

WPS 1268

POLICY RESEARCH WORKING PAPER

1268

The Reform of Mechanisms for Foreign Exchange Allocation

Theory and Lessons from Sub-Saharan Africa

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The paper provides an analysis of the mechanisms for foreign exchange allocation used in trade policy reform and an assessment of their effectiveness. The case is strong for avoiding delay in moving to full currency convertibility in dismantling or modifying foreign exchange controls. Movement to a unified free market for exchange would be facilitated by changes in policies and in donor practices, so exchange can be channeled through private sellers.

The World Bank
Policy Research Department
Trade Policy Division
March 1994



Summary findings

Administrative exchange allocation has been common in developing countries, especially in Sub-Saharan Africa. Steps to dismantle or modify these control mechanisms have been carried out through transitional schemes. La Ferrara, Castillo, and Nash draw lessons from Sub-Saharan Africa's historical experience useful both to African and former socialist economies:

- Exchange regime reform should be given highest priority for its role in reducing anti-export bias. Although many Sub-Saharan countries have attempted to reform their allocation mechanisms, only a few have made the transition to market allocation (virtually convertible currency, at least on the current account). Failure to do so is the major shortcoming of most adjustment packages.

- Both gradual and rapid approaches have succeeded. On purely economic grounds (given the problems of such intermediate steps as auctions), speed is preferable but it is not always politically or institutionally feasible.

- The transition must be accompanied by a coherent set of fiscal and monetary policies and a willingness to allow the exchange rate to seek a true market-clearing level.

Some lessons regarding the specific mechanisms, discussed in approximate order of their proximity to convertibility, are as follows:

The most rudimentary transition mechanism is the *own-funds scheme*, which is no more than a beginning of reform. Own-funds schemes should be accompanied by liberalization of the rules governing exports, or illegal exports and the black market premium may increase.

Export retention schemes can minimize the adverse

effects on exporters of foreign exchange shortages, reduce the implicit export tax, and fund a legal private exchange market. But the retained funds must be saleable, the retention rates substantial, and traditional exports must be included to adequately fund the legal private exchange market.

Open general licensing (OGL) and similar schemes can be a useful intermediate step in liberalizing import and exchange allocation regimes. But in practice the benefits are limited by two features. First, consumer goods competing with local production, whose imports were restricted the most, have usually been excluded, at least initially. Moreover, OGL has no endogenous price-setting mechanism for the exchange rate. The OGL rate should generally be connected to, but lower than, the parallel rate.

An *auction* incorporates a pricing mechanism, which is an important advantage. But the pricing mechanism must be allowed to work, which has not always been the case. Auction rules should be clear (should not allow discretionary disqualification of bids, for example), should minimize participation costs, and allow wide participation. Marginal, rather than the more common Dutch, pricing system is preferred. The use of a reservation price may reduce volatility but may also impede the full disbursement of funds.

The shortcomings of transitional schemes to dismantle or modify foreign exchange controls become more important the longer they are in place. A strong case can be made for avoiding delay in moving to full currency convertibility.

This paper — a product of the Trade Policy Division, Policy Research Department — is part of a larger effort in the department to examine problems in adjustment in Sub-Saharan Africa. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nellie Artis, room N10-031, extension 38010 (59 pages). March 1994.

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This study is a product of the UNDP/World Bank Trade Expansion Program. The authors acknowledge with gratitude the comments of Elliot Berg and Jaime de Melo, and discussions with Janine Aron. The views expressed here are not necessarily those of the World Bank, UNDP, or affiliated organizations.

1. Introduction

Foreign exchange management is central to the process of trade liberalization, and of structural adjustment in general. Commercial policy measures such as interventions on tariffs and non-tariff barriers may appear to have a more visible impact on the trade system *per se*, but exchange rate policy and allocation mechanisms affecting the availability of foreign currency to economic agents play at least an equally important role in shaping the structure of incentives.

Administrative exchange allocation has been used in developing countries, and in Sub-Saharan Africa in particular, because it is the most direct and quickest means of dealing with balance of payments crises, of indirectly taxing disfavored sectors (especially exports), and of channelling crucial imports toward uses the government considers high priority. However, it is now generally recognized that exchange management has had a number of adverse economic effects, and most structural adjustment programs have included steps to dismantle or at least modify these direct control mechanisms. These steps have been carried out through a number of transitional mechanisms.

These transitional exchange allocation mechanisms have seldom been discussed in an analytical framework, and never in an integrated fashion. Yet, failure to account for interactions has created design and implementation problems in some countries. Numerous studies have been conducted on exchange rate policies and exchange rate regimes in Africa, among which are Dornbusch (1984), May (1985), Gulhati et al. (1986), and Pinto and van Wijnbergen (1986). Most of them examine the nature and consequences

of foreign exchange controls *per se* (such as the distortionary effects of multiple rate practices and parallel markets) and the options that could help cope with these shortcomings, rather than the transitional policies designed to move to new exchange regimes.

To date, the only comprehensive review of the attempts at transition to floating regimes in developing countries has been done by Quirk et al. (1987). Their paper describes both the form of exchange market arrangements and the problems that have arisen in the implementation of such arrangements, an approach which is common to the present analysis. It differs from the present, though, in at least two respects. First, and most significant, Quirk et al. are only concerned with market-determined exchange rate systems (e.g., auctions and interbank markets), which have generally been used only in the late stages of reform. They do not deal with other schemes which play an important role in earlier stages of transition in foreign exchange allocation, like own-funds, Open General Licensing (OGL) and export retention schemes. Second, the coverage of the two studies is different, both for the countries examined (developing countries in Quirk, et. al., SSA countries in the current study) and for the period under consideration (until 1986 in Quirk et al., up to 1993 in the present analysis). Others, like Krumm (1985), Aron and Elbadawi (1993), and Feldman and Mehra (1993) have focused on the specific mechanism of exchange auctions, and conducted an in-depth analysis of design and implementation issues.

The goals of this paper are several-fold. The first is to clarify the meaning of the terms used to describe the different transitional mechanisms and the role each intended to play in the transition. This is not a trivial task, as some terms have been used to describe different things. A second is to analyze inter-actions among the various mechanisms themselves and with other policy reforms. A final objective is to examine the historical experience of SSA countries with these mechanisms, with the goal of synthesizing theory and experience to draw lessons for the future. Such lessons should have value not only for the African countries which have yet to complete, or begin, the transition, but also for the former socialist economies for whom problems with exchange allocation are major obstacles to reform.

The remainder of this paper is divided into five sections. Section 2 briefly sketches the situation of a stylized SSA country at the beginning of the 1980s, describing the typical controls on the exchange system that were in place and their effects. The description of the problems that plagued the pre-reform regimes serves as the basis for evaluating the reform measures. Section 3 describes the various transitional mechanisms and explain their intended function and role in the transition. Section 4 describes a partial equilibrium analytical framework within which several schemes can be analyzed, and uses it to draw implications. Section 5 examines evidence of the interactions among these mechanisms and between them and other policies and relates this to the predictions of the theoretical models of section 4. Section 6 evaluates how far SSA countries have gone in the movement towards convertibility. By comparing the experience of "successful" and "unsuccessful" reformers, the section provides some general guidelines on the patterns of reform. Section 7 summarizes and concludes the paper.

2. Initial conditions

In the late 1970s or early 1980s, most of the SSA countries were saddled with diverse and widespread foreign exchange controls.¹ Three main kinds of controls deserve particular attention for their effects on the allocation of foreign exchange: those on the exchange rate, those on the import licensing system, and controls on export proceeds.

The exchange rate regime of a SSA country at the beginning of the 1980s typically had a dual nature. The official exchange rate was pegged to a basket or to the currency of the main trading partner and applied to debt service payments, official current account transactions and essential imports (e.g. petroleum and other inputs with significant supply-side effects, plus certain food imports); all the other transactions (private capital and most commercial transactions) had to be financed on the parallel market (legal or not), where the exchange rate was floating and considerably more depreciated than the fixed

official rate. This premium on the sale of foreign currency on the parallel market was both a signal and a cause of major distortions in the economy. It was kept high by demand for exchange that could not be satisfied in the official market, demand both for importing goods and services and exporting capital (often in the expectation of imminent depreciation). The persistent overvaluation of the real exchange rate led to increasing importance of black market activities. More and more exporters chose to smuggle their products instead of going through official channels, thus lowering the amount of foreign exchange that the authorities could allocate to import licenses and fueling the demand for smuggled imports. Sometimes the use of multiple official exchange rates resulted in a differentiated exchange rate structure for several types of commercial transactions. Such "exotic arrangements"² illustrate a common feature of SSA economic systems: the use of the exchange rate as a substitute for a structure of taxes and subsidies.

The underpriced official foreign exchange was allocated to importers through a system of import licenses issued by the Ministry of Commerce to individual importers for specific categories of products. Once he obtained the license, the importer was usually entitled to purchase the necessary foreign exchange from the Central Bank or from authorized banks, though the authorization was not always automatic. The incentive for rent-seeking activities connected with such a discretionary system was of course extremely high, since the import quota rent augmented the subsidy implicit in obtaining foreign currency at an overvalued exchange rate. The system also gave a non-transparent and unpredictable level of protection to domestic producers, since competing goods were assigned lowest priority for foreign exchange allocation.

In addition to the implicit subsidy to importers, an implicit tax on exporters and on workers' remittances from abroad was generally levied in the form of surrender requirements for their proceeds.³ Exporters were required to repatriate the proceeds from their exports within a certain period from the date of shipment and sell them to the Central Bank (or to authorized commercial banks) at the official exchange rate; a similar requirement applied to payments for invisibles.

Several interrelated problems arose from this complex foreign exchange allocation system. Foreign exchange shortages led to rationing and restrained imports, thus creating bottlenecks in the production process and shortages and high prices for consumer goods. The whole system protected inefficient domestic production of import substitutes, thereby imposing a strong anti-export bias which diverted resources away from the export sectors and undermined the prospects for increasing foreign exchange earnings in the future. In particular, the exchange licensing, import controls, and tariffs provided multiple, often redundant, layers of protection. The importance of unofficial parallel markets implied a loss of control by the government on the bulk of economic activity and, related to this, a loss in fiscal revenue. Moreover, the persistent overvaluation of the domestic currency and consequent chronic expectation of devaluation encouraged capital flight, reducing savings, investment, and growth. Last, the lack of transparency and the high degree of discretion in the system encouraged rent seeking activities and corrupt practices.

The incidence of these problems varied of course across countries and over time, but it is clear that the foreign exchange allocation system of a typical SSA country at the beginning of the 1980s "imposed heavy costs in terms of distortions in resource allocation and unequal access by various socio-economic groups".⁴ This was inconsistent with the goal of trade policy reform and structural adjustment. The recognition of such shortcomings induced a number of SSA governments to adopt reform programs which were intended to eventually lead to market allocation of foreign exchange, and usually to floating regimes, as steps towards ultimately making the currency convertible. The transition to a more liberalized system was usually carried out through a combination of allocation mechanisms. The rest of the paper focuses on the most commonly used of these transitional mechanisms.

3. Transitional foreign exchange allocation mechanisms: description and rationale

Transitional foreign exchange allocation mechanisms were present in adjustment programs as cells of a complex matrix rather than "self-contained" schemes. Here, though, we abstract to a certain degree from institutional complexity and isolate each mechanism for analytical purposes. Each sub-section will describe the functioning of the relevant scheme in a typical SSA country and provide the rationale for its use. An assessment of the main effects of several of these mechanisms are derived in a basic analytical framework in section 4.

The order in which the various schemes are presented reflects the phases of the transition, with a shift in emphasis from mechanisms which only deal with allocating foreign exchange, where the price is set outside the mechanism itself, to schemes in which the allocation and the price-setting are endogenous. While the introduction of own-funds, open general licensing and export retention schemes do not require any departure from a fixed or multiple foreign exchange system, the establishment of auctions, legalized foreign exchange bureaus and interbank markets do.

3.1 *Own-funds schemes*

An own-funds scheme allows a certain set of goods to be imported without constraints as long as the importer does not require access to official foreign exchange resources. Usually it is embodied in a so-called "no currency" or own-funds import license which is issued automatically for items specified on a positive list and which does not authorize the foreign currency necessary to import them.⁵

Most own-funds schemes do not require any documentation from the importer about the source of his currency. This can translate into an implicit incentive to use black market foreign exchange, although legal remittances and retained funds from exports (when allowed) could in principle serve to finance such imports. Own-funds schemes, while increasing welfare, may also paradoxically increase the black-market

premium, as well as unofficial transfers from abroad, illegal exports and over and under-invoicing practices, unless accompanied by liberalization on the export side (section 4.1).

Such schemes can cover both intermediate inputs whose shortage may reduce the utilization of productive capacity, and consumer goods which play a major role in providing incentives for production. In Tanzania, for example, due to the shortage of some consumer goods and to their high price relative to traditional export earnings, farmers lacked the incentives to produce traditional agricultural commodities. By increasing the availability of these "*incentive goods*", the introduction of the own-funds scheme removed a bottleneck not only on the consumption but also on the production side. Besides increasing the supply of goods in the country, the own-funds schemes have the additional advantage of legalizing imports that are already smuggled as well as encouraging the repatriation of remittances and other capital abroad.

Although these schemes improve the efficiency of the incentive structure somewhat, they are not supposed to address the issue of efficient allocation of foreign exchange in general nor to reduce the size of the parallel market. The scope for the use of such schemes as major vehicles towards convertibility is therefore *a priori* limited.

3.2 *Open general licensing (OGL)*

An OGL regime is designed to allocate foreign exchange for importation of goods or services specified on a list, according to some automatic criteria and at an official exchange rate. In other words, for items specified on the list, import licenses and foreign exchange are automatically provided at a "subsidized" rate. In most cases funds have been provided by donors (mainly the World Bank). The OGL has operationally translated into a mechanism designed to pump foreign exchange into a reforming economy with some restrictions on, but without allowing discretionary determination of, how the imports are channeled or to whom. Since both the quantity and the price of the foreign exchange are fixed in

advance, OGL schemes by definition involve rationing. The rationing devices traditionally used have been the eligibility of goods and the eligibility of firms.

The liberalization sequence typically followed by SSA countries has been the following: At the initial stage, a "positive" list of goods that could be imported was specified, mainly spare parts and essential inputs, but sometimes also raw materials and non-competing consumer imports. The second step replaces the "positive" with a "negative" list of goods that cannot be imported, from which list competing consumer goods are gradually deleted. In the third stage, the negative list is reduced to a bare minimum, such as goods prohibited for security and health concerns. Finally (but not in all cases), service, invisible and capital transactions are added. The rationed access of firms to the scheme usually has benefitted priority industries. For example, in Uganda, the OGL was limited to firms engaged in priority industries within selected subsectors and based on tax revenue, management capability and access to credit. In Malawi and Tanzania, only "end users" were allowed into the OGL facility to preclude traders and other intermediaries from enjoying excess profits.

The main rationale for the introduction of an OGL scheme is to allocate foreign exchange in a non-discretionary manner according to some well-defined rules. Besides alleviating production and consumption bottlenecks related to insufficient import capacity, such a scheme eliminates the distortions brought about by discretionary allocation of import and exchange licenses. In particular, given the automatic and transparent operation of the system, the scope for rent-seeking activities is significantly reduced. A limit of OGL schemes is, by definition, the fact that they do not address the issue of exchange rate determination, and thus do not totally eliminate multiple rates, rationing, or rents. Therefore, OGL schemes should be viewed as useful but temporary mechanisms in the transition.

3.3 *Export retention schemes*

Under an export retention scheme (ERS), exporters are allowed to retain a certain percentage of their earnings in special foreign currency deposit accounts at home or (rarely) abroad. The remainder of the earnings must be surrendered to the government at the official exchange rate. The retained earnings can be used to import specified goods or sold at a parallel exchange rate to third parties.

The possibility of retaining export proceeds is usually introduced as an incentive scheme to compensate for the general anti-export bias of the trade system. Exporters have expenses denominated in foreign currency (freight, insurance, importation of raw materials), and in many instances after they surrender foreign exchange it is difficult and costly to get it back. When required to surrender all their proceeds, exporters must sell exchange to the authorities at the official (overvalued) exchange rate and then resort to the parallel market to finance their imports, thus paying an implicit export tax equal to the black market premium. But even when all the foreign exchange needed can be obtained without resorting to the parallel market, the process of exchanging export receipts in local currency (at the bank's buying rate) and then purchasing foreign currency again (at the selling rate) would cause them to incur the foreign exchange differential and additional transaction costs. Even in a well-functioning exchange system like Mauritius, this spread has been estimated to add around 2-3 percent to exporters' currency costs (Hachette, et. al.). All this clearly taxes the export sector. Over time, the intrinsic value of the ERS incentive for exporters automatically declines as reform closes the gap between the parallel and official exchange rates.

The ERS has three beneficial effects. One is to insulate exporters from problems in the exchange allocation system so they can readily import for their own needs. The second is (when the retained earnings are transferable) to give an implicit subsidy to exporters, or reduce the implicit tax from the overvalued rate. The third is to provide a source of supply for a legal private exchange market.

Several features in the design of a retention scheme affect its coverage and effectiveness. First, the percentage of retention allowed has varied from 2 or 5 percent to 100 percent, according to the kind of exports involved and to the stage of reform of the country. In general, higher ratios have been allowed for nontraditional exports than for traditional ones, and for later stages of reform. Second, the eligibility of exporters may depend on the kind of goods exported as well as on the size of the firm and other criteria (e.g., the percentage of domestic value added, in Kenya). Once again, the tendency is to favor nontraditional and large exporters over traditional and small-scale ones. Small or occasional exporters may prefer to smuggle in order to avoid transactions costs of official channels.

Third, the foreign exchange retained may or may not be saleable. In some cases, exporters are required to use the amounts retained for the importation of raw materials and spare parts essential to their production activity (e.g., Tanzania). In case the foreign exchange retained is saleable (e.g., Kenya, Uganda), a relevant feature of the scheme is the exchange rate at which it can be sold. Generally, this rate is a free market rate or at least a rate not as overvalued as the official rate. In this case, the scheme reduces the implicit tax on exports in proportion to the percentage of earnings allowed to be retained.

Last, limits may be placed upon the date of surrender and the period within which the foreign exchange retained can be used or sold. These limits are intended to prevent speculative holding of exchange, though it is not clear that they have been productive or effective in meeting this goal. For example, in Zambia a retention period limit of 21 days was in effect in 1984. This was expanded to 60 days in 1987 to 180 days by 1992.

3.4 Foreign exchange auctions

Under an auction regime, the available amount of foreign exchange is allocated by the central bank through a bidding process. A number of different institutional settings can be encompassed under such a definition. Nonetheless, most auctions in SSA seem to be conducted according to the following scheme.

The central bank decides the amount of foreign exchange to be auctioned, and in some cases sets a minimum reserve price. Participants submit bids indicating the amount requested and the price they are willing to pay.⁶ The submission of bids usually requires an advance deposit of domestic currency, covering part or all of the foreign exchange requested. The central bank then ranks the bids by price and, beginning with the highest, awards the amount bid to each bidder until the available supply is exhausted. Each bidder pays the price of his own bid if the auction is of the "Dutch" type, while all pay the market clearing price (that is the lowest price among successful bids) in the "marginal price" system. The market clearing price becomes the official market exchange rate and applies to all transactions until the next auction.⁷ The market exchange rate, the number of bids and the number of successful bidders are announced after the auction. Auctions may be held weekly or fortnightly.

Two kinds of auctions can be distinguished, according to the nature of the participants. In a wholesale auction, the participants are commercial banks and authorized dealers, who then sell onward to importers; in a retail auction, foreign exchange is sold directly to importers.

An auction system addresses many of the problems outlined in section 2. First of all (to varying degrees, depending on the institutional rules), it allows the interaction between demand and supply of foreign exchange, thus moving towards a market system and providing gains in terms of allocative efficiency. If appropriately run, it cannot create queues, as an OGL system, since the price is endogenously determined. Second, by leading to a *de facto* devaluation, the introduction of an auction regime should lower the spread between the official and the parallel rates. If the auction rate applies to a sufficiently wide range of transactions -and in particular to the purchase of export proceeds- the anti-export bias would be consequently reduced. Third, some features like the publication of the price, number and size of the bids make an auction a transparent system which discourages rent-seeking and corruption.

3.5 Foreign exchange bureaus

Foreign exchange bureaus are institutions that purchase and sell foreign exchange at rates established by themselves. Such bureaus have (legally or not) always been part of the parallel market, but only recently have been legalized by some SSA countries. It is therefore the legalization of bureaus, not their mere existence, that constitutes a step towards a more liberalized foreign exchange system.⁸

The sources of the foreign exchange sold by bureaus are mostly private: remittances (when allowed) and retained export proceeds (when saleable). In principle, however, bureaus can be allowed to bid at the auctions, so even auction funds can be channeled through foreign exchange bureaus.

Compared to other allocation mechanisms, the main feature of the bureau system is the flexibility and simplicity of procedures with which it operates. Documentation requirements for buyers are minimal and, even when full coverage in local currency is required for an import or exchange license (e.g., Uganda), the delay receiving foreign exchange is much less than in the "official" market. Requirements for access to official markets tend to impose "fixed" costs. Large importers can amortize these costs over larger volumes, and thus have some advantage in procuring exchange through these channels. Therefore, small and medium or occasional importers constitute the main clients of the bureaus, even though they pay a higher price.

The rationale for the official recognition of foreign exchange bureaus is to legalize at least a portion of the parallel market, thus bringing under control part of the informal sector and laying the foundations for exchange rate unification. Moreover, the entrance of bureaus into the market brings competition and efficiency and potentially creates a thick and non-volatile market if a sufficient amount of foreign exchange is channeled through this system. In the experience of most SSA countries, the bureaus' rate has generally proved to be stable (see Aron and Elbadawi).

3.6 Interbank markets

A further final step towards convertibility is the establishment of an interbank market. In an interbank market wholesale participants are the commercial banks and the authorized foreign exchange dealers (e.g., bureaux), who trade foreign exchange among themselves and with the general public. The exchange rate is determined in transactions between the banks (and dealers) and in negotiations between the banks and their clients, and is therefore free to vary. Periodic fixing sessions are held with the central bank participating, during which the "official" rate is established based on the previous transactions among the private buyers and sellers.

Although interbank systems are relatively unregulated compared to other allocation schemes, some prudential regulation is usually set. Limits on stocks (maximum amount of foreign exchange held) and on flows (maximum volume of foreign exchange surrendered per period to each commercial bank) have often been imposed to prevent major dealers from cornering the market and to avoid large exposure to risk.

In principle, in a pure interbank system all the supply and the demand for foreign exchange should be channeled through the market. In some SSA countries, though, partial surrender requirements still remain and some portion of the exchange supplied is allocated outside the market, with the government often having guaranteed access to foreign exchange for its own use. Even in such cases, however, the exchange rate applied to all transactions should be the same.

An interbank market seems to provide a solution for most of the problems outlined in section 2. Foreign exchange is allocated through the price mechanism in an efficient manner; its availability for import necessities is increased and the degree of anti-export bias implicit in fixed overvalued exchange rate regimes is significantly reduced or eliminated, since the interbank system is actually a floating regime. Besides providing more uniform incentives, such a system virtually eliminates the spread between the official and the parallel rate and hence reduces the scope for black market activities. Finally, the

determination of the exchange rate is removed from the political arena, which is in general desirable in SSA countries where inappropriate interventions have caused serious distortions in the economic system.

The movement to a decentralized market system should not translate, however, into disregard of the development priorities of the government. Accompanying policies should therefore assure its compatibility with the medium and long term development prospects of the country.

4. Simple analytics of allocation mechanisms

Some of the effects of different mechanisms, as well as their interactions with each other, can be illustrated in a partial equilibrium framework, similar in some respects to that used by Dornbusch (1974) and developed by de Rosa (1992) for own-funds schemes.

4.1 Own-Funds

First consider a small economy with no capital flows that produces and consumes three commodities: importables, exportables, and nontraded goods. Monetary and fiscal policy variables are assumed as given, and imports are assumed equal to exports. The unrestricted demand for foreign exchange (imports) is shown as DD in figure 3.1, while the unrestricted supply of foreign exchange (exports) is SS .

The pre-reform situation of a typical SSA country can be represented by the presence of an import quota ($M=M_0$) not strictly enforced, so that the level of imports can be increased beyond M_0 through smuggling, although at increasing marginal costs. Exporters are required to surrender proceeds at the official rate P_0 , so the supply of legal exports is X_0 . Exporters can illegally export more, but, like import smuggling, only at increasing marginal costs. The effective import and export curves are therefore DD' and SS' , whose slopes are greater in absolute terms the more rapidly increasing are the marginal costs

of smuggling imports and exports respectively. The illegal imports $M_1 - M_0$ are financed through foreign exchange earned by export smugglers at the real parallel exchange rate P_1 , which is above the "overvalued" official rate e_0 . The ratio P_1/e_0 represents the black market premium.

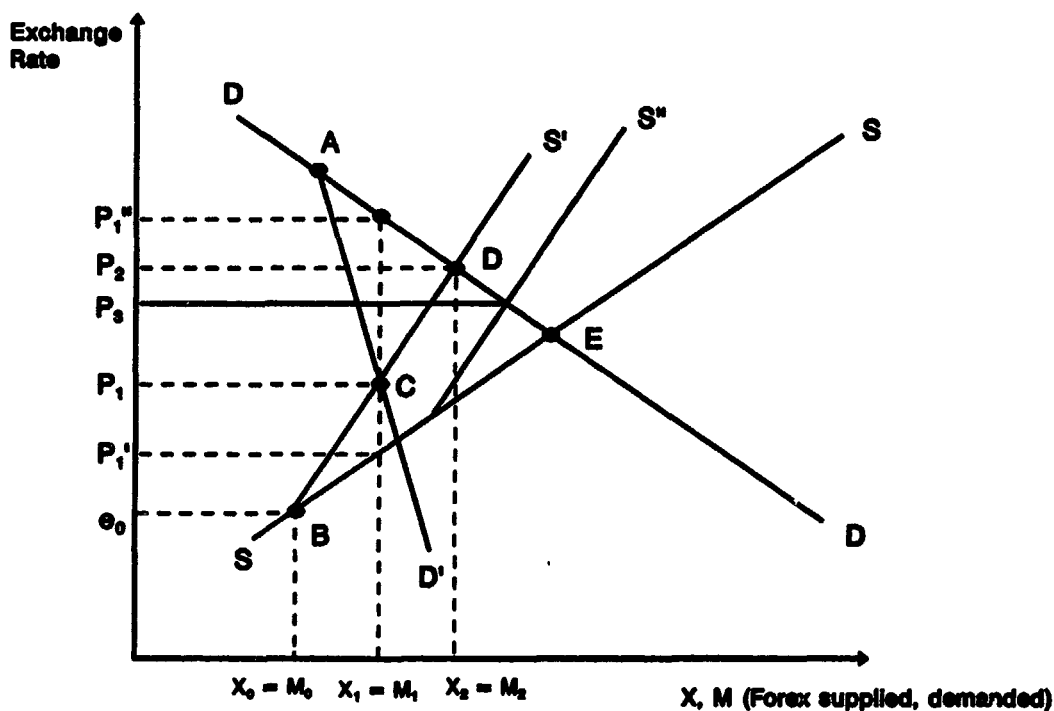


Figure 3.1 Effects of Own-Funds Scheme

Suppose now unlimited imports are legalized under an own-funds facility. This eliminates the extra costs of increasing import demand beyond M_0 : the relevant demand schedule becomes DD . However, export supply is still represented by SS' if smuggling costs for exports are not reduced. The quantity M_2 is now legally imported, while $X_2 - X_0$ constitutes unofficial exports. Both the real parallel exchange rate (now P_2) and the parallel premium (now P_2/e_0) rise in order to provide an incentive for increased export production to meet the greater demand. In terms of welfare effects, though, the new equilibrium is preferable to the previous one. Imports are increased and the deadweight loss associated with protection is reduced from the area $BCAE$ to the triangle BDE . This is one of de Rosa's basic results. Thus,

paradoxically, an increased black market premium is associated with an improvement in welfare in the import-export market.

For many reasons, however, it is desirable to reduce the black-market premium. Any policy measures that increase the supply, or the elasticity of supply, of exports could do this. A partial export retention scheme, for example, could shift the "illegal section" of the supply curve to the right, making the effective supply SS'' and reducing the black market premium to P_3/e_0 , and reducing the welfare loss as well.

4.2 *Auctions and parallel markets: price and premium determination and unification issues*

Suppose there is an auction market operating simultaneously with a private market. The auction is funded through exogenously determined donor contributions to the government. The auction has available Q^* ($= Q_1 - Q_3$ in figures 3.2 and 3.3) of foreign exchange each period. Buying from the auction costs more than buying from the private market; the extra cost may be in the form of paperwork requirements, fees, or increased probability of detection of illegal activity (tax evasion). We denote by e the official marginal auction price of foreign exchange and by P the price on the private market. In this discussion, we abstract from the various issues revolving around the effects of the auction rules on the strategic behavior of bidders. We assume bidders bid according to their true marginal valuation of the foreign exchange, so the auction equilibrium is essentially a competitive market equilibrium.

To begin with, suppose that all buyers in the auction (but not the private market) incur the same cost, C^* , of buying from the auction instead of the private market, and that the auction has a reservation price of forex e^R . If the total demand for foreign exchange is DD , then the demand in the private market would look like DD' in figure 3.2. There would be a kink at $P_1 (= e^R + C^*)$; at this price in the private market, demand would shift to the auction. How the total demand is divided between the two markets depends on the supply schedule in the private market. If the supply is like S_1S_1' , there will be no demand

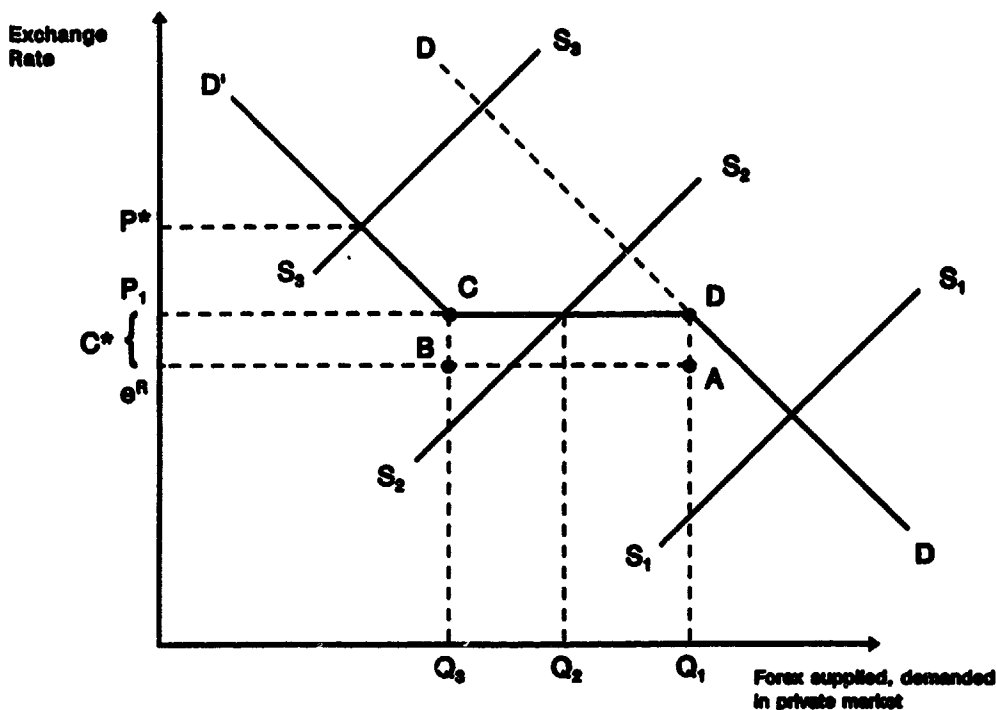


Figure 3.2 Effects of Auction; homogeneous cost

for auction funds; if the supply is like S_2S_2 , the auction funds will be partially used ($Q_1 - Q_2$ will be funded in the auction); if the supply is like S_3S_3 , the auction funds will be fully disbursed. Assuming the last case, the total cost of using the auction is the rectangle $ABCD$ ($= C^* * Q^*$). In this model, the premium of the private market rate over the auction rate is always C^* , provided only that the demand for auction funds is positive.

Now suppose that the buyers are not homogeneous with respect to their cost of using the auction. For example, in Uganda, participation in the auction requires a letter of credit (LC). If this is the only reason for opening an LC, the auction imposes an extra cost. But for those importers who get other benefits from an LC, the marginal cost of using the auction is not as high as it is for the others. Alternatively, suppose (as is true in Uganda) that documentation from the auction is also used to assess import tariffs, so that tariff evasion is much harder when imports are effected using auction funds. Then

the full cost of using the auction will be higher for importers of high-tariff goods than for those of low-tariff goods.

In either of these cases, the private market demand would look like DD^* in figure 3.3. At any price over e^R , some buyers will switch to the auction. Importers of low-tariff items will be the first to switch. The higher the private market price, the larger the number of buyers who will find it worthwhile to switch. At price P_3 , enough buyers would be using the auction to exhaust its funds. At higher prices, the private market demand has the same slope as the total demand \overline{DD} .

The price of foreign exchange in the private market is determined by the intersection of the private supply schedule and the private market demand (DD' in figure 3.2 or DD^* in figure 3.3). The market-clearing auction rate is the private price minus the marginal cost of using the auction. In the case of constant marginal cost C^* (figure 3.2), the auction price is always the private price minus C^* ; in other words, the premium is constant and equal to C^* . In the case of rising marginal cost (figure 3.3), the premium is larger under conditions that cause more auction funds to be disbursed, but only up to the point at which auction funds are fully disbursed. In figure 3.3, if supply is S_2S_2 , the private market price is P_1^* , while the auction price is still at the reservation price e^R . If auction funds are just fully disbursed (i.e., the quantity supplied in the private market is exactly Q_2), the private market price is P_3 , and the auction price still e^R , so the premium is C^{max} . But if the private market supply is such that there is excess demand for auction funds (e.g., private supply is S_3S_3), the auction price is above the reservation price e^R . In this case, the auction price is less than the private price (P^*) by the premium C^{max} , no matter what the level of the private price.

Assuming the auction funds are fully used, the total cost of using the auction is the area EFI (which is equal to the area EGI , since these are two triangles with identical base and height). If the cost of using the auction is "transaction cost", then this area is a real economic cost. If the cost is only payment of tariffs which could otherwise be evaded, then this is a transfer from importers to the government.

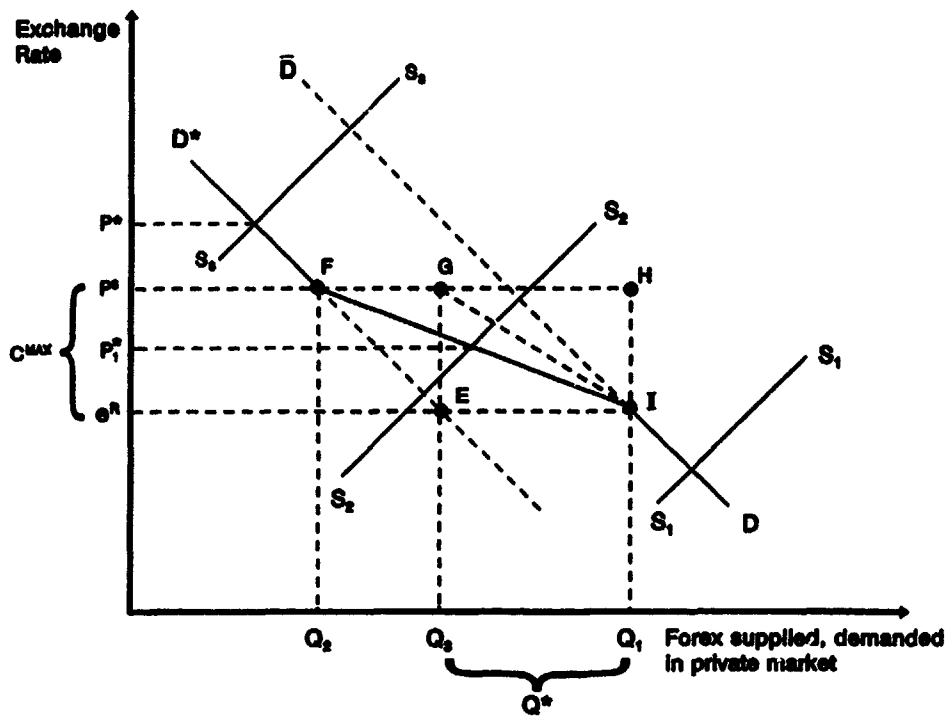


Figure 3.3 Effects of Auction; heterogeneous costs

Several conclusions can be drawn from this simple model:

- In both figures, if the auction funds are fully used (supply vis a vis demand is like S_3, S_3), then small perturbations in supply or demand would cause the private market exchange rate and the auction rate to move together. The premium would not change. The private market price will be P^* . The auction price will be equal to $(P^* - C^*)$ in figure 3.2 or $(P^* - C^{max})$ in figure 3.3, depending on whether the marginal cost of using the auction is constant or rises with the amount of auction funds used.
- If the auction funds are not fully used (e.g., if supply is S_2, S_2), then small perturbations will cause the premium (and private market rate) to change in figure 3.3 (but not in 3.2), but the auction rate will not change in either figure.
- The level of the reservation price determines the vertical position (but not the slope) of the segment

of the private demand schedule that lies between Q_1 and Q_3 . Suppose that supply in the private market is stochastic. Then, the higher is the reservation price in the auction market, the less frequently will the auction funds be fully used. That is, the less often will the quantity traded in the private market be less than Q_3 . This means that the auction and the private market rates will move together (which happens only when the equilibrium Q is less than Q_3) less frequently, so the premium becomes more volatile in the case of heterogeneous costs. It also means that the average price of foreign exchange increases in both the auction and private markets.

- If the reservation price is set high enough to have an effect, it will interfere with the full disbursement of the auction funds.
- If the auction funds are fully disbursed (i.e., the supply-demand conditions in the private market are as depicted by S_3S_3), unifying the auction (or an OGL) and the private market by channeling auction funds through the private market would imply unification of the rate at the private market rate prevailing before the unification. Both supply and demand would shift by the same amount (Q^*). If, however, auction funds are only partially disbursed (i.e., supply relative to demand is like S_2S_2), the supply will increase by Q^* , while demand will increase by less (to the total demand schedule DD), so the resulting unified market exchange rate is lower than the private rate before. If supply is like S_1S_1 , the exchange rate would fall even more than in the previous case if the two markets are unified, since demand would not shift at all.
- By unifying the auction and private markets, the government will not lose revenue, and probably will gain. It is sometimes feared that eliminating the official channel for selling foreign exchange will increase tariff evasion and lose revenue. This result says that even if tariff evasion increases, this loss is likely to be more than compensated by the higher price received by the government when it sells foreign exchange. The simplest way to see this is to assume that supply and demand conditions are such that auction funds are fully, but barely, disbursed. Then the government's

revenue from the auction funds is $[(Q_1 - Q_2)e^P]$, while the revenue from tariffs that would be lost were the funds not channeled through the auction is $EFI (= EGI)$. Now suppose the markets are unified. The previous result shows that since private market demand and supply each shift by $(Q_1 - Q_2)$, the unified exchange rate would be the same as the pre-unification private rate, P_3 . The government's revenue from selling through the unified market would therefore be $[(Q_1 - Q_2)P_3]$, the area $EGHI$. The extra revenue from selling at a higher rate exceeds the lost tariff revenue by the area GHI . This is an even stronger claim than that made by Collier and Gunning, who pointed out that unification would not reduce revenue.¹

4.3 Pricing issues in open general licensing and parallel markets⁹

In operating an OGL, the question arises of what should be the price of foreign exchange in this market. (In auctions, a reservation price may or may not be used, but if it is, the question of the appropriate level arises here, too.) In some countries, the level has been set using the parallel rate as a target. This analysis explains why this leads to gradually increasing underdisbursement of funds.

Suppose the official OGL market operates alongside a private parallel market for foreign exchange. The OGL market has a fixed amount of foreign exchange available in each session, namely $(Q_1 - Q_2)$ in figure 3.4, which is disbursed by the central bank according to the guidelines established by donors. We denote by e the price of foreign exchange in the official market and by P the price in the parallel (private) market. Initially, the central bank sets the official OGL rate at e_0 . For simplicity, assume all buyers incur the same relative transactions cost C^* for the use of OGL funds and thus face the full price $P_0 (= e_0 + C^*)$. (The analysis is not changed by an assumption that costs differ among buyers). The full demand

¹ Revenue would not increase with unification if there is a uniform tariff, leading to a constant marginal cost of using the auction. All African countries, however, have a non-uniform tariff schedule, so the marginal cost rises. In this case, government revenue increases with unification.

curve is represented by DD . The demand for private (parallel) market funds (excluding OGL funds) is $DABD'$ when the OGL price is e_0 . The private supply curve is represented by SS . The quantity of OGL funds disbursed is the difference between the quantity demanded and the quantity supplied in the private market, i.e., the difference between SS and DD . In the initial equilibrium, this difference (the length of segment AB) is equal to $(Q_1 - Q_2)$, indicating OGL funds are fully disbursed.

Now assume that the central bank adopts a new exchange rate rule: The OGL rate is set equal to the parallel market rate prevailing in the previous OGL session (or $e_i = P_{t-1}$). As a result of the new rule, the horizontal segment of demand shifts upward in each period.

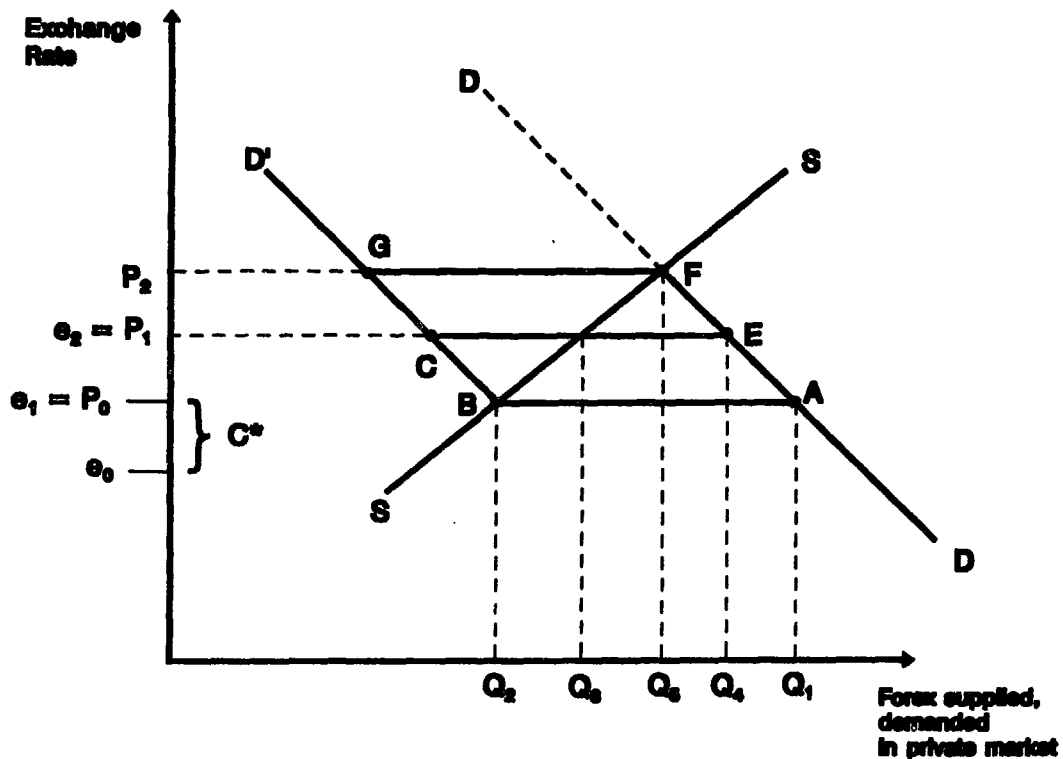


Figure 3.4 Effects of open general licensing pricing rule

In the second period, the OGL rate is e_1 , the full-price of OGL funds is P_1 , so net demand for funds in the private market is $DECD'$. The quantity of funds supplied in the private market is Q_3 , while

the quantity $(Q_4 - Q_3)$ is funded in the OGL market, leaving $(Q_3 - Q_2)$ of OGL funds undisbursed. In the third period, the OGL rate is e_2 , the full price of OGL funds is P_2 , and the net demand is equal to the private supply (Q_3) , so there is no demand for OGL funds. Any further increase in the price of OGL funds has no effect.

5. Foreign exchange allocation mechanisms: experience and policy issues

This section gives an evaluation of experience with these transitional mechanisms. Effectiveness depends not only upon the design of each mechanism, but also upon the consistency among the various schemes, and between them and other policies. The policy issues arising in the design and implementation of the various schemes will be discussed, with particular attention to the interaction among them and with reference to the experience of those African countries that best provide an example of the specific issues.

5.1 *Own-funds facilities*

Two key issues should be addressed in evaluating an own-funds scheme: first, whether it attains the goal of increasing imports of intermediate and consumer goods; second, how these imports are actually financed.

The extent to which the introduction of an own-funds facility significantly increases the inflow of imports into the country depends on how extensive the eligible list is and how effectively illegal imports were suppressed before. If a fairly large number of items are included in the list and if the controls were previously strictly enforced, the new scheme constitutes a significant step towards trade liberalization. How much this reduces protection of import-substituting domestic production (and the consequent anti-export bias) depends on whether competing imported products are included. If the list of eligible products is relatively inclusive, the own-funds scheme automatically encourages the import of goods whose

importation was most severely restricted, since it is these goods whose domestic price will exceed their border price by the greatest margin. If, on the other hand, the eligible list comprises mainly goods which were previously given priority in exchange allocation, this advantage is lost.

The own-funds facility can be useful in bringing a large segment of the parallel economy into the formal economy without requiring any additions to the existing administrative machinery. This can be an important consideration in a weak institutional setting.

In Tanzania, during the period 1970-84 (except for the years of the coffee boom in 1976-77), balance of payments problems induced the government to introduce and gradually tighten up an elaborate system of foreign exchange controls which gave preference to the importation of intermediate and capital goods and allocated foreign exchange on a discretionary basis. This led to high protection, serious shortages of inputs and spare parts for some of the most efficient firms, and to shortages of consumer goods, especially in rural areas, until an own-funds facility was introduced in 1984.

Import licenses have since then been issued which allow the importation of goods specified on a positive list (mainly consumer goods like textiles, soap, cooking oil, and producer goods like building materials, equipment and vehicles) using unofficial foreign exchange held by domestic residents. The official list covers approximately 40 percent of the import categories, although some catch-all phrases allow discretionary approval to import many other items not specifically included.

The Tanzanian own-funds scheme proved effective in providing access to imported goods. Imports under the scheme jumped to about 35 percent of total imports and remained at that level until 1989, when the importance of OGL increased. Total imports increased from about US\$0.84 billion before the own-funds scheme to US\$1.19 billion in 1988, though some of the increase was probably due to registration of previously existing illegal imports.

The second issue, namely that of the sources of "own" foreign exchange, links own-funds schemes with the other transitional mechanisms. If the own-funds facility is not introduced in conjunction with

other policy measures increasing legal access to foreign exchange, the reduction in import smuggling activities may be accompanied by an increase in the importance of parallel markets in the economy (section 4.1). In particular, if neither a relaxation of surrender requirements for export proceeds nor a liberalization of the rules governing remittances is introduced, the only possible sustainable source of foreign exchange flows (excluding the drawing down of existing accumulated stocks) for additional imports under the own-funds scheme becomes export smuggling.

Once more, Tanzania provides an example. When the own-funds facility was first introduced in 1984, both receipts from invisibles and export proceeds had to be surrendered to a central authority, so that the need to obtain foreign exchange actually led to an increase in illegal exports. Table 3.1 shows an interesting pattern in official exports of merchandise goods and of services. Both tend to decrease substantially in the period 1982-87 compared to the years 1980-81. Though it is hard to prove cause and effect, one interpretation of this is an indication of underinvoicing of exports and increase in smuggling activities.¹⁰ The black market premium increased during the introduction and early stages of the own-funds scheme, as predicted by the model in section 4.1.

Table 3.1: Tanzania: exports and imports (1980-90), millions of U.S. dollars

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Merchandise exports, fob	583	613	413	383	399	328	336	347	386	415	434
Exports of total services	179	196	117	108	107	108	110	102	121	123	140
Merchandise imports, fob	1,089	1,061	952	708	760	869	913	1,000	1,033	1,070	1,290
Imports of total services	323	284	221	191	264	309	328	420	471	479	481
Black market premium	224.0	192.7	204.6	301.3	286.5	259.4	248.0	138.9	100.0	35.2	78.0

Sources: African Development Indicators
Pick's Currency Yearbook, various issues

One implication is that, in order to avoid increasing the importance of parallel markets, own-funds facilities should be accompanied by a liberalization in the rules governing remittances or by export retention schemes. Tanzania, for example, in 1986 began to allow nontraditional exporters to retain some of their earnings, 100 percent at first, subsequently reduced to 50 percent. Accordingly, unofficial production of nontraditional crops and handicrafts increased significantly (though from a small base) in 1987,¹¹ helping at least in a small way to fund the own-funds import. The rise in the black market premium, however, indicates that this small measure was not sufficient.

5.2 Open General Licensing schemes

The main issue in the design of OGL schemes is the determination of the exchange rate applying to imports on the list. Since neither the quantity nor the price of foreign exchange is endogenously determined by the scheme, a failure in setting the price that should clear the market (in particular, the choice of an overvalued exchange rate) will result in the formation of queues at the OGL window. Although the scheme is not explicitly designed for exchange rate determination, it promptly "signals" the necessary changes in the official rate by showing excess demand or supply. In the experience of SSA countries, the liberalization of the OGL list without adequate increases in the foreign exchange and adjustment of the exchange rate supplied has often led to chronic excess demand, queues, loss of credibility, speculative overimporting, rapid depletion of OGL funds, and in some cases, closure of the OGL facility. One case in point is Tanzania, where the unwillingness of the authorities to devalue as often and as much as necessary to accommodate liberalization of the OGL list has caused the persistence of excess demand throughout the reform period. Tanzanian officials, though, blamed the persistence of excess demand on the speed of OGL liberalization.

Quirk (1989) correctly emphasizes that "exchange rate or equivalent action on pricing should accompany the adoption of such a system". An interesting exchange rate rule was used in Madagascar

for the Liberalized Import Regime (LIR), the predecessor to the OGL. Under conditions of aggregate demand in excess of available LIR funds, importers were "cleared" from the queue in each session by receiving only their prorated demand share, while the nonrefundable application fee (defined as percentage of the funds originally requested) implicitly forced importers to pay a slightly more depreciated effective exchange rate, even in the absence of official devaluation.¹² Despite the low threshold for the devaluation rule, which was triggered only when less than 40 percent of foreign exchange demand was met at a session:¹³ sufficient official devaluation and reduced scope for illegal activity account for the smooth operation of the system. The Malagasy scheme worked well until October 1991 when the system collapsed on account of macroeconomic imbalances and civilian unrest.

But the need to avoid an overvalued exchange rate with an OGL does not imply that the rate should be set equal to the parallel market rate. Based on the adverse effects of multiple rate systems in general, it might seem desirable to equalize the OGL and the parallel rate. This has been done by some countries, which have informally used the parallel rate as a guide in setting the official rate.¹⁴ However, compared to the parallel market, significant transaction costs are associated with the use of OGL funds due both to administrative costs (paperwork costs, commercial bank fees for the opening of letters of credit, local coverage requirements) and to the opportunity cost of legal versus illegal activities (the evasion of customs duties being less likely under a carefully monitored OGL window). These transaction costs imply that an attempt to set the price of OGL foreign exchange too close to the parallel rate can result in less than full use of OGL funds. As shown in section 4.3, the parallel market rate *minus* all relative transaction costs sets a ceiling on the OGL rate.

Setting the OGL rate is a delicate balancing act. It must not be set too low, or queues will result. On the other hand, it must be set at a discount from the parallel rate. The OGL can be set closer to the parallel rate if there is simultaneous reduction in the cost of using the OGL scheme, as well as stricter enforcement of the rules designed to prevent illegal activity. Many SSA countries are moving in this

direction. For example, Malawi and Zambia no longer require 100 percent local coverage upon application for OGL funds; Uganda recently eliminated the requirement of a letter of credit, reduced processing delays in the official market and lowered the threshold for preshipment inspection.

An OGL also interacts with other mechanisms. If the import lists under this scheme and the own-funds window overlap, and if the OGL rate is persistently overvalued, there will be excess demand in the OGL for items that appear on both lists. In this case, only those firms that have access to the OGL will benefit from the exchange rate subsidy.

5.3 Exporter Retention Schemes

Compared to OGL mechanisms, retention schemes have proved to be less cumbersome and to cause less delay in the supply of foreign exchange. In Zambia, for example, getting exchange from the retention scheme currently requires four to seven working days, while under the OGL it takes three to five weeks. In general, they have also proved more effective in encouraging exports than other incentive schemes like duty drawbacks or rebates. This was the case in Kenya, where an export compensation scheme had been operational since 1974 but, marred by frequent changes and delays, had benefitted only a few large exporters without encouraging exports on a broad base. One estimate of the benefits of a foreign exchange retention scheme in Poland, where exchange restrictions were severe, was quite high—up to 8 percent of GDP (Tarr). But the size of the benefits depend on whether the retained earnings are saleable, on the eligibility criteria, and on the retention ratios applied.

First, the benefits are larger if the export proceeds are saleable. This helps insure that the proceeds over and above exporters' immediate needs are put to good use. It also increases the scheme's incentive effect for exporters. An export retention scheme may not be effective in bringing illegal exports into official channels when operated in conjunction with an OGL or other official market with an overvalued rate, if constraints exist on the uses of the retained proceeds. Exporters would in this case have the

incentive to smuggle so as to obtain the parallel rate for their exports and at the same time effect their imports at the subsidized official OGL rate, thus benefitting from the full parallel premium.

As far as eligibility is concerned, the main issue regards the treatment of traditional versus nontraditional exports. Many SSA countries have excluded traditional exports from the scheme. These include Madagascar; Tanzania, which abolished the retention allowance for traditional products in April 1989; and Uganda, where coffee was excluded from the scheme. Others have applied very low retention ratios. In Ghana, for example, the retention ratio for cocoa was only 5 percent. However, traditional exports constitute the bulk of most SSA country total exports, so that even the highest retention percentages would not supply much foreign exchange to the market if applied only to nontraditionals. The significance for foreign exchange supply of a 100 percent retention allowance on non-coffee exports in Uganda, where coffee exports constitute 70 percent of the total, is clearly limited. Therefore, where adequate funding of private markets for foreign exchange is a concern (as it generally is, especially in later phases of the reforms), traditional exporters should be allowed to participate in the scheme, possibly on equal terms.

Turning to the retention ratios, obviously the higher the percentage, the greater the incentive effect on exports and the scope for enlargement of the foreign exchange market. In SSA countries, however, the tendency has sometimes been to allow exporters to retain only slightly more foreign exchange than needed for their imported inputs, so that retention ratios have been low, particularly for traditional exports (5-35 percent in Ghana; 35 percent in Tanzania; 50 percent in Kenya and Zaire). This has been motivated partly by a desire to guarantee that a certain amount of foreign exchange is available for official purposes. In the initial stages of a reform, the parallel premium could still be significant and the government's fiscal constraints may pose a serious barrier to its payment of the full price for currency. The imposition of even low retention ratios could in this case constitute a limited step towards

liberalization. But the percentage should be expanded quickly, with the government purchasing its requirements in the market.

An important consideration is the interaction of export retention scheme with bureaus and interbank markets. Introducing a retention scheme without constraints on the uses of the funds is one way of supplying the private market for foreign exchange. This has happened in Uganda and since August 1992, in Kenya when the introduction of a 100 percent retention allowance on nontraditional exports (later extended to other categories) brought about the development of an extensive interbank market, and in Zambia, where since October 1992 the bureaus and the retention market have *de facto* been fully integrated. In June 1993, Tanzania altogether abolished the surrender requirement to foster the expansion of bureaus.

5.4 The transition to a floating regime: auctions or interbank markets?

Once a country is committed to adopt a floating regime, perhaps the most crucial issue becomes whether it should move directly to an interbank market or first implement an auction system.

Much of the debate on the appropriateness of interbank versus auction systems centers on the degree of development of financial markets. Aron and Elbadawi (1993) suggest that an auction would be preferable as a further step in the transition when the institutional setting is not developed enough to allow for the smooth functioning of a decentralized market. In such cases, an auction system strengthens the existing foreign exchange market institutions, give agents some time to learn how to function in a more market-oriented system, and thus prepare the ground for an eventual shift to a decentralized system. Another argument raised against interbank markets is that, if the number of commercial banks and authorized dealers is not sufficiently high, it may be harder to prevent collusion among major players in the market.

While it is true that in an auction the central bank can strictly monitor and regulate the behavior of participants, there is in principle no reason why it could not intervene in the interbank market as well to impose regulations preventing collusion, for example, by setting maximum limits on the spread between buying and selling rates. Alternatively, it could enforce the desired spread by its own buying and selling rates. Moreover, if free entry for foreign exchange bureaus were allowed, competition should be guaranteed even in an interbank market.

Aron and Elbadawi (1993) suggest that an auction's informational content is richer than an interbank system in that it conveys more precise and focused information than that conveyed merely by the prices. On the other hand, Quirk (1987) argues that, since the foreign exchange is only partly surrendered to the market under an auction system, less information on the overall supply is available. And, from the point of view of the government, (and donors - see section 5.6) an auction may be preferable in that it allows more direct monitoring of the use of foreign exchange and ensure allocation for development priorities.

However, in many respects, an interbank system is superior to an auction. First, auction systems leave room for manipulation by the authorities through frequent ad hoc interventions. This has clearly been the case with Nigeria, where the central bank systematically intervened in the auction in order to prevent excessive depreciation (section 5.5).¹⁵ Manipulation in the auction in Zambia in the mid-1980s was more blatant, involving disqualification of high bidders and other direct interventions. Second, auctions function discretely, which causes delays in the availability of foreign exchange and creates uncertainty for participants engaged in both sales and purchases. Third, even well-run auctions impose higher transaction costs on participants than a well-functioning interbank market. Finally, the manner in which auctions in SSA have been designed in practice has prevented them from closely mimicking a true exchange market. Particularly, the pricing rules adopted and the almost total reliance on exchange from donors or state-owned enterprises to fund the auction has maintained a segmented market structure. And

in Guinea, the mechanism that was called an "auction" actually evolved into a system operated through bids of quantity desired at a given price, with no price-adjustment mechanism.

On balance, the problems with auctions argue that the move to an interbank market should be as expeditious as feasible. In some cases, it may be possible to skip the auction altogether, as Gambia has done, apparently quite successfully. This option should at least be seriously considered and specific reasons identified for rejecting it in cases where a transitional auction is chosen instead. But in some cases, for political or institutional reasons, an auction may be necessary. The experience with countries like Ghana and Uganda shows that the auction can be very effective in reducing the parallel market premium and in strengthening the intermediation role of commercial banks in the foreign exchange system. After these two objectives have been reached, though, the move to an interbank market should not be delayed, since the shortcomings potentially implicit in an auction system are more likely to emerge with its prolonged maintenance.

An intermediate solution suggested by Feldman and Mehra (1993) is the introduction of a double auction, that is, an auction in which both sellers and buyers submit bids and in which price and quantity exchanged are determined by matching offers with demand bids. The advantage of such a system would be twofold: on one hand, the functioning of the auction would be more transparent since the government would have less discretion in determining the amount of foreign exchange to be auctioned; on the other hand, the double auction would be very similar to an interbank market because the private sector would be involved on both the supply and the demand sides. The difference would be, of course, in the discrete rather than continuous operation of the auction and in the different degree of institutional complexity required for the operation of the mechanism. But, to date, this has not been tried.

5.5 *The design and management of foreign exchange auctions*

Several issues arise in the design and management of foreign exchange auctions. Among the issues most discussed in the literature is that of the pricing rule.¹⁶ The main difference between the Dutch and the marginal price system is that the former implies price discrimination, acting as a tax on inframarginal bidders. Different buyers pay different prices for the same commodity, making this system a very imperfect substitute for a free market. This acts as a tariff, albeit a highly variable one, introducing a nontransparent and unpredictable method of taxing import consumption and protecting inefficient production of import substitutes. In another major departure from the effects of a free market, the surplus related to the purchase of foreign exchange accrues to the government in the form of revenue instead of to infra-marginal buyers in the form of profits. This may constitute a major incentive for the government to use a Dutch auction. But it also means that efficient users of foreign exchange (who tend to be the inframarginal bidders) do not receive the excess profits that serve to attract investment to the sectors and companies that can use the exchange best. This compromises the goal of efficient intertemporal resource allocation.

The Dutch system is sometimes claimed to be preferable for SSA countries because it supposedly discourages strategic bidding and excessive devaluation. The argument is that in a marginal price auction, bidders could bid higher than they are really willing to pay, since they know that they will end up paying only the marginal rate. This reasoning is what seems to have led to the adoption of the Dutch rule in most SSA countries. However, it is not at all clear this is really what should be expected or what has happened in practice. Some have argued that a Dutch auction would actually be an incentive to under-bid and that the "true" price would be more effectively revealed under a marginal price rule.¹⁷

In any case, the experience of SSA countries that have adopted a Dutch system shows that the marginal and the maximum rates rapidly tend to converge, so that the issue concerns more the early stages of the auction than its regular operation. For example, in Uganda the spread between the highest

and marginal bids fell from USh 130 and USh 120 in the first and second sessions to USh 50 from the fifth on, which represents only about 0.5 percent of the average exchange rate. There has clearly been a learning process, which may or may not be related to the use of a reserve price (see below).

The imposition of floor and ceiling levels on the acceptable rates by the central bank may influence the price course more than the institutional rule of Dutch versus marginal pricing itself. The reserve price is the minimum price at which the central authority is ready to sell the foreign exchange. McAfee and McMillan (1987) suggest the use of a reserve price to counter collusive practices, but generally it has been used as a device to assure a "fair" or "true" (in the view of the central bank) pricing of the scarce foreign exchange. This estimate may be formed with reference to a secondary market. In Ghana, for example, the bureaus' rate has been used as an anchor for the reserve price. But sometimes, the reserve price has been set with little reference to objective market indicators.

Aron and Elbadawi (1993) hypothesize that wherever a reserve price has been set, even though not announced, it has contributed to stabilizing the auction exchange rate, since bidders have learnt the policy rule implicit in the authorities' behavior. In the case of Uganda, participants in the auctions soon understood that the central bank set the floor price one or two shillings above the previous week's close, and their bids converged accordingly (table 3.2). This was not without shortcomings, though. In all but two sessions, the amount of successful bids was lower than the amount of total bids, and only once (in the third week) did supply act as a constraint: in all the other cases some bids were excluded, mainly because they did not meet the reserve price requirement.¹⁸ The resulting underutilization of auction funds suggests the reserve price may have been set too high. Setting a reserve price may, in principle, not only lead to under-disbursement of funds, but also to destabilization of the parallel premium, and an increase in the average price of foreign exchange in both the auction and parallel markets (section 4.3).

Table 3.2 Uganda: auction exchange rates, Shillings

<i>Week</i>	<i>Date</i>	<i>Average rate</i>	<i>Marginal rate</i>	<i>Highest bid</i>	<i>Lowest bid</i>	<i>Spread spread</i>	<i>Bid</i>
1st	01/31/92	1,039	970	1,100	970	130	130
2nd	02/07/92	1,037	980	1,100	900	120	200
3rd	02/14/92	1,025	990	1,050	970	60	80
4th	02/21/92	1,028	995	1,050	980	55	70
5th	02/28/92	1,029	1,000	1,050	985	50	65
6th	03/06/92	1,028	1,000	1,050	1,000	50	50
7th	03/13/92	1,031	1,000	1,050	1,000	50	50
8th	03/20/92	1,027	1,000	1,050	1,000	50	50

Notes:

1. Difference between the highest bid and the marginal rate.
2. Difference between the highest and the lowest bid.

Source: Robertson (1992), p.7 (from Bank of Uganda).

A second (opposite) kind of price intervention is the imposition of an upper ceiling on the auction rate, with the aim of preventing an "excessive" devaluation. This was introduced as an explicit rule in the Zambian auctions of March 1987, while it was indirectly enforced by the central bank of Nigeria through commercial banks in the period 1986-89. Anecdotal evidence suggests that central bank officials informally exerted pressure on commercial banks in order to prevent them from bidding too high. The system of general rules governing the auction indirectly reached the same goal. Limits were set on the share of the total foreign exchange supplied that could be allocated to each single participant discouraging price competition among the banks and keeping the bids low. Regardless of how much a bank was willing to pay to obtain foreign exchange, it knew that it could obtain only a fraction of its needs, and that fraction depended on its size rather than on its bids. Other regulations had the effect of restraining the demand at the auction and thus indirectly enforcing a ceiling on the auction rate. The data reported in Table 3.3 confirm these conclusions: despite the fact that demand constantly outstripped supply in 1987-88, the depreciation rate in the auction market remained low and the premium on the parallel market remained positive and significant.

Table 3.3 Nigeria: performance of the auction

<i>Month¹</i>	<i>Forex supply</i>	<i>Total bids (US\$ m)</i>	<i>Excess demand (US\$ m)</i>	<i>Auction rate</i>	<i>Depreciation rate</i>	<i>Parallel rate²</i>	<i>Premium³ (%)</i>
01/87	50.00	55.41	5.41	3.4222		7.6923	124.77
02/87	75.00	94.04	19.04	3.9412	15.16	6.6666	69.15
03/87	50.00	38.39	-11.61	3.8241	-2.97	7.1428	86.78
04/87	80.00	102.18	22.18	3.7371	-2.27	6.2500	67.24
05/87	85.00	125.20	40.20	4.1619	11.37	5.5555	33.48
06/87	100.00	150.00	50.00	4.3637	4.85	5.5555	27.31
07/87	70.00	78.84	8.84	3.9899	8.57	6.6666	67.08
08/87	100.00	109.63	9.63	4.0405	1.27	6.2500	54.68
09/87	100.00	116.39	16.39	4.1918	3.74	5.0000	19.28
10/87	100.00	117.34	17.34	4.2533	1.47	4.7619	11.95
11/87	100.00	118.80	18.80	4.3432	2.11	4.3478	0.10
12/87	100.00	118.00	18.00	4.1916	-3.49	4.5454	8.44
01/88	100.00	117.00	17.00	4.1516	-0.95	5.0000	20.43
02/88	115.00	138.83	23.83	4.2342	1.99	5.0000	18.08
03/88	120.00	144.51	24.51	4.2910	1.34	5.5555	29.46
04/88	120.00	142.40	22.40	4.2121	-1.84	6.2500	48.38
05/88	120.00	145.77	25.77	4.1761	-0.85	6.6666	59.63
06/88	120.00	146.59	26.59	4.3132	3.28	6.2500	44.90
07/88	120.00	144.29	24.29	4.4750	3.75	6.6666	48.97
08/88	120.00	143.52	23.52	4.5455	1.57	7.1428	57.14

Notes:

1. Data refer to the first session of the month.
2. Since data on the parallel rate are only available on an end-of-period basis, in order to make them comparable with auction rates (which relate to the *first* session of the month), we report the end-of-period January figure in the February line.
3. Calculated as: $(\text{Parallel rate} - \text{auction rate})/\text{auction rate}$.

Sources: Sobodu and Sotonwa (1992), pp. 34-35; World Currency Yearbook, various issues.

A second major issue in the design of foreign exchange auctions is the nature of the participants. In a retail auction the participants are directly importers who demand foreign exchange for their own needs. In a wholesale auction, instead, the central bank sells foreign exchange to commercial banks

and authorized dealers, who then sell onward to their clients. In practice, in both cases bids have been submitted by commercial banks, the difference being that while in the retail system banks can only bid for the amount covered by importers' existing orders, in the wholesale system they can bid for more and sell the remaining part on the secondary market. A somewhat "hybrid" system has arisen in the case of Uganda, where—despite the official denomination of "wholesale" auction—commercial banks only submit bids which exactly cover their clients' requirements, thus setting a *de facto* retail system. Banks are reluctant to bid on their own account, even though they can legally do so, due to the imposition of a time limit on the utilization of funds. The foreign exchange purchased at the auction must be utilized in three weeks, otherwise it must be sold back to the central bank at the marginal rate less a 2.4 percent commission. This induces commercial banks to merely pass on importers' bids rather than bid for sale on the secondary market.

There are least two reasons to allow wholesale bidders rather than limiting the participation to importers. First, the transaction costs involved in a retail auction are high for small or occasional importers, so that only importers who require relatively large amounts of foreign exchange would actually participate in the auction whether they are legally excluded or not. Second, the adoption of a wholesale auction would generally contribute to the development of the financial sector and to the eventual establishment of a competitive market for foreign exchange. Of course, allowing wholesale bidders is not inconsistent with the inclusion of retail bidders (with some minimum quantity limit) as well.

In any case, whatever the type of auction, participation should be allowed on a fairly broad basis in order to avoid a situation in which a few large banks (or importers) dominate the market. This does not mean complete absence of exclusionary rules: it may in fact be prudent to exclude a bidder which could dominate or manipulate the market. This was the case, for example, in Zambia, where the mining company (about 40 percent of the market) was allocated foreign exchange under a special

arrangement. In Sierra Leone, the high degree of concentration of the import and export sectors also justified the adoption of special rules.

A possible remedy for the danger of concentration is to allow foreign exchange bureaus to bid in the auction to increase competition. In Uganda, competition has been de facto limited to the commercial banks, because foreign exchange bureaus are deterred by excessive documentation requirements. Even in this case, however, the market is more competitive than it would appear, since the real bidders are the numerous importers, for whom the banks are only acting as agents.

Since bureaus are less closely regulated by the central bank than are commercial banks, the inclusion of bureaus may create problems for the central bank in monitoring the use of auction funds, where this is necessary, for example, to satisfy donor requirements. There are, however, ways of dealing with this (section 5.6). Another way of preventing monopolization could be the imposition of a maximum limit on the size of the bids.

An important requirement for the management of an auction market is transparency. In order to build the confidence of participants, the rules governing the system should be unambiguous and disclosed. The amount of foreign exchange to be auctioned should be announced in advance; the opening of the bids should be public and the number of successful bids should be announced accordingly.¹⁹ In case of disqualification of any bids, the underlying reasons should be publicly communicated.

In some cases, when the above rules have not been observed the functioning of the auction has been compromised. In Zambia, for example, auction managers had discretion in disqualifying bids. This led to manipulation of the auction. In Ghana, instead, the committee that managed the auction included representatives from commercial banks, so that any decision would be known by the whole banking sector.

As with transparency, some guidelines regarding the frequency of the auctions should be followed. In principle, auctions should be held on a regular basis rather than at unpredictable intervals, so that their importance in the foreign exchange allocation system is established. Moreover, they should be held often enough to reflect changes in economic conditions and to prevent panic bidding, without at the same time becoming so frequent as to make the market "thin" or increase administrative costs prohibitively. Although Nigeria experimented with daily auctions, in practice a weekly frequency seems to have been about right in most of the countries that have tried it.

Last, but not least, when designing and managing an auction, participants should not be overloaded with documentation requirements. Excessive paperwork and advance deposit requirements impose costs on bidders in terms of time and interest lost which discourage the use of the auction. One of the reasons for the underutilization of auction funds in Uganda, for example, was the requirement that importers should open letters of credit²⁰ and have a 100 percent local cover when the foreign exchange was purchased. Where the funds were slow to be disbursed to winning bidders, and especially where interest rates were high (e.g., Zambia), the costs of the advance deposit requirements were even more onerous. Other documentation requirements may concern the uses of the foreign exchange purchased through the auction. Documentation requirements impose costs on everyone but are especially costly to small-scale users.

5.6 The role of external assistance in the transition to a liberalized regime

Donors' funds financed virtually all OGL systems in SSA and constituted the main source of foreign exchange for the auctions in Ghana, Uganda and Zambia.²¹ It is therefore extremely important to address the issues of how external assistance has been provided so far and how it should be provided in order to be consistent with the aim of achieving and sustaining a liberalized foreign exchange regime.

So far, importers who wanted to get foreign exchange from official sources have encountered significant documentation requirements, which are imposed to give donors control over the allocation of their funds. The stylized procedures that an importer would follow can be summarized as follows:²²

- 1) The importer would complete an application to purchase foreign currency and pass it to a commercial bank, together with a pro-forma invoice (list of the goods to be shipped, specifying the price and the terms of sale) and the import license (if required).
- 2) The importer would direct a commercial bank to arrange payment to the exporter, typically by opening a letter of credit. In Uganda, the commercial bank charges 1 percent and the Central Bank 2 percent for this.
- 3) He would then obtain the foreign exchange through the relevant scheme (OGL, auction or other).
- 4) On establishment of the payment mechanism, the importer would proceed with shipment.
- 5) The commercial bank would pass all the documents (application, invoice, import license, letter of credit) to the central bank, who would register the import and send copies of the documents to the Customs and to an institution for a pre-shipment inspection, to ascertain that duties have been correctly applied and that prices are legitimate.²³
- 6) Following the shipment, the commercial bank would pass the central bank documents containing evidence of payment and shipping (that is, the final invoice, the bill of exchange, the bankers' statement of acceptance of the letter of credit, and a clearance from the surveillance institution).
- 7) The central bank would then pass the documentation to the donors, who would check that the transaction has been carried out according to the terms of agreement, particularly as far as the uses of the funds are concerned.²⁴
- 8) If the transaction were satisfactory on all checks, the donor agency would reimburse the amount by transferring funds to the central bank, who would then use them in the auction, OGL, or other scheme.

The above process is evidently very costly: paperwork costs add to commercial bank fees at every step, and the requirement of local coverage for letters of credit (100 percent in the case of Uganda, where the interest rate is 40 percent) adds further costs in terms of interest lost. Moreover, delays in the execution of the various controls (such as the pre-shipment inspection) create uncertainty regarding the time at which the foreign exchange will be available and discourage the use of "official"

channels compared to the bureaus or the parallel market.²⁵ In Uganda, donor funds have not been fully disbursed.

To help resolve these problems, donors need to simplify documentation requirements and allow their funds to be channeled through other channels, such as foreign exchange bureaus. So far, the World Bank and other bilateral donors have generally funded auctions and OGL schemes²⁶, but as the role of the secondary market increases, they should design procedures to channel their funds through foreign exchange bureaus and eventually through the interbank system. The simplification of import procedures would allow even the bureaus to collect the essential documentation from the importers and deliver them to the central bank, where the documents would be available for donor inspection. This would of course break the link between the donor funds and any specific import, which should occur anyway, but still allow donors to verify that the kind of goods imported and the terms of the transactions are in accordance with the agreements. Collier and Gunning report, however, that Uganda's recent efforts to extend the paper trail requirements to the bureaus as a prelude to abolishing the auction and creating an interbank market were seen by some as a precursor to a return to rationing. As an alternative, they recommend using "Direction of Trade" statistics on exports from developed countries to the recipient countries. These are collected on the exporting end and are thus less likely to be distorted by evasion. This would have the additional advantage of virtually eliminating any paperwork burden on importers coming from donor demands.

There are still some donors who tie their import support by requiring that their funds be used to import particular categories of goods, or that the imports be from specified countries. The experience of SSA countries suggests that such tied aid has two negative consequences. First, it discourages the use of "official" funds compared to funds purchased through the bureaus, which are usually subject only to the restrictions inherent in the government's prohibitive list. Second, it shifts expenditures to

lower priority items. It is clearly desirable that donors remove such constraints on the free use of their support.

One final recommendation is that donors supply funds on a more regular basis. The fact that the flow of funds was not constant over time and the timing of disbursement could not always be predicted with certainty (due, for example, to bureaucratic delays) has increased the volatility of the exchange rate, which in turn has reflected negatively on the course of other prices. Moreover, uncertainty on the future availability of foreign exchange has induced enterprises to carry larger stocks of imported raw materials and intermediate goods than would have been the case if foreign exchange had been channeled more regularly through the system. This has been a particular problem, for example, in Uganda.

6. Patterns of reform in SSA—review of experience²⁷

The foreign exchange allocation mechanisms previously outlined have been introduced in many SSA countries in the 1980s and early 1990s, but only in a few have they fully achieved the goals for which they had been designed. A brief review of the experiences of four countries is presented here to indicate how the various mechanisms worked (or failed to work) as parts of a whole program of foreign exchange allocation reforms in some "successful" and "unsuccessful" cases.

Ghana is often considered as the most successful example of design and implementation of trade policy reform in SSA. Starting from a highly protectionist regime and an exchange rate which had remained overvalued for years because the government feared the political consequences of a devaluation, the Cedi was devalued seven times during 1983-85. The first time in April 1983, this was done through a system of import surcharges and export bonuses, then through discrete changes in the official parity, until a dual system was introduced in September 1986. The first window was

administered at the fixed official rate and was used for official debt service, imports of petroleum products and surrender of traditional export proceeds. The second window consisted instead of a weekly Dutch "retail" auction and was used to finance all other importers licensed to bid at the auction and to surrender nontraditional export receipts. The dual system lasted only a few months, since it was only a transitional device to guarantee the allocation of foreign exchange at a subsidized rate for "priority" uses and to prepare the market for a more extensive use of the auction. The auction then became the only effective window in February 1987. Meanwhile, an export retention scheme with multiple rates had been introduced to guarantee exporters (mainly nontraditional) access to foreign exchange for their essential imports.

Although a considerable depreciation had been achieved since the beginning of the reforms, the parallel premium remained on average 46 percent in 1987 and the existence of a still important black market for foreign exchange hampered the efficient functioning of the auction. The government subsequently legalized foreign exchange bureaus in February 1988 and granted them eligibility to bid in the auction in December 1989. Exporters were allowed to sell their retained earnings to the bureaus, instead of being obliged to hold them in accounts abroad to finance essential imports. These and other changes brought the black market premium down to 6 percent in 1990, a spread which primarily reflected transaction costs inherent in the operation of the auction. These costs—and this spread—were eliminated first by replacing the retail auction with a wholesale one in which commercial banks -and not the central bank- were responsible for determining the eligibility of individual bids, and then replacing the auction itself with an interbank market in March 1992. The foreign exchange system is now liberalized, except for some controls remaining on capital outflows, and the parallel market premium has been virtually eliminated: Ghana can therefore be judged to have a virtually convertible currency.

Uganda had experimented with auctions beginning in 1982, but at that time the coverage of auction funds on the demand and supply side was extremely limited and all kinds of controls on foreign exchange allocation remained in place. So the first stage of the liberalization process can actually be traced to the 1987 Economic Recovery Program. As in the case of Ghana, at the beginning the main ingredient in the reform package was a set of devaluations (between May 1987 and December 1989) aimed at avoiding a growing appreciation of the exchange rate in the presence of annual inflation rates above 100 percent.

An OGL system was introduced in November 1987, and an export retention scheme for nontraditional agricultural exports one year later, together with the so-called Special Import Program (SIP).²⁸ The export retention scheme was very effective in enhancing export performance, especially because it was accompanied by deregulation in the markets of nontraditional exports. The OGL and SIP schemes did not prove to be very successful, so from 1989 the World Bank and the IMF pressed for the adoption of further liberalization measures. Although in principle an auction system could have been introduced first, the government believed the legalization of foreign exchange bureaus would be more likely to succeed, since it would merely recognize structures which were already existing on the black market, rather than creating new structures and new markets. The bureaus were thus legalized in June 1990, and soon absorbed a significant amount of foreign exchange transactions. The next step, the unification of the exchange rate, was taken in January 1992 with the introduction of a weekly Dutch auction in which commercial banks and bureaus were allowed to participate.²⁹ The auction was funded by donors. But the demand for foreign exchange was less than expected and the auction funds were in general not fully utilized (Table 3.4), for several reasons. These included the reserve pricing rule, the higher administrative costs of using the auction, and the relative difficulty of tax evasion when using the auction.³⁰

Table 3.4 Uganda: utilization of the auction funds, US dollars.

<i>Week</i>	<i>Date</i>	<i>Forex supplied</i>	<i>Total bids</i>	<i>Successful bids</i>	<i>Utilization Rate</i>
1st	01/31/92	5,000,000	2,482,978	2,287,844	45.8%
2nd	02/07/92	2,500,000	2,461,218	1,412,318	56.5%
3rd	02/14/92	2,500,000	3,051,863	2,499,999	100.0%
4th	02/21/92	3,500,000	3,557,839	3,335,278	95.3%
5th	02/28/92	4,000,000	1,927,323	1,919,412	48.0%
6th	03/06/92	3,500,000	3,239,794	3,239,794	92.6%
7th	03/13/92	2,500,000	1,503,586	1,256,380	50.3%
8th	03/20/92	4,000,000	3,711,931	3,388,116	84.7%
Total		27,500,000	21,936,532	19,339,141	
Average		3,437,500	2,742,067	2,417,393	70.3%

As of September 1993, the system has functioned smoothly and has led to a consistent reduction in the spread on the parallel rate. However, to resolve remaining problems and move closer to a true market mechanism, the proposal is currently being considered of shifting to an interbank market, provided that donor funds can be channeled this way.

More controversial and certainly less successful with trade liberalization has been the experience of Nigeria. In the early 1980s the Nigerian government maintained a fixed overvalued exchange rate and allocated foreign exchange (derived primarily from oil exports) through a highly discretionary administrative import licensing system. The growing importance of the parallel market (the premium was around 400 percent for the period 1983-85) and other macroeconomic imbalances induced the government of General Babangida to launch an adjustment program in 1986. After a series of discrete devaluations beginning in January 1986, a dual rate regime was introduced in September 1986. The first window consisted of a crawling peg against the US dollar and was used for debt service and

official imports, all other legitimate current account transactions being financed in the second window, where the exchange rate was determined at a weekly wholesale auction. The pricing rule was an average-bid one in the first two sessions, became a marginal price one from the third on, and was finally changed into a Dutch rule in April 1987. The latter rule was introduced by the central bank in an attempt to moderate the "excessive" rate of depreciation which had occurred in the first months: it was hoped that the Dutch rule would restrain the banks' desire to bid high.³¹

Excess demand remained, though, so that the scarce foreign exchange was actually allocated according to a series of rules which were much closer to an administrative system than to a market one.³² Regulatory intervention was extensive in the secondary market as well. Banks were allowed to sell auction funds to the interbank market, but in principle only at a 1 percent margin. Given the rationing of funds, there was scope for a high black market premium to persist in the sales to final importers, creating enormous rents for banks who were allocated exchange in the "auction."

The two windows of the dual system were unified under the auction in July 1987, until a managed system was introduced in January 1989, wherein the exchange rate was discretionarily determined by the central bank in loose accordance with five predetermined criteria. The degree of transparency in the exchange rate determination was thus reduced further, adding to the already existing administrative complexity of the allocation according to size. Under IMF pressure, the government reinstated a Dutch auction in December 1990. To protect future financial rents, commercial banks lobbied successfully for tough capital requirements and regulations on the creation of new banks and to keep the bureaus outside of the interbank market.

In March 1992, the auction was discontinued and the exchange rate was allowed to be determined on the interbank market. The purpose of this change was to abolish the still high parallel premium, but the central bank was not willing to accept the rate of depreciation resulting from the system and intervened to defend the Naira by meeting all the demands for foreign exchange at an exchange rate it

considered appropriate. The result was a drop in international reserves from US\$ 4 billion in March 1992 to US\$ 1 billion at the end of the year, which induced the central bank to suspend the supply of foreign exchange for six weeks from December 1992 to March 1993. At that date the central bank announced that it would supply a fixed quantity of exchange every week at a pre-determined exchange rate; the quantity allocated to each bank would be a function of its Naira deposits at the central bank. The new system was designed to absorb liquidity and stop the currency depreciation through monetary contraction, a result that it actually achieved. At the same time, though, it touched off a process of financial disintermediation and distorted the incentives for the banking system. Rents accruing to banks from selling foreign exchange were higher than the returns on real project lending. Many distressed banks opened rural branches in order to increase deposits and reserves at the central bank and be allocated larger amounts of foreign exchange. The resources mobilized in this way would have otherwise been available for investment and growth.

The Nigerian system cannot be said to be close to convertibility, nor it can be said to have achieved efficiency and transparency in the allocation of foreign exchange. A significant premium on the parallel market remains and persisting excess demand - together with the political unwillingness to let the currency depreciate above a certain threshold - requires administrative rationing at the bank level. No effective step towards a market-based allocation regime can be envisaged unless the exchange rate is allowed to play the role of clearing the market through devaluation.

Another example of a "troubled" foreign exchange system is that of Zambia. After experimenting with a pegged exchange rate and a system of administrative controls on the allocation of foreign exchange in the 1970s and early 1980s, Zambia first introduced an auction in October 1985. Such auctions, held on a weekly basis and conducted according to the marginal pricing rule (Dutch from March 1987), allocated donor funds and surrendered export receipts to authorized banks. The auction rate also set the price for those foreign exchange transactions which took place outside the auction

market, e.g., debt service, direct transactions of the government and of the Zambia Consolidated Copper Mines (ZCCM), and oil imports. The exchange rate initially depreciated and the parallel premium fell, but these trends were soon reversed as the government introduced a number of measures to discourage high bids and in general the demand for auction funds. Such measures included imposition of severe documentation requirements; institution of a deposit requirement of 30 percent (40 percent from March 1987) as pre-condition for participating in the auction; disqualification of high bids; publication of the names of high bidders in order to question their patriotism; and finally the appointment as governor of the central bank of Dr. Chivuno, who was one of the major opponents to the auction.

Some external factors (namely the decline in copper prices and the insufficient support from donor agencies), together with the failure of macroeconomic stabilization (which put the exchange rate under speculative pressure) and with internal political problems (the riots which followed the decontrol of maize prices in December 1986), led to a suspension of the auction from January to March 1987 and to its final abandonment in May. The exchange rate was then fixed and the administration of exchange and import licenses was given to a Foreign Exchange Management Committee (FEMAC). The first reform attempt had thus come to an end.

The dialogue with the World Bank and the IMF was later re-opened and in February 1990 a dual exchange system was introduced. In the first window, receipts from mining and parastatals funded official imports and debt service at a rate which was pegged to the SDR. The second window, instead, was operated on an OGL basis with donor funds and applied to a positive list of imports. The exchange rate in this window was still set by the government, but adjusted frequently to balance demand and supply. As more foreign exchange became available, more imports were transferred to the second window, until the first was abolished in April 1991. The parallel premium was still significant, due to persisting excess demand for foreign exchange. To address this and other

problems, such as the delays and cumbersome procedures of the OGL scheme, a Bureaux de Change system was instituted in October 1992. Two months later the official and the bureau rate were unified at the latter rate.

The Zambian experience is a study in contrast. Compared to the initial reversals and failures in reform, Zambia has lately made substantial progress in liberalizing the market for foreign exchange.³³ To some extent, the recent progress has been facilitated by the fact that the new political regime (since 1992) was not closely tied to past policies. Nonetheless, although the price of foreign exchange is currently market-determined, the bulk of foreign exchange is still allocated by administrative fiat (namely, debt service, ZCCM and government transactions, imports under the OGL scheme). Further movement towards market allocation is needed, but this is impeded by the large role on both the supply and demand side played by ZCCM.

Many other SSA countries provide useful examples of patterns of reform of the foreign exchange system, both successful and unsuccessful. In The Gambia, an interbank market has operated smoothly since 1986 together with an OGL system, and the currency can now be said to be fully convertible. Kenya has implemented an export retention scheme and allowed an interbank market for retained funds since August 1991, though not without considerable interference. In May 1993 a wholesale auction was introduced with the aim of stabilizing the exchange rate, but it has turned out to be a device for providing cheap foreign exchange to politically influential banks. Other countries, like Madagascar (where an OGL scheme had been in place since 1987) have seen their reform attempts falter in the face of internal political turmoil. And in some, only recently have serious reforms gotten underway. Ethiopia just began its auction in August 1993. The overall picture of SSA seems that of a region in which structural imbalances, political problems, and in some cases warfare have obstructed liberalization of the foreign exchange systems, as they have obstructed other reforms. Most countries seem to be moving in the right direction, but still have a long way to go.

7. Lessons for design and implementation

Theory and experience with exchange allocation mechanism reforms can be synthesized to yield a number of lessons. Some of these are relevant to the design and operation of specific mechanisms, others to the reform process in general. This section discusses the general lessons first, moving then to the specific.

First, given its importance in determining the relative incentive structure, and particularly its redundant role in increasing anti-export bias, reform of the exchange regimes should continue to be given highest priority in the reform programs of most SSA countries. Likewise, the failure to successfully make the transition to a market allocation (i.e., a virtually convertible currency at least for current account transactions) has been, and is, a major shortcoming of most adjustment packages. Only a few SSA countries (the Gambia, Ghana and Mauritius) have made this transition. The key to a successful and sustainable transition lies largely in the consistency of the overall reform package and the careful design of each part.

Second, there seems to be no general prescription regarding the appropriate speed of the transition. Ghana phased the transition over almost a decade, with many intermediate steps, using many of the transitional mechanisms. Uganda has moved faster, and is perhaps close to completing the transition, but like Ghana used several mechanisms, including an auction. The Gambia moved quite rapidly to an interbank market with no intermediate steps, and thus to virtual current account convertibility. Given the problems of all intermediate steps (including auctions), a rapid transition is preferred on purely economic grounds, but this may not always be feasible due to political or institutional constraints.

Third, the success of exchange rate reforms is jeopardized by failure of macroeconomic discipline. This implies that the transition must be accompanied by stringency in fiscal and monetary

policy and also by a willingness to allow the exchange rate to seek a true market-clearing level. When the political sensitivity of devaluation impedes this process, even a mechanism with endogenous price-setting (e.g., auction) can degenerate into an administrative allocation mechanism, as occurred in Nigeria. Ghana and Uganda have exercised control over public expenditure and monetary expansion and have been willing to allow appropriate devaluations; Kenya, Nigeria, Zaire, and Zambia (at least until recently) have not. This goes a long way in explaining the success of the first group and the reversals in the second.

Fourth, the movement to a true unified free market for exchange would be greatly facilitated by some changes in donor practices. These would be aimed at "untying" aid, making disbursements more regular, and simplifying documentation requirements for disbursement, so exchange can be channeled through private sellers of exchange.

Among the specific transition mechanisms, probably the most rudimentary is the own-funds scheme. It may be useful as an initial step toward reform when distortions are severe, since it is simple, imposes little administrative burden, and is almost certain to have some salutary effects. Its value is largely determined by comprehensiveness of the list of eligible goods. If the scheme is restrictive (and particularly if it does not include consumer goods that compete with domestic production), it will be administratively more complex and will have less potential for reducing protection. The list should be as inclusive as possible, preferably all-inclusive. In this case, there will be an automatic incentive to import goods that are in the shortest supply, as indicated by the difference between their border prices and domestic prices. Also, own-funds schemes should be accompanied by some liberalization of the rules governing exports; otherwise, the extra incentive from the own-funds schemes may increase illegal exports and the black market premium. At any rate, the own-funds scheme is no more than a beginning of reform, since it does not attack the fundamental problems and the system continues to confer non-transparent (and usually high) protection.

Export retention schemes have several potential functions. One is to minimize the adverse effects of foreign exchange shortages on exporters' ability to import necessary inputs. For this, the retained funds need not be saleable. The other two functions are to partially remove the implicit export tax (by allowing exporters to sell exchange at a better price than the official rate) and to fund a legal private exchange market. To accomplish these, the retained funds must be saleable, the retention rates substantial, and especially to adequately meet the last goal, traditional exports should be included.

Open General Licensing (and similar) schemes have been used in most adjusting SSA countries. In principle, they can be a useful intermediate step in simultaneously liberalizing the import and exchange allocation regimes. In practice, some have been neither very open nor very general. One problem is that the goods whose imports were restricted the most (e.g., consumer goods that compete with domestic production) have usually been excluded, at least in the initial stages. This implies that the early stages actually increased effective protection. Another problem has been that the OGL has no endogenous price-setting mechanism for the exchange rate. Consequently, the rate often has been set at an overly appreciated level, leading to chronic shortages and rationing, which was the problem meant to be resolved. To avoid this, the OGL rate should generally be connected to, but lower than, the parallel rate.

As a step toward establishing a true market allocation mechanism, a well-functioning auction has significant advantages over these other mechanisms. Perhaps the most important is that, in addition to its allocation function, it incorporates a pricing mechanism as well. The most important lesson of experience is that the pricing mechanism must be allowed to work without interference; otherwise, the auction may degenerate into another mechanism for non-transparent, administrative allocation of exchange. Other lessons relate to the auction's design. In principle, the auction should use a marginal pricing rule to more clearly approximate the intertemporal effects of a free market. The auction rules should be clear (e.g., not allow discretionary dis-qualification of bids), should minimize costs of

auction participants, and should allow wide participation by type of product and type of bidder. As experience in Nigeria indicates, multiple bids for the same import should not generally be allowed since they artificially inflate demand and reduce the information value of excess demand as an indicator of shortage or inappropriateness of the auction price. The use of a reservation price in an auction is controversial. While it may reduce volatility, it may also impede the full disbursement of funds.

Of course, all of these design issues become more important the longer the "transitional" schemes are left in place. The danger that poor design may compromise the goal of the reform is a strong argument for moving as rapidly as possible to full convertibility, at least for current account transactions.

Annex

Patterns of reform: Summary table

	<i>Auction</i>	<i>Inter-bank</i>	<i>Bureau de change</i>	<i>Export retention</i>	<i>OGL</i>	<i>Own-funds</i>
The Gambia		1986-	1990-		1986	
Ghana	1986-92	1992-	1988-92	1986-		
Guinea	1986-					1980s
Kenya	1993-	1992-		1992		
Madagascar				1985-91	1987-91	
Nigeria	1986-89 1990-92	1986-93	1989-	1986	1980-84	
Somalia	1986-87 1990-	1985-87 1988-		1985-		1980-81
Tanzania			1992-	1986-	1988-	1984-
Uganda	1982-86		1990-	1988-	1987-92	1987-
Zaire		1983-	1991-	1983-		
Zambia	1985-87			1983-	1990-	1980s

Endnotes

1. Two caveats are in order. First, when talking about "Sub-Saharan Africa" we will generally exclude the CFA Franc zone, since countries belonging to this area pursue a particular foreign exchange policy and have traditionally benefitted from full convertibility with respect to the French franc. Second, only foreign exchange controls and restrictions related to current account transactions will be explicitly considered, since most SSA countries still maintain restrictions on the capital account, and the issues of capital account convertibility are somewhat different from those of trade policy liberalization, which is the focus of this paper.
2. For a comprehensive review of "exotic exchange rate arrangements" see Dornbusch (1984). For the purpose of this paper, a multiple rate structure can be described as one in which the authorities buy and sell foreign exchange at different official rates according to the kind of transaction. Even when the exchange rate is officially unified, multiple rates (in the International Monetary Fund definition) may arise with the introduction of export bonuses or import deposit schemes.
3. Other ways of taxing exports were also used, including explicit export taxes, quantitative restrictions and parastatal control of export channels.
4. Gulhati et al. (1986), p.416.
5. In some cases the license may not even be required, while in others it may be granted on a discretionary basis rather than automatically, and limits may be imposed on the overall quantity and price of the goods imported.
6. Auctions in which the bidder indicates both the price and the quantity are defined in the literature as "multi-unit" auctions (see Feldman and Mehra). In the experience of SSA, the detail of the composite bids presented varies from country to country. In Uganda, for example, each commercial bank aggregates all the importers' requests at a given price and submits a single bid for that price; in Zambia, banks were required to submit separate bids for different uses, even if the price offered was the same.
7. In the case of a Dutch auction, both the marginal price and a (weighted) average of successful bids could be used. Among the countries which have used auction systems in SSA, three shifted from a marginal price to a Dutch rule (Nigeria, Uganda, Zambia), one adopted the Dutch system from the outset (Ghana) and one chose a marginal price rule (Guinea).
8. Although in what follows we will not distinguish between the two kinds of bureaus, a legalized bureaus market usually consists both of independent foreign exchange bureaus and of bureaus that have been established as arms of commercial banks.
9. The analysis is similar for an auction operating alongside a parallel market. In the case of the auction, the issue is how the reservation price in the auction can be set, rather than how to get the "official" OGL rate in the discussion here.
10. Bagachwa, et al. (1990) find evidence of substantial parallel market activities for agricultural, hunting and mining products, as well as for tourism and housing services.

11. Bagachwa et al. (1990).
12. The nonrefundable application fee (a), coupled with the average prorated demand share fulfilled at each LIR session (s), drove a wedge between the official (E_o) and the effective (E_e) exchange rate as follows: $E_e = (1+a/s)E_o$.
13. The exchange rate rule was the following: whenever the divergence (E_e/E_o-1) exceeded 25% for two consecutive months, the official exchange rate was devalued by the percentage difference, less the application fee. This rule, together with the (initial) application fee of 10%, implied a low threshold for devaluation (i.e. $s=0.4$).
14. In the case of Zambia, for example, it was announced that all foreign exchange allocations under the OGL were to be made "at the rate determined by the Bank of Zambia on the basis of the exchange rates quoted by the bureaux de change for the US dollar, without providing for any discount" (facsimile dated June 9, 1993 on the subject of the modified OGL system).
15. The high degree of intervention of the central bank of Nigeria is related to the fact that auction funds come almost totally from exports of a state-owned resource (i.e., oil). In other countries, the presence of donors' funds as the main source of foreign exchange helped administer the auction in a regular and transparent way.
16. See, among the others, Krumm (1985), Takacs (1987), Aron and Elabadawi (1993).
17. Takacs (1987), p.15.
18. In some cases the cause of exclusion was insufficient cover: commercial banks were in fact required to maintain balances in their clearing accounts with the Bank of Uganda sufficient to cover the amount bid at the time of the auction.
19. The publication of the bids in a detailed form (listing the importers or the banks with the relative prices, quantities and uses) could have contrasting effects: on one hand, it would increase transparency and build confidence; on the other it might encourage collusion among the bidders. While such a publication occurred in the case of Zambia (and partially of Uganda), it did not in Ghana and Nigeria.
20. A letter of credit is issued by the bank as a proof of local currency coverage.
21. In the case of Nigeria, virtually the entire pool of foreign exchange for the auction came from oil receipts. Other foreign exchange allocation schemes, like export retention or own funds, have instead been funded mainly by private earnings.
22. The procedures described in the text actually relate to disbursement of ODA funds to Uganda. The kind of requirements and the order of magnitude of the costs are similar in other countries.
23. The pre-shipment inspection often applies only to imports whose value is above a certain threshold (for example, US\$ 5,000 in the Ugandan case), but most recent proposals by the World Bank and other agencies suggest reducing the threshold in order to better enforce Customs controls.
24. This in turn would mean checking that the imported goods are on the agreed positive list (or are not on the agreed negative list) and that the exporting country is the correct one (if funds are "tied").

25. Robertson (1992) has estimated the costs associated with the use of auction funds in Uganda for an import of US\$ 25,000 at an auction exchange rate of USh 1,031/US\$. Taking into account commissions from the central and commercial banks, interest charges, pro-forma invoices and the pre-shipment inspection, the cost of the import increased from USh 25,775,000 to USh 29,472,085 (that is, 14.3% of the initial value).

26. Even auction systems have sometimes faced difficulties in being accepted by the donors. In the case of Uganda, for example, the European Community did not accept the retroactive financing implied by an auction system for its first Structural Adjustment Program (SAP). It did accept it for the second SAP in 1992.

27. A detailed analysis of each country's foreign exchange policy goes beyond the scope of this study. The Annex shows the timing of the use of several transition mechanisms in a number of SSA countries.

28. Under the SIP foreign exchange was allocated to eligible categories of imports under a first-come first-served basis; the exchange rate applied was the same as for the OGL, but the system was more open and general.

29. Foreign exchange bureaus were nominally allowed to bid in the auction, but procedural requirements (as the opening of letters of credit) effectively precluded them from submitting bids.

30. As shown in Table 3.3, the average utilization rate in the first eight sessions of the auction was 70.3%, with rates below 50% in the first and fifth sessions. Besides the shortcomings of the auction system *per se*, one of the reasons for the underutilization of auction funds in the first stages was that under the OGL and SIP programs (which provided foreign exchange on an irregular and unpredictable basis) importers had stored high levels of inventories, and needed to run down these inventories during the auction regime (which represented a more certain source of funds).

31. A complementary measure designed to curb the demand for foreign exchange in the auction was the change in its periodicity from weekly to fortnightly in the same month.

32. In particular, the available supply was distributed in prorated shares among successful bidders, the shares depending on both bank size (defined by their asset base) and the amount bid. "Large" banks were awarded a maximum of 5% of the total supply of foreign exchange, while for "medium" and "small" banks the percentages were, respectively, 2% and 1.5%.

33. As of September 1993, the FEMAC has been abolished, the export retention scheme allows nontraditional exporters to retain 100% of their proceeds, a short negative list for imports exists, and the OGL scheme finances about 30% of total imports (but 95% of them are eligible for the scheme).

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