Recent Experiences with Exchange Auctions

Kathie L. Krumm

CPD Discussion Paper 1986-29
March 1986

CPD Discussion Papers report on work in progress and are circulated for Bank staff use to stimulate discussion and comment. The views and interpretations are those of the authors.
RECENT EXPERIENCES WITH EXCHANGE AUCTIONS

Kathie L. Krumm

Trade & Adjustment Policy Division
Country Policy Department

March 1986

The Author wishes to thank John Cuddington, Peter Harrold, Katrine Saito and Peter Hansen for their helpful comments and Marinela Dado for excellent research assistance.

[Kla-c]
Recent Experiences with Exchange Auctions

Table of Contents

A. Introduction.................................................................1

B. Exchange Regimes Following Exchange Crises..........................2

C. Recent Experiences With Exchange Auctions..........................5

   1. Access and Entry.....................................................7
   2. Frequency and Size of the Auction..................................8
   3. Exchange Rate Determination.........................................9
   4. Special Treatment Categories.......................................17
   5. Resulting Allocation of Foreign Exchange..........................20

D. Concluding Remarks......................................................22

[Kla-c]
ABSTRACT

This paper synthesizes, updates and expands upon an earlier CPD Discussion Paper (No. 1985-22) on the experiences with exchange auctions. One response to foreign exchange crises in a limited number of cases in the 1980s has been the introduction of an exchange auction. Under such a regime, the central bank regularly sells a given amount of foreign exchange through a bidding process and buys foreign exchange in the intervening periods at the previous auction-determined rate. One section of the paper compares and contrasts an exchange auction with the major alternatives and identifies conditions under which an auction compares favorably. The other section describes the structural considerations involved in introducing an exchange auction and, in addition, presents some preliminary evidence on the recent experiences of five countries, two longer episodes in Uganda (1982-85) and Jamaica (1983-86), one short-lived episode in Sierra Leone (1982-83) and two recent episodes in Zambia (1985-86) and Bolivia (1985-86). To tackle problems encountered with such a system, modifications can and have been made to the main features in the design of an auction: the access to the system, the frequency and determination of the quantity supplied to the auction, the pricing options and the special treatment of certain categories of transactions. Key elements of the outcomes on which preliminary evidence is presented are the real exchange rate (both level and volatility), inflation, and the allocation of foreign exchange. Although they are not peculiar to the exchange auction per se, this note also describes transitional multiple rate systems which incorporate auctions.
A. Introduction

The foreign exchange crises facing many developing countries in the 1980s resulted in various modifications to exchange rate regimes. One response in a limited number of cases has been the introduction of an exchange auction. Under such a regime, the central bank regularly sells a given amount of foreign exchange through a bidding process and buys foreign exchange in the intervening periods at the previous auction-determined rate.

The exchange auction is one of a number of exchange rate regimes that can be adopted to resolve an exchange crisis and to restore a cushion of international reserves. The following section (Section B) compares and contrasts an exchange auction with the major alternatives and identifies conditions under which an auction appears to be a favorable option.

The experiences with exchange auctions are limited to date. However, it is possible to describe the institutional considerations involved in introducing an exchange auction and, in addition, present some preliminary evidence on these experiences. The next section (Section C) analyzes the various institutional features and options and describes the relevant recent experiences of five countries, two longer episodes in Uganda (1982-85) and Jamaica (1983-86), one short-lived episode in Sierra Leone (1982-83) and two recent episodes in Zambia (1985-86) and Bolivia (1985-86). To tackle problems encountered with such a system, modifications can and have been made to the main features in the design of an auction: the access to the system, the frequency and determination of the quantity supplied to the auction, the

This paper extracts from an earlier CPD Discussion Paper "Exchange Auctions: A Review of Experiences", July 1985, and updates and expands that paper to include the recent experiences of Zambia and Bolivia. Please refer to the earlier paper for more detail.

[Kla-b]
pricing options and the special treatment of certain categories of transactions. Key elements of the outcomes on which preliminary evidence is presented are the real exchange rate (both level and volatility), inflation, and the allocation of foreign exchange. Although they are not peculiar to the exchange auction per se, this note also describes transitional multiple rate systems which incorporate auctions. While the basis for generalizations is as yet very narrow, the evidence suggests that the exchange auction option has not performed badly.

B. Exchange Regimes Following Exchange Crises

As a result of the external and policy-induced macroeconomic disturbances to the developing economies in the 1970s and early 1980s, the foreign exchange reserves of many central banks were drained, and the fixed exchange rate regimes in those countries came under increasing pressure. There are various alternatives for resolving such a crisis and for restoring a certain level of reserves. One of the common responses is to maintain the prevailing fixed rate and to ration the foreign exchange, usually with the intensification of quantitative restrictions and capital controls. This was the initial response of Uganda, Jamaica, Sierra Leone and Zambia prior to the exchange auction system. Another response in a fixed rate context that has been more widely studied is a substantial nominal devaluation of the currency. The extent of the devaluation may not be sufficient to eliminate the binding constraint of quantitative controls and instead may only reduce it. This was the case for Uganda, Zambia, and Bolivia where a series of discrete devaluations had preceded the introduction of the exchange auction.

Because an exchange crisis is characterized by the virtual absence of international reserves, and because minor disturbances under a fixed rate
regime would be reflected in quantity fluctuations that could not be absorbed by reserve level changes, the devaluation necessary to eliminate quantitative restrictions would have to exceed the equilibrium to ensure that the new fixed rate is perceived as sustainable. In addition, in a situation in which one of the objectives is to restore a certain level of reserves, the devaluation would have to be greater than otherwise to reduce accordingly the demand for foreign exchange and allow reserve accumulation.

A variant on the one-time devaluation in response to a crisis is the adoption of a crawling peg regime. Like the standard fixed-rate regime, a price of foreign exchange is set and determines the quantity demanded and supplied, but, in addition, the central bank can respond to quantity fluctuations by periodically altering the price, usually devaluing the currency further in response to inflation differentials.

An alternative to altering the fixed exchange rate is the introduction of a floating exchange-rate regime. The central bank fixes its level of reserves accumulation (or intervention) and allows the price of foreign exchange to fluctuate, generally through the operations of an interbank market. Such a system can operate in the presence or the absence of capital controls, as in the case of a fixed regime.

The exchange auction is one type of floating exchange-rate regime. A certain quantity of foreign exchange is price rationed regularly through an auction, with the price of foreign exchange adjusting accordingly. Subsequent surrender of foreign exchange up until the next auction is made at this auction--determined rate less commissions, resulting in a ratchet-like floating regime. The desired reserve accumulation, as well as other transactions discussed below, can be set aside, and the rest of the foreign exchange is auctioned.

[Kla-b]
In contrast to an administrative rationing system, an auction is transparent and uses prices as a mechanism for rationing the available foreign exchange, generally viewed as improving the resource allocation process, reducing cumbersome bureaucracy, and discouraging rent seeking behavior compared to other rationing mechanisms. In addition, by establishing a more attractive rate for exporters and other sellers of foreign currency, the auction can enhance the supply of foreign exchange, both the total earned and the share passing through the central bank.

The debate over the superiority of fixed or floating exchange rate regimes is unresolved for both developed and developing countries. Nonetheless, following an exchange crisis, introduction of a floating regime has certain advantages over a major devaluation and continued maintenance of a fixed-rate regime. Usually, at this stage, the equilibrium exchange rate is known to policymakers with less precision. A float removes the need to select a rate. Also, setting quantity and not price assures a more certain path of reserves accumulation, which may be an important element in restoring credibility. An overdevaluation under a fixed regime likewise increases the likelihood of adequate reserve accumulation, but the political costs typically present for any devaluation would be heightened.

In many countries, the politicization of the exchange rate is an important consideration. Although a crawling peg is similar to the exchange auction in principle, except that the central bank regularly adjusts the price instead of the quantity of foreign exchange, the public's perceptions as to the central bank's (and thus government's) role in determining the exchange rate may be different for the two regimes. Under an auction (or other floating rate regime), even though its reserve management (or intervention)
decisions directly affect the quantity of foreign exchange in the market and, thus, its price, the central bank may not be perceived as determining the exchange rate, removing the exchange rate from political pressures. Vis-a-vis a floating rate interbank market, an auction with many participants also may have an advantage since the banks can avoid being pinpointed as the economic agents responsible for the devaluations which may ensue.

Another situation in which an auction may make more economic sense than a freely floating market for both sales and purchases of foreign exchange is when the market is thin or characterized by infrequency of transactions. Under the auction system, foreign exchange purchases are accumulated before sales are made. These advantages have to be weighed against the cumbersome procedures involved in managing an auction relative to an interbank market and the increased incentives for collusion when the market cannot continually respond.

C. Recent Experiences with Exchange Auctions

An exchange auction is any regime where the allocation of a given amount of foreign exchange is determined through a bidding process. Within that, as the recent experiences show, the design of the regime can vary greatly. In describing the experiences of the countries where exchange auctions have been used recently, Uganda (1982-85), Sierra Leone (1982-83), Jamaica (1983-86), Bolivia (1985-86), and Zambia (1985-86), this note focuses on the issues that need to be addressed rather than describe the chronological development of each regime. A chronological outline of the major developments in those exchange regimes is given in Table 1 to guide the reader in the presentation.
<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>Uganda</td>
<td>August 23: Introduction of dual system with managed pegged rate (Window I) and auction (Window II) (m,a)</td>
</tr>
<tr>
<td></td>
<td>Sierra Leone</td>
<td>December 17: Introduction of dual system with official fixed rate market and auction/commercial market (m,a)</td>
</tr>
<tr>
<td>1983</td>
<td>Jamaica</td>
<td>January 10: Introduction of dual system with official fixed rate market and interbank parallel market (m)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>July 1: Unification into fixed rate exchange control regime (f)</td>
</tr>
<tr>
<td></td>
<td>Bolivia</td>
<td>November 24: Unification into inter-bank floating market with exchange rate bands (u,b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>December 28: Introduction of auction system in interbank market with bands (u,a,b)</td>
</tr>
<tr>
<td>1984</td>
<td></td>
<td>June 15: Unification under auction system (u,a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>November 29: Removal of exchange rate bands (u,a)</td>
</tr>
<tr>
<td>1985</td>
<td></td>
<td>May: Suspension of auction (f)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>September 1: Introduction of unified auction system (u,a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>October 11: Introduction of unified auction system (u,a)</td>
</tr>
</tbody>
</table>

Note:  
- f - fixed rate, exchange controls  
- m - multiple rate regime  
- a - exchange auction  
- b - exchange rate band  
- u - unified flexible rate regime
1. Access and Entry

Access to the exchange auction system is based primarily on the type of transaction for which the foreign exchange is to be used. In the experiences reviewed, access is relatively unrestricted for current account transactions; several restrictions on capital account transactions remain except in the case of Bolivia where the use of foreign exchange is not monitored. The implications for the allocation of foreign exchange are discussed below. To ensure that the foreign exchange allocated through the auction is used for the stated purpose (except in Bolivia), certain documentation is submitted at the time of the bid.

To maintain competitiveness in the auction, it is important to widen participation and thus minimize the ease of collusion. Restrictions on the individual agents participating in the auction tend to be relatively few. Those authorized to bid usually include commercial banks on behalf of themselves or their customers, bona fide importers from both private and public sector enterprises, and the central bank. The average number of bids in the auctions has been above 100 in all cases. At the same time it may be prudent to exclude a bidder which could dominate and manipulate the market. For example, in Zambia, the mining company has a special arrangement for its allocation of foreign exchange, discussed further below. The best example of manipulation was in the case of Sierra Leone where the export and import sectors are characterized by a high degree of concentration. Bidding the rate up and down and then timing export sales and import purchases accordingly threatened to lead to heavy central bank losses. In Jamaica access initially limited to the few commercial banks led to manipulation in response to government pressure and to public criticism of devaluing rates, but the entry to the auction was enlarged in early 1984 and perceptibly reduced manipulation. [Kla-b]
2. Frequency and Size of the Auction

The dynamics of the auction are central to its understanding. One of the advantages of an auction in a thin or lumpy foreign exchange market is that it allows a larger pool of foreign exchange to accumulate. Thus, the frequency would be correlated with the thinness of the market. As expected, Jamaica's auction occurs more frequently (twice weekly) than in Uganda and Zambia (weekly) or in Sierra Leone (originally every two weeks, eventually, monthly). In Bolivia, auctions are held more frequently (from three times weekly to daily) because of an active parallel black market, discussed further below.

The amount of foreign exchange to be auctioned is determined by the central bank and equals available reserves less the amounts allocated for special purposes, discussed in more detail below, and less the desired reserve level. An important aspect of the dynamics of the foreign exchange market is the expectations of the quantities to be supplied to the auction and, hence, central bank behavior. Generally, the central bank's goals are to manage reserves so as to smooth out the variability in international payments and to increase over time its reserves position, thus reducing the possibility of a renewed crisis. While not necessarily making known any fixed response rules, the central bank follows a few basic principles in managing the quantity allocated to the auction. The auction amount usually is announced prior to the auction. In Uganda, the central bank announces the minimum amount that will be supplied; in Zambia, the central bank announces that it will supply up to a given amount. In response to what is considered an unwarranted sharp escalation in the auction-determined rate (for example, because of a transitory increase in demand), the central bank may increase the auction supply by reducing its reserves target temporarily, equivalent to leaning [Kla-b]
against the wind in a floating regime. This has been done successfully at times by both the Jamaican and Zambian authorities. In order to avoid what is considered an unwarranted drop in the rate, the central bank enters its own bid at some reservation price (or in the Zambian case sells foreign exchange less than the announced maximum). To date, the central banks of Uganda (until the later stages), Jamaica, Bolivia, and Zambia have been able to supply the auction with sizeable quantities of foreign exchange. In Uganda, the healthy response of agricultural exports to the new system was an important element in maintaining the size of the auction. Initially, the Zambian auction has been supplied by central bank resources augmented by targeted external financing including a Bank facility.

The exchange auctions have been less successful in achieving an accumulation of foreign exchange reserves. Problems arise largely because certain warranted upward movements in the rate are viewed as undesirable, reminiscent of the pre-auction nominal exchange rate as an object of policy. Both the Jamaican and Bolivian authorities recently have swerved significantly from their reserves targets in order to place downward pressure on the rate that is likely to be unsustainable. One must caution against this policy trend while not denying central banks a useful intervention role.

3. Exchange Rate Determination

There are two basic pricing options for determining the exchange rate in a foreign exchange auction using sealed bids. Under marginal pricing, the clearing rate, or the highest rate at which the bids fully exhaust the offered foreign exchange, is paid by all successful bidders who receive foreign exchange. Under the Dutch auction, each successful bidder is charged what he or she bid. Under both systems, all purchases of foreign exchange up until the next auction are made at the marginal rate, except in Bolivia where the
average rate of successful bids is used. The implications of these options for bidding strategies and public revenues are not yet clear and require further analytical work. The experiences reviewed here demonstrate a degree of experimentation. Uganda's system used a marginal pricing system, but the central bank temporarily introduced a system in 1984 whereby the excess of the actual bid over the marginal bid was reimbursed with non-rediscountable 3-month Treasury bills instead of cash. Under this system, the spread of bids narrowed and the bids were initially lower. The Sierra Leone and Zambia auctions use marginal pricing while the Jamaican and Bolivian authorities use the Dutch auction.

The real exchange rate is one of the most important relative prices in an economy, and it is generally agreed that the real exchange rate at its equilibrium level improves welfare. In the experiences reviewed here, the currencies under the official exchange control regimes preceding the exchange auction were substantially overvalued, and the trend in the auction determined real exchange rates was a depreciation, as expected and desired. The behavior of the official nominal and real exchange rates for Uganda, Sierra Leone, Jamaica, Bolivia, and Zambia is illustrated in Figure 1. The examination of the behavior of the official real exchange rate is complicated in Uganda, Jamaica, and Sierra Leone during certain phases by the existence of multiple markets, consisting of an official lower fixed rate market and a parallel market with flexible rate clearing mechanism, which are discussed in more detail later. Nonetheless, clearly the eventual unified rates represented sizeable real depreciations in comparison with the previous fixed rate administrative allocation regimes. On average, the real auction-determined rate depreciated 126% in Uganda, 53% in Sierra Leone, 84% in Jamaica, 214% in Bolivia, and 90% in Zambia.
Note: Q2 1985 real effective exchange rate applies only to April and May.
SIERRA LEONE:

NOMINAL EXCHANGE RATE

SIERRA LEONE:

REAL EFFECTIVE EXCHANGE RATE

SIERRA LEONE: CPI BASED INFLATION
JAMAICA: NOMINAL EXCHANGE RATE
JAMAICA: REAL EFFECTIVE EXCHANGE RATE

JAMAICA: CPI BASED INFLATION
BOLIVIA: NOMINAL EXCHANGE RATE

Notes: 1) 1985 fix rate includes July and August rates.
2) 1985 float rate includes only September rate.

BOLIVIA: REAL EFFECTIVE EXCHANGE RATE

Notes: 1) 1985 fix real effective exchange rate applies to July and August.
2) 1985 float real effective exchange rate applies to September only.

BOLIVIA: CPI BASED INFLATION
ZAMBIA: NOMINAL EXCHANGE RATE

Kwacha per US$

Notes: Q3 1985 fix rate includes July-October rates.
Q4 1985 fix rate includes November and December rates.

ZAMBIA: REAL EFFECTIVE EXCHANGE RATE

1980-100

Notes: Q3 1985 fix real effective exchange rate applies to July-October.
Q4 1985 fix real effective exchange rate applies to November and December.

ZAMBIA: CPI BASED INFLATION

1980=100

Note: Q3 and Q4 1985 inflation rates shown are annualized rates during the quarter.
One concern with floating rates is volatillity. Unlike flexibility in the level of the real exchange rate, volatility tends to have negative economic connotations. The central bank can play a smoothing role in managing its reserves and the size of the auction, although by the nature of the crisis its reserves are limited. In addition, the exclusion of many capital account transactions would be expected to reduce instability; a sharp rise in the Bolivian rate in January 1986 is related to substitution out of local currency accounts into foreign currency. Reducing the frequency of rule changes also reduced volatility in the experiences reviewed here. In the Ugandan case, there was considerable volatility when the second auction window was first opened, but by 1984, weekly fluctuations of the nominal marginal rate around the monthly average had moderated to less than 10%. The rates were more volatile in Jamaica following each change in exchange rate policy. However, throughout 1985, the trend in the nominal rate was quite flat. After a couple of months under the auction system, Zambia's nominal rate had settled down somewhat by early 1986.

Another concern with an exchange auction system, or floating rates in general in less developed countries, is building destabilizing inflation into the system, going beyond the standard inflationary impact associated with the nominal devaluation of a fixed rate. Inflationary results obviously depend crucially on the expectations about other macroeconomic policies, such as the ability to implement fiscal reform or to maintain adjustments in relative wages and prices. As shown in the preceding figures, inflation decelerated in Uganda until the end of the episode (following excessive fiscal expansion before an election) and trended slightly upward in Sierra Leone and Jamaica, but there does not appear to be any evidence of destabilizing behavior. Bolivia already was experiencing the highest inflation rates in the world.
The exchange auction was introduced at the same time as major fiscal reform measures which contributed to a deflationary trend. While no firm evidence is yet available for the Zambian experience, preliminary evidence indicates a doubling of sustained inflation over that prior to the auction (60% from 30%), but a drop relative to the initial sharp jump in prices (over 100%). In addition, the foreign exchange cost of imports has fallen about 5% because credibility has been restored to the trade credit market and expensive suppliers' letters of credit have been eliminated.

4. Special Treatment Categories

The initial response to balance of payments pressure in developing countries often is the introduction of selective quantitative restrictions and thereby special treatment for certain categories of transactions. One of the rationales for responding to an exchange crisis by devaluing or floating is to reduce the implied arbitrariness and distortions. However, certain categories may remain for which temporary or more permanent special treatment is considered desirable. Hence, auctions sometimes are accompanied by pre-auction allocations of foreign exchange to certain transactions or incorporated first into a transitional multiple exchange rate regime.

Unlike a floating interbank market, the auction system can ensure access to foreign exchange for certain categories by allocating the relevant amounts prior to the auction and then charging the auction-determined exchange rate. Such special treatment for large purchasers of foreign exchange also aims at limiting their ability to engage in strategic bidding. In Uganda, the special categories included petroleum imports, central government purchases and medical supplies. In Jamaica, they include petroleum imports and central government purchases including debt servicing. In Zambia, they include...
imports of the national copper mining company, central government purchases and external debt servicing. The Bolivian system has no special treatment categories. Instead, the public sector entities are subject to a strict foreign exchange budget. However, two major bidders, the tin mining company and the oil company, have yet to make extensive use of the auction. The major limitation with the special categories is that they may fully absorb the foreign exchange available, making the exchange rate indeterminate. This occurred in Uganda in mid-1985 and contributed to the suspension of the auction system.

Although transitional multiple exchange rate regimes are not peculiar to exchange auctions, it is useful to mention them here since they were important parts of the exchange rate regime changes in Uganda, Sierra Leone and Jamaica. The multiple exchange rate regime consists of a fixed rate market at a lower exchange rate, typically the prevailing official fixed rate under the previous administrative allocation regime, and another flexible rate market. Unlike a dual rate regime where most capital account transactions are allocated to the flexible rate market and current account transactions to the fixed rate market so as to isolate the current account from asset market instability, the primary objective of the multiple rate regime considered here is implicitly to tax and subsidize certain transactions. In the experiences reviewed here, the multiple rate regimes were introduced as explicitly temporary measures. In Uganda and Sierra Leone, one window was opened at a managed lower rate and a second window operated along auction lines. Uganda's system was unified after 22 months in June 1984. Sierra Leone abandoned the system after 7 months before any unification of the auction and returned to a unified fixed rate regime with exchange controls. In Jamaica, the interbank
parallel market existed alongside the official market for 10 months until the introduction of a temporary unified floating rate interbank system in November 1983. This was replaced by an auction in December 1983. Thus, the Jamaican auction system itself was always unified.

The foreign exchange allocated to the special lower fixed rate market is largely determined by a process of earmarking the export receipts from this market. The categories of transactions generally include official grants and loans, Fund purchases and traditional exports. The latter are relatively price inelastic in the short run and thus viewed as a more optimal source of revenue. At the same lower rate, these foreign exchange receipts generally went to finance, one, official debt obligations so as to smooth the impact of the impending exchange rate change on the public finances over time and, two, certain imports considered "essential" so as to moderate certain supply side and income distribution consequences. Gradually transactions are moved to the higher floating rate, and eventually all transactions are subject to the auction-determined rate. In this transitional period, the behavior of the flexible rate depends critically on the volume of foreign exchange transactions assigned to the market on both the demand and supply side. In the case of Uganda, a large proportion of both receipts and purchases were transferred to the auction during the transition. In Jamaica, a large part of the foreign exchange demand was transferred to the flexible rate market, but only a slightly increased supply.

Another important factor in the behavior of the multiple rate regime is the management of the fixed rate during the transition since the two rates are determined simultaneously. In the cases considered here, Uganda followed a policy of depreciating in real terms the currency at the official rate, while Sierra Leone and Jamaica maintained the official rate at the same
nominal level, leading to a real appreciation of the official currencies and
in Jamaica a widening gap between the multiple rates, as shown in Figure 1.
To prevent a further overappreciation of the currency at that rate and smooth
the impact of the eventual depreciation, a policy of keeping the transition
period short or adjusting the fixed rate during the period is critical.

5. Resulting Allocation of Foreign Exchange

One of the major critiques of administrative allocation of foreign
exchange under exchange control regimes is that the mispricing of foreign
exchange distorts relative prices and results in rents and misallocation of
resources. In principle, an auction system allocates foreign exchange in a
transparent manner to where it earns the highest returns and eliminates
rents. While these activities may differ from those that earn the highest
social rates of return, administrative foreign exchange allocation is a very
incomplete approach to this concern.

Another concern is the adequacy of the financial system to provide
credit to productive units so that they can compete with trading which
generates liquidity internally and with wealthy consumers. The issue of
credit market imperfections and inequality of wealth distribution apply not
only to access to foreign exchange but also to domestic purchases; consumption
taxes and luxury taxes are superior policy alternatives. However, it is worth
examining the extent to which the allocation of foreign exchange under the
auction system has favored the consumption goods trade over imports of pro-
ductive inputs and luxury over basic consumption goods. Since the intro-
duction of the exchange system in Uganda in 1982, the composition of imports
has shifted in favor of consumption goods which increased from about 30% of
total imports to 40% in 1983 and 60% in 1984. However, the mix of consumption
[Kla-b]
goods consists largely of rural consumer basics, consistent with increased rural incomes due to agricultural pricing reform. In addition, the majority of imports, especially non-consumption goods, are aid-financed and there were numerous problems in disbursing aid at the time. In Jamaica, the composition of imports is not significantly different from that prior to the changes in the exchange rate regime. No data is available on the allocation in Bolivia. In Zambia, consumer goods represent less than 20% of total foreign exchange allocated under the new system compared to about 13% previously, with no conspicuous surge in luxury imports. A major part of the demand comes from the industrial sector for intermediate inputs, with the shares for parastatals and private enterprises remaining about the same as previously. The main problem with Zambian credit is the large overhang of letters of credit opened before the exchange rate change. The government is obligated to pay the exchange rate differential so these trade credits can be unfrozen but it will be able to do this only over a couple of years. This experience points to the importance of carefully considering the fiscal impact when introducing an exchange auction regime.

In contrast to potential problems with insufficient credit to productive units, the government can have unlimited credit. The governments in the experiences reviewed here had effective overall controls, often in connection with a Fund program, or were not anxious to place upward pressure directly on the auction rate by bidding based on availability of central bank credit. In the Uganda system, government access was monitored explicitly through a fixed foreign exchange allocation not to exceed a certain percentage of the available supply.

Another concern is that the exchange auction provides an opportunity for private capital outflows, loosely referred to as "capital flight."
Typically, the nature of capital controls remain the same as before the introduction of the auction. Obviously it is difficult to insulate the auction completely from "capital flight," but not necessarily more than under alternative exchange regimes, for example, controls to prevent over- and under-invoicing can be identical in both systems. In fact, if one of the causes of capital outflows is an expected devaluation of an overvalued exchange rate, then the introduction of a floating system such as an auction serves to reduce short-term capital flight. This appears to be the result in Jamaica. Since access to the exchange auction for capital transactions may remain highly restricted, another illegal (black) market continues to exist. Nonetheless, its scope is largely reduced compared to the previous situation, and black market premiums fall dramatically, from over 200% to about 20% in Uganda, from over 60% to about 1% in Jamaica, and from over 300% to under 20% in Zambia. In Bolivia, the premium fell from 1500% to about 10%, but this situation needs to be viewed differently because of the huge cocaine trade which operates outside official channels and because of the openness of the capital account.

D. Concluding Remarks

The exchange auction is one of a number of alternative exchange rate regimes that may be an appropriate response to an exchange crisis. A number of our member countries find themselves in this situation and therefore are considering introducing such a system. In comparison with intensified administrative allocation of foreign exchange, the exchange auction can be a more efficient and less corrupting instrument for rationing a given amount of foreign exchange, including when the auction is a part of a multiple rate regime. In comparison with adjusting the nominal rate under fixed rate
regimes, a floating rate eliminates the difficult task of selecting an appropriate rate after a crisis, and with the price of foreign exchange rather than the quantity fluctuating, assures the restoration of reserves without resorting to the other extreme of an undervalued currency. While the exchange auction involves some cumbersome administrative procedures, it may be preferable to a floating rate interbank market if that market is thin.

Five countries have operated such a regime with varying success in the 1980s, and their experiences illustrate the possibilities as well as the problems with such a regime. Uganda's system lasted from 1982 until its suspension in mid-1985; Jamaica has used the auction since the end of 1983; the Sierra Leone auction operated for less than a year; Bolivia and Zambia recently introduced auctions in late 1985. The major policy lessons to be derived from these experiences are the following. Wide participation and ease of access to the auction are important for promoting competitive bidding behavior. Nonetheless, maintenance of restrictions on certain capital account transactions has not hampered the auction's operations; black markets continue to operate for such transactions but the wedges between the rates are sharply reduced because of the absence of the threat of devaluation for an overvalued exchange rate.

Another relevant point for any exchange rate regime discussion is the importance of consistent macroeconomic policies to ensure a real and sustained depreciation from the previously overvalued levels. The auction can result in significant nominal depreciations without destabilizing inflationary trends and thus sustainable real depreciations reflecting the underlying economic conditions. This has been the case for Jamaica and, until the last months of the auction, for Uganda. (The Sierra Leone experience is too short and the Zambian one too recent to evaluate and Bolivia already was experiencing...

[Kla-b]
destabilizing inflation.) However, fiscal and monetary indiscipline can lead to the collapse of the exchange regime, as in Uganda where accelerating inflation and expectations of exchange rate collapse culminated in the suspension of the exchange regime. An exchange auction cannot substitute for macroeconomic management. Nor can it overcome problems in credit allocation. It is still vital that productive sectors have sufficient access to credit to enable them to bid for foreign exchange and that the government be restricted from unlimited credit in its bidding.

Relieving concerns about volatility in less developed financial markets with its negative economic connotations (in contrast to the positive ones for flexibility), the nominal exchange rates have followed quite stable trends after some volatility in the rates following the introduction or modification of the regimes. One of the contributing factors to stability is the behavior of the central banks. The central bank can manage its reserves and vary the supply in such a way so as to accommodate transitory fluctuations in demand and reduce volatility. However, the importance of maintaining a steady supply to the auction, on the one hand, and avoiding unsustainable interventions on the other, cannot be overemphasized.

Two other important considerations for policymakers can be incorporated into the exchange auction regime. If it is important to ensure a given supply of foreign exchange for certain categories such as petroleum or official debt servicing, these amounts can be set aside prior to the auction, and then charged at the auction-determined rate, as long as these special categories can be prevented from fully absorbing the available foreign exchange. The other concern is the management of the transition between regimes. The exchange auction can be combined in a transitional multiple rate regime with a fixed rate market at a lower rate, as in Uganda and Sierra Leone. In Jamaica,
a floating rate interbank market existed alongside the official fixed rate market prior to unification and replacement by the auction. The main lessons from these experiences are to keep the transition period short or to adjust the fixed rate over the period, preventing further overappreciation and smoothing the impact of unification.

In conclusion, the exchange auctions have not performed badly to date. Any country considering the introduction of an auction system can benefit from learning more about the experiences of countries in similar circumstances, both the pitfalls and the strengths. In addition, a number of insights can be expected to emerge from further analytical work that is needed on the design of an auction, particularly strategic behavior in bidding strategies.