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The Role of Open Market Operations in the Monetary Management Process of the Nepal Rastra Bank

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Abstract

This article examines the role of open market operations in the overall monetary management process of the Nepal Rastra Bank. In the last few years, this has become the most important monetary instrument of the Bank. It will continue to use open market operations frequently during the inflation targeting monetary policy implementation. The focus of monetary policy will be to provide adequate liquidity to support economic recovery and to avoid the build up of inflationary pressure by ensuring price stability. With a view to facilitating more effective management of market liquidity and to achieve its monetary policy objectives, the Nepal Rastra Bank has moved to more active open market operations with the introduction of auctioning Outright Sale/Purchase, Repurchase Agreement (Repo) and Reverse Repurchase Agreement (Reverse Repo) in August 2004. The key features of the new open market operations are very frequent auction to inject or absorb liquidity and derivation of an interest rate corridor formed by the Repo and Reverse Repo rates. Under this system, the volume of liquidity to be injected or absorbed under open market operations is advised by the Liquidity Monitoring and Forecasting Framework based on the monetary policy stance and market liquidity situation.

Prologue

The open market operations (OMOs) are the major indirect instrument of monetary control around the world. The open market operations allow great flexibility to the central bank in the timing and volume of monetary operations at its own initiative by encouraging relationship with the market participants and provide a means of avoiding the inefficiencies of direct control. As the central bank of the country, the Nepal Rastra Bank (NRB) is solely responsible for formulating and implementing monetary policy. The formulation of monetary policy involves developing a plan aimed at pursuing the goals of stable prices, favourable balance of payment situation, efficient payment system, full employment and a stable financial

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environment in the country. In implementing that plan, the NRB uses the tools of monetary policy to induce changes in interest rates and the amount of money and credit in the economy. The monetary policy actions influence the levels of spending, output, employment and prices with considerable time lags through these financial variables.

The Nepal Rastra Bank Act, 2002 provides the NRB a greater operational autonomy in the formulation, announcement and implementation of the monetary and credit policy of the country. The Act has also envisaged achieving price stability, balance of payment stability, financial stability and efficient payment system as the basic objective of monetary policy. The Act has also clearly spelt out the major instruments of monetary policy could be cash reserve ratio, bank rate/refinance rate and open market operations.

The formulation of monetary policy has undergone momentous shifts over the years. In the early 1980s, the NRB placed special emphasis on objectives for the monetary aggregates as policy guides for indicating the state of the economy and for stabilizing the price level. Since that time, however, ongoing and far-reaching changes in the financial system have reduced the usefulness of the monetary aggregates as policy guides. As a consequence, monetary policy plans are now based on a much broader array of indicators. However, the monetary aggregates still play a useful role in judging the appropriateness of financial conditions in making monetary policy plans. Nevertheless, their role is quite similar to that of many other financial and non-financial indicators of the economy.

To a considerable extent, changes in monetary policy formulation have been accompanied by corresponding changes in the implementation approach. In the early 1980s, monetary policy was implemented by targeting a quantity of bank reserves that was based on numerical objectives for the monetary aggregates. As the NRB reduced its reliance on the monetary aggregates and conditioned its policy decisions on a wide range of indicators, the implementation strategy shifted toward a focus on reserve and money market conditions consistent with broader policy goals, rather than on achieving a particular quantity of reserves.

No one approach to implementing monetary policy could be expected to prove satisfactory under all the economic and financial circumstances. The actual approach has been adapted from time to time in light of different considerations, such as the need to combat inflation and the desire to deal with uncertainties stemming from structural changes in the financial system. Thus, it is fair to say that the current implementation approach is likely to continue to evolve in response to changing circumstances.

Regardless of the particular approach, implementing monetary policy involves adjustments in the supply of bank reserves, relative to the reserve demand in order to achieve and maintain desired money and financial market conditions. Among the policy instruments used by the NRB, none is more important for adjusting bank reserves than open market operations, which add or drain reserves through purchases or sales of government debt securities in the market. Indeed, open market operations are the most powerful and flexible tool of monetary policy. The NRB can expand or contract the amount of reserves in the banking system and can ultimately influence the country's money supply by buying or selling government debt securities like Treasury Bills, Development Bonds and other financial

instruments in the market. This method of trading in the market to control the money supply is called open market operations.

Status of Open Market Operations in the Monetary Management Process

The primary objective of monetary policy for the fiscal year 2004/05 is to maintain price stability and to consolidate the balance of payment. The inflation has been targeted at 4 percent while the balance of payment surplus has been projected at Rs. 5.5 billion. The excess liquidity of commercial banks has been taken as the operating target of monetary policy for the fiscal year 2004/05. In order to monitor and forecast short-term liquidity position, the Liquidity Monitoring and Forecasting Framework (LMFF) has been made operational since the beginning of the current fiscal year 2004/05.

The most important monetary policy instruments are the reserve requirements, open market operations and discount window in the central banking perspectives. The reserve requirements consist of reserves of banking system. The open market operations in Nepal are referred broadly to the purchase and sale of government debt securities by the NRB for the monetary management purpose. Generally, monetary authority aims to withdraw currency from circulation or decrease the excess reserve in the banking system through the open market sales of securities and for an expansionary monetary policy it buys securities from the economic agents. The rediscount window is related to monetary authority's lender of last resort role. As such, the NRB may lend reserves to banks and financial institutions on the penal rate. The discount rate also has announcement effects that send signals to markets about stance of monetary policy. A higher discount rate can be used to indicate a more restrictive policy, while a lower rate may signal a more expansionary policy. The NRB may also determine the type of acceptable collateral and quantum of borrowing to affect banks' credit allocation.

The NRB started open market operations since November 1988 to mop up excess liquidity with the commercial banks through the auction of 91 days Treasury bills. Although the purpose of open market operations was to control the liquidity of the banking system and implement monetary policy, these operations also contribute to the sale and purchase of government debt securities. This has, however, contributed to the formation of a secondary market for the government debt securities and pursuit of domestic borrowing policy in conformity with daily requirements. Generally, the open market operations policy of the NRB is formed in conformity with the economic policies implemented by the government. During the implementation of operations, deviations of the realized magnitudes of both narrow money supply (M_1) and broad money supply (M_2), from their predicted values, are taken into account.

The open market operations are directed by taking into account the liquidity of the economy, either by increasing the liquidity level through outright purchases of Treasury bills or through repurchase agreements (repo), or by decreasing the level of liquidity through outright sale of the Treasury bills or through reverse repurchase agreements (reverse repo). The weighted average discount rates (or auction/interest rates) derived from open market

operations reflect the liquidity condition of the economy. The open market operations of the NRB ensured a reallocation of liquidity level in the economy and also enable commercial banks to manage their investment portfolios rationally.

Until mid-July 2004, the open market operations were conducted under the rules set by the Open Market Operations Committee (*hereinafter called OMOC*), which established a portfolio of government debt securities for doing tap sale, outright sale/purchase and repos. The quantity of sale and purchase of Treasury bills in the secondary market was determined on the basis of yield curve. Under these provisions, the NRB announces the rates based on the market, which ultimately determines the quantum in the secondary market transactions of Treasury bills. The NRB used to mop up excess liquidity through outright sale of the Treasury bills in the secondary market provided the quotes of commercial banks were the below the yield curve determined rates. The NRB was also absorbing liquidity through tap sale of Treasury bills. The rates on tap sale were determined by deducting ten basis points in the weighted average discount rate of Treasury bills. On the other hand, the NRB injects liquidity in the economy through the outright purchase of Treasury bills in the secondary market at the penal rate, where the rates were fixed by adding two hundred basis points to the yield curve determined rates. The repo facility for 7 days was also provided to the investors of Treasury bills to meet their short-term liquidity requirement. The repo rate was also fixed at penal rate by adding fifty basis points in an average of weighted average discount rate of the latest four auctions of the 91 days Treasury bills. However, all these provisions pertinent to open market operations were withdrawn on 19 July 2004 through the announcement of new monetary policy guidelines for fiscal year 2004/05.

Until 18 July 2004, the prices in outright sales/purchases and the interest rates for repos were determined by the NRB. However, with the announcement of new monetary policy for fiscal year 2004/05 on 19 July 2004, the NRB started arranging auctions for outright sales/purchases, repos and reverse repos. The purpose of this procedural change was to allow the prices to be market oriented. In doing so, it was envisaged that the prices would follow a stable trend and reflect the real market conditions. An important procedural change in the reverse repo transactions occurred when the system changed to an auction system since 19 July 2004. The NRB conducts open market operations sometimes together with the interbank money market and the foreign exchange market and sometimes alone to manage the liquidity in the market, in accordance with the implemented monetary policy, to preserve the stability of the markets. The NRB uses open market operations extensively during the liquidity squeeze resulted from adverse economic situations.

For the last one-decade, open market operations were being used as the flexible short-term monetary instruments. The auction of Treasury bills in primary as well as secondary market and repo auctions are being undertaken under the conduct of open market operations since the beginning of fiscal year 2004/05. According to the new system, the quantity of outright sale/purchase, repo and reverse repo auctions in secondary market are determined by the NRB based on the LMFF and also the trends of monetary targets. The NRB would determine to mop up liquidity through outright sale of Treasury bills in the secondary market when the regular auctions indicate very low discount rate, whereas it injects liquidity

through outright purchase of treasury bills. The market, based on the quantities fixed for such transactions, will determine the secondary market discount (interest) rate. Till 18 July 2004, the commercial banks were taking initiative for the open market transactions. After announcement of new monetary policy for the fiscal year 2004/05, the NRB is taking such initiatives on the basis of liquidity position in the economy indicated by the LMFF. These new provisions of open market operations would help to set up more market-determined transparent process in the monetary management and would also contribute significantly in the development of government debt securities market.

In the due course of the monetary management process, the NRB has issued Treasury bills amounting to Rs. 21.9507 billion through the outright sale and Rs. 5.30 billion through the tap sale for moping up excess liquidity in the economy during the fiscal year 2003/04. On the other hand, the NRB has purchased Treasury bills from the economy amounting to Rs. 16.2127 billion for providing liquidity to the economy in the same period. Likewise, the NRB has provided temporary liquidity facility to the economy amounting to Rs. 51.4061 billion through the repo transactions during the fiscal year 2003/04. With the initiation of new open market operations system, the NRB has moped up excess liquidity from the commercial banks through the auctioning of outright sale and reverse repo amounting to Rs. 11.70 billion and Rs. 4.07 billion respectively during the first six months of the current fiscal year 2004/05. Meanwhile, the NRB has injected liquidity on the economy through the auctioning of outright purchase and repo of respectively Rs. 0.0496 billion and Rs. 2.66 billion during the first half of the current fiscal year 2004/05.

Role of Open Market Operations in the Monetary Management Process of Nepal Rastra Bank

The NRB has been setting the objectives of maintaining price stability and a reasonable surplus in the balance of payments for achieving a sustainable economic growth in the country. To achieve these objectives, the central bank has set up the monetary aggregates namely narrow money (M_1) and broad money (M_2) as intermediate targets. These targets are set on the basis of central bank's confidence on their controllability and accurate predictability as these variables have also shown a significant and economically valid relationship with prices and income, which are also the major objectives of the monetary policy itself. To influence the intermediate targets, the NRB has used net domestic assets (NDA) of the monetary authority's account and short-term interest rates as operational targets. The operating targets are used to influence intermediate targets, which ultimately helps to achieve the final targets. This process as a whole could be referred as the monetary management process.

While implementing the monetary management process in Nepal, the basic link between monetary policy and the economy is established through the market for bank reserves (i.e., excess deposits held by banks and financial institutions at the NRB). The commercial banks are at the center of the money market with their customer deposits and their own reserve balances at the NRB serving as the core element in the flow of funds. In the market,

commercial banks and financial institutions trade their non-interest bearing reserve balances held at the NRB with each other, usually on an overnight basis. On any given day, depository institutions that are below their desired reserve positions borrow from others that are above their desired reserve positions. The NRB's monetary policy actions have an immediate effect on the supply of or demand for reserves and the interbank rate, initiating a chain of reactions that transmit the policy effects to the rest of the economy.

In making monetary policy plans, the Monetary Management Committee (MMC) of the NRB is involved in a complex, dynamic process. The MMC estimates when and to what extent, its own policy actions will affect money, credit, interest rates, business developments and prices. Since the state of knowledge about the way the economy works is quite imperfect, the policymakers' understanding of the effects of various influences, including the effect of monetary policy, is far from certain. Moreover, the working of the economy changes over time, leading to changes in its response to policy and non-policy factors. On top of all these difficulties, policymakers may not have up to the minute, reliable information about the economy, because of lags in the collection and publication of data. Even preliminary published data are frequently subject to significant errors that become evident in subsequent revisions. Meanwhile, the government's budgetary policies influence the economy through changes in tax and spending programs. Shifts in business and consumer confidence and a variety of other market forces also affect saving and spending plans of businesses and households. In view of all these economic parameters, the NRB could change reserves market conditions by using three main instruments, namely the reserve requirements, the bank/discount/ refinance rate and open market operations.

The higher level OMOC formed in the Public Debt Management Department (PDMD) of NRB directs the most flexible and actively used instrument of monetary policy to effect changes in bank reserves. Under the Rules on Public Debt Management, 2002, the OMOC is empowered to conduct open market operations effectively for achieving monetary policy targets.

The NRB's open market operations are generally conducted on the government debt securities. In the Nepalese debt market, the government debt securities are divided into two categories, i.e., discount and coupon government debt securities. Discount securities comprises all securities with maturity of one year or less and pay only a contractually fixed amount at maturity, called face value. In this case, the return to investors is the difference between the maturity value and the issue value. Treasury bills are classified as discount securities. Coupon securities comprise all securities with maturity of more than one year and pay interest every six months, plus principal at maturity. Till date the Development Bonds, Special Bonds, National Saving Certificates and Citizen Saving Certificates are considered as coupon securities. Some of the government debt securities are non-marketable and non-interest bearing, which could not be sold in the secondary market. However, the bulk of government debt securities are marketable, that is, they can be traded in the secondary market at prevailing market prices through licensed market makers.

The open market operations affect the money supply and related financial measures through their impact on the reserve base of the banking system. As a matter of monetary

policy tactics in controlling these reserves, open market operations could be conducted in one of two ways. In an *active way*, the open market operations could be conducted by aiming for a given quantity of reserves and allowing the price of reserves (i.e., the interest rate) to fluctuate freely. However, in the *passive way*, the open market operations are conducted by aiming at a particular interest rate, allowing the amount of reserves to fluctuate. Industrial countries, with well-developed and sensitive markets, normally employ a passive approach, although there have been exceptions. A passive approach also appears to be the norm in emerging markets that have reached a certain level of sophistication. There are advantages to a more active approach in developing countries. However, the absence of efficient interbank markets, to transmit the influence of monetary policy, might be one reason for an active approach in the developing countries. Another reason might be that the active approach allows the central bank to define its policies more clearly, especially when control of inflation is the overriding goal. The prompt availability of deposit data will enable the central bank to make better projections of the demand for reserves, helping to gauge the effect of open market operations on money market conditions. The central bank would also require estimates of other factors affecting reserve supply, such as government deposits, currency in circulation, foreign exchange and the float arising from timing differences between crediting and collecting funds in the central bank clearing system. Many of these estimates require close cooperation with the government treasury at a working level.

In practice, the accuracy of reserve estimates needs to be judged against incoming evidence on interest rates from the interbank or money market, which reveals about the liquidity pressures in the system. A short-term market rate, in particular an overnight interbank rate, may usefully serve as the primary guideline for open market operations. Interpretation of this information should be aided by continuing contacts with the market. Thus, the NRB should be continually speaking with the market participants in an effort to understand the factors influencing market conditions and enabling policymakers to better assess market psychology.

Modality of Open Market Operations in the Nepal Rastra Bank

Generally, the open market operations involves the buying and selling of government debt securities and central bank securities in the open or secondary market by the central bank. However, in the Nepalese context, the open market operations are the buying and selling of Treasury bills in the secondary market in order to expand or contract the amount of money in the banking system. According to the section 45 of the *Nepal Rastra Bank Act, 2002*, the NRB may conduct open market operations against debt securities issued by the government or bank itself with outright purchase/sale of securities, repurchase agreements (repo) and reverse repurchase agreements (reverse repo). The conduct of open market operations including its procedures, conditions and the instruments shall be determined by the high level OMOC headed by the Deputy Governor of NRB. The Committee also consist representatives from the HMG/N, Ministry of Finance, Executive Directors of Research Department, Banks and Financial Institutions Regulation Department, Banking Office and PDMD. The Director of the PDMD serves the OMOC as a member secretary.

The open market operations are conducted with the objective of controlling money supply and liquidity in the economy within the framework of monetary policy targets. The open market purchases inject money into the banking system and stimulate growth while sales of securities do the opposite. In this way, the NRB could offset swings in reserves caused by changes in the public's demand for cash and numerous other factors through the open market operations. The NRB's goal in using this principal tool of monetary policy is to adjust the short-term interest rate, i.e., the rate at which banks borrow reserves from each other.

The NRB, in the scope of open market operations, may issue monetary bills/bonds for its own account and behalf. However, the matters such as the prevention of the monetary bills from being a permanent alternative investment tool and the limitation of the issuance of the bills so as merely to promote the effectiveness of open market operations shall be taken into consideration. The open market operations shall be conducted only for monetary policy purposes and shall not be conducted to provide credit to the government, to public establishments and institutions.

Normally, seasonal swings in the public's currency holdings are the dominant source of shot-run currency variation. Some of these swings represent intra monthly patterns reflecting such routine transactions as payments of salaries and other social spending. Others result from the effects somewhat longer seasonal cycles on business activity during the year. For example, currency in circulation rises substantially during the festive season, from early September to October end and much of this bulge reverses in the following month. Most short-term variations in currency movements are reasonably predictable, since they follow recurrent seasonal patterns. Meanwhile, the NRB attempts to offset recurrent contractions and expansions in reserves associated with seasonal swings in currency through its open market operations. If the NRB did not do so, banks and financial institutions as a group would be obliged to adjust their reserve positions by lowering or raising their investments and short-term loans. Such actions would cause significant fluctuations in the interbank rate and other short-term rates and could lead to serious market disturbances. Specifically, in managing the supply of bank reserves, the NRB would make adjustments for changes in the demand for those reserves so as to create money market conditions that are consistent with the desired monetary policy objectives. Hence, the open market operations have both defensive and dynamic aspects.

The domestic policy directives indicated in the monetary policy announcement of the central bank guides the modality of open market operations. For example, if the short-term interest rate is persistently above the intended level, the OMOC would expand the supply of reserves to restore the appropriate reserve market conditions, thereby bringing down the interest rate to the intended level. To implement these policies, the PDMD of NRB would have to translate the monetary policy directives into the operating objectives. The detailed forecasts of the LMFF serve as the core elements for judging reserve conditions and for conducting day-to-day open market operations.

As advised by the LMFF, the open market operations is conducted with buying and selling of government debt securities in the secondary market in which previously issued

government debt securities, especially the Treasury bills, are traded. When the NRB buys securities from the commercial banks, it pays by crediting the bank account at NRB. Since this transaction involves no offsetting changes in reserves at other banks, the rise in the reserves of the bank increases the aggregate volume of reserves in the monetary system. When the NRB sells securities to banks and financial institutions, the reserve consequence is exactly the opposite in which the payment by the banks and financial institutions reduces their reserves.

It is noteworthy that the NRB normally conducts its open market operations in the government debt securities market, which is the broadest and most active of Nepalese financial markets. The breadth and depth of this market, as evident in its capacity to accommodate all types of transactions without distortions and disruptions, are essential for the effectiveness of open market operations. The government debt securities do not bear credit risk and so they are the most suitable instruments for open market operations. These characteristics of the government debt securities market enable the NRB to buy and sell quickly, at its own convenience and in any amount that may be required to keep the supply of bank reserves in line with policy objectives.

The NRB uses two general approaches to add or drain bank reserves through changes in the portfolio of government debt securities in the system. When significant reserve shortages or excesses are expected to persist for a relatively long period, the NRB may make outright purchases or sales of government debt securities of it's holding that permanently affect the size of the monetary system and the supply of reserves. Aside from the long-term upward trend, most of the time reserve surpluses/shortages are expected to be short-lived, either because seasonal and other technical factors are expected to be reversed/offset or because the outlook for reserves is uncertain. In these cases, the NRB undertakes transactions that only temporarily affect the supply of reserves. The NRB uses repurchase agreements to add reserves and reverse repo transactions to drain reserves on a temporary basis. Such temporary transactions are designed to minimize fluctuations in the overall supply of reserves and they are used routinely and much more frequently than are outright transactions.

Normally, the NRB conducts outright transactions in the market through auctions in which the commercial banks are requested to submit bids to buy government debt securities from the NRB or offers to sell government debt securities of a particular type and maturity. Generally, the NRB uses Treasury bills with a maximum maturity of one year. In considering propositions on any given security, the NRB selects bids with the highest prices (i.e., lowest yields) for its sales and offers with the lowest prices (i.e., highest yields) for its purchases. Typically the outright operations are arranged for delivery of the government debt securities within the next day. The timing of outright transactions is driven primarily by the expected persistence of excesses or shortages in reserves. The exact timing of such operations also considers market conditions as the NRB attempts to avoid rapidly rising or falling market rates and other possible events that may add other possible events, which may add to market volatility or impede price movements.

The NRB uses short-term repo auctions with banks to add reserves on a temporary basis. Under the repo arrangement, the NRB buys Treasury bills from commercial banks that agree

to repurchase them at a specified price on a specified date. The added reserves are extinguished automatically when the repos mature. It is much more convenient for the NRB to inject large amounts of reserves on a temporary basis through outright purchases. Repos allow the NRB to respond quickly when reserves fall short of desired levels and they can smooth the pattern of reserves for the maintenance period by meeting needs for particular days. Moreover, transaction costs for repos are very low and acceptable collateral is a Treasury bill. The distribution of repo transactions among commercial banks is determined by auction in which banks bid for a specific amount of repos at a specified bid price. With all the offers arranged in descending order of bid price, the PDMD accepts offers that carry the lowest bid prices up to the desired amount.

In view of the monetary policy guidelines for the fiscal year 2004/05, the instruments of open market operations could be categorized as outright purchase, outright sale, repurchase agreements (repo) and reverse repo. Although outright purchase and repo injects liquidity into banking system, outright sale and reverse repo withdraws liquidity from banking system. Repos and reverse repos are ideally suited for offsetting short-term fluctuations that affect bank reserves. They are also useful for offsetting large shifts in liquidity caused by a gesture of capital inflows or outflows, which can be expected to become the dominant tool for open market operations. The outright purchases and sales of Treasury bills in the secondary market are also used to provide or absorb reserves on a more permanent basis. They are also considered an important instrument of monetary control. The description of each instruments used in open market operations are illustrated as below.

Outright Purchase

The open market operations through the outright sale of Treasury bills are realized when there is structural or permanent liquidity shortage in the economy. As a result of outright purchase, banking system's reserves increase permanently.

Repurchase Agreement (Repo)

The repurchase agreement (repo) is realized when there is temporary liquidity shortage in the economy. The repo is a forward transaction and it consists of spot purchase of a Treasury bills and simultaneous forward sale of the same. In that framework, repo can be thought as collateralized lending. During the repo transaction, repo rate and sale date would be determined in the spot date (purchase date). As a result of first leg of repo transaction, banking system's reserves increase. In the forward date (second leg), the NRB sells government debt securities at predetermined price and so reserve level in the system decreases. At the moment, the maturity period of repo transactions could not be longer than 7 days.

Outright Sale

It is the reverse of outright purchase and it is realized when there is structural or permanent excess liquidity in the economy. As a result of outright sale, banking system's reserves diminishes permanently.

Reverse Repo

As the name demonstrates, that operation is reverse of repurchase agreement. The reverse repo is realized when there is temporary excess liquidity in the economy. The reverse repo is also forward transaction and it consists of spot sale of Treasury bills and simultaneous forward purchase of the same. The repo rate and purchase date would be determined in the spot date (purchase date). As a result of first leg of reverse repo transaction, banking system's reserves decrease. In the forward date (second leg), NRB purchases government debt securities at predetermined price and so reserve level in the system increases. At the moment, the maturity period of reverse repo transactions could not be longer than 7 days. Repos and reverse repos are suitable for offsetting short-term fluctuations that affect bank reserves. They are also useful to eliminate large changes in liquidity caused by capital movements.

The open market operations from one day to the next are closely related. In its daily actions, the NRB responds to the market factors affecting reserve supplies and demands. Nevertheless, the NRB also takes into account the implications of its own immediate past operations. With uncertain reserve estimates and possible projection errors, the NRB faces considerable risk that it might add or drain more reserves on any given day than may be warranted, causing the short-term rate to move away from the desired level. To minimize this risk, the NRB responds cautiously to the projections of large uncertain reserve shortfalls or excesses. Nevertheless, the NRB does add or drain reserves that are shown to be out of line with reserve needs. Usually, the consequences of any such actions can be remedied quickly, since revised information and operations of the previous day are routinely factored into the daily reserve picture. As mentioned above, the aim of open market operations is adjusting reserve level and so money supply and liquidity in the economy. When the NRB decides to realize, it announces relevant information about open market operations before the auction day. The NRB publishes auction notice in the daily newspaper prior to the auction day and also release the information from the website. Generally, the bids are accepted till 3:00 p.m. on the stipulated auction day and the settlement are done on the next day.

Consolidated Efforts in Conducting Open Market Operations

The monetary management process in Nepal has been improved by recent introduction of monetary instruments, especially the effective open market operations through auctions of outright sale, outright purchase, repo and reverse repo of Treasury bills. The new monetary approach has been able to provide market oriented interest rates through the effective open market operations. In the absence of an active secondary market in government debt securities, the open market operations are also conducted in the primary market. One much used open market operation involves the issue of new government or central bank securities in order to absorb excess liquidity. If the NRB offers a new Treasury bills to absorb reserves, it should be considered as a monetary operation only if the incoming funds are not available to government for spending. The cleanest approach is to set the funds aside in a special account created purely for purposes of monetary policy. Such an account would ensure that bank reserves are reduced permanently by the operation, at least until policy is adjusted. In cases where the

central bank finds that it overestimated the surplus of reserves, it can buy back the securities before maturity, leaving the special account balance unchanged. Such repurchases before maturity, perhaps followed by subsequent resale as policy is further adjusted, can have the additional advantage of helping to develop a secondary market.

The open market operations by issuing special securities are of most practical use when excess liquidity is flooding the banking system. Because these securities can be bought back before maturity and resold, they can also be employed to adjust the variation of liquidity pressure. But they do not provide the same flexibility as open market operations in the secondary market. In the absence of an active money and interbank market, the NRB is deprived of ongoing information about actual and emerging liquidity conditions, which makes planning the timing and size of operations more difficult. In the absence of an active market for government debt securities, a special securities issue might also be considered as a means of adding to bank reserves needed for long-term growth. This would provide authority to the NRB for auctioning special securities that would be created along with the debt issue. Such a special issue, guaranteed by the government, may help strengthen and diversify the NRB's balance sheet.

The government decisions on debt management and deposit balances with the NRB obviously have an impact on the use of open market operations. Sometimes the government can help facilitate operations. At other times, they can complicate the task. All the time, the government and the NRB work together on these issues, though with varying degrees of tension and power. On pure debt management decisions, the government in most cases makes the final decision, with the NRB serving as its agent. In areas where governmental operations have a more direct impact on bank reserves, the NRB normally has a bigger say. Whatever the relationship, open market operations will be most effective monetary instruments where the NRB has control over factors that affect the reserve base of the banking system.

The focus of monetary policy is to provide adequate liquidity to support economic recovery and to avoid the build up of inflationary pressure. With a view to facilitating more effective management of market liquidity and to achieve its monetary policy objectives, the NRB moved to more active open market operations. The key features of the new open market operations system are very frequent auction to inject or absorb liquidity. This has also helped to establish an interest rate corridor formed by the repo and reverse repo rates. Under this system, the volume of liquidity to be injected or absorbed under open market operations is decided by OMOC with the feed back of the liquidity condition indicated by the LMFF based on the monetary policy stance and market liquidity situation. Since the commencement of more active open market operations, the NRB has conducted auctions for repurchase transactions very frequently, as there was excess liquidity in the market. The auctions were on a weekly basis. The NRB also began conducting outright sales to absorb liquidity on a longer-term basis. The NRB has also offloaded the government debt securities under its holding for open market operations during December 2004 to January 2005 to mop up liquidity as its portfolio had dwindled due to the performance criteria set in the Poverty Reduction Growth Facility (PRGF) for the Nepal.

As an economy grows, financial markets can be expected to broaden and deepen, but experience shows that the pace and pattern of market development may need guidance from monetary and government authorities. The associated development of open market policy instruments tends to occur in two stages. First, there is a shift away from direct controls toward use of open market operations in the primary market through auctions of new issues of securities. Later, there will be a further shift toward the use of fully flexible two-way operations in existing securities as active secondary markets develop. In addition to their policy function, open market operations in primary markets can be viewed as a prelude to the evolution of active secondary markets.

Many factors outside of monetary authority affect supply of reserve in the system. Such factors are changes in currency holdings of the public and the government's cash balance at central bank. The currency demand is the largest factor that requires reserve injections to the system. Changes in currency demand may come from swings in business activity and seasonal factors such as payments of salaries or festive and holiday shopping seasons. Most short-term variations in currency movements are predictable and the NRB attempts to offset seasonal swings in currency through the open market operations. As such the disturbing volatility in the short-term interest rates are eliminated.

The NRB supplies reserves to the banking system mainly in two ways, i.e., lending through discount window and buying government securities from the market. In the first case, loans are provided to banks and financial institutions at a discount/penal rate. Discount window facilities are uniquely suited to the task of meeting the temporary liquidity needs of individual banks. But open market operations are better suited to implementing the short-term adjustments to the availability of aggregate reserves that are necessary in conducting monetary policy. In addition to that, adjustments to the basic discount rate can be important in signaling and conducting monetary policy. To attain monetary ends by implementing open market operations requires restrictions on discount window monetary instrument. Otherwise, the open market operations could not be used as the basic monetary instrument for controlling bank reserves. In totality, the NRB should be able to determine the linkages among monetary instruments very carefully. The reserve requirement instrument may assist open market operations of the NRB. Thus, the NRB may send more clear signals by using open market operations with reserve requirement.

Future Challenges towards the Conduct of Open Market Operations in the Nepal Rastra Bank

The government debt securities market is generally regarded to be free of credit risk and therefore the best medium for open market operations. Unstable political and economic conditions, however, may make it impossible to maintain a viable market for issuing government debt securities. Political stability and a sustained government record of meeting interest payments and redemption schedules are therefore essential to the use of open market operations. Apart from a failure to meet such contractual obligations, a government securities market can also dry up if the NRB pursues an inflationary policy that drives investors out of the market by eroding the real value of outstanding debt. Thus, keeping inflation within acceptable bounds is also a vital precondition for the effective open market operations.

For conducting efficient open market operations both the NRB and the government need a reliable marketplace for government debt securities, where participants feel secure that counter parties will perform according to their obligations and which is transparent enough to encourage wide participation. To obtain its objectives through open market operations the NRB should establish performance standards for the participants. This is also the natural focal point for market surveillance through gathering statistics and publishing market aggregates. The NRB may not wish to go beyond these functions by assuming direct regulatory and oversight responsibilities, which may unduly tax its limited personnel resources as well as a loss of credibility creating rumors in the government debt securities market, as they sometimes do. The general public would tend to rely on the NRB as bearing some responsibility for markets in which it operates, whatever its specific role. For this reason, the NRB should take steps that help rationalize the market's architecture and enhance its performance. The NRB generally prefers to operate in a transparent market that trades continuously, where communication of its operations is prompt and in which its purposes are well understood. Thus, the NRB should take steps to help achieve these goals, such as promoting an interbank market, designing proper market instruments and trading infrastructure, providing financing facilities, establishing criteria for dealing with the open market function, collecting and disseminating statistics and encouraging a safe payment and clearing mechanism.

Apart from these, the issue of the NRB bills/bonds should be initiated especially for the purposes of monetary policy. Choosing between the two types of instruments, i.e., the NRB securities and government securities, therefore, depends mostly on institutional and market considerations. The issue of the NRB securities may be useful to conduct open market operations, when the government securities are not allowed to use in conducting open market operations. However, the development of an active government debt securities market would be delayed, rather than stimulated, by large-scale issues of the NRB's own bills/bonds. Thus, the government should take it seriously that the issue of the NRB's bills/bonds would be complicating its policies on determining cost of debt management and segmenting a thin debt market.

If the open market operations are taken as the principal policy instrument for the monetary management process in the country, other monetary instruments obviously need to be given less importance, particularly the discount window, where the banking system can obtain reserves on its own initiative simply by borrowing from the NRB. For open market operations to be effective, limitations need to be placed on the access of banks to borrowing from the NRB at the discount window. Without such limitations, open market operations could not be used as the principal monetary instrument for controlling bank reserves and overall financial conditions. The discount window should therefore be designed to make access to the NRB's credit less attractive in one way or another, perhaps through a high penalty rate or restrictive guidelines in providing Standing Liquidity Facility (SLF). Restrictions on the discount window need, however, to be handled with care. If a penalty rate is set well above current market conditions, the system might not react quickly enough to unanticipated liquidity demands. The regulations that restrict access to the window have to permit smooth adjustment when reserve shortages occur.

In a tight monetary policy implementation period, borrowing from the NRB for very limited periods allows banks to make more orderly portfolio adjustments. Such short-term borrowing at the discount window, viz., Standing Liquidity Facility, should be differentiated from longer-term structural borrowing at the window, i.e., Refinance Facility, which allows emergency long-term advances to banks and financial institutions in severe operating difficulties.

As the economy expands and the market matures, it is advisable to implement monetary policy through open market operations in the secondary market, mainly in the form of repos and reverse repos. In contrast with outright operations, repos provide temporary financing of reserve shortages and surpluses, but do not directly influence demand and supply in the security that serves as collateral. Most positively, repos tend to enhance liquidity in the underlying securities, helping to develop a more active secondary market. The use of repos with a short maturity should also make it clear to the market that the NRB is encouraging participants to develop as many alternative sources of short-term lending and borrowing as possible. Repos can be used in various maturities, although short-term operations tend to dominate. If the repos have become the main instrument, the open market operations should be undertaken through informal auctions on a daily basis, with maturities generally overnight. However, outright transactions run a high risk of dominating the market and impeding further development, when secondary markets are still comparatively thin. The repos are seen as an effective instrument for increasing market liquidity and helping to smooth the way to broader market development.

The government should have equal or greater interest in competitive trading, given that the cost of national debt should fall as government securities become more liquid. For this purpose, an active interbank market is particularly important because it helps in clarifying the timing and volume of open market operations. The NRB should also encourage market practices conducive to competitive trading. It could encourage a computerized system of bids and offers for securities that protects anonymity. To foster market transparency, it should also discourage trading from outside the established markets. As such, the issue of securities as promissory notes and the practice of secondary market transactions through private endorsement should be abolished.

To help maintain a clear separation between monetary and fiscal policies, it is most desirable if all the government debt securities issued to meet fiscal needs are sold directly into the market through the auctions. The non-interest bearing and non-marketable government debt securities should also be paid by the government or made marketable with market-oriented coupon to avoid any potential conflict between debt management and monetary policy needs. The timely initiation of planned auction of long-term government securities would also help to develop a competitive and deregulated market system. This also avoids pressure on the NRB to facilitate primary market issues at a predetermined rate.

To minimize the credit, delivery and settlement risks associated with the securities transactions and to make open market operations more effective, the NRB should institutionalize Primary Dealers System (PDS) for selecting trading counter parties for its open market operations. As such, the NRB could also encourage market development by

setting down ground rules for parties with which it deals. The primary dealers must be either commercial banks or highly capitalized financial institutions or big corporate discount houses. The primary dealers would be able to handle large orders efficiently, quickly and safely. Moreover, all primary dealers are expected to engage in substantial trading with the NRB and participate meaningfully in auctions. The primary dealers would also provide market information that may be useful for formulation and implementation of monetary policy. If a primary dealer fails to meet the specified standards, the NRB should have the authority to discontinue its trading relationship with that dealer. If the market participants are very few, the creation of a primary dealer system may be more problematic and impractical. In order to avoid market collusion and charges of favoritism, the number of primary dealers should be fairly large. By establishing such a dealers, the NRB would be in a stronger position to encourage dealers to establish better market making standards, such as minimum transaction sizes for dealing at quoted prices. The ongoing rapid technological changes would also influence the best approach for the NRB to take toward market structure and its own counter parties.

The NRB should also encourage the market to set delivery and payment standards. There would not be effective market functions without reasonable assurance that securities would be delivered on time and paid for as agreed. Although the speed and reliability of the clearing and payments systems obviously depend on the market's technical capacity and institutional arrangements, the NRB can play a powerful role in stimulating such efforts because of its leverage as lender of last resort. The NRB can also work together with the government to introduce an appropriate technology in the government debt securities market, such as a book-entry or scripless system to record security ownership and a simultaneous delivery-versus-payment (DvP) procedure from the NRB's deposit accounts as the central depository supported by the electronic Real Time Gross Settlement (RTGS) system.

To accommodate modern practices of the open market operations and improve the debt management, the existing rules and regulations for the transaction of the government debt securities and open market operations are not sufficient. Thus, an appropriate legal, regulatory and infrastructure base should be developed through proper amendments in the current rules and regulations.

As the backbone of conducting open market operations, the staff involved in the operations should be well educated, experienced and trained with sufficient exposures on debt and monetary management. The management theory of "right man in the right place with carrots and sticks" should be strictly followed for this purpose.

Last but not the least, the issue calendar of government debt securities should be publicized immediately after the announcement of government budget for ensuring most economic, efficient and effective open market operations in the NRB. The issue calendar should be strictly implemented. Moreover, the notification of the forthcoming open market operations should be released to the market, at least, before three days of the auction.

Concluding Remarks

The monetary management process is an art that greatly depends on experience, expertise and judgment. In the last few years, the most important monetary instrument in the monetary management process of the NRB has become open market operations. They are realized in voluntary basis and more flexible than other monetary instruments. Generally, the NRB uses open market operations extensively during the liquidity squeeze. The open market operations of the NRB ensure a reallocation of liquidity level in the economy and also enable banks to manage their securities portfolios rationally. In the near future, the NRB would continue to use open market operations frequently during the inflation targeting monetary policy implementation. The OMOC would still set interest rates for different maturities and the PDMD will be engaged in transactions that yield desired liquidity level in market in order to achieve inflation target. The open market operations will remain major instrument to ensure equilibrium in the demand for bank reserves and supply of bank reserves.

In practice, the open market operations would function most effectively when the government abides by a clear division between debt management and monetary policy operations. This usually involves an agreement to neutralize the monetary effect of the government's cash balance with the NRB or to delegate substantial control over it to the NRB. Virtually, the debt management decisions are made with ongoing input from the NRB, both informally and through formal committee structures.

Reliable market for government debt securities is essential for open market operations. The market participants should feel secure that counter parties will perform their obligations. Therefore, the NRB should establish performance standards for market participants. The NRB should aim to operate in a transparent market in which trading is done continuously. The NRB should communicate about the proceedings of the open market operations to the participants with clear purposes. The NRB needs to develop interbank market, designed market instruments, trading infrastructure, provided financing facilities, established criteria for dealing with its open market function, collecting and disseminating statistics and encouraging a safe payments and clearing mechanism. The NRB should also ensure required technical assistance and develop electronic transfer and settlement mechanism.

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