestic economic and financial stability for a small and highly open economy like Taiwan. Since Taiwan allows free capital movement, the CBC is facing the challenge of striking a balance between exchange rate stability and monetary policy autonomy.

Basically, Taiwan adopts a managed floating foreign exchange rate regime. However, when seasonal or irregular factors (such as hot money) disrupt the foreign exchange market, the CBC will step in to maintain an orderly foreign exchange market. If the measure causes violent fluctuation of market funds, the CBC will adopt some open market operation tools to ease the volatility, such as CD/NCDs and swaps. Therefore, there is an operational arrangement for coordination of both monetary and exchange rate management.

3. In the 1st half of 2008 , due to the continuous soaring prices of international primary materials, Taiwan has the inflationary pressure of import prices. For price stability, the CBC adopts some measures, such as fine-tuning the policy rates, and absorbing excess liquidity of banks, to prevent inflation risk and to maintain our economic growth. In the 2nd half of 2008 to 2009, On the Contrary, the CBC lowered interest rate rapidly and provided liquidity to market. However, achieving price stability needs coordination among government agencies. It relies not only on the CBC's monetary policy, but also on other policies such as sound fiscal policy, to control potential inflation risk. Our government has adopted some measures to stabilize prices in previous year, such as cutting tariffs and import taxes and raising export taxes on staple commodities, and providing fuel subsidies for the public transportation business. In response to financial crisis, our government has actively adopted an expansionary fiscal policy, while the CBC has consistently pursued an easy monetary policy. These coordinated policy efforts are helping to stimulate the economy.

4. Our government has been devoted to building a sound bond market, and has published the benchmark interest rates of medium- and long-term bonds for reference in an effort to guide a sound bond market. The soundness of the bond market will promote the effectiveness of the CBC's open market operations.

Reference

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