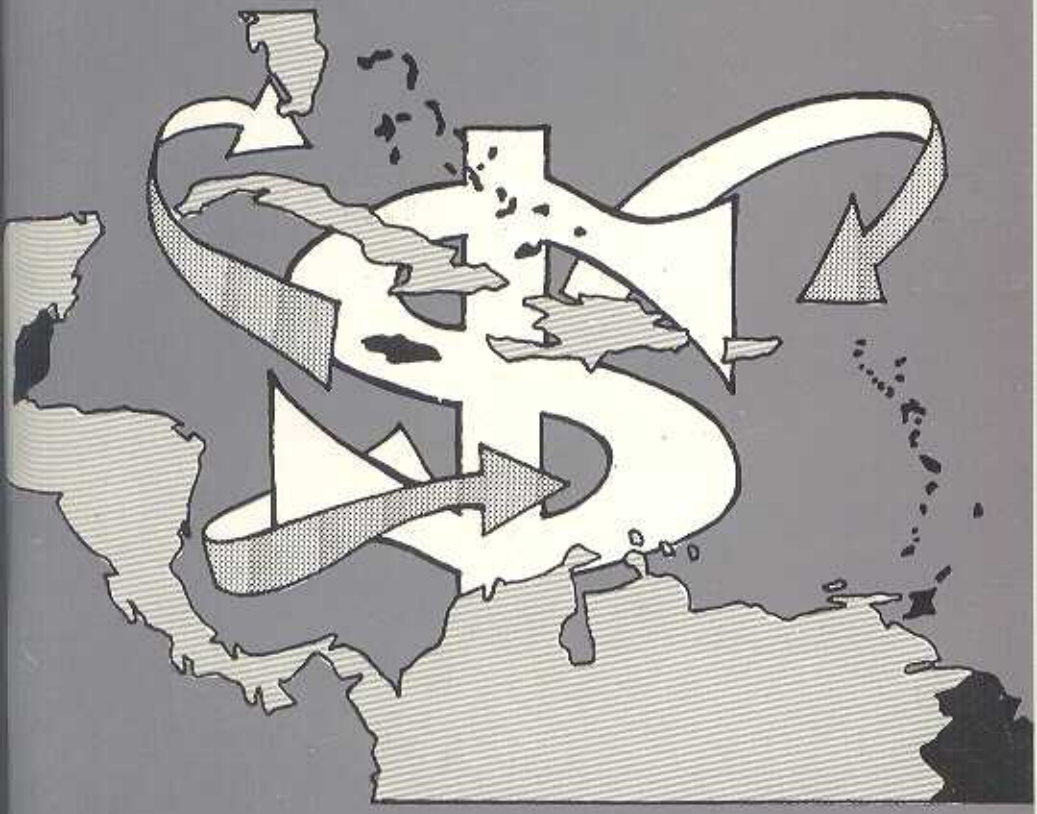
Occasional Paper Series Number 3

Liquidity Management in Liberalising Economies:

Some Experiences from the Caribbean

Edited by Laurence Clarke and Hyginus Leon



The Caribbean Centre for Monetary Studies

Liquidity Management in Liberalising Economies: *Some Experiences from the Caribbean*

The present collection of papers and commentaries are the outcome of a wide ranging reconsideration of an important facet of monetary policy, namely liquidity management, by a set of distinguished and greatly experienced financial practitioners and analysts from across the entire Commonwealth Caribbean. The Workshop from which they are drawn was organised around four topics: monetary management in liberalising economies, policy issues in liquidity management, operational responses, and the implications for the public sector-private sector nexus for monetary policy and liquidity management. These broad categories do not embrace the full range of topics covered. The reader will find discussions of market determined versus interventionist approaches to monetary policy, selective versus global credit controls, the role of balance of payments in the conduct of monetary policy, fiscal policy, and the efficiency or inefficiency of traditional monetary policy instruments.

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Liquidity Management in Liberalising Economies:

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edited by

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The University of the West Indies

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Dedication

To those pioneers of the previous
Regional Programme of Monetary Studies
who have left their indelible footprints as guides
to the younger generation of scholars

Introduction

The Caribbean Centre for Monetary Studies (CCMS) was formally established in May 1995 and became operational on August 1, 1995. This Centre evolved out of the previous Regional Programme of Monetary Studies (RPMS), a programme which had served the Caribbean well for the past 27 years. The initial RPMS was established in 1968 as a partnership between Caribbean Central Banks and the Universities of the West Indies and Guyana, to facilitate high quality research in monetary, financial and central banking issues in the region. Other activities of the CCMS include the training of regional central banks' staff and the development of a regional repository of monetary and financial information. The Centre's activities are fundamentally geared to promoting and supporting the financial and economic development of the Caribbean region.

As part of its mandate, and in the tradition of the last few years of the RPMS, the CCMS intends to host a series of seminars and workshops of particular significance to the central banking and university communities on an annual basis. This monograph is a summary of the proceedings of the first seminar for the CCMS, though the third in the Occasional Paper series which begun under the RPMS. The workshop attempted to explore some problems of liquidity management confronting Caribbean economies and to propose potentially viable solutions for future implementation within the region. Participants at the workshop represented a broad cross-section of people who have been intimately involved in researching, advising and working in the financial sector in the Caribbean.

It is our hope that this and other publications of the CCMS will be widely read by professionals, students and scholars across the region, and will contribute to the exchange of ideas on the problems confronting the small open developing economies in our region. In editing this monograph, we have borrowed liberally from comments made during the workshop. We hope that our representations reflect accurately the views and opinions of the various participants.

We would like to thank the staff of CCMS who assisted with the organisation of the workshop at the St. Augustine Campus of the University of the West Indies and provided vital support functions. In particular, we wish to thank Allisha Abraham who transcribed the proceedings of the workshop, without which there would be many more errors. Financial support from the eight central banks of the region is gratefully acknowledged.

L. C. Clarke and H. L. Leon
September 1, 1996

Foreword

The Caribbean financial sector has been in a state of continual change for well over a decade. The changes have included the emergence of new financial institutions, institutional mergers, financial product innovation, fundamental alterations of the regulatory framework, and a paradigm shift in macroeconomic philosophy and policy. Most central bankers and analysts of central banking policy would agree that the operating environment for central banks has changed drastically.

It cannot be taken for granted that the traditional armoury of monetary policy instruments would be as effective in the new environment or would even operate in the same manner. Moreover, central banks while confronted with new problems have found their stock of traditional weaponry seriously depleted by the widespread adoption of economic liberalism or market liberalisation. The reconsideration of monetary policy thus becomes an urgent necessity.

The present collection of papers and commentaries are the outcome of a wide ranging reconsideration of one important facet of monetary policy, namely liquidity management, by a set of distinguished and greatly experienced financial practitioners and analysts from across the entire Commonwealth Caribbean. The Workshop from which they are drawn was organised around four topics: monetary management in liberalising economies, policy issues in liquidity management, operational responses, and the implications for the public sector-private sector nexus for monetary policy and liquidity management. These broad categories do not embrace the full range of topics covered. The reader will find discussions of market determined versus interventionist approaches to monetary policy, selective versus global credit controls, the role of balance of payments in the conduct of monetary policy, fiscal policy, and the efficiency or inefficiency of traditional monetary policy instruments.

The collection will be of immense value to both those seeking a guided tour to the problems of liquidity management in the present-

day financial systems of the Commonwealth Caribbean as well as those whose interests are more focussed and sophisticated.

The Caribbean Centre for Monetary Studies and its Executive Director, Dr. Laurence Clarke, are to be congratulated for their foresight and skill in organising the Workshop and publishing this collection of papers.

Professor Compton Bourne
Pro-Vice Chancellor and Principal-Designate,
St. Augustine Campus
University of the West Indies

September 1, 1996

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Monetary Management in Liberalising Environments

Courtney Blackman[*]

Let me first say how delighted I am to be here and flattered to be the lead-off resource person at this Workshop on Liquidity Management in Liberalising Economies. I am particularly flattered because it is also the occasion later today for the formal launching of the Caribbean Centre for Monetary Studies which follows the Regional Programme for Monetary Studies, a successful programme since 1968. Since 1972 when I became Governor of the Central Bank of Barbados, I have attended all but three of the annual conferences, and on those occasions I very much enjoyed the intellectual sparring.

Liberalisation

My task is not so much to detail individual solutions, because I am some distance away from the front-line now, but to provide a conceptual framework for our discussions on liquidity management. We have seen tremendous economic liberalisation forces let loose in recent times and I would argue that these liberalisation impulses come from two sources. The first impulse is ideologically driven. Even at the height of the Keynesian era, there was a libertarian school epitomised by Dr. Milton Friedman which subscribed to the view that a government was best which governed least and that optimal economic outcomes were achievable through the workings of the free market. That view was substantially strengthened when the pure Keynesian model failed to deal with some of the emerging problems, when the developing countries stumbled, and finally when the communist system collapsed and with it, much of the Marxian paradigm.

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* *Dr. Blackman is the Barbadian Ambassador to the United States and a former Governor of the Central Bank of Barbados .*

The most extreme version of that free market ideology was the McKinnon-Shaw thesis of financial repression and the consequent prescription of financial liberalisation. The basic premise of financial liberalisation is that market-determined outcomes in the financial sector will optimise the rate of savings, investment and growth in the LDCs. McKinnon and Shaw were very successful in selling this prescription to the multilateral financial institutions who in turn imposed it to a large degree on LDCs, seeking funding for structural adjustment programmes. This financial liberalisation programme involved the removal of ceilings on interest rates, promotion of high and real positive interest rates, removal of exchange controls on capital movements, and the floating of exchange rates.

The second impulse came from the managerial school. The managerial school observed that the development models used in the past had failed as well, but approached the problem from a different perspective. The managerial school does not believe that government intervention is bad *per se*; rather, it believes that markets will not always produce the most optimal outcomes and that government intervention is sometimes necessary. The approach that I am going to take in this presentation is that we should avoid ideological paradigms at all times. I would argue further that the free-market paradigm which is represented by financial liberalisation is as dangerous as the Marxian and other ideologically driven programmes have been. I should rather like to use what I might call a managerial approach in which we determine first of all what our goals are and then later think through the process in as technical a manner as possible and see what tools we should use; sometimes we would intervene and sometimes we would not.

Liquidity

Let me begin by looking at the concept of liquidity itself, and from the point of view of a central banker whose responsibility is essentially to regulate the levels of liquidity in the economy. Indeed, the concept of liquidity is central to any theory of central banking and we can identify at least four different concepts of liquidity: liquidity of an individual asset, liquidity of a portfolio, liquidity of an economy and international liquidity.

Asset Liquidity

We all know what is meant by a liquid asset and suffice it to observe at this time that the liquidity of an asset is a function of the extent and, in the case of financial assets, the depth of the market in which the asset is traded. In the absence of markets, therefore, it is difficult to conceive of the liquidity of an asset, since there is nothing intrinsic in an asset that makes it liquid.

Portfolio Liquidity

The liquidity of a portfolio is certainly a function of the assets contained in it but also depends on who owns the portfolio. Whereas a creditor would be prepared to lend Mr. A X dollars against the collateral of a given portfolio, he might be willing to lend Mr. B $(X+Y)$ dollars against the collateral of the said portfolio, and whereas Mr. C might offer Z dollars against the collateral of a given portfolio in January, in February, he might only be prepared to offer $(Z-Y)$ dollars. In other words, the liquidity of a portfolio is not only a function of objective market conditions; it is also a function of the perception of potential creditors. The importance of perception, the importance of psychology is, in fact, very much at the root of liquidity management.

Economy-wide Liquidity

The significance of liquidity in an economy is that, people who have liquid portfolios are able to purchase goods and people whose portfolios are not liquid are not as likely to be able to spend, unless of course they can get credit which depends on the perception of their creditors. An economy characterised by large numbers of economic units with relatively liquid portfolios may be described as possessing a high level of liquidity and may be characterised by high levels of expenditure now, but not necessarily in the future. One can have liquid economies in which people do not want to spend but, generally speaking, if the economic units of a society are liquid, then spending is most likely to occur. The economic function of a central bank is to maintain the liquidity level of the economy as a

whole at optimal levels. Now, the attribute of a central bank which endows it with the capacity to regulate liquidity in the economy is the infinite liquidity of its own portfolio. Since its liabilities are legal tender within its national boundaries, it can in theory purchase all the assets in a nation. As a matter of fact, central banks in some countries have tried to do that.

We may represent an economy as comprising classes of institutions and we may write them in some hierarchical way. The first of these is the class in a society with the least liquid portfolio, that is households. Next above them come firms, then capital markets, then money markets, and at the apex is the central bank. The central bank, as noted above, is infinitely liquid. Now, firms and other classes who wish to increase their liquidity or the liquidity of their portfolios sell assets to more liquid classes; for example, households sell to firms - they usually sell their labour; firms sell financial assets - mortgages perhaps to capital markets; capital markets sell assets - financial assets - to the money markets which are even more liquid, and money markets and capital markets may become more liquid by selling to the central bank. The central bank has no trouble because it has as much liquidity as it wants. So the central bank may increase liquidity in the total system by standing ready to accommodate money market institutions by purchasing assets from them; money market institutions are in a position to buy assets of capital markets; and so on, right down until you get an increase in liquidity. Of course, to tighten liquidity the reverse process occurs.

International/External Liquidity

The central bank can only change liquidity within the boundaries of its own nation, or society; it cannot do so ordinarily outside of that country. Indeed, there is perhaps only one country now which can alter liquidity outside of its national boundaries, that is, the United States. External liquidity is the trickiest of the four types of liquidity. By external liquidity, we mean the capacity of a society to make payments for its imports of goods and services in the event of a deficit in its foreign accounts, either current or capital. To do

so, the society must have command over internationally accepted money or credit, and to understand this we have to look a bit at money. We may think of money as running along a continuum starting with fiat or fiduciary money at one extreme (fiat money has no backing whatsoever) and ending with commodity money (the intrinsic value of the money is the same as the face value, as in the days of gold coins) at the other. Now the trouble with fiat money is that usually it is only useful within the area which is controlled by the central bank of that society. The Central Bank of Trinidad and Tobago can, therefore, issue as much money as it likes in Trinidad and Tobago, but that money is not useful internationally. In early economic history, gold or some kind of specie commodity money was used in order to settle international trade. Most currencies are in fact hybrids. There is a tendency to use fiat money within your country, but when you get outside of your country, you have to use some form, some variant of commodity money. Sometimes currencies are totally commodity-backed money (that is, money totally backed by some commodity); in other instances, currencies are commodity-based. The EC dollar and the Barbados dollar are examples of commodity-backed and commodity-based money, respectively. As countries demand the confidence of their trading partners, they are able to develop partly market currencies. For example, the German currency is primarily market-backed but they also keep some reserves. The Taiwanese currency is probably more market-based because they have very large reserves. In contrast, the United States dollar is a fiat currency but it is also a commodity at the same time. The dollar is treated as a commodity.

It is extremely difficult for us in the Caribbean to reach the position of the United States simply because, we just cannot "play" in those markets; our currencies do not have an element of commodity in them; they are not treated even partly like commodities, and so it is very important for us to remain for a very long time to come as hybrid currencies where we have to be at least commodity-based.

Markets

In modern economies, even though there is much talk about the market and it is assumed that we know what a market is, pricing

policies do not reflect the nature of specific markets. ***A market is not a supply and demand curve. A market is an institution, a social institution and it does not exist by itself.*** It results from the interaction of the constraints which both governments and players put on the market, and I have come up with the aphorism that "if it's a market, it's not free and if it's free it's not a market". So, to speak about total liberalisation in the market and a free market confuses people. The most highly effective market in the world - the New York Stock Exchange - is most carefully and minutely regulated, complete with circuit breakers; if it moves too fast, up or down, you stop programme trading. So, in talking about liquidity management, it is essential that we focus on the nature of the markets in our own societies, because we cannot speak of liquidity, in general, or liquidity management outside of the context of a market.

The efficiency with which a central bank can transmit its policies through a market depends on the quality of that market. If markets are characterised by imperfections, impulses from central bank policy will not flow through and the desired effects will not materialise. In fact, it is necessary to determine the state of the market before any policy instruments can be devised. It is worth noting that, in the United States, if the Federal Reserve Board moves the interest rates 25 basis points this is sufficient to trigger numerous responses. This is because that market is so effective. As argued earlier, in the management of external liquidity, Caribbean economies cannot launch a market-based currency because of the thinness and narrowness of our international foreign exchange markets; we still have to include a very large component of commodity currency within our foreign exchange currencies.

Liquidity Management

What are the constraints on liquidity management in the Caribbean? This region is characterised by imperfect markets, a proneness to fiscal deficits which have a tendency to flood the financial markets with liquidity, and sluggish supply conditions which increase liquidity without necessarily leading to capital spending and investment. As a result, increases in the output of goods and ser-

vices do not match the increases in liquidity. This bottleneck is a function of the real sector. Policy makers have failed to address serious real sector issues and have spent far too much time on the concerns of the financial sector. If the real sector can be motivated to perform, then financial instruments, like exchange and interest rates, will attain the desired levels.

On the external side, the openness of the economies imply large foreign deficits, because the larger the foreign sector, the more exposed the economy is to fluctuations and balance of payments pressures. The thinness and shallowness of foreign exchange markets adds another dimension of difficulty to the management of liquidity. In this respect, developments in telecommunications have greatly increased the speed with which capital can flow, and so our continued focus on the number of months of imports, for example, that our liquidity levels can cover, probably is outdated. Rather, we should focus more on the potential for capital outflows and inflows. The capital that can be exported in a perfectly open and liberalised economy with floating exchange rates is quite large. In fact, it is limited only by the liquidity in the economy. Indeed, as long as economic agents have access to liquidity, they can purchase foreign exchange. It appears that in the future, capital movements will pose a greater danger than trade imbalances.

Policy Implications

What policy implications can we deduce for liquidity management? First, we will have to depend more on fiscal policy than on monetary policy, because monetary policy acts best at the margin. You cannot mop up the kinds of liquidity that exists in Guyana and Jamaica with monetary policy; you have to use fiscal policy and probably monetary reform. Second, the imperfection of markets may dictate the use of selective credit controls to mop up particular pockets of liquidity. General techniques to mop up liquidity across the board, and then depend on the markets to do the allocation, will not work. Third, high levels of foreign exchange reserves are necessary, since we are unlikely to develop a market-based currency in the short-run. Fourth, foreign exchange rationing may be neces-

sary. This is because in a developing country, foreign exchange is the same thing as capital and capital is a scarce resource; it really is not very prudent to leave the determination of your non-substitutable and critical resource to the working of the market. Finally, the development of financial markets must be promoted, and in particular, their integration across the region.

Liquidity Management: Some Policy Issues

*Delisle Worrell**

The reason why central banks try to manage liquidity is to avoid surges in credit and expenditure which might cause the balance of payments to deteriorate. Otherwise, the central bank might leave financial institutions to adjust their excess or deficient liquidity as they please. If banks hold excess funds, they can hold cash, buy government securities, increase their interest rate spreads and/or they might lend abroad. In the case of a deficiency, they might borrow abroad, sell government securities and/or narrow interest rate spreads.

The burden of my argument is that unfortunately the central bank is of very little help in avoiding the balance of payments consequences of liquidity surpluses and deficits. Liquidity management can at best only buy time for fundamental adjustments of fiscal balances, investment incentives and export promotion strategies, and even this limited role is available only in certain circumstances.

Policy Instruments and their Effect on Liquidity, Interest Rates and the Balance of Payments

The Discount Rate

Changes in the Central Bank's discount rate have no effect on liquidity. Commercial banks do not use discount borrowing for a sufficient length of time to affect their profitability even when liquidity is short. If the central bank is not able to affect their profitability then there is no reason for them to do anything about their credit, or anything that will affect the balance of payments. They have alternatives - they may sell government securities from their portfolio or they may borrow abroad. However, the discount rate may be used to back up other policies.

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* *Dr. Worrell is a Deputy Governor at the Central Bank of Barbados*

Open Market Operations

The second instrument available to central banks is the purchase and sale of securities from the central bank's portfolio, that is, open market operations. The central bank hardly ever wants to buy securities. Usually, it wishes to sell securities. Sales to commercial banks which have excess cash are no problem since banks with excess cash are always willing to buy. However, those sales do not protect the balance of payments because they simply switch liquidity from excess cash to excess securities. Indeed, the commercial banks are at liberty to sell these securities back to the central bank when credit demand rises. So if they later need those funds to expand credit, and consequently put pressure on the balance of payments, then they can simply sell the securities back to the central bank. To prevent that, the central bank would have to drastically lower the price at which it is prepared to repurchase the securities. Even so, the banks may be prepared to take the loss on the repurchase operation rather than disappoint preferred customers. If the funds are needed for the expansion of consumer credit, the rewards may more than compensate for any loss that might be made in reselling the securities to the central bank. So open market operations are unlikely to be of major assistance.

Global Credit Limits

Global credit limits do not alter liquidity but they may protect the balance of payments temporarily. The only limits that work are those that stipulate a maximum for loans and make no exceptions. Selective credit controls are largely ineffective because of the fungibility of money. In time, firms and households will simply reposition themselves to get around the credit limits. To be practical, therefore, global credit limits must be restricted to the reflows within the banking system, and such a limit may only be held for a short time. This allows time for more fundamental adjustment measures to be taken. The effectiveness of the credit limit depends on the central bank's muscle. If the central bank is not particularly influential, the banks will simply ignore it's stipulation. If the central bank, however, does have some influence within the system, then the financial institutions tend to take it more seriously.

Reserve Requirements

The fourth instrument available to the central bank is changing the reserve requirement, that is, raising or lowering it. In this case, the requirements must be moved by an amount sufficient enough to lock in the excess or to remove the deficiency. Cash reserve requirements will not have any effect. If the banks need the funds to expand credit, they will sell securities from their portfolio to accommodate any change in the cash reserve requirements. Where they are still in effect, requirements for cash and securities together will have consequences similar to those for a credit limit, but only if banks are not permitted to borrow abroad. If the banks can borrow abroad and the total limit is increased by a certain percentage, they will simply borrow enough funds to expand their credit and meet the limits. On the other hand, if their ability to borrow abroad is limited, their total ability to expand credit will be restrained. As in the case of credit limits, they are at best a temporary measure. After a while, households and firms are going to reposition themselves in terms of the way they manage their mix of deposits and other cash repositories so that they can effectively avoid any expenditure restriction.

Interest Rates

The international financial institutions are ideologically opposed to central banks setting any interest rate, but it is well established in economic theory that oligopolistic markets require such a reference point. As we know from practical experiences, if the central banks provide no guidance, banks will use the US or Canadian market rate as their reference point; that is where their headquarters are and that is where they get their instructions from. Caribbean interest rates must bear a relation to the US interest rate, but it makes sense to include, as well, considerations of the domestic economy's circumstances - economic intelligence which only the central bank is equipped to provide. With respect to liquidity management, however, interest rate changes are unlikely to be helpful. Experience suggests that there is little elasticity of response to small changes in interest rates both for deposits and for loans, and large

changes may correct liquidity, but at the expense of the balance of payments rather than by defending the balance of payments. For example, a large fall in the deposit interest rate may encourage trading companies to pay off foreign trade credits - which may now appear relatively expensive - and finance inventories of traded goods by borrowing domestically. That uses up the excess liquidity, but it also reduces short-term capital inflows and weakens the balance of payments, not to mention the possibility of capital flight.

Conclusion

The instruments used by central banks for liquidity management are hardly effective in addressing the question of the allocation of real expenditure on investment and consumption. The moral is that liquidity imbalances must be tackled at source, either via the fiscal deficit or surplus, or by directly going to the balance of payments.

If there is excess liquidity, and foreign exchange reserves are too low, government must cut back to achieve a lower deficit or a larger surplus. Such action would reduce national expenditure, reduce the expenditure on foreign exchange and correct the balance of payments at source. This cannot be done by managing the liquidity. On the other hand, if there is excess liquidity, together with a very rapid build up of foreign exchange reserves, this is almost certainly a sign of speculative capital inflows and problems of credibility with the overall fiscal position. In that case, the overall policy framework needs to be addressed.

If there is a liquidity deficit and foreign exchange reserves are too low, there is a need for investment incentives and export promotion, as well as a lower fiscal deficit or a larger surplus. That says both that the foreign exchange is not performing well enough and expenditure is growing too fast. A liquidity deficit together with high foreign exchange reserves indicates the need for a very significant and severe fiscal correction.

The existence of excess liquidity together with high and persistent levels of foreign exchange reserves need not be a matter of concern. In time, it is self-correcting as expenditure patterns adjust to the buoyancy of the export sectors. Excess liquidity will only exist with high and persistent foreign exchange reserves if the export sectors are generating foreign exchange.

Essentially, the danger we face is that of placing too heavy a burden on the monetary policy instruments that are available to us. We should regard them merely as devices to buy time to address the fundamental problem which is determining the balance of payments. If we do that, then the state of the domestic liquidity is something that will work itself out over time.

Liquidity Management: Some Operational Issues

*Laurence Clarke**

This paper attempts to explore some of the operational dynamics involved in liquidity management in developing economies. The policy aspects of the management of liquidity have been explored by other presenters and several perspectives have emerged. Dr. Worrell made the point that there could be an excess liquidity or a tight liquidity management problem with no need for policy action, at least at the level of the central bank, as long as the external reserves are satisfactory. If it is generally acceptable that there is a basis for intervening in the labour market to set minimum wages, and for intervening sometimes in the trade sector, what makes the financial market so different that the central bank should not basically intervene if there is a clear market failure in the form of an excess liquidity or even a tight liquidity situation? We may argue that the intervention Dr. Worrell is suggesting is not market-based and maybe direct controls could be used. The fact remains, though, that there appears to be no basis for not wanting to intervene in a case of failure in financial markets.

The real issue is not whether we should sit idly by as a central bank and do nothing about the liquidity management problem. Rather, it is to recognise that, like most other forms of interventions in economics, monetary intervention alone simply cannot be the panacea for arresting the problem. So, if there is a significant market failure that manifests itself in chronic excess liquidity or chronic tightness of liquidity, the central bank should intervene, but it should do so while simultaneously tackling the source of the real sector problem, along the lines that Dr. Worrell has articulated in his paper. The market should be nudged forward on the financial side and the structural constraints on the real sector should be addressed.

The thrust which should be proposed, therefore, is that there is some basis for using monetary instruments for the management of ex-

* *Dr. Clarke is Director, Caribbean Centre for Monetary Studies.*

cess or tight liquidity problems within the economy. If one accepts the view that it is sufficient for the balance of payments to be healthy, and that the market would then correct itself, one is, in fact, making a judgement that the level of foreign exchange reserves that exists at that point in time, is optimal. Since the optimal level of foreign exchange reserves is unknown, we have to address the management of liquidity, if only as part of a series of other kinds of policy responses in the short-run, and certainly, in the long-run.

Assuming that we have to address the liquidity management problem, and that the central bank has to be the main agent for doing so, although there may be a residual role for fiscal policy, the question to be addressed is: Is it necessary for fiscal policy to be subservient or subsumed to monetary policy, or for monetary policy to be subservient or subsumed to fiscal policy? In my opinion, the excess liquidity problem - whether of a systemic nature or of a structural real sector nature in origin - has a very strong monetary manifestation, and monetary policy has an active role to play in dealing with the problem. The rest of this presentation addresses four issues along that theme. First, can approaches to forecasting the level of excess liquidity be assessed? Second, some issues and mechanical features that have evolved in actually trying to sterilize excess liquidity are discussed. Sterilised forms of intervention are then examined, followed by remarks on foreign currency accounts and their implication for dollarisation, within the context of emerging banking systems.

Liquidity Forecasting

In the central banks of the region, a combination of two systems is utilised to forecast liquidity problems in our economies. One system is the more orthodox system of financial programming in which one looks at the major flows within the economy, identifies an operating target (most likely net domestic assets), and forecasts over a period of time the likely behaviour of the flows within the system. That method assumes a certain level of sophistication within the central banks. The second type of forecasting tool, in common use in a number of Southern African countries, is one in which the

key players in the economy, for example, the commercial banks, are questioned about their expectations on financial flows through the banking system or their particular institution, and the likely behaviour of their customers. These responses, along with any expected significant export receipts or import payments and liquidity needs over a specific time horizon, are aggregated to provide a profile of the likely level of excess liquidity or liquidity tightness within the market. In Barbados, for example, there is a tendency to use round-robin canvassing to establish the liquidity implications for the issue of long-term instruments. For shorter-term transactions or issues of shorter-term paper, a sophisticated financial programming model is often employed. Some institutions in the Caribbean, therefore, adopt a hybrid system in operation. In other economies, only one system exists, that is, canvassing the key players. The forecasting exercise can become more complicated if large real sector interests enter the market. The choice of system is a function of the available expertise and capability within the respective economies. There is an obvious need for the Ministry of Finance and the central bank to work closely on forecasts.

The wider question of liquidity forecasting is an issue in need of continuous refinement within the central banks of the region. The ability to forecast accurately is particularly important. For example, suppose that the forecast for excess liquidity is X. If the actual excess liquidity is $X+Y$ or $X-Y$ then sterilisation will not have the intended effect. The ideal scenario is to have a match between changes in your net international position and changes in government cash flows and/or changes in the position of the commercial banks with the central bank.

Sterilisation

A central issue to the sterilisation debate is whether a direct or indirect instrument should be used. An emerging consensus in some developing economies is that there are synergies in using the indirect instrument, even if it is only simply to expand capital markets, or the market for financial paper. Within the last 20 to 25 years, the thrust towards indirect instruments has grown significantly, even

in the developed countries, a large number of which utilised direct instruments until the late 70s. Most developing countries have actually moved towards indirect instruments only within the last ten years. A recent study by the IMF of nineteen emerging economies pointed to some major advantages in the use of indirect instruments, as opposed to direct instruments, for dealing with the sterilisation problem. The Fund measured pre-transition and post-transition arrangements in the context of moving from direct instruments to indirect instruments, and found reduced spreads and margins and greater positive real interest rates. The study advocated a shift towards market-based instruments to support the sterilisation effort. A problem in implementing that recommendation is the lack of effective policy tools in our economies. This section explores some issues relating to open market operations and reserve requirements.

Open Market Operations

The Auction Process

The auction process is central to open market operations. A number of issues influence the effectiveness of any effort to sterilise excess liquidity. For instance, there are advantages of using paper issued by central banks as opposed to paper issued by the treasury as the major instrument of sterilisation under open-market-type operations. One of the main reasons is that the use of paper issued by the central bank (for example, Jamaica uses certificates of deposit and Botswana has Bank of Botswana certificates), can secure, over a period of time, in-house information about the bidding process and the effectiveness of sterilisation. Indeed, distinct patterns of bidding can be discerned by examining the bids and the actions of the major players. In Botswana, for example, where multiple bids can be submitted, market players typically bid at various levels of the yield spectrum and position themselves so that wherever the market clears, they can procure part of the allotment. This is not necessarily responsible behaviour. Central banks which do not administer the auction process itself, may lose critical information which can affect the extent to which they can pitch future bids.

Auction Methods

A second question relates to the method of the bid. No consensus has emerged on which method of bid will effect the greater capacity to sterilise. But it is quite clear that alternative situations yield significant differences. For instance, under the standard model, called the "Modified American" bid, there is a cut-off price that clears the market. As long as the bidder falls within that allotment, the price paid is whatever was bid. In the "Dutch auction", however, there is a market cut-off price that clears the market, and irrespective of the individual bid, all players within the allotment pay that same price. A third approach is where all bids are averaged and everyone pays the same average bid. The capacity to sterilise properly, therefore, seems to depend partly on the bidding arrangement, although it is not clear whether the bidding arrangement makes a major difference at the margin. What is clearly evident from an analysis of various bidding processes is the need for transparency and for consistency from one period to the next. Also, any future changes should be stated clearly, be understood by the market players, and the results of such changes should be publicised.

Primary versus Secondary Market Intervention

A third sub-issue is whether intervention should occur at the level of the primary market in the bid process, or whether the central bank should intervene at the level of the secondary market. The general feeling is that, as far as possible, the primary dealers should be allowed to deal at the level of the primary market, and that the central bank, if it has to intervene, should probably do so at the level of the secondary market. Although this dichotomy may not make a significant difference, it may well help markets to develop.

Forms of Auction

One central question relates to the form the auction should take. There is a school of thought that says if there is an excess liquidity problem, and the problem could be recognised, a "tap issue" could be done. In tap issues, a bid volume is not announced. Bids are

invited at whatever market price the bidder wishes. The auction process proceeds until a judgement to close the auction is exercised, based on the level of liquidity shortfall or excess and the state of the market at that point in time. Many practitioners argue that, in developing countries, tap issues are probably the better form of auction since the level of excess liquidity or the state of the economy, at a given time, are never known exactly. As mentioned earlier, stating allotment volumes constrain the auction process. Of course, in many of the situations in our economies, the size of the auction is driven by the need to roll-over a security at maturity. If the bidding process is viewed as having both a fiscal and monetary dimension, especially with respect to sterilisation, then more may be required than the roll-over of the securities. In fact, the form of auction may well influence the effectiveness of the auction, and the traditional archaic model of placing an allotment number, indicating at the time what volume should be, is largely responsive to the old order of trying to manage debt, or using that instrument for fiscal purposes. There really has been no modification in the auction form to respond to the open-market-type operations which have a monetary dimension. So, we may want to consider moving away from some of the old approaches which have more of a fiscal bent, as we move to sterilise what is largely a monetary issue.

Repurchase Agreements

A related matter of concern to both Jamaica and Trinidad and Tobago is the question of repurchase agreements, or repos. The advantage of repurchase agreements or repos is that they give central banks some flexibility to enter the market at a pre-determined price, without having to change the structure of interest rates for outstanding instruments. In fact, the central banks in South East Asia have gone further in that they are actually issuing cross-border repos and reverse repos. In other words, if Thailand has an excess liquidity problem and Singapore has a deficit problem at that point in time, they can actually set up central bank arrangements whereby the countries can support each other cross-border, largely because of the convertibility of their currencies. Given the convertibility among the Caribbean currencies, we probably should not be trying

to deal with the excess liquidity problem at the level of our respective economies. To the extent that Guyana, Jamaica, Trinidad and Tobago, and both Barbados and Bahamas to lesser degree, have had excess liquidity problems, there can be a basis to structure both domestic and cross-border repos. This raises settlement issues reminiscent of the now defunct Multilateral Clearing Facility in the region. Indeed, there is an opportunity to start looking at sterilisation more within the wider regional framework and less within our own domestic economies. It is precisely because there have been market failures domestically that we have the problem in the first instance.

Reserve Requirements

With respect to reserve requirements and sterilisation, we have to constantly deal with the question of the playing field. For instance, if the reserve requirements are tight in the banks, then market players will shift to non-banks; if it becomes too stringent in one type of non-bank, they may move to another type of non-bank, and so on. A recent study of seven South East Asian countries by the Federal Reserve Bank of San Francisco, revealed that the level and effectiveness of sterilisation is influenced by the size of the non-banking system. The larger the non-banking system, the less effective the sterilisation effort within these economies. If reserve requirements are to be used as an instrument, some mechanism will be needed to address both the banking and non-banking systems. In fact, if we try to use reserve requirements as a basis for sterilising excess liquidity within our system, at the time when the equity markets are growing very rapidly, we exclude a sizeable volume of flows within the financial markets, especially through the stock markets. Clearly, the use of this instrument by itself will not be effective. During 1990 and 1994, growth in inflows into developing countries has been much greater in equity markets than in debt markets. If we are to take cognisance of that fact and use mechanisms to sterilise our systems using only the banking system, we would surely miss the boat by far.

Other Forms of Sterilisation

In countries like Singapore and Malaysia, other forms of sterilisation of excess liquidity are practised. Excess liquidity from the banking system is absorbed not only through open market operations, and reserve requirements, but also through capital market transactions. Part of the policy is to induce pension funds and other contractual forms of savings to enter the banking market at special rates, and/or to deposit funds directly with the Central Bank. In the Caribbean we have used special deposits, but in the Far East the authorities have actively encouraged the capital markets to play a role equivalent to that of the banks.

What role can our secondary markets play? Suppose there is an excess liquidity problem which has been sterilised into the central bank. The funds are technically speaking requited in terms of foreign exchange reserves. The central bank can now re-channel some of the sterilised funds into the financial system by encouraging the non-banks, for example, the mortgage and agricultural banks, to issue special long term forms of paper. Effectively, the maturities of the pool of savings would have been transformed. In most of our economies, the excess liquidity situation is driven partly by inflation. The predominant use of government paper and deposits is because market players want to stay short and deal in assets that are relatively risk-free. The role of the central bank, therefore, is to create liquidity mechanisms for channelling sterilised funds into the long end of the market. The central bank may even need to allow the non-banks to access these deposits at preferential rates, both to encourage greater efficiency in the use of savings and to accelerate the process of transformation from short-term to longer-term savings.

Intervention

The third broad area to be addressed briefly is the question of intervention within the foreign exchange markets or the economy in general. First, let us define intervention as essentially using the foreign exchange markets to buy or sell foreign exchange in sup-

port of the domestic currency. As is well known, there are probably three channels through which intervention activity affects the system. One channel is purely monetary - one intervenes by selling foreign exchange on the market, generating monetary expansion. A second channel is to intervene but simultaneously sterilise. The monetary expansion, caused by the sale of the foreign currency, is offset by an issue of securities. That has the advantage of altering the distribution of holdings of domestic and foreign assets. The third channel is to create certain expectations that will influence the exchange rate, which is ultimately the objective of intervention. But the critical point here is that merely intervening in the markets, *per se*, whether to support a fixed exchange rate or to stabilise a floating exchange rate, does not make sense in our economies. If intervention for support is necessary, then it should be accompanied by sterilisation, and mechanisms should be established to ensure success.

Foreign Currency Accounts

Finally, let us consider the management of foreign currency accounts. In Botswana, for example, there is a major problem of chronic excess liquidity, largely driven by the sale of diamonds. It is worth noting that the authorities did not have a fiscal problem, and secondly, diamonds were being sold very regularly at the time. With US$ 5 billion of reserves, trying to sterilise the expansions every two or three weeks was simply a nightmare. It became apparent that the real problem was trying to monetise all the flows. Holding these flows in foreign currency accounts provided a mechanism for translating only a portion of that foreign currency into local currency. A logical extension is to relate that to the whole process of dollarisation which is becoming a major issue in Latin America. A pertinent question is to what extent does the presence of foreign currency accounts create a mentality or a psychology for people to want to denominate or to negotiate local contracts only in foreign currency? For example, house rents are denominated in US dollars. There is clearly a dollarisation mentality that is emerging in our economies. To what extent is the objective of the thrust throughout our economies of creating foreign currency accounts

largely to integrate our financial system more with the international community? And to what extent is that creating another problem of dollarisation of our economies? And is this necessarily bad? The jury is still out!

Monetary and Liquidity Management: Public and Private Sector Nexus

Implications for the Banking System

*Ronald Ramkissoon**

The earlier presentations have dealt with the liberalisation of the financial system and how to manage liquidity in such a system. It is important to emphasize that in most Caribbean countries, we are no longer relying on administrative rules and regulations to determine portfolio allocation. In the commercial banks, much greater emphasis is now placed on prices to influence decisions by households. Thus interest rates, costs, and profitability have greater influence now in the decision-making process than before. I emphasize that because of the pass-through implications.

Profitability

If the objective of the commercial banks is to maintain an adequate rate of profit and the central bank, for example, implements a monetary policy instrument that results in a higher cost to the banks, then a natural response would be to find ways to counter the effect of that policy instrument in their pricing; for example, a higher reserve requirement (with of course no interest) is in effect a tax on the commercial banks. The ability to pass on this added cost to the public will depend in part on how competitive the environment is. But the banks have to find some way to maintain profitability while adhering to the imposed regulations.

If part of financial liberalisation involves foreign competition, one needs to ask at what rates do foreign banks raise money? What is the level of the reserve requirement and other costs in a US environment? Indigenous commercial banks compete with the international banks. Yet the international banks do not operate in a simi-

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lar manner to the indigenous banks. They do not set up branches all over the country. Instead, some sell banking services out of suitcases. A commercial bank in Trinidad and Tobago has to meet a reserve requirement of 26%. It is clear that the increased cost affects both the deposit rates offered and the loan rate charged in order to maintain profitability.

Prudent banking practice suggests that there is a level of excess liquidity that banks will normally hold. Beyond that, there are costs to holding excess funds that could be utilised elsewhere. Since the funds have to be raised, there is a direct cost to the banks. The intention of protecting the exchange rate and the balance of payments is clearly reasonable; what is required is a less burdensome level of liquidity that is perceived as 'normal', probably defined in terms of the cost to the commercial banks and therefore the society at large.

Dr. Clarke suggested that excess liquidity should be invested in long-term instruments. This is promising but there are pitfalls to consider. Suppose the excess liquidity is placed in long-term instruments. Then if liquidity becomes tight, the institutions are going to experience problems. They would have to resort to the central bank for funds. In fact, the viability of the financial system may be compromised if the problem is severe and especially since capital markets are relatively underdeveloped.

The central bank action of taking say TT$ 500 million out of circulation does not just end there. There are real sector implications for the commercial banks, the households, and the firms, and of course the balance of payments. So, the impact of liquidity management on the commercial banks must be taken into account in evaluating the effect of the monetary policies.

Market Signals

What should commercial banks be encouraged to do? It is clear that we need to ensure that savings are channelled to the financial institutions that are going to encourage investment. But if the existing macro-economic environment is not one that encourages the

potential investor, then the commercial bank cannot lend to a sector that is non-existent. In the past, a policy of import-substituting industrialisation was followed, where high tariff walls were imposed and manufacturing plants were strongly encouraged. In many cases, we supported the cheap imports of raw materials and, like many other developing countries, operated an over-valued exchange rate. In effect, a framework was established for manufacturing and assembly line products, but when the society and business interests demand loans for these manufactured products, the commercial banks are accused of too much consumer lending. We cannot have a structure that encourages imports and then expect the commercial banks not to finance such imports, when there is a demand for them. And that demand is created by the environment, by the interest rate and other economic policies that are imposed on customers of the commercial banks. In a similar vein, funds directed at agriculture at low rates have not been effective because the low returns in agriculture do not generate the requisite demand for agricultural loans.

There are always competing claims to the limited resources available in any economic environment. Given the inflation rate that economic agents would like to borrow at, the commercial banks can only reflect that demand from the society, which is itself conditioned by the kind of macro-economic policies that are set. In this context, it is clear that the environment is changing in Trinidad and Tobago and commercial banks' lending to the export sector is growing. Why? Simply because the changing environment in Trinidad and Tobago is signalling to agents that the "import cheap and sell dear" strategy is dead. High interest rates and the exchange rate have both contributed to the increased interest in exporting, and so the commercial banks are lending more for export-type activity. Prices and costs are now much more important, international interest rates are critical, and the commercial banks are reacting to the new operating environment.

In conclusion, suffice it to say, that there are several ways in which the management of liquidity could impact on commercial banks, on firms, and on households. These need to be taken into account

by the authorities in devising economic policies. We need to look at the whole system rather than focus only on the central bank and the commercial banks or even solely on the financial system.

Implications for Capital Markets

*Mary Zephirin**

One of the problems in the Caribbean is that our markets are not actually thick enough to allow for effective open market operations. In order to get changes in demand, large changes in interest rates are required, and these large changes in interest rates can in fact be destabilising. This is not unique to the Caribbean. Other developing countries have in the '80s found quite inelastic responses of spending to interest rates. In some economies, government instruments were sold to the non-bank private sector in an attempt to squeeze the liquidity out of the sector.

Interest Rate Effects

One of the problems that bankers in both Barbados and Trinidad and Tobago complain about is that by controlling excess liquidity through increases in interest rates the authorities are actually pushing up the required rate of return on investment. Consumer lending is probably very interest-inelastic and banks continue to lend to the consumers willing to borrow at higher rates. Higher interest rates have a greater impact on investors. If one considers a pipeline of projects lined up according to rate of return, then the marginal projects will not be implemented. It is not just a question of whether there is actually a change in investment decisions, rather investment decisions may be postponed. So economic plans are changed not on their merit but because the authorities are trying to control a problem of government demand through monetary policy.

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Dr. Clarke spoke earlier about mechanisms in the market for government securities, the information produced by trading government securities and the methods of trading. Trading mechanisms can have a deleterious effect on interest rates especially when there is an attempt to control excess liquidity. In Trinidad and Tobago, for example, a problem arises when trading is given out to tender to commercial banks. Market analysts have suggested that one reason why the government securities are interest rate inelastic is because higher rates have to be offered to sell the securities which the commercial banks were not prepared to buy.

Generally, I think the entrance of foreign banks has been a positive thing for liberalising markets; it stimulates competition and the foreign banks tend to introduce new processes that help the market. However, in a situation of very aggressive management of excess liquidity, the situation arises where the banks are using much time and resources simply to evade reserve requirements, for example, and that can have a negative effect on the capital markets. At least, this is an inefficient use of time and resources simply to evade or counter every action taken by the Central Bank.

Implications for Least Developed Small Economies

*Carla Barnett**

Whenever I am in a room among my colleagues from Jamaica and Trinidad and Guyana, I sometimes feel thankful that I am still in the category of a least developed economy simply because the crises that we have had to deal with have not reached the proportions that have been reached in Trinidad and Tobago, Jamaica and even in Barbados. It is difficult to conceptualise the process that exists in Jamaica, of actually seeming to manage liquidity at such a micro level. The Central Bank of Belize is still at the level of managing liquidity on a weekly or monthly basis, dealing with the Ministry

* *Dr. Barnett is Deputy Governor, Central Bank of Belize.*

of Finance, working out their requirements for the next week or month, and simply being able to get by.

What is Excess Liquidity?

The question I want to ask first is why is excess liquidity a problem and when is it a problem? In Belize, we moved from low reserves and tight liquidity in the mid-1980s, to high reserves and excess liquidity by the end of the '80s. By the turn of the '90s, both liquidity and reserves had declined, but they are now increasing. For us, excess liquidity is a problem only in so far as it is sourced from domestic credit expansion as opposed to foreign inflows. The most important lesson learnt from Jamaica, Trinidad and Tobago and Guyana is that of treating the level of excess liquidity itself as the problem, rather than the impact that it will have. Tightening your liquidity to deal with the excess is tantamount to shutting down the real sector. It can be argued that if excess liquidity is high, reserves may fall, but some liquidity is needed in the system to fund the productive sectors which earn foreign exchange.

Managing Liquidity

The two most important options that we have for managing liquidity are the reserve requirements and moral suasion. Reserve requirements include cash reserves and liquidity reserves, which are reserves of securities and other assets. Liquidity reserves are treated only as a temporary measure. They are not used to solve the problem. It is recognised from the start that the problem is not monetary but fiscal. If the Central Bank has to offset fully the government's impact on the monetary system, the economy will eventually grind to a halt. To implement this approach, the Central Bank has to set very short-term targets. The policy change needs to be implemented swiftly and be sufficient to achieve the target. For example, liquidity requirements are increased by x percent to remove the "targeted" amount of excess reserves from the system. The one time change approach is based on the notion that frequent intervention is itself destabilising.

As regards moral suasion, all discussions should foster open dialogue in a spirit of mutual respect and cooperation. When an emerging problem requires a change in policy, the commercial banks are called in for discussions. Past experience suggests that adequate disclosure, and open discussion on the implications of no policy change, engenders cooperation.

Policy Instruments

Open market operations are of limited effect in our system as the amount of government securities that are available - about $70 million in treasury bills - would have little impact on the system as a whole, especially after you take into account the portion of these securities that commercial banks hold in their portfolios to meet reserve requirements. The size of the market is small and the number of participants in the market is really limited to the commercial banks and a few other institutions, so that the thinness of the market is a constraining factor. In Belize, because the source of the problem is fiscal in nature, it is difficult to suggest that government should intervene in the market by putting out more paper. Whenever there is a liquidity problem governments, in general, prefer to issue more paper to mop up the excess liquidity simply because it is a future obligation.

The development of the capital markets should not be embraced as an end in itself; rather, the development of the capital markets should have as its objective the development of the real sector. Issuing paper to develop capital markets invariably leads to money chasing paper and paper chasing money, and the feedback effect on the real sector is not going to be positive.

Global credit limits have not been used as a policy instrument but, in periods of tight liquidity, when the Central Bank wanted to ensure that export earners had adequate funding, discounted paper was provided selectively, and on a very short-term basis, to the industries that needed it. For example, when the citrus industry has difficulty accessing funds to bring in the crop, discounting through the banking system is encouraged.

Fiscal and Monetary Policy

There have been periods during which monetary policy was thought to be more important as central bankers and other times when government sought to stimulate growth at the expense of reserves. It is now recognised that fiscal and monetary policy cannot be separated. They have to be complementary to each other in a way that goes beyond ensuring that when the government proposes its budget, it should state the required domestic financing so that the central bank can inform it of the potential impact. That complementarity of effort should in fact inform the determination of the domestic financing component of the budget. Over the last several years, the Ministry of Finance and the Central Bank of Belize have worked very closely together in monitoring both the monetary and the fiscal accounts. That experience indicates that better solutions emerge which can be implemented together, and the public impression of there being differences of opinion between the central bank and the Ministry of Finance has been minimised. In small economic systems, it is important for economic agents to understand that the monetary authority and the Ministry of Finance are in general agreement about the state of the economy and the proposed economic policies, since perceived differences do affect both overall confidence in the economy and the credibility of government policies.

In conclusion, the protection of the foreign reserve position remains paramount because the key to economic health is a stable exchange rate. This is the principal lesson learnt from the experiences of the economies in the Caribbean. Whatever monetary and / or fiscal policies are proposed, the objective has to focus on real production and real export earnings, whether they come from services, from tourism, or from agriculture. As a central banker, this may sound strange, but monetary policy in Belize is nothing other than export production. That is the objective the Central Bank seeks to promote in the long-run.

Implications for High Inflation Economic Environments

*Colin Bullock**

I wish to congratulate Dr. Clarke on the excellent seminar we have had today. It has been intellectually stimulating and challenging, and there have been several ideas to follow up on in terms of management of the situation in Jamaica. My remarks on liquidity management are from the point of view of a high inflation economy.

Policy Lessons

Let me begin by stating that in the economies which are characterised as high inflation economies, that high inflation is not necessarily a function of the exchange rate regime. We need to look at what caused these economies to opt for flexible exchange rate regimes and at their history of fiscal expansion. Irrespective of ideology, or whether the exchange rate was over-valued, it remains true that the increase in public indebtedness led to a situation where these economies had no foreign exchange reserves and therefore, to a large extent, were subject to the dictates of multilateral lending agencies. So, the first message here is that for flexibility in policy choice, an economy must have adequate foreign exchange reserves. The second point to note is that the lessons of inappropriate liberalisation are well learnt. In other words, liberalising the foreign exchange regime without adequate macro-economic policy support, and without adequate legislation supporting the regulation of the financial system, can lead to an inflation/devaluation spiral, industrial unrest and wage inflation, which makes the disinflationary process more difficult. The end result, especially after years of specifying monetary targets which are not met, is the issue of macro-economic policy credibility. The critical issue is how does one regain that macro-economic policy credibility? It is clear that over-reliance or total reliance on monetary policy to the exclusion of fiscal policy has negative consequences. But if it is accepted

* *Mr. Colin Bullock is a Deputy Governor, Bank of Jamaica.*

that the problem is fiscal, then the question to revisit is what does the central bank do? How does it react to this situation, the underpinnings of which are essentially fiscal?

Our discussions so far suggest that liquidity management, however defined, appears to be simpler and less problematic in economies with a fixed exchange rate regime, where the currency is commodity-backed, where there is free convertibility and where there is limited government accommodation. In contrast, the liquidity management is more difficult with a flexible exchange rate regime, with an non autonomous central bank, and where the government has deposits in the central bank, the disposition of which is not under its control. In a liberalised economy with significant foreign currency deposits it becomes necessary to make a distinction between foreign currency deposits which are being held because of excessive domestic monetary expansion and foreign currency deposits being held for some other reason. But as far as monetary policy is concerned, if one has a relatively small open economy, is concerned about dollarisation, and wants to preserve the exchange rate of the currency, then the focus has to be on managing the domestic currency money supply; in other words, the central bank has to manage local currency liquidity instead of a global measure that includes foreign currency deposits.

Operational Approach

In Jamaica, the operational approach to liquidity management involves the daily monitoring of balance sheet items. The need for this level of detail is simply managerial. It allows the Central Bank to know on a day-by-day basis what factors are driving excess liquidity in the system and to be able to address the source. But there is a second, and perhaps even more important reason for daily monitoring. The Central Bank operates in a situation of low macroeconomic policy credibility because numerous targets have been announced, which were not met. Consider the situation where the government announces that its objectives are relative exchange rate stability and single digit inflation. In the public's eye, inflation is a monetary phenomenon and the central bank is responsible for de-

livering the money supply targets and maintaining price stability. The monitoring of daily balances is not only for internal management but it is also to inform the Ministry of Finance on a daily or on a weekly basis of what is happening to liquidity in the system and what are the factors that affect liquidity. Specifically, are liquidity movements related to the purchase of too much foreign exchange or the result of government cash operations? To the extent that the central bank is not autonomous, and has no control over government deposits, then it has to use whatever levers are available to effect the requisite fiscal management and fiscal support for its monetary policy objectives. In addition, the balance sheet of the Bank of Jamaica is published in the newspapers two times per month, and journalists have been informed of what elements in the balance sheet help to facilitate money creation. The high level of information dissemination fosters transparency and generates public interest in the money creation process. The jury is still out as to whether the financial journalists will in fact rise to the challenge of actually reading the balance sheet and making relevant commentaries.

Operational Constraints

In terms of central bank reaction to movements in the balance sheet, the central bank can react, for example, to base money growing too fast, within reason, by adjusting the rate of net international reserve accumulation. Government securities can be sold from its portfolio, or the central bank can undertake repurchase or reverse-repurchase agreements. If base money is growing too fast, reverse-repurchase agreements would be used, but there are obvious constraints, including interest costs and the imperative to make profits, to the management of the balance sheet. In other words, after several years being a loss-making institution, the ability to expand these stabilising measures is subject to remaining profitable.

As regards the selling of government instruments, there are constraints in terms of government cash flow and debt servicing obligations. In an inflationary environment, the market preference is for short-term instruments and there is a tendency to have a bunch-

ing of short-term government debt which puts pressure on fiscal resources in the near-term.

Another constraint to monetary policy relates to the potential instability of the financial system. In the absence of adequate fiscal support, a tight monetary policy with high interest rates can raise the probability of debt defaulting. The consequent liquidity problems which arise impact on the entire financial system and feeds back to the money creation process through the possibility of liquidity support for those commercial banks experiencing problems.

There is an additional constraint where there are foreign exchange flows into the economy. Can the central bank buy foreign exchange, and can it sterilise net international reserves if the foreign exchange is purchased, or alternatively, is the central bank prepared to allow the exchange rate to appreciate? Further, the capacity to reduce gross reserve accumulation is dependent on how much gross foreign reserves the central bank actually wants to accumulate.

In conclusion, let me comment briefly on the public and private sector nexus. Tight monetary policy affects real investment and real growth, and generates relatively high nominal and possibly real interest rates. High nominal interest rates are a cost to the central bank through the printing of money, creating an inflation tax, and to the public sector directly through increased debt servicing obligations, which eventually undermines the capacity of the government to deliver essential social and economic infrastructure. In an inflationary environment, private sector credit may increase but not necessarily be channelled into productive investment. Despite the high nominal interest rates in Jamaica, banking system credit to the private sector was substantially above the programme target last year, and the balance of payments current account deteriorated.

The Liquidity Management Challenge in Caribbean Economies

*Hyginus Leon**

All the economies of the Caribbean region are to some degree involved in a process of liberalisation, both in the real sector, foreign trade sector, and the financial sector, as well as in production and marketing systems, and this process of liberalisation is changing considerably the way in which central banks have to approach the question of monetary management. In some cases, the liberalisation process has been accompanied by new legislation for the financial sector and new legislation redefining the role or the modus operandi of central banks. If one is to judge from recent developments in some economies, several developments have occurred which place a great premium on how the central banks and the economic authorities as a whole seek to manage the liquidity of the financial sector.

This paper presents a summary of the main issues and debates which arose in the workshop, hosted by the Caribbean Centre for Monetary Studies, on the problems of liquidity management confronting Caribbean economies. It also proposes potentially viable solutions for future implementation within the region. The workshop included four main presentation sessions, followed by open discussions.

Summary of Presentations

In the first presentation, Dr. Blackman provides a conceptual framework for the discussion of liquidity managment and states that ideological paradigms of either the strict market-based non-interventionist or managerial-based interventionist perspectives ought to be avoided. He pointed out that liquidity depends upon the extent and the depth of the market and also on perceived risk by creditors. Second, the ability to generate liquidity depends on the exist-

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ence of markets and the requisite market conditions to facilitate intermediation. More importantly, a market is a social institution which operates in the context of constraints placed upon it by interacting agents. There is a need to focus on the market as an institution. The effectiveness of the transmission of central banking policy, therefore, is predicated on whether you have a market and how effective that market is. Implicitly, he argues that policies cannot be generic but rather have to be so crafted to reflect the individual peculiarities of the market in which one actually operates. The constraints within which one operates are : a) imperfect markets; (b) sluggish supply conditions, which generate inadequate investment; and (c) the openness of economies. On the basis of the fact that one ought not to concern oneself so much with absolute amounts of reserves but more so with the potential for capital movements, Dr. Blackman recommends a greater dependence on fiscal policy, selective credit controls and the development and integration of capital markets.

Measurement of Excess Liquidity

What seems to be missing from the exposition is the following question: How do we define and measure excess liquidity? The issue of excess liquidity is important since it is often forgotten that liquidity management also involves the management of excess liquidity. We take it for granted that because we are talking about liquidity management that we do have excess liquidity. Is it all funds in excess of the statutory cash reserve requirements, a loan deposit ratio greater than 85 percent, or a liquid asset ratio greater than 20 percent? What is the optimal cut off point and should it vary with the structure of the economy and with the current economic conditions? For how long should the stated criterion hold before it is obvious that an excess liquidity situation exists? For how long a period do we implement selective credit controls? And what are the impact and medium term implications of implementing them?

Most of us would concur on the disintermediation effects caused by the fungibility of money and, therefore, the potential ineffectiveness of selective credit controls. But, when you do implement

those selective credit controls, they generate a certain amount of dynamism depending on whether economic agents perceive them to be effective and on the credibility of the stated period. And what do we do in the post-implementation period? The question that arises is how do we measure the effectiveness of selective credit controls? In addition, if selective credit controls is a form of non-liberalisation, what exactly is liberalisation? Have we liberalised when we open only the financial market? Or have we liberalised only when we open both financial and the external accounts? Further, there is the issue of the optimal sequencing of various markets in the liberalisation process. So we need address how much liberalisation, in what sequence, and when do we implement?

The second presenter, Dr. Worrell, argued that central banks try to manage liquidity to avoid surges in expenditure that may cause deterioration in the balance of payments. However, whatever is done to mop up excess liquidity only buys time to undertake fundamental adjustment of fiscal imbalances, investment incentives and export strategies. Policy makers ought to really address imbalances at the source, either via the fiscal deficit or surplus, or by directly going to the balance of payments. Dr. Worrell makes several interesting observations: first, the discount rate has no effect on liquidity; second, open market operations do not solve the liquidity problem; third, global credit limits may only have a temporary effect; fourth, reserve requirements can at best be temporary; and finally, movements in indicator interest rates, which should reflect certain aspects of the domestic economy, may have to be sufficiently large to have an effect. It should be noted though that such large changes may have adverse repercussions on the economy.

Dr. Clarke's presentation addressed two critical concerns: the need to nudge financial markets, while simultaneously altering the real sector source of the problem of excess liquidity. He noted that the critical question to be answered concerned the identification of the root cause of the problem. If this issue could be addressed satisfactorily, then we would be in a better position to provide a long run solution or perspective, although certain short term measures may still be necessary to provide some respite. Whereas Dr. Clarke's

presentation raised important questions, he did not provide any answers as to what was the optimal level of excess liquidity. Instead he focussed on how to sterilise liquidity. His basic prescription is that we need to match changes in government cash flows and net international reserves, and to use intervention and sterilisation to transform liquidity profiles towards the long end of the market in order to generate investment. Issues of dollarisation and issuance of central bank debt to sterilise those excess liquidity amounts were discussed and the point was made that there was a need to separate the monetisation and debt management processes. Additionally, the policy maker ought to be guided on whether central bank debt or strictly government debt is issued according to: (a) the potential of creating high powered money, and (b) the effects of long-term and short-term future taxation. He emphasised that far too many short-term instruments were being employed in Caribbean economies.

Mr. Ramkissoon noted that there is a shift to allow interest rates, cost and profitability to influence the decision making process much more than before. Every policy action has a cost which can affect profit margins. There is a need to evaluate the effect of central bank policies on objectives of commercial banks and to quantify, in terms of reserve requirements, some tax burden that may be perceived as 'normal' by the commercial banks. In general, the authorities should implement policies that will create an environment that will generate demand for funds for investment in productive endeavours

Dr. Zephirin argues that the thinness of our markets limits the scope for open market operations. To generate a significant interest rate response, sizable changes in interest rates may be necessary. However, these large changes may destabilise the system that one is trying to influence. High interest rates have a greater impact on investors. Whereas consumers will borrow at high rates, investment decisions may be postponed or cancelled, not because of their lack of merit, but in reaction to monetary policy aimed at solving a fiscal problem.

Dr. Barnett raises the issue that the level of excess liquidity *per se* should not be seen as the critical problem; rather, one should be more concerned about the impact of the specific policies, aimed at neutralising that excess liquidity, on the real sector. Attempting to fully offset the impact of government fiscal laxity on the financial system can literally bring the real sector to a halt. In fact, the development of the real sector should be the underlying objective of both monetary policy and the development of capital markets. A necessary condition for the implementation of balanced growth policies is adequate disclosure and open dialogue between the central bank and the fiscal authority to foster an environment of mutual respect and cooperation.

Mr. Bullock notes that liberalisation without adequate macroeconomic support and financial sector legislation can lead to an inflation/devaluation spiral and industrial unrest. After years of specifying monetary targets that are not met, there emerges a lack of policy credibility. In this situation of low credibility, there is need to undertake continuous monitoring of balance sheet items and to encourage information dissemination to produce policy transparency to economic agents.

In the addendum paper, Mr. De Silva and Dr. Hilaire provide a summary of the experiences of monetary policy in Trinidad and Tobago, the latest economy in the Caribbean to shift to a regime of flexible exchange rates and capital mobility. They argue that, with capital account liberalisation, the ability of asset holders to transact foreign currency instruments meant that interest differentials between Trinidad and Tobago and the rest of the world became very important. Monetary policy has had to be fashioned to suit the particular circumstances of the country. In particular, significant structural conditions that have influenced central bank policy include the importance of the domestic budget deficit, the growing potential for interest differentials to determine capital flows, the dominance of commercial bank financing in Trinidad and Tobago, and the role of the exchange rate in domestic price determination. The switch from a fixed to a floating exchange rate and full capital

mobility has provided major challenges for monetary policy. While much has been learnt during the last three years, there are still major issues that are likely to emerge as market participants become more innovative and internalise the lessons of the recent past.

Selected Issues

Liquidity

The necessity for liquidity management arises from the nature of our currencies in the money spectrum. The more commodity-based currency you have, the less liquidity problems you have. As one moves closer towards commodity money, domestic and international liquidity are almost equivalent and the need to practise domestic liquidity management is less because there is almost automatic equilibrium between the demand for and supply of liquidity. Further, to have a market-based currency, you have to have a very reliable productive system so that economic agents both know that you can produce goods and are prepared to hold your currency as a store of value.

It is reasonable to assume that most of the observed liquidity originates in earnings of the foreign sector and in capital investments. There seems, though, to be an additional source of liquidity (monetary flows) that does not generate a higher permanent level of liquid balances in the commercial banking system, for the simple reason that it has a great deal of mobility. Consequently, the financial institutions are not free to treat them in the same way as they treat liquidity arising from exports of oil, sugar, or entertainment services.

In a liberalised market environment, it is important to focus on the potential of capital flows. Thus, the rule of three months import cover is probably irrelevant. The question that emerges is can our economies hold sufficient foreign exchange reserves to guard against large capital outflows? For example, the level of international reserves that Mexico would have had to hold to guard against the outflow that occurred in late 1994 would have been phenomenal. And given the fact that it is expensive to hold international reserves, we ought to consider what would be an optimal level of reserves that would be needed to guard against large unexpected capital outflows.

Selective Credit Controls

Selective credit controls were recommended for special pockets of liquidity and it was argued that the tools used would depend on the state of the market. As markets get better and more developed, more sophisticated tools can be used. And as the country develops the state should withdraw and let the market do as much of the allocation as possible. The market is a tool and policy should be aimed at making the market work for us. In fact, selective credit is practised even in the United States, but it is done through the market.

Selective credit controls do not have to be limited to the listing of priorities for credit issued by the government and the central bank. In different contexts, strategic alliances between the operators within the state, the financial sector and the real sector, have worked out relationships in which the state, given guidance, was able to infuse direction in the process of credit and the accumulation of capital in the countries concerned. If we accept that financial variables are only important as they impact on the financial sector, then the question is not whether liquidity is high and demand is low, but how to ensure that liquidity is allocated to productive investment. Barbados, for example, had a whole structure of selective credit controls for many years, and it has been argued that the only thing they did was to encourage the growth of credit unions, because credit unions were not subject to them. Households simply moved their funds to other financial institutions where credit was available on the terms that they wanted.

The notion that credit drives expenditure and that if liquidity exists then somehow there will be spending is spurious. The motives for spending have nothing to do with liquidity. The problem confronting the Caribbean revolves around the incentives for investment. If investment is encouraged then most economic problems may be resolved.

Anomalies

We know from practical experience that we do not have the atomistic decision-making process of the perfect markets of the text books.

Further research is needed in examining the impact of the structure of firms in less developed economies in implementing economic policies in the region. It is quite possible that because you are successful, for example, in getting investment inflows for infrastructure development on a large scale and because all of those inflows are not being used on imported goods for infrastructural development, then there may be a build up of liquidity. However, this is not a cause for concern because expenditures are supported by the total earnings plus your long-term capital inflows. Focussing on liquidity will surely be counter-productive.

There is a willingness to seek external assistance, and an almost obsessive pre-occupation with ensuring the balance of the balance of payments without taking into account the real transfer of the resources which are involved in that type of policy of foreign borrowing. In fact, a persistent deficit may be required to permit the effective transfer of goods to the economy.

Disintermediation

Another issue is the impact of global credit limits and the combination of cash and liquidity reserves on disintermediation. For example, credit limits do not stop a commercial bank from arranging a deal between a willing depositor and a debtor. And that transaction does not appear as the creation of credit. Bankers acceptances, which have no reserve requirements, are another example of disintermediation. Further, the imposition of reserve requirements may generate developments in the industrial organisational structure that were not only unanticipated and but even undesirable. For example, higher reserve ratios on commercial banks encourage debtors to go to merchant banks, and when you impose similar restrictions on the merchant banks they go to building societies, and when the building societies are similarly restricted other institutions or mechanisms will be sought to provide the desired credit. In essence, reserves ratios are a tax on the private sector and economic agents will seek to avoid them. Thus, as reserve ratios are equalised across institutions, households move through the spectrum of financial institutions and various commercial paper instruments as they seek a means of avoiding taxes and meeting their portfolio needs. Reserve ratios above what

could be considered prudential levels may, in fact, be ultimately ineffective.

Discount Rate

Whereas commercial banks do not use advances or overdrafts long enough for the discount rate to be effective, the impact depends on the health of the financial system. In an inflationary environment, as macro-economic stabilisation is initiated, financial institutions may find that, despite adequate collateral on their loans, those loans may not perform well in the context of stabilisation. Indeed, the financial institutions may need to use central bank support for protracted periods. The problem is that, whereas a high discount rate tends to be punitive and discourages the use of advances, financial institutions may have no recourse but to continue using this type of credit. The central bank may find that it may be forced, in such situations, to even recapitalise interest as additional loans. If financial instability leads to financial crises within the financial system, then there exists an unmanageable liquidity situation. As such, every effort should be made to manage the financial system so as to avoid the risks that would generate such a problem.

Open Market Operations

Open market operations only work if they motivate a switch from real expenditures to holding financial assets in the short term. Initially, if interest rates rise but are expected to fall thereafter expenditure decisions may be postponed. However, consumption and investment decisions are not likely to be significantly affected by small movements in the interest rate.

Should open market operations be conducted through government paper or central bank paper? If the central bank issues its own paper there is a cost implication which may conflict, at least in the public view, with the mandate to remain profitable. Issuing paper at high interest rates creates high powered money which, if continued, will mean that high powered money will eventually replace "ordinary" money. It is arguable that any sum of financial assets that gets sig-

nificant should really come under the control of the central bank. In fact, in small economies, some of those funds should be invested abroad and that would simultaneously take some liquidity out of the system. An advantage of this approach is that control would be maintained through authorised dealers and, in particular, pension funds which would have been invested in domestic investments would be valued in foreign exchange. On the other hand, issuing central bank paper helps separate the objectives of monetary policy from financing the budget, and provides greater capacity for effective sterilisation, since the government would not have control of the proceeds.

Information Flows

The Central Bank in conjunction with the Ministry of Finance, need to monitor, at least on a weekly basis, the government's cash flow position and, given the current state of information technology, there is no reason why the government should not know its cash flow position on a daily basis. Similarly, the central bank should obtain intelligence on commercial banks operations, for example, the seasonality of currency demand. Experience suggests that very often the portfolio management and the cash flow forecasting of many commercial banks are not notably different to that of the government; very often the commercial banks themselves are surprised by their losses in the clearings or their need for overdrafts. It is clear that there is need for greater monitoring, data analysis and forecasting for the effective management of the balance sheets of these institutions. In a liberalised environment, there is a need for more informal and direct approaches to information gathering. Some of these information flows, for example, exchange control data, would previously have been collected by the central banks.

Sterilisation

Dealing with sterilisation and the management of liquidity by the central bank forces us to realise that we are in the realm of the 'second best', with considerations of trade-offs and hidden costs. The issue that arises is whether the government should assume respon-

sibility for the quasi-fiscal costs that accrue to the central banks from the issue of securities for servicing the sterilisation effort. The choice between conducting operations through government debt and conducting operations through central bank debt should be informed by the potential impact of the high powered money created in the process. The central bank pays the interest on its debt through money creation; the interest cost of government securities are covered through future taxation. Whereas central bank paper withdraws liquidity from the system, government paper may add liquidity subsequently to the system. Central banks are not the only institutions capable of sterilising inflows. In the Organisation of Eastern Caribbean States, for example, there is no surrender requirement to the Eastern Caribbean Central Bank. The burden of sterilisation falls on the commercial banks, and they can do so at less cost than the central bank.

Special deposits, in the case of Trinidad and Tobago, are a form of central bank paper. They are used mainly when the commercial banks have excess funds and no treasury bills are available. Although the rate of 4 percent is below rates abroad, they serve the purpose of smoothing out the differential between lending and deposit rates in the absence of other higher yield instruments. Further, under floating exchange rates, there is the additional cost of currency risk that may offset the slightly higher foreign rates available.

One of the shortcomings of the debate on sterilisation is that we seem to focus only on the central banks. If the sterilisation process is to work we need to incorporate the implications for the portfolio behaviour of financial institutions, firms and households. From the perspective of the financial institutions we must look at the concepts of both margin and liquidity in their asset liability management; from the firms and households perspective, we must look at the capacity to absorb adverse budgetary impacts brought on by the reaction of financial institutions to central bank policy. Financial institutions, in managing their portfolio have to shift between assets which the central bank and the government are offering, and cash and credit to firms and households. Changes in lending and deposit rates will affect, to some degree, the decisions on real expenditures in the

economy. What we want to avoid in the sterilisation process is switching between assets that have the same liquidity characteristic. If you are going to switch and if the instruments are going to be used for sterilisation, you should be switching from a short-term asset to a long-term asset. This transforms the maturity of savings from short term to long term, and creates opportunities for longer term investments through secondary market transactions.

It is not unusual for financial institutions to carry long term investments that are funded by short term maturities of one year or less. But there are risks inherent in that strategy and part of their financial management strategy, for a given amount of risk, is to manage the maturity profile of the balance sheet to meet operating objectives. The implication for monetary policy is that the effect of liquidity sterilisation will depend on the degrees of freedom available to alter the asset and liability sides of the balance sheet to maintain the desired profit margin, and the capacity of firms and consumers to absorb the cost of such changes.

It is not necessary to monetise all capital inflows into your system and we ought to be a little more creative in ensuring that not all currency inflows get converted into our domestic currency. Thus, only a subset of the net inflows would be monetised at any one point in time, with beneficial effects on the capacity to sterilise. Sterilisation is a complex issue and will not only involve the issue of securities via open-market-type of operations, but also will probably embrace reserve requirements and other kinds of interventions that induce institutions to mop up the excess inflows. Further, financial institutions, firms and households could be induced to invest their funds abroad.

Pension Funds

Most economies have significant national insurance funds that are not controlled by the central bank and can be deployed in the banking system almost at any time without any necessary control or supervision by the central bank. In some instances, movements of large block of funds from one bank to another based on interest rate considerations, can cause problems for some commercial banks. There

is need to explore the use of these pension funds for productive investment.

Foreign Currency Accounts

Three issues arise in the consideration of foreign currency accounts. First, to what extent do their growing size affect monetary policy? Second, what is the level of substitution between foreign currency accounts and domestic accounts. Third, what are the motives for holding foreign currency accounts? Current indications are that these accounts are used mainly as service accounts for export-oriented companies and as travel accounts for individuals. That precautionary motive is indicative of an implied hedging strategy that masks basic uncertainty about or lack of confidence in the availability of foreign exchange on demand. Foreign currency deposits do not have reserve requirements but there is a 25 percent liquidity requirement in Trinidad and Tobago, for example; further, these deposits incur no taxes, to provide an incentive for capital inflows. It seems ironical that we can encourage foreign inflows by no taxes and no reserve requirements, and yet lament the low levels of domestic savings when earned interest on domestic deposits are taxed and banks have to meet reserve requirements, in some instances, of 25 percent.

Economic Policy Credibility

It is probably fair to say that close collaboration between the commercial banks and the monetary authorities has been one of the reasons for the relatively low inflation rates, stable financial indicators and relatively healthy balance of payments observed in most economies. Moral suasion and central bank independence both relate to professional competence. Central banks need to be able to advise governments, publish independent assessments on the economy, and to be politically responsible in the public perception. The central bank and the authorities who set up central banks should provide the resources to establish this professional competence, so that in the public's mind and in the perception of domestic and foreign institutions, when the Central Bank declares on a matter, it is deemed to be credible. In the case of moral suasion, the central bank has to net-

work the financial sector, the private sector and other non-governmental organisations, canvass ideas and display some sensitivity to the needs and constraints of these institutions. What is needed is to have certain degrees of freedom, based on professional competence, and specific rules, both legal and informal, that allow the development of certain policies and ensure their implementation. This notion of professional competence probably can form the basis on which to measure the performance of a central bank.

As regards policy credibility, we need to consider economic policy credibility, in general. The public does not compartmentalise the system in terms of macroeconomic policy, fiscal policy or central banking policy. If one part of the economic policy system is not working properly, or is not credible, then all other parts become suspect in the eyes of the public. For example, interest rates cannot credibly be lowered until expectations on inflation and the exchange rate change. Part of the high interest rates, no doubt, is due to aggressive monetary policy, but part is due to credibility, in terms of public expectations.

Degree of Policy Effectiveness

On the basis of the above presentations, we can argue as follows: that economic agents, households and firms, seek basically to: (a) avoid, evade or minimise the effects of the imposition of central bank controls, and that whatever those agents do depend upon the health or the ultimate structure of the financial system within which they operate. Therefore, what we are getting is a notion of optimisation subject to a broad set of constraints within which economic agents actually operate. In as much as the households and the firms form a sort of symbiosis that constitutes the macro system, then this signals the need for a more holistic approach to the measurement of government policy.

What needs to be done is to link the macroeconomic impact of central bank operations to the microeconomic effects of risk management of commercial banks and households. In essence, commercial banks and households must attempt to minimize or manage

risk. In particular, the commercial banks undertake asset liability management by matching their asset and liability profiles to avoid a negative impact on the profit margin. Whereas for households it is the fungibility of money, for commercial banks it is the fungibility of asset-liability management that ensures that the bottom line remains unaffected. In the asset-liability management process of the commercial banks, one may find a multiplicity of responses that may be consistent with the policy stance that the central bank proposes. How much of a policy change is sufficient to get the desired response? Small changes may not generate the desired effect but yet sufficiently large changes, may de-stabilise the system that one is trying to influence.

What then might be an appropriate framework to examine the above issues? The point was made that there is a fundamental mis-match at the moment between the development of financial and real sectors and that liquidity, obviously, is not being allocated to productive investment. What is needed is a theory of dynamic policy implementation. There are three basic components we need look at. The first is the issue of time. The second issue is the notion of institutions, and third is the relevance of uncertainty.

As regards time, we need ask three questions: "how to do it?", "when to do it?", and "for how long to do it?". We can address these in three ways, namely: the time horizon of implementation; the timing of the implications of implementation; and the initial position from which we undertake the implementation. The time horizon of implementation will allow a measure of the effectiveness of what is being implemented. A policy may be effective over the long-run but ineffective or even adverse over the short-run. Conversely, it may be effective in the short but not in the long-run; if I decide to evaluate that policy over the medium rather than short-run, then can it be said that the policy has failed? Obviously not. The results of implementation are obviously linked to the uncertain lags in the transmission process of policy, and the trajectory of change following implementation depends on the state of the economy when the policy was implemented. If objectives and time horizons are sufficiently delineated and well articulated, and if one

knows exactly when to implement, then one has a better measure of how to gauge whether the particular policy was correct or not.

As regards institutions, we need to look at the state of the market, that is, whether markets are functioning and their overall effectiveness. In addition, the wider issues of society and cultural influences and the observability of impact effects need to be considered. How quickly can we observe the effects of the instruments being used, and can we even fully observe these effects? In a liberalising environment, relationships which may have informed policy decisions may no longer be predictable due to structural change in the economy. For example, velocity of money may be more difficult to predict, and the increase in the demand for broad money may not necessarily imply an increase in future inflation. Similarly, the behaviour patterns in the real sector - for example, integration of the informal economy into the formal economy - and the financial sector - due to increased competition and advances in technology - may alter due to liberalisation.

Uncertainty deals basically with two concerns. The first concerns insufficient knowledge about the transmission mechanism. Further, there is also a large knowledge gap as regards the length of the policy horizon, how long before the policy takes effect, and whether the effect is uniform over the entire horizon. Notwithstanding the fact that the transmission mechanism is complex and that changes in interest rates may not be very effective, should policy be focused on intermediate targets or a final target for, say, inflation? Second, one has to contend with the perception of agents, which concerns not only risk but also how agents perceive past, present and future events, and how they react to changes that are taking place. This issue leads naturally to the notion of dynamic policy.

I want to be a little provocative and make a claim that it is almost impossible to have absolute effective government policy. The first guiding principle is that the macro economy, as with all macro systems, must be a reflection of the micro units that comprise the macro system. The second guiding principle is that everything is forever

changing, but we do not know where that change is leading. So every decision we make is in the context of change and uncertainty. How we react to change and uncertainty is related to the amount, timing and credibility of the information available, our preferences towards risk and opportunity, and the other internal and external influences that limit the acceptable set of decisions. A third principle is that economic agents almost always seek to improve their well being, subject to a variety of constraints.

When an economic agent makes a decision it is always within the context of a moving target. For example, I have an objective, for which current constraints dictate that I make decision X. In the course of the time horizon within which I am operating under decision X, the attendant conditions change. As a result, I modify my decision to Y. When I modify my decision Y, my objective target may have changed, and there will be a new set of circumstances that influence that which I do. So in my effort to optimise, I revise not only my target, but take into account the changed conditions to alter my decisions to reflect that continuously changing set of conditions. At the aggregate level, some of these micro changes may cancel out and some may exaggerate the total effect. In the absence of the magnitude and timing of the aggregate macro effect, it seems reasonable to hypothesise that, because of the complexity of managing change within the overall system, it will be very difficult to find a policy that will counter exactly those aggregate micro decisions in both magnitude and timing.

Since this process depicts not only individual agent behaviour but also government decision making, we may therefore ask, "Is it at all possible for governments to effect that fine method of optimisation and at the same time generate **absolute** effective government policy?" The answer to that is clearly no. Surely not in the short-run. At most, we can hope for some degree of effectiveness and that should be the benchmark by which policy effectiveness should be judged. Is effectiveness attainable in the long-run? It might to some degree if we can focus clearly on long-term goals and guidelines, which relates to the issue of policy credibility. Clearly there must be minimalist intervention to avoid sizeable

variations in perceptions and decisions of individuals. Furthermore, we must have broad regulation to avoid agents acting contrary to stated rules and guidelines, and there must be efficiency in the working of markets, the dissemination of information flows and the transfer of expertise. If those requirements are not attainable in the long-run, the degree of effectiveness may be reduced. However, it is almost certain that our efforts cannot be guided on a short-run micro management basis. Rather, what seems to be required is stability of a "long-run position" rather than absolute fixity. Within that notion of stability, we need also to consider how to manoeuvre with minimal change to generate the desired degree of policy effectiveness.

A POSTSCRIPT

Liquidity Management and Monetary and Financial Integration

*Laurence Clarke**

Consistent with the thrust of the arguments in earlier chapters, one of the reasons the question of liquidity management must assume growing importance to emerging economies like those in the Caribbean, relates to the potential direct and indirect impact that this activity could have on the process of monetary and financial integration. For this reason, this closing note attempts to focus, in a preliminary way, on a few elements of some possible linkages between liquidity management and the wider aspect of monetary and financial integration in emerging economies.

External Integration

The process of monetary and financial integration could be viewed at two broad levels - (a) external to the economy, that is, integration of an existing economy with other neighbouring or satellite economies, that may or may not be integrating in other ways (for example, the CARICOM region), or integration of the domestic structures with wider international systems; and (b) internal to an economy (that is, among sub-sectors at the domestic level). As is well known, monetary integration does not necessarily imply financial integration, although usually the former occurs before the latter or, at a minimum, they evolve simultaneously. What is however essential, especially in respect of external integration, is some measure of exchange rate stability and some degree of liberalisation of the economic environment, that is, the total absence or limited availability of exchange controls, especially on capital transactions.

Factors to Integration

It is common cause that a few key factors have typically influenced the degree of success or failure at monetary and financial integra-

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tion efforts, especially when these more broadly apply at the external level. These include, firstly, what is often called the "incompatible trinities", that is, the irreconcilable relationships between capital flows, exchange rates/control mechanisms and the domestic money supply. There is little question that the management of liquidity is acutely influenced by all of these three variables. Capital inflows monetised and not properly sterilised will cause domestic liquidity to build up; sizeable outflows will tighten liquidity. The money supply will be influenced in both cases. Movements either way will put pressure on exchange rates, especially in fiscal regimes. Yet, it is the degree of capital mobility in and out of a given economy which is a key barometer to the degree of monetary and financial integration of one economic system to another. There is also total consensus that stability of exchange rates matters in large measure in such a process.

A second factor of importance to the integration effort is the optimal degree of geographical coverage for any economic system, that is, the optimal currency area, be it influenced by factor mobility, openness of an economy, quantum of product diversification, inflation or other aspects of policy. The nexus between liquidity management and this facet of integration is stronger, the greater the degree of other forms of integration that may exist. In general, though by no means always necessarily so, the larger the currency area, the greater may be the opportunities for integration synergies and for the development of mutually reinforcing policy support activities. This is particularly true of financial structures that are typically diverse, in terms of the levels of their development and of their complexity. One aspect that emerged from the earlier discussion on the operational facet of liquidity management was the potential, in environments with full or partial currency convertibility, for cross-border sterilisation activities. *Country A, in chronic liquidity surplus might wish to structure repurchase or reverse-repurchase agreements with Country B, in temporary or chronic liquidity deficit, hence broadening the options for effective sterilisation activities.* The more integrated countries are, the easier these may be, especially if there is a common currency in use and, therefore, little or no problems of exchange rate differences between given economies. Moreover, the

degree of existing independence or interdependence of monetary and fiscal policies under any type of exchange regime, will also influence the effectiveness of sterilisation efforts by any one or group of players within such an integration arrangement. In this context, therefore, the management of liquidity could enhance the integration effort, while the very nature of the integration 'status quo' could in turn influence the effectiveness of policy measures aimed at sterilising, or otherwise expanding, liquidity flows at the domestic level.

Payments Systems

Fundamental to all of the above is the question of settlement or payment mechanisms, and the extent to which financial integration is adequately facilitated by, or facilitates all of these - at the micro-individual firm level (that is, local bank clearing systems) or at the macro-level (that is, international/external transactions vis-à-vis the rest of the world) - both within the money and equity markets. The more developed and sophisticated the payment systems, the less likely is there to be adverse impact on currency demand and velocity of circulation of money, with or without problems of liquidity. Large floats or uncleared effects in the banking or equity markets are symptomatic of structural market or payment weaknesses. Situations of expanding excess liquidity or tight liquidity, can exacerbate fragile positions of intermediaries in the systems, partly because of problems of moral hazard. This could be particularly costly for cross-border transactions, where the benefits of technology today have given rise to capabilities for massive movements of funds almost instantaneously. Inadequacies in domestic payment or settlement systems could present serious bottlenecks to efficient liquidity management, given the trends in capital markets theses days. The efficiency or movements in and out of securities that may be a hall-mark of effective liquidity management, could be jeopardised through inefficient clearing arrangements.

Foreign Currency Accounts

Much discussion took place in the earlier presentations of this publication, on the role of foreign currency accounts (FCAs), both in

terms of their currency substitution characteristics and their wider economic and political import (the credibility issues for such currencies at times). But to the extent that foreign currency accounts become an increasingly large variable within or outside of the domestic money supply stream, their mere presence represents an active manifestation of monetary and financial integration of a foreign economy within a local one. Over time, there must be clear convergence of domestic and international asset prices and yields, the greater the degree of build up of these FCAs.

But it is also common cause that this is precisely one way of reducing the impact of massive trade or investment-induced flows into the domestic economy. There is also broad consensus that this form of sterilisation could unquestionably give rise to a greater role for, and in the use of, alternate instruments for the management of liquidity by agents other than the monetary authorities. The use of back-to-back and other forms of financial swaps by commercial banks in hedging their foreign currency exposures, for instance, reduces the pressure orthodoxy placed on central banks and monetary authorities, in their often socially and privately costly efforts at liquidity management (that is, arising from their use of open-market-types of operations and reserve requirements).

Yet, there is no question that, to a large extent, a key determinant of the liquidity management/monetary-financial integration nexus is the source of the surplus or deficit liquidity. This is particularly true for excess liquidity situations driven by fiscal deficits, as opposed to major inflows of foreign receipts. Typically, economies in budgetary imbalances will be short on international reserves with concomitant weak exchange regimes. Problems of excess liquidity, in such cases, would normally not be soluble by external sterilisation through cross-border investments or other means, owing to the likely dearth of foreign exchange or national reserves. In this case, a liquidity crisis could probably be addressed only by more conventional instruments, many of which would be blunted either because of the quasi-fiscal costs attached to the issue of securities, or for some other reason. In these cases, the process of integration could well be stultified, as traditional monetary mechanisms may

be suspect. Fiscal instruments designed to enhance the transmission mechanism of monetary signals through to the real sector of the economy may provide far better prospects. The link, therefore, with liquidity problems driven by fiscal imbalances is much more tenuous.

Internal Integration

A word should be said on internal integration, that is, a rationalisation and harmonisation of fragmented domestic submarkets, instruments, institutions, systems and technology. Here the jury is still out, as experiences have suggested that the impact could be both potentially negative and positive. Studies in East Asia, in particular, have suggested that in situations of acute liquidity problems, there could be disintermediation from banking-type institutions to their near substitutes, non-banks. This appears particularly true with the use of reserve requirements but even more so for open-market-type operations. In effect, fragmentation is enhanced. This would be clearly anti-integrative. *Yet, there is a growing body of practitioners, both at the level of monetary authorities and players in capital markets, which recognises the potential for term maturity transformation and for switching from typically short-term liquid instruments, to longer term paper demanded by non-banks, especially insurance and pension entities.* The experience in the Philippines, Singapore and some Latin American countries (for example, Chile) would suggest that, through success and more active roles by monetary authorities, liquid assets lying relatively dormant in private banking systems or central banks might be recycled through longer-term intermediaries, for ultimately more efficient productive use. The activities of home mortgage banks or other secondary market mechanisms are related examples of how excess liquidity, or more likely tight liquidity situations at the primary level, usually of banking systems, could be absorbed by, and sterilised or channeled through, capital markets with the desirable potential also for re-liquefying the primary market. Over time, this would have the positive effects of market-based yield curve generation, spanning significant term periods, while enhancing pricing and management efficiency in domestic markets. This could, in turn, represent the

foundations for more positive monetary and financial integration over time in local economies.

In sum, even if one assumes that no active role needs to be adopted by policy-makers in liquidity situations in economies - a view to which I do not subscribe - the very nature of 'auto-pilot' adjustment on the monetary policy side as is argued, will in fact over time contribute to external as well as internal financial market integration. Active management will certainly deepen and hasten these forms of integration.

Implications for the Caribbean

At the end of the day, however, what does this all mean for the Caribbean? The following may be indicative:

(a) Individual economic managers need to be clear, based on empirical experiences, as to what constitutes the key source of excess or deficient liquidity at given periods of time. Indications, for instance, are that influences in Jamaica, Guyana and Suriname, are largely fiscal; in most OECS countries this may not be the case. Identification of the principal sources will be critical if management of these liquidity situations is to be successful.

(b) It would appear that, already, different responses are evolving between fixed exchange and flexible exchange rate regimes in the Caribbean, in so far as the management of liquidity goes. This may, among other things, present problems in efforts towards economic convergence, although divergence/convergence of policies does not necessarily have to infer divergence/convergence of performance.

(c) At a time when currency convertibility is almost a full reality in the Caribbean, and efforts at monetary and financial integration are intensifying, new cross-border techniques for supportive efforts in liquidity management must be more aggressively examined and structured. This is all the

more potentially workable given the clear patterns in surplus/deficit liquidity economies in the region.

(d) The desideratum for Caribbean economies is movement towards both external and internal integration of monetary and financial systems. This means, among other things, that liquidity management techniques that would induce disintermediation from one segment to another, within local financial systems are probably not the ideal. Both banking and equity markets should be influenced by policy tools.

(e) The central banks of the region will need to be more creative in their efforts to not only better manage liquidity but, in the process, to ensure that the non-banking system is more integrally involved. *The creation of appropriate liquidity mechanisms to rediscount, and ensure access to liquidity at all times by longer term holders of paper, will be a necessary challenge for central banks.* This is particularly important in the sense that the full impact of open-market-type operations might be impaired, if transactions are limited to the monetary system (that is, central banks and commercial banks). Any capital market type institutions would certainly be more efficient.

(f) As was noted earlier in this publication, liquidity management by itself, using monetary instruments would not influence spending decisions in a major way, especially given the generally thin nature of Caribbean capital markets. It will require simultaneous policy efforts to deal with real sector inadequacies, and enhance the effectiveness of the monetary transmission mechanism in economies. In the Caribbean, this is particularly important, as although most economies are in fiscal balance, many of the larger ones (Jamaica, Guyana and Barbados) are not. Efforts to correct such imbalances using fiscal policy are therefore critical and must be used in conjunction with monetary tools. In this way, sounder liquidity management could be attained, and among other things, underpin the wider economic integration effort now underway region-wide.

ADDENDUM

Monetary Policy Under Flexible Exchange Rates and Capital Mobility: Trinidad and Tobago Since 1993

Charles De Silva and Alvin Hilaire[*]

The shift in April 1993 from a fixed to a floating exchange rate regime together with liberalisation of both the capital and current accounts brought major challenges for monetary policy in Trinidad and Tobago. The ability of asset holders to move in and out of foreign currency instruments meant that interest differentials between Trinidad and Tobago and the rest of the world became more important. Monetary policy had to adapt to an environment where domestic financial activity is much more sensitive to international developments. In the three years of experience with the new regime, many new challenges have already surfaced and some issues are likely to take on even greater intensity as market players become more innovative and aggressive.

Capital Account Liberalisation and a Flexible Exchange Rate Regime

Theoretically, under certain simplifying assumptions for an open economy with fixed exchange rates, an attempt by the monetary authorities to increase or decrease the domestic supply of money is ultimately ineffective. Under a flexible exchange rate regime, the exchange rate would adjust (depreciate) to keep the balance of payments in equilibrium. Therefore, the initial increase in the supply of money is not reversed, and so the Central Bank action can determine the level of the money supply. There are also differences in the two regimes with other shocks. For example, an international development such as an expansion of world real income raises domestic income and lowers domestic real interest rates under fixed exchange rates, but, in the steady state, it has no effect on interest rates and real

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income in a flexible exchange rate economy. This is due to currency appreciation in this latter case.

In either exchange rate regime, the results may be significantly modified depending on the extent of capital mobility. The larger the mobility, the more would interest rates be tied to the international markets and hence the less room for policy that is based on varying domestic interest rates. Once there is significant mobility, domestic interest rates would approach international levels, given considerations of expected currency depreciation and a possible premium based on assessments of risk.

In practical terms, consideration must be given to institutional, behavioural and administrative features in relating these theoretical results to a particular country. With regard to the exchange rate, for countries that have flexible regimes, many of the features of the fixed rate system may be preserved if there is nominal exchange rate targeting. The general case is, in fact, that countries with floating currencies are not neutral to the level of the exchange rate, and do not leave the rate solely to market forces. With respect to capital mobility, transactions costs and lack of information may inhibit the degree and speed of capital movements across borders. Importantly also, in the early period following capital account liberalisation and the adoption of a floating currency, behaviour in the financial markets is likely to be influenced by caution, inertia, and possibly some fear of policy reversals. Depending on the experiences in the period, behaviour is likely to change, a phenomenon for which monetary policy must be acutely aware.

Principal Monetary Influences in Trinidad and Tobago

The initial conditions in Trinidad and Tobago at the adoption of a floating currency encompassed an economy largely dependent on petroleum exports, and public policy that was in a strong liberalisation mode. In 1992, the petroleum sector's share of the nation's Gross Domestic Product was 24%. Following two successive Standby Agreements with the International Monetary Fund between 1989 and 1991 and a Structural Adjustment Loan with the World Bank, trade

policy was being conducted under a formal sequence of liberalisation. Pervasive quantitative import restrictions were being progressively removed, and substituted by temporarily higher tariffs, while agreement with the rest of CARICOM also meant a stepping down of the Common External Tariff. The government was envisaging a smaller role for itself in the economy, through the divestment of state enterprises, and the central bank was moving away from selective intervention in credit markets, while strengthening its prudential powers.

Several characteristics of the Trinidad and Tobago economy informed the central bank's policy prior to and subsequent to the floating of the Trinidad and Tobago dollar. These include the link between fiscal decisions and the monetary aggregates; the relation between domestic and foreign interest rates and the potential effect on capital flows; commercial bank behaviour relative to Central Bank policy; and the sensitivity of the private sector, in general, to financial market developments.

The potentially stimulative effect of an overall government budget deficit on an economy is generally well understood. In an oil economy like Trinidad and Tobago, however, the more appropriate concept is the domestic budget deficit, that is, one that is focussed on the net amount the government injects into the domestic economy.

With significant capital controls before April 1993, the domestic money market was fairly well insulated from international developments. Domestic interest rates generally moved to equilibrate the local money market, quite independently of what was happening externally. The liberalisation of the capital account subsequent to 1993 has made the interest differential between Trinidad and Tobago and the rest of the world a more relevant concept to portfolio investment abroad. Although there has not been a great surge in foreign portfolio investment, it has implications for monetary policy depending on the potential magnitude and speed of transfers. Such capital outflows can cause currency depreciation, leading to domestic inflation and in the absence of sterilising intervention, huge inflows can also lead to real exchange rate appreciation which can reduce the profitability of exporting.

Commercial banks dominate the financial system in Trinidad and Tobago. Most of the private sector credit is provided by the commercial banks and, in fact, the primary source of business financing is bank overdrafts. Thus, Central Bank policy that affects the commercial banks is fairly rapidly and directly transmitted to the private sector, through interest rate movements and credit policies[1].

Historically, the demand for money is determined by income, and while interest rates do affect investment decisions, project implementation is also heavily influenced by perceptions of overall macroeconomic and political stability, as well as fiscal and other incentives. The public's propensity to hold liquid assets is shifting relatively slowly over time as the positive effect of the growth of financial intermediation is being offset by technological innovations which allow for economising on holdings of cash and other liquid assets.

Targets and Indicators

The principal target of the Central Bank of Trinidad and Tobago is maintaining a low inflation environment[2]. Considerations of growth and development do enter as well into the analyses. It is thought, however, that by focusing its attention on inflation, the Bank would make a major contribution to creating the permissive conditions for growth.

In pursuit of its ultimate target, a range of intermediate targets and indicators is utilised in fashioning policy. The main characteristics informing the choice of indicators are : (a) they are an important link in the transmission mechanism connecting policy with the ultimate targets; (b) they are close to policy action, so that the thrust of action can be quickly reflected in the indicator; (c) they are readily observable; and (d) they are primarily influenced by policy action, and in-

[1] *The Central Bank also has prudential and other powers over non-bank financial institutions. For example, at present there is a reserve requirement of 5% on deposit liabilities of the non-banks (20% for banks). Nonetheless, monetary policy action is more directly focussed in practice on the commercial banks.*

[2] *Formal targets for inflation are not announced as in other countries.*

fluenced in the same period only to a much lesser extent by non-policy variables.

The Central Bank monitors nine classes of indicators: consumer and producer price inflation; money supply aggregates; fiscal data (net domestic budget deficit, which is adjusted for net foreign flows to the government account; tax receipts; wage payments); foreign exchange rates, including relative inflation rates for competitiveness; interest rates - domestic and international; domestic credit to the private sector; commercial banks' liquid assets; capital flows and market sentiment - in the absence of a formal summary indicator, this is gauged by dialogue and interaction with financial market participants and the general business community.

Monetary policy is conducted within the guidelines of a financial programming framework whereby quarterly benchmarks on several items, such as the net official international reserves, net domestic assets of the Central Bank and fiscal balances, are set. The financial programme provides a set of intermediate targets consistent with the desired benchmarks, and is determined in close consultation with the Ministry of Finance.

Instruments

The main instruments of monetary policy available in Trinidad and Tobago, apart from moral suasion, are reserve requirements, discount rates, selective credit controls, interest controls and exchange controls. Basically, changes in reserve requirements have constituted the main instruments of policy. These have been in the form of non-interest bearing deposits at the Central Bank, determined as a proportion of the commercial banks' deposit liabilities, or as 'secondary reserves', which may include treasury bills.

For the past few years, commercial banks have been discouraged from such borrowing even at the discount window. Interest controls, have largely not been employed in Trinidad and Tobago, so that interest rates locally have been reflective of market conditions. Selective credit controls have generally taken the form of restric-

tions on lending to foreigners and limits on consumer credit, such as detailed stipulations on terms of installment credit. These controls have been phased out over time, being completely removed by early 1994. Since the passage of the Exchange Control Act in 1970, the Central Bank had been empowered to ration foreign exchange in order to ensure that international reserve holdings were adequate. Administratively, the controls tended to be relaxed when reserves were abundant and tightened when reserves were scarce. The relinquishing of exchange controls in 1993 removed a long-standing function from the Central Bank.

Open Market Operations

Open market operations are being introduced in 1996. This involves the purchase and sale of bills/securities by the Central Bank in order to influence monetary conditions. Open market operations would reduce the reliance on reserve requirements which represent a tax on the banking system. In order to avoid the buildup of potential quasi-fiscal deficits, the preference is for using government paper, as opposed to Central Bank paper. It would consequently be desirable to have the cost of open market operations formally catered for in the government's budget.

Open market operations in Trinidad and Tobago will principally be conducted using treasury bills (up to 1 year maturity) and treasury notes (1 - 5 years maturity). The recent Treasury Notes Act 1995 allows the government to issue an additional TT$ 2 billion in debt instruments, evenly split between the treasury notes and treasury bills. The existing treasury bill issue, now at $983 million, is limited to $1 billion. The existing arrangements in this latter market, with respect to issue dates, for example, will continue and eventually be merged into the new system of open market operations.

Unlike Jamaica, where open market operations use primary dealers as intermediaries, the system in Trinidad and Tobago will not involve designated primary dealers, although it is expected that much of the operations will be initially conducted through major partici-

pants in the treasury bill market. Over time, as the money market develops, formalised primary dealerships may be introduced. Administratively, a Trading Desk has been set up at the Central Bank which would gather market intelligence and conduct trades. Analysis of the monitored indicators will inform decisions to buy or sell securities, whether outright or in repo/matched sale-purchase form.

Summary and Concluding Remarks

In April 1993, the switch from a fixed to a floating exchange rate and full liberalisation of both the capital and current accounts ushered in major challenges for monetary policy. While theoretically, a fully flexible exchange rate regime insulates an economy's income from international shocks, capital mobility ties domestic interest rates to foreign interest rates. The importance of the domestic budget deficit; the growing potential for interest differentials to determine capital flows and the dominance of commercial bank financing are significant structural conditions that influence Central Bank policy.

Monetary policy in Trinidad and Tobago is undergoing a major reorientation. Three years experience of a fundamentally new regime is quite short but a great deal of learning has taken place in that time. Some of the challenges are evident but a lot still needs to be discovered. It is clear, however, that while intimate knowledge of systems and experiences in other countries is very important, monetary policy in Trinidad and Tobago must ultimately be fashioned to suit the particular circumstances of the country.

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