

# DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION

## WORKING PAPER

EFFECTS OF ALTERNATIVE FOREIGN EXCHANGE ALLOCATION  
ON THE ZAMBIAN ECONOMY WITH SPECIFIC REFERENCE TO  
THE AGRICULTURAL SECTOR: 1985 - 1988

by

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# I. INTRODUCTION <sup>1</sup>

## A. Background and Issues to be Addressed

In October 1985, the Government of the Republic of Zambia (GRZ) established a system of foreign exchange auctioning. This replaced quarterly rationing by an inter-ministerial committee which by many accounts had become inefficient and corrupt (Sanderson, 1987). The auction, and the host of accompanying reforms, had enormous short-run consequences for Zambian political and economic stability and had long-run potential for profound structural transformation until its cancellation by President Kaunda in May 1987.

Because the auction was terminated only recently and the new Foreign Exchange Management Committee (FEMAC) which rations foreign exchange has only been operating for one year, little has been written comparing economic performance and the business climate under the alternative systems.

This paper examines the effects of these different foreign exchange allocation systems on agriculture. We will first address three questions at the level of the general economy:

1. What types of companies classified by ownership pattern (private Zambian, transnational corporations (TNC's), parastatals and mixed parastatal/private) have been relatively more successful in acquiring foreign exchange?
2. Which sectors have been more successful in obtaining foreign exchange under the two systems?
3. Has the composition of commodities imported differed between the auction and FEMAC?

We will then examine in greater detail the effects of alternative foreign exchange allocation systems on agriculture by addressing the following questions:

4. What types of companies within the agricultural sector classified by ownership pattern have been relatively more successful in acquiring foreign exchange?
5. Has the composition of commodities imported by agricultural enterprises differed between the auction and FEMAC?
6. What types of agricultural companies classified by economic activity (commercial farms, food processors, input manufacturers and

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distributors) have been relatively more successful in obtaining foreign exchange under the two systems?

7. During the auction, what was the trading environment like for private and public companies? How is it different now?

8. To what extent is the Zambian experience generalizable to other Southern African countries? What variables are key to understanding the potential impacts of introducing an auction on other Southern African economies which currently ration foreign exchange?

#### B. The Context of Foreign Exchange Auctioning

Movement to some form of a flexible exchange rate system is often a major element of IMF reform programmes carried out with member country governments which have previously maintained overvalued exchange rates. In recent years, a number of Sub-Saharan African countries have adopted IMF-sponsored reform packages which have included as one component movement from centrally-administered foreign exchange rationing at fixed or tied exchange rates to auctioning of foreign exchange at floating exchange rates (Table 1).

Foreign exchange auctioning is basically carried out in two ways. One way is through use of an interbank market (such as in The Gambia, Nigeria, Sierra Leone, and Zaire) where the exchange rate is negotiated between commercial banks. The central bank's role is limited to smoothing operations such as regulating monopolistic behavior and setting floor and ceiling bidding limits. The second way is an auction system (such as in Ghana, Guinea, Uganda, and Zambia) where the central bank plays a more direct role. Export receipts are surrendered to the central bank which auctions foreign exchange on a daily or weekly basis. The central bank decides how much foreign exchange will be offered on auction (after some amount has been set aside for meeting foreign debt obligations and other essential hard currency transactions). The exchange rate for a given auction period is determined in one of two ways: a "marginal system" whereby all bidders pay the lowest rate which exhausts that period's supply of foreign exchange; or a "Dutch auction system" where bidders exchange local currency for dollars at the actual rate that they have bid.

The policy choice of moving from a fixed or heavily managed exchange rate regime to a floating regime (which an auction implies) is controversial. Among the reasons commonly cited by proponents of a floating system are:

- Domestic resource allocation will become more efficient and international competitiveness of the country will improve as producers and consumers respond to market signals resulting from a more realistic exchange rate. This will: create a healthier export climate, especially for the agricultural sector which has historically been heavily taxed by many African governments; provide greater incentives for import substitution; and improve the country's balance of payments position;
- By moving from an arbitrary and slow-moving bureaucratic system to a market-determined one, commodities which are most critical for the

domestic economy (spare parts and capital goods) will receive a share of foreign exchange commensurate with the value that society attaches to them. The bureaucracy can not hope to match the performance of the market in determining these values and allocating foreign exchange accordingly;

- A float reduces incentives for parallel market activity. This brings such activities back into the mainstream economy, broadening access to foreign exchange receipts to the entire economy, and adding to the tax base;

- By moving to a float (as opposed to an officially-decreed single devaluation), the government may avoid some of the negative political consequences that invariably accompany the decision to devalue.

Arguments typically made against floating exchange rate regimes are:

- They are inequitable. The urban and rural poor suffer greatly from the severe inflation that accompanies exchange rate adjustment while well-heeled speculators and foreigners such as TNC's and international banks capture most of the benefits;

- Shocks are so acute in the short-run that reform efforts become politically unsustainable;

- Severe exchange rate instability greatly reduces the ability of public and private enterprises to plan future activities;

- Without the government regulating what is imported, the local economy is flooded with luxury items which are a waste of scarce foreign exchange.

Eight of the nine SADCC countries are currently members of the IMF and five governments (Zambia, Zimbabwe, Malawi, Mozambique, and Tanzania) have signed economic reform agreements so far in the 1980's<sup>2</sup>. At present, six SADCC governments ration foreign exchange<sup>3</sup>. Establishment of an auction or interbank system is a possible component of future reform packages for these countries. An improved knowledge of the Zambian experience is potentially valuable to any government that must choose among a number of foreign exchange management alternatives.

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<sup>2</sup> Angola is not a member at present although the government has recently begun negotiations to enter the IMF.

<sup>3</sup> Zambia, Zimbabwe, Malawi, Tanzania, Mozambique, and Angola ration foreign exchange while the three South African Customs Union (SACU) members -- Botswana, Lesotho, and Swaziland -- have no barriers for internal customs union trade and adhere to the South African tariff structure for trade with countries outside SACU.

TABLE 1: IMF-Sponsored Programmes Which Include Interbank and Auction Arrangements in Sub-Saharan Africa

	Form of Arrangement	Exchange Rate Determination	Role of Central Bank Intervention	Foreign Exchange Surrender Requirements
The Gambia	Interbank (1)	Negotiable between banks and their clients	No intervention to influence the exchange rate	100% of goods and services to commercial banks except for some tourism proceeds; receipts of Marketing Board to the central bank
Ghana	Auction (weekly) (1)	Dutch auction	Possible by adjusting the amount of foreign exchange supplied to the auction	100% of all receipts to the central bank
Guinea	Auction (weekly) (1)	Marginal auction	Possible by adjusting the amount of foreign exchange supplied to the auction	Joint ventures in the mining sector pay a special export tax amounting to 40% of export proceeds; partial surrender requirements apply to other exports
Nigeria	Interbank (auction for oil receipts) (1)	Negotiable between dealers and their clients; marginal price for successful bidders at auction	None in interbank; possible by adjusting the amount of foreign exchange supplied to the auction	100% of all receipts to commercial banks
Sierra Leone	Interbank	Negotiable between banks and their clients	None	100% of all receipts to commercial banks
Uganda	Auction (weekly)	Marginal auction	Possible by adjusting the amount of foreign exchange supplied to the auction	100% of goods and invisibles
Zaire	Interbank (1)	Negotiable between banks and their clients	Some intervention on the interbank market	Receipts of mining and oil companies to the central bank; all other export and invisible proceeds to commercial banks
Zambia	Auction (weekly)	Began as marginal auction, but later moved to Dutch auction	Possible by adjusting the amount of foreign exchange supplied to the auction	All export and invisible proceeds to the central bank through commercial banks, except for the retention of privileges of the mining company and exporters of "non-traditional" goods

(1) Still in effect as of December 31, 1987.

Source: Quirk, Peter, et al. "Floating Exchange Rates in Developing Countries: Experience with Auction and Interbank Markets," IMF Occasional Paper No. 53, May 1987.

## II. A BRIEF HISTORY OF FOREIGN EXCHANGE CONTROLS IN ZAMBIA

Prior to 1975, Zambian controls on imports were limited to a differentiated tariff structure which placed high duties on luxury consumer goods and low duties on capital and intermediate goods to encourage import substitution. With the large fall in copper prices which began in 1975 and subsequent balance of payments difficulties, import licensing was instituted and foreign exchange was allocated by an inter-ministerial committee which met quarterly (Colcough, 1988). This system lasted until the auction was established in October 1985.

Upon its inception, payments for oil, International Air Transport Association (IATA) charges, TAZARA and TAZAMA (the Trans-Zambian railroad and fuel pipeline), ZCCM (the copper company), and the GRZ were excluded from the auction. The weekly supply of dollars was fixed at US\$5 million. In February 1986, oil, TAZARA, and TAZAMA were included in the auction and the weekly supply of dollars was increased to US\$9 million.

The GRZ and the Bank of Zambia (the reserve bank) soon became alarmed at the steady depreciation of the kwacha (see Figure 1). From a pre-auction (October 3, 1985) base of K2.2=US\$1, the currency had fallen in value by 72.7% by mid-July 1986 to K8.07=US\$1<sup>4</sup>. The Bank of Zambia instituted several changes to stabilize the exchange rate. New documentation requirements were introduced, restrictions on the use of bank overdraft facilities were put in place, and overdue tax payments had to be paid up before bids would be considered. Most significantly, the reserve bank moved from a marginal system to a Dutch auction to discourage high bidding (Bank of Zambia, 1986).

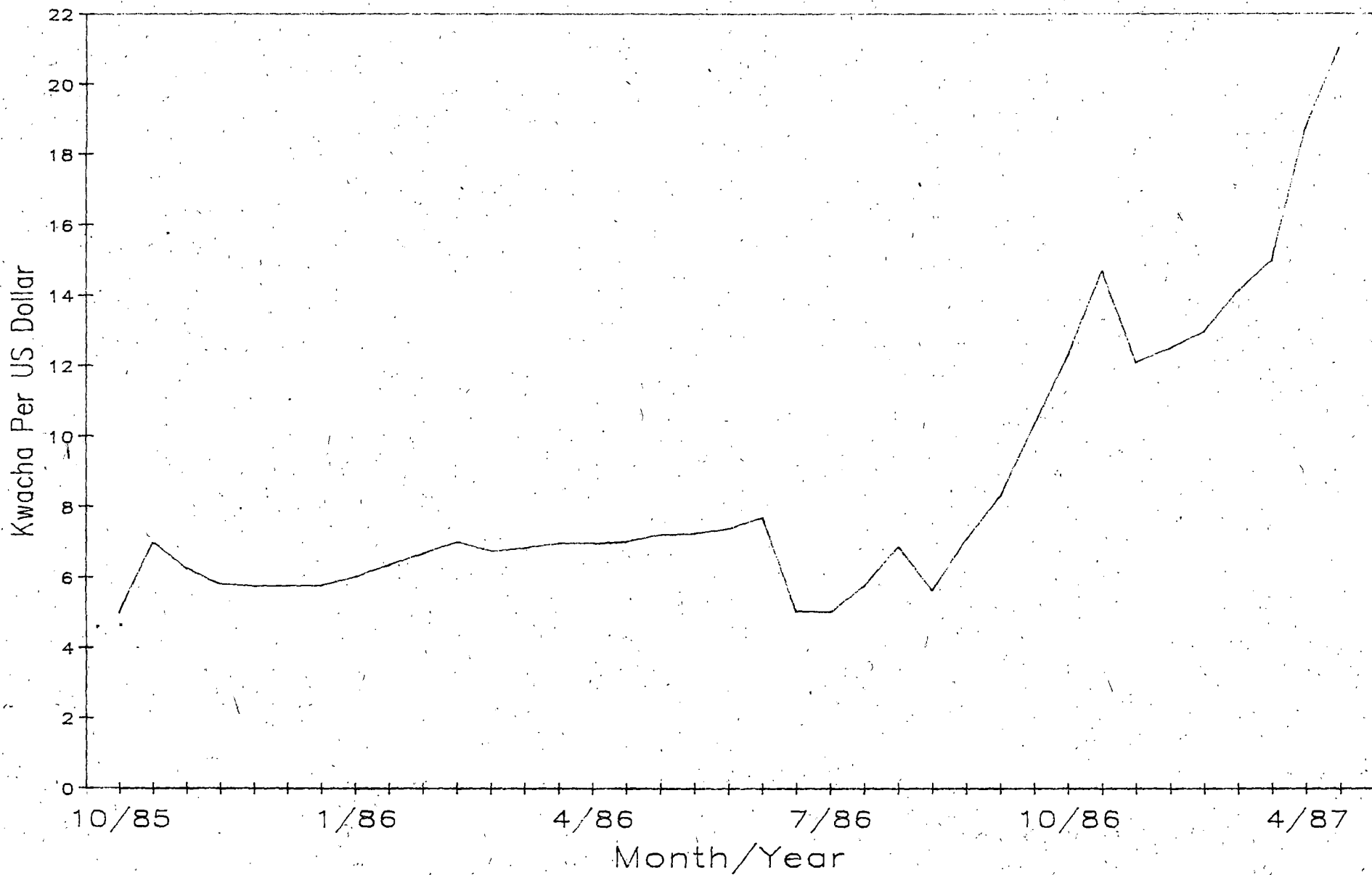
Despite these attempts at stabilization, exchange rate depreciation accelerated until the auction was terminated in May 1987. The exchange rate reached its lowest point in April 1987 when it fell to K21.01=US\$1 -- representing a depreciation of 89.5% against the dollar from the pre-auction rate.

Several factors appear responsible for the failure of the exchange rate to stabilize. Copper and cobalt prices continued to decline in 1986, further constricting the already tight supply of dollars for the auction. On the demand side, the money supply increased at a 60% annual rate during the auction period, fueling the demand for dollars and exerting more downward pressure on the kwacha. This was due to the government's apparent unwillingness to raise interest rates to finance the budget deficit. Instead the deficit was financed by putting more money into circulation (Harber, 1988). In addition, some observers place a substantial amount of blame on the Bank of Zambia for "tampering" with the auction, beginning in July 1986. Most serious was the temporary but unsustainable infusion of more dollars into the auction which eventually led to delays in the release of dollars to successful bidders, the move to the Dutch auction, and the wholesale disqualification of bids which were judged to be too high. These measures alienated the donors

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<sup>4</sup> Calculated as  $1 - \frac{\text{Base Rate}}{\text{New Rate}}$

FIGURE 1: Exchange Rate Movements During the Auction, Zambia (October 1985 – April 1987)



Source: Bank of Zambia

who were providing substantial sums of dollars to the auction, and damaged the confidence people had in the integrity of the auction. These moves, in combination with a constant barrage of negative publicity against the auction in the government-controlled national press, fueled fears that the auction would soon be abolished. This may have been partially responsible for additional deterioration of the exchange rate as participants bid high to get foreign exchange while the auction still existed (Sanderson, 1987).

In his May Day speech of 1987, President Kaunda announced Zambia's renunciation of the IMF agreement. Among other measures, the auction was terminated, the exchange rate was henceforth fixed at K8.00=US\$1, and foreign exchange would once again be centrally allocated by an inter-ministerial committee. FEMAC would meet every two weeks to allocate dollars to companies which had submitted the necessary documentation through their commercial banks to the FEMAC secretariat. It is this system which is currently operating in Zambia.

### III. METHODS EMPLOYED TO ANALYZE FOREIGN EXCHANGE ALLOCATIONS UNDER THE AUCTION AND FEMAC

#### A. Introduction

The main objectives of this paper are to determine which sectors, firm types, and commodities received relatively more foreign exchange under the two most recent allocation systems in Zambia. Another important goal is to describe what the business and trading environment has been like for companies in the food and agricultural sector under these two foreign exchange allocation systems. The data sources and methods employed in conducting analysis related to these goals are noted below.

#### B. Data Sources

Data for foreign exchange allocations under the auction and FEMAC were published in the Times of Zambia during much of the auction and for all bi-weekly FEMAC allocations to date. Beginning in June 1986, the Bank of Zambia decided to publish detailed auction results in the newspaper to insure fairness and inform the public about who was receiving foreign exchange. This practice has been continued during the FEMAC period and is widely applauded as a significant deterrent to the corruption that was alleged to be rampant under the pre-auction foreign exchange allocation system.

Newspaper clippings were available for auctions 37-58, and 60-68, covering the period June 20, 1986 through January 24, 1987. Allocations from FEMAC 1 through FEMAC 22 (May 16, 1987 to March 10, 1988) were also acquired<sup>5</sup>. During each allocation period, lists of successful applications for foreign exchange included the following information for each entry: name of the applicant; amount of dollars granted; the bid rate of kwacha for dollars; the

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<sup>5</sup> The authors wish to thank Mr. Terry Gordon of Barclay's Bank and Dr. James Snell of USAID for lending us newspaper clippings they had saved.



sector of the company receiving the allocation; and a brief description of the item(s) to be imported <sup>6</sup>.

An additional variable for company ownership pattern was also included. Designations were: private Zambian company; trans-national corporation; agricultural cooperative; parastatal (100% GRZ-controlled); and mixed parastatal/private company. Designations for individual companies were acquired by consulting records and officials at the Ministry of Commerce and Industry, the Export Promotion Board, annual reports of ZIMCO and INDECO (the two largest Zambian parastatal holding companies), and representatives of private companies.

### C. Random Sampling Procedures and Statistical Analysis

Random samples of the auction and FEMAC periods were taken (Table 2). To address cross-sectoral questions, observations were taken from the entire set of listings of foreign exchange allocations during the two periods. For issues related solely to the agricultural sector, a separate sample was taken of only those companies engaged in agriculture and related industries <sup>7</sup>.

Cross-tabulation analysis which employs the Chi-Square statistic was performed to measure the strength of association between foreign exchange allocation shares to sectors, firm types, and commodities during the auction and under FEMAC. Because the figures generated are the products of random sampling, one can only imply that they are correct within a certain margin of error. Where official figures are available from the GRZ, statistical results have been cross-checked.

## IV. COMPARISON OF ALLOCATION OF FOREIGN EXCHANGE TO THE GENERAL ECONOMY UNDER THE AUCTION AND FEMAC

### A. Allocation by Company Legal Status

Historically, parastatal enterprises have played a prominent role in the Zambian economy. As of 1980, parastatal companies accounted for more than 50% of annual gross domestic product (GDP) in the food, textile, wood, chemical, and mining industries (Table 3) and for almost three-quarters of overall manufacturing and mining sector GDP. When mining is excluded, the public contribution to manufacturing sector GDP is still a substantial 65%.

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<sup>6</sup> The bid rate varied during the auction, but has been fixed at K8.12=US\$1 under FEMAC. In addition, the company's sector was not identified during the auction. However, this can be inferred by cross-checking with the FEMAC designation for each company.

<sup>7</sup> For this sample, the designation of "agriculture" was extended to include food processing companies and input manufacturers/distributors. These are usually classified as "manufacturing" companies by the Bank of Zambia.

As a result, one would expect that the parastatal share of foreign exchange allocations would be quite high and this is indeed the case under both the auction and FEMAC (Table 4). The share of foreign exchange that went to 100% GRZ-owned parastatals and mixed companies (parastatals with some private ownership) was roughly half of total funds allocated under the auction. Somewhat surprisingly, there was no statistically significant difference between the shares allocated in each period. Similarly, for 100% GRZ-owned companies and mixed companies examined separately, there is no statistically significant difference in their percentage shares between the two foreign exchange allocation systems.

The widespread pre-auction fear that the parastatal sector would fare very poorly if forced to compete against the private sector for hard currency did not come to pass. Parastatal performance was decidedly mixed. In terms of exports, foreign exchange earnings rose during the auction for parastatals engaged in manufacturing, agriculture, transport, communications, trading, and hotels (Table 5). Overall parastatal foreign exchange earnings fell, but this is mostly attributable to reduced mining sector earnings resulting from falling copper prices. Parastatal foreign exchange earnings net of mining rose by more than 30% from 1984/85 to 1986/87.

The difference in combined private shares (locally-owned companies and TNC's) under the auction (46.6%) and FEMAC (42.2%) is also statistically non-significant. However, when this is broken down, the share of foreign exchange allocated to TNC's fell significantly under FEMAC and was for the most part re-apportioned to Zambian-owned private enterprises. This lends credence to the position of a number of TNC representatives who stated that under FEMAC the GRZ is actively discriminating against TNC's. Alternatively, this may support repeated claims by government officials, the national press, and some local businessmen that the main beneficiaries of the auction system were expatriate companies which were better able to marshal financial resources and management expertise to operate in the difficult economic environment created by the auction.

#### B. Allocation by Sector

Prior to the auction, the manufacturing sector dominated foreign exchange allocations, receiving as much as 46% of import licenses in 1981 (Table 6)<sup>8</sup>. Although there was a fair amount of variation, transport/communications was generally a distant second, followed by mining, agriculture, and food imports. Manufacturing's share of imports seems to have risen substantially during the auction (Table 7). This may be partially due to a desire to rehabilitate plants which had not received substantial investment in a number of years due to lack of foreign exchange availability. Moreover, with the decontrol of prices, the manufacturing sector was able to pass on higher hard currency

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<sup>8</sup> Before the auction, the import licensing and foreign exchange allocation processes were separate. As a result, there were continual backlogs of companies holding import licenses, but no foreign exchange. This explains the divergence between total authorizations and actual imports in Table 6.

TABLE 2: Structure of Random Samples Taken from the Auction and FEMAC Foreign Exchange Allocation Lists, Zambia

	Decision Rule for Inclusion in the Sample	% of Population Sampled	Number of Observations	Period Covered
All Sectors:				
- Auction	Every 50th allocation	2%	275	20/6/86-24/1/87
- FEMAC	Every 25th allocation	4%	241	16/5/87-10/3/88
Ag. Sector Only:				
- Auction	Every 5th ag. firm listed	20%	268	20/6/86-24/1/87
- FEMAC	Every 5th ag. firm listed	20%	269	16/5/87-10/3/88

Source of Data: Times of Zambia (various issues).

TABLE 3: Public/Parastatal and Private GDP by Branch of Mining and Manufacturing Sector Industry, Zambia (1972 - 1980)  
(Millions of Constant 1977 Kwacha)

Industry Branch	Total, All Sectors			Public/Parastatal			Private		
	1972	1975	1980	1972	1975	1980	1972	1975	1980
Mining (1)	591.4	293.5	310.1	538.6	229.6	258.0	52.8	63.9	52.1
Food, Beverages, Tobacco	180.6	163.5	147.3	135.8	114.7	106.0	44.8	48.8	41.4
Chemicals	38.1	61.9	43.4	18.7	36.7	26.9	19.4	25.2	16.7
Textiles and Leather	25.2	33.1	42.0	0.4	5.8	24.2	24.8	27.3	17.8
Paper and Printing	12.1	14.8	13.2	1.1	2.9	3.5	11.0	11.9	9.7
Wood and Furniture	8.8	14.1	9.9	3.0	4.7	5.1	5.8	9.4	4.8
Other	0.4	1.7	0.9	0.0	0.0	0.0	0.4	1.7	0.9
TOTAL	856.5	582.6	566.8	697.6	394.4	423.7	159.0	188.2	143.4

(1) Public/parastatal figures include only copper mining. From 1970-84, copper accounted for 86.1% of total value of Zambian mineral production.

Source: World Bank, "Zambia: Industrial Policy and Performance," June 1984;  
CSO Zambia, "Country Profile: Zambia 1985," September 1986.

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TABLE 4: Allocation of Foreign Exchange Under the Auction and FEMAC  
by Company Ownership Pattern, Zambia  
(Percentage Shares)

Company Ownership Pattern	% of Foreign Exchange Allocated During Auction	% of Foreign Exchange Allocated During FEMAC
Mixed Parastatal/Private	31.0%	33.9%
Private Zambian (*)	24.2%	30.2%
Parastatal (100% GRZ)	21.8%	20.6%
Transnational (**)	22.4%	14.9%
Other (1)	0.7%	0.4%

Notes: Calculations are products of random sampling and are thus subject to sampling error.

(1) Comprised of agricultural cooperatives and educational institutions.

(\*) Chi-square statistic significantly different at 85% level.

(\*\*) Chi-square statistic significantly different at 95% level.

Source: Times of Zambia (various issues) and authors' calculations.

TABLE 5: Sectoral Foreign Exchange Earnings of Parastatals, Zambia  
1984/85-1986/87  
(Millions of US Dollars)

Sector	1984/85	1985/86	1986/87
Mining	829.0	763.7	688.0
Transport	26.0	34.8	46.3
Manufacturing	11.7	19.1	26.9
Energy	39.4	30.0	26.5
Communications	5.3	6.2	9.7
Trading	1.8	4.2	4.4
Hotels	2.4	5.0	4.2
Finance	4.8	1.0	1.6
Agriculture	0.2	0.1	1.1
Construction	0.0	0.0	0.0
TOTAL	920.6	864.1	808.7

Source: NCDP, "Economic Report 1987," January 1988.

TABLE 6: Import License Authorization and Actual Imports by Sector, Zambia (1979 - 1982)  
(Millions of Constant 1977 Kwacha)

Sector	1979		1980		1981		1982	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Manufacturing	104.1	28.7%	122.8	28.7%	127.5	46.4%	88.5	39.1%
Transport/Communications	92.1	25.4%	103.8	24.3%	20.2	7.3%	35.9	15.9%
Mining Suppliers	51.7	14.3%	68.4	16.0%	16.7	6.1%	26.4	11.6%
Agriculture and Fertilizer	41.0	11.3%	57.0	13.3%	55.5	20.2%	21.5	9.5%
Food	31.7	8.8%	31.6	7.4%	12.0	4.4%	19.4	8.6%
Trading/General Consumers	16.6	4.6%	7.6	1.8%	19.8	7.2%	17.3	7.7%
Services	14.1	3.9%	17.1	4.0%	10.3	3.8%	9.8	4.3%
Construction	11.0	3.0%	19.0	4.4%	12.5	4.5%	7.6	3.4%
TOTAL AUTHORIZATIONS	362.3	100.0%	427.2	100.0%	274.6	100.0%	226.6	100.0%
ACTUAL IMPORTS (1)	412.9		550.1		549.0		512.4	

(1) Actual imports exceed total authorizations because some imports were purchased with import licenses from previous years.

Source: World Bank, "Zambia: Industrial Policy and Performance," June 1984.

TABLE 7: Allocation of Foreign Exchange Under the Auction and FEMAC By Sector, Zambia  
(Percentage Shares)

Sector	% of Foreign Exchange Allocated During Auction (Sample Figures)	% of Foreign Exchange Allocated During FEMAC (Sample Figures) (1)	% of Foreign Exchange Allocated During FEMAC (Official Figures) (1)
Manufacturing (**)	54.3%	65.6%	46.5%
Transport/Communications (***)	12.0%	5.0%	6.9%
Mining (2)	11.4%	7.4%	7.8%
Agriculture	7.5%	7.6%	9.7% (3)
Banking/Finance	5.4%	3.1%	5.7%
Energy	3.1%	3.6%	4.8%
Other Services	2.9%	4.5%	14.1%
Trading	2.5%	2.5%	2.4%
Construction	0.7%	0.3%	2.0%
Health and Education	0.2%	0.3%	NA

Notes: Calculations are products of random sampling and are thus subject to sampling error.

(\*\*) Chi-square statistic significantly different at 95% level between the two sets of sample figures.

(\*\*\*) Chi-square statistic significantly different at 99% level between the two sets of sample figures.

(1) Sample figures differ from official figures because: sample figures include Main Application allocations, whereas official figures also include 50% Retentions, No Funds Involved, and PTA allocations; official allocations to the "service" sector include some commodities destined for other sectors; official figures are for the period May 1, 1987 to March 31, 1988 while sample figures are for May 1, 1987 to March 10, 1988; and sampling error. Neither set of figures include direct allocations to government.

(2) Represents foreign exchange allocated to companies that supply equipment and materials to ZCCM. ZCCM is excluded because they retain a portion of their export earnings for direct imports.

(3) If the \$9 million allocated to agriculture in March 1988 through a special EC facility is excluded, this figure falls to 7.6 percent.

Source: For sample figures, Times of Zambia (various issues) and authors' calculations; For official figures, NCDP Progress Reports No. 1 and 2 on implementation of the Interim National Development Plan.

costs to consumers and thus generate sufficient kwacha to bid for foreign exchange in subsequent auctions (Bank of Zambia, 1986).

The sectoral allocation of foreign exchange did not change very much under the auction when compared with FEMAC. While the share of foreign exchange allocated to manufacturing has risen substantially under FEMAC (from 54% during the auction to 65% currently), and the transport/communications sector did relatively better during the auction (12% then versus 5% now), no other shifts in sectoral allocations are observable.

At the sectoral level, agriculture's share of foreign exchange during the auction fell when compared with 1979-1982 import license figures, and remained unchanged with the advent of FEMAC. The Bank of Zambia attributed agriculture's performance in the first year of the auction to a number of factors: unattractive producer prices; the small number of commercial farmers in Zambia; and low liquidity in the dominant smallholder sub-sector. These issues will be discussed in more detail in Section V.

To some extent, these figures need to be approached with caution. The Bank of Zambia's grouping of companies under the "manufacturing" sector is quite sweeping. The performance of manufacturing can have significant consequences for other sectors due to linkages. For example, NCZ (the fertilizer company), cereals millers, textile mills, cigarette companies, and agricultural equipment manufacturers fall under the manufacturing classification. However, their performance has obvious ramifications for the more narrowly defined "agricultural sector". Moreover, although the auction and "Main Application" allocations under FEMAC have been the main sources of foreign exchange during the period under examination, potential importers have access to several other sources of foreign exchange. Exporters may retain 50% of foreign exchange earnings and use these hard currencies as they wish. In addition, the "No Funds Involved" category is for companies and individuals who have external sources of hard currency (such as overseas bank accounts)<sup>9</sup>. For companies that do considerable exporting, many of their imports are financed through the 50 Percent Retention Programme whereby 50% of hard currency earnings do not have to be surrendered by exporters to the reserve bank, but can be immediately used for purchase of additional imports. Within agriculture, companies such as the Zambia Sugar Company and commercial farming enterprises involved in vegetable, fruit, and livestock export have financed many of their imports through this programme.

For the FEMAC period, percentage shares generated by the sampling procedure were compared with official GRZ figures to determine whether the sample accurately identified sectoral allocations<sup>10</sup>. GRZ figures include Main Applications, PTA Funds, 50 Percent Retentions, and No Funds Involved allocations whereas the sample was taken from the Main Applications only.

<sup>9</sup> In general, the bulk of these imports are consumer goods purchased by private individuals.

<sup>10</sup> Official figures on sectoral allocations during the auction are not available.

Comparison of the second and third columns of Table 7 reveals that the sample overstates the share of foreign exchange allocated to manufacturing during FEMAC. This is because manufacturing depends almost exclusively on Main Applications as a source of foreign exchange. Therefore its share would be smaller in the GRZ figures which includes all sources of foreign exchange. While the share of foreign exchange allocated to manufacturing varies between the sample and official figures, its dominant first place ranking is beyond dispute. This needs to be considered in light of the GRZ proclamation in its New Economic Recovery Programme that manufacturing would only receive third priority behind agriculture and mining.

A second discrepancy concerns the "service" sector which has received a significantly greater share of foreign exchange according to official figures. However this is essentially a problem of commodity classification. In October 1987, the National Commission for Development Planning stated in its first progress report on the recovery programme:

...a look at items placed under the service sector has revealed a problematic situation. Items like medicines, education books and scientific journals, and some industrial raw materials have appeared under the service sector.

Beyond these two problems, sectoral percentage shares and rankings do not differ too widely when comparing sampling and official figures. Although agriculture's percentage share appears higher using the official figures, this is accounted for by an EC grant of US\$9 million to agriculture in March 1988. When this is removed, agriculture's share falls from 9.7 to 7.6% which is the same as the sample figure.

### C. Allocation by Commodity Imported

Foreign exchange allocation shares to broad groupings of commodities under the auction and FEMAC are displayed in Table 8. The big loser under FEMAC appears to be financial and transport charges<sup>11</sup>. The fall in this category's share during FEMAC probably results from a combination of two factors. First, as mentioned in the previous section, the transport sector has fared significantly worse since the demise of the auction and this is here reflected in a decline in funds to pay for transport services. Secondly, one would expect the continued economic deterioration in Zambia since May 1987 to be strongly reflected in a deterioration of the financial sector's performance.

Industrial inputs (variable cost items such as raw materials, chemicals, and other intermediate goods) have received a relatively greater share of foreign exchange under FEMAC, rising from approximately 35% during the auction to 44% currently. There is also evidence that the share of foreign exchange apportioned to spare parts has risen during FEMAC.

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<sup>11</sup> Financial charges include requirements of the banking and insurance sectors as well as dividend payments, personnel recruitment expenses, and consultants' fees.



**TABLE 8: Allocation of Foreign Exchange Under the Auction and FEMAC  
By Commodity Type, Zambia  
(Percentage Shares)**

Type of Commodity	% of Foreign Exchange Allocated During Auction	% of Foreign Exchange Allocated During FEMAC
Industrial Supplies (**)	35.6%	44.2%
Financial Charges (Inc. Transport) (***)	29.4%	13.8%
Spare Parts (*)	18.4%	24.6%
Capital Goods	12.3%	12.2%
Consumer Goods	4.0%	4.6%

Notes: Calculations are products of random sampling and are thus subject to sampling error.

(\*) Chi-square statistic significantly different at 90% level.

(\*\*) Chi-square statistic significantly different at 95% level.

(\*\*\*) Chi-square statistic significantly different at 99% level.

Source: Times of Zambia (various issues) and authors' calculations.

If industrial supplies are broken down by primary (i.e., raw materials) versus processed (relatively more value added), there is evidence that the share going to primary supplies has fallen during FEMAC (from 12.5% to 7.5%) while hard currency going to imports of processed industrial supplies has risen from 22% to 32% under FEMAC. In other words, more value added is being imported at present while less value is being added locally. This is consistent with the pre-auction view that the overvalued kwacha is depressing competitiveness of local import-substituting industries.

Also of interest are the commodity categories for which no discernible changes occurred -- consumer goods and capital goods. There is a widespread belief in Zambia that the auction was abused by greedy traders and profligate private individuals who squandered scarce foreign exchange on luxury consumer goods. In other words, the market failed to allocate foreign exchange in a manner consistent with the long-term interests of a society concerned with productive growth and development. This analysis indicates that imports of consumer items were not significantly different during the two periods and were only in the range of 4 to 5% of total imports which were purchased with auction funds and Main-Application funds during FEMAC.

In its review of the first year of the auction, the Bank of Zambia (1986) estimated the share of consumer goods imported with auction funds at 6% and stated the following:

In the first few months after the introduction of the auction system and the accompanying liberalization of the trade and payments system, the country was flooded with imported foodstuffs and other consumer goods which were, in most cases, out of reach to the ordinary Zambian. Without being supported by any statistics, the auction system was solely held responsible for the reappearance on shelves of this assortment of commodities. .... such an allegation can hardly be supported by the available data on the distribution of auctioned foreign exchange.

Similarly, neither system was significantly better at increasing allocations of foreign exchange to long-run investment items such as capital goods: their share remained unchanged at roughly 12% under both systems.

#### D. Conclusions

While much changed under the two systems of allocating foreign exchange, much also remained the same. Although consumer goods were more available in local markets, the auction was not responsible for their presence. The bulk of these goods were imported through the "No Funds Involved" mechanism which is used by companies and individuals who have external sources of foreign currency (see section IV.B. above). Although a somewhat greater share of foreign exchange has been devoted to the importation of intermediate goods under FEMAC, the difference is not huge. Although TNC's captured a larger share of foreign exchange during the auction than under FEMAC, the share going to parastatal enterprises did not fall precipitously as had been feared prior to the auction. Finally, allocations were considerably higher to the transport/communications sector during the auction and considerably lower for

manufacturing. However, allocation shares remained unchanged for all other sectors.

That sectoral shifts were not as great as had originally been anticipated should not necessarily be surprising. The auction lasted only nineteen months. Movement to a flexible exchange rate regime implies profound structural change that would perhaps take five to ten years to fully manifest itself. It is possible that there would eventually have been significant shifts of resources to sectors with great potential such as agriculture if the auction had been allowed to last longer.

## V. COMPARISON OF ALLOCATION OF FOREIGN EXCHANGE TO THE AGRICULTURAL SECTOR UNDER THE AUCTION AND FEMAC

### A. Classification of Companies as Part of the Food and Agricultural Sector

As stated earlier, the Bank of Zambia's classification of manufacturing enterprises is quite broad, including a number of companies which are of critical importance to the food and agricultural sector. In this section, analysis of "agricultural" sector companies goes beyond the Bank of Zambia's narrow classification to include agricultural input manufacturers (such as NCZ) and food processors (such as NMC, other cereals millers and meat packers such as the Lusaka Cold Storage Commission). There is a problem with this classification as some companies manufacture both food-related commodities and non-food items. This makes it very difficult to identify the end use of an imported input or capital good as agricultural or non-agricultural. This is dealt with as follows. An allocation to a company such as ROP Industries (a parastatal that manufactures both soap and cooking oil) for imports of soybeans would be included in the agricultural sector sample frame while an allocation for detergents, general spare parts, or capital goods would not. While it is obvious that detergents do not have a food-related end use, spare parts and capital goods are more problematic as there is a distinct possibility that they could be at least partially used for food processing. Nevertheless, such allocations were not included in the agricultural sector sample frame.

### B. Allocation by Company Ownership Pattern

As is the case with a number of other sectors in the Zambian economy, parastatal enterprises dominate the formal food sector. The parastatal share of overall GDP in the food, beverage, and tobacco sector ranged between 70-75% during the 1970's (see Table 3). While the percentage share of parastatal GDP in overall agricultural GDP (which includes informal activity) is not that large (roughly 35% in 1980), government involvement with smallholders through parastatal marketing boards such as NAMBOARD (maize, other grains, and fertilizer distribution) and LINTCO (cotton) is extensive.

Reflecting its prominent position in the food sector, the foreign exchange share for parastatal and mixed parastatal/private companies was nearly half (47.6%) of allocations to food sector-related companies during the auction

(Table 9). This has risen to 58.7% under FEMAC, supporting claims that the committee has actively favored parastatal companies<sup>12</sup>.

While private companies enjoyed greater access to foreign exchange during the auction (receiving 51.3%), they have seen their share plummet to 36.9% since the beginning of FEMAC operations. Within the private sector, the TNC's have seen their allocation share fall precipitously under FEMAC. This parallels developments in the general economy, but the reduction in TNC shares has been more pronounced in agriculture (from 34.6 to 20.8%) than in the economy as a whole (from 22.4 to 14.9% -- see Table 4). Meanwhile there has been no discernible decline in the share going to locally-owned private companies under FEMAC.

While 100% foreign-owned TNC subsidiaries operating in Zambia have fared relatively worse under FEMAC, mixed companies have fared relatively better. Their share has risen from 24.6% during the auction to 40.8% under FEMAC. Because most private shares in mixed companies are held by TNC's, in one sense it can be said that TNC's have not been uniformly discriminated against.

The percentage share allocated to 100% GRZ-owned companies has not been significantly different between the auction and FEMAC.

#### C. Allocation by Economic Activity Within Agriculture

Enterprises were also classified according to their major activity within the food and agricultural sector (Table 10). There is some evidence that input dealers/manufacturers have received somewhat less foreign exchange under FEMAC (falling from 51.7 to 44.3%). Disaggregation reveals that the decline in allocations to agro-chemical dealers/manufacturers has been dramatic. Whereas agro-chemical companies received 23% of foreign exchange allocations during the auction, their share has fallen to a meager 7.6% under FEMAC. There are only a handful of agro-chemical companies in Zambia and most of them are TNC's. As stated above, TNC's have received significantly reduced foreign exchange allocation shares during FEMAC.

#### D. Allocation by Commodity Imported

There is little difference in the commodities imported for the food and agricultural sector under the two foreign exchange allocation systems (see Table 11). Only financial charges registered a significant fall in shares declining from 12% during the auction to less than 4% under FEMAC. As with the fall in shares devoted to financial charges across sectors, this is perhaps explained by the decline registered by the transport sector under FEMAC.

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<sup>12</sup> During our interviews, a number of people stated that if a private company seeking a FEMAC allocation failed to provide a supporting letter from a parastatal verifying that the requested imported goods were to be used by that parastatal, the chances of approval were virtually nil.

TABLE 9: Allocation of Foreign Exchange Under the Auction and FEMAC to the Food and Agricultural Sector By Company Ownership Pattern, Zambia  
(Percentage Shares)

Legal Status	% of Foreign Exchange Allocated During Auction	% of Foreign Exchange Allocated During FEMAC
Transnational (***)	34.6%	20.8%
Mixed Parastatal/Private (***)	24.6%	40.8%
Parastatal (100% GRZ)	23.0%	17.9%
Private Zambian	16.7%	16.1%
Agricultural Cooperatives	1.1%	4.4%

Notes: Calculations are products of random sampling and are thus subject to sampling error.

(\*\*\*) Chi-square statistic significantly different at 99% level.

Source: Times of Zambia (various issues) and authors' calculations.

TABLE 10: Allocation of Foreign Exchange Under the Auction and FEMAC to the Food and Agricultural Sector By Sub-Sector Firm-Type, Zambia  
(Percentage Shares)

Sub-Sector Firm-Type	% of Foreign Exchange Allocated During Auction	% of Foreign Exchange Allocated During FEMAC
Input Dealers/Manufacturers (*)	51.7%	44.3%
Food Processors	34.5%	39.1%
Crop and Livestock Producers	13.7%	16.6%

Notes: Calculations are products of random sampling and are thus subject to sampling error.

(\*) Chi-square statistic significantly different at 90% level.

Source: Times of Zambia (various issues) and authors' calculations.

TABLE 11: Allocation of Foreign Exchange Under the Auction and FEMAC to the Food and Agricultural Sector By Commodity Type, Zambia  
(Percentage Shares)

Type of Commodity	% of Foreign Exchange Allocated During Auction	% of Foreign Exchange Allocated During FEMAC
Industrial Supplies (*)	30.2%	38.9%
Spare Parts	23.7%	23.6%
Capital Goods	21.6%	25.1%
Food and Beverages	12.5%	8.5%
Financial Charges (Inc. Transport) (***)	12.0%	3.8%

Notes: Calculations are products of random sampling and are thus subject to sampling error.

(\*) Chi-square statistic significantly different at 90% level.

(\*\*\*) Chi-square statistic significantly different at 99% level.

Source: Times of Zambia (various issues) and authors' calculations.

Although agro-chemical companies have received substantially less foreign exchange under FEMAC, chemical imports have not decreased in a statistically significant way. Increasingly private individuals and businesses which are not primarily agro-chemical companies have been importing directly, as opposed to buying from an agro-chemical company. During the auction, farmers were allowed to import directly and apparently this trend has accelerated under FEMAC <sup>13</sup>.

There is mild evidence that imports of variable cost items other than spare parts increased under FEMAC and this may be for the same reason that this happened across sectors. Reappearance of a seriously overvalued exchange rate during the FEMAC period has reduced competitiveness of domestic import-substituting industries, making it more financially attractive to import such items instead.

#### D. Insights from Interviews

A purely statistical analysis provides an incomplete picture of why some types of companies and commodities fared better under one foreign exchange allocation system than under another. To obtain a better understanding of the nature of the trading environment since the advent of the auction in 1985, representatives from 25 companies involved in food industries and agriculture, the Bank of Zambia, donor organizations, and farm interest groups were interviewed during December 1987 and March 1988. In comparing the business climate during and since the auction, respondents voiced concern in four broad areas which they felt were important in explaining the performance of the food and agricultural sector: the structure of producer incentives which was a function of changing input costs and output prices; the ability to plan future activities; increased administrative costs under FEMAC; and the priority given by the GRZ and FEMAC to agriculture. Let us examine each of these.

##### 1. Input Costs and Output Prices

Several respondents believed that one reason the agricultural sector as a whole did not respond as favorably to the auction as one might have hoped was because the costs of imported inputs were allowed to increase as the kwacha depreciated, while the producer price for maize remained controlled <sup>14</sup>. Although the producer price for maize rose by 41.2% between 1985/86 and 1986/87 (Republic of Zambia, 1988), farmers were squeezed as this was

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<sup>13</sup> According to the data sampled, agro-chemical companies imported 88.3% of all agro-chemicals during the auction. This fell to less than 50% under FEMAC. While the authors doubt that this order of magnitude in erosion of agro-chemical market share is accurate, interviews with agro-chemical company and farmer interest group representatives confirm that direct importation by individual farmers has been on the rise.

<sup>14</sup> GRZ-decreed producer prices for all other crops served only as minimum-guaranteed floor prices. However, because private marketing is underdeveloped in Zambia, many commercial crops could only be sold to the government marketing boards. Therefore, the floor price became the effective price.

insufficient to keep pace with inflation on the input side where costs for some imported items had doubled or tripled by April 1987.

While commercial maize farmers may have done poorly during the auction<sup>15</sup>, commercial farmers who devoted more resources to export crops did well. Local currency depreciation may have hurt them on the input side, but they made up for this by exporting at an attractive exchange rate. As of early 1987, the Export Growers' Association estimated that the value of horticultural exports had more than doubled since the auction began. ZAMHORT, a parastatal that deals in fruit and vegetable trade, exported 438.3 MT in 1985/86 versus only 16.1 MT in 1984/85 (Weidemann et al., 1987). 1986 was the first year that ZAMHORT turned a profit<sup>16</sup>. With the establishment of FEMAC and the reappearance of a fixed exchange rate that is overvalued, these farmers and their suppliers are now experiencing substantially reduced profit margins. While incentives to export have been drastically curtailed, input costs have not fallen. As one respondent explained, when the kwacha was revalued to K8=US\$1 from K20=US\$1, export returns automatically fell. However input dealers did not reduce prices accordingly. While export prices in local currency terms are currently one third of what they were in April 1987, input dealers continue to base their prices on an exchange rate of K20-25=US\$1 more than one year after the revaluation.

## 2. The Planning Capacity of Businesses

Respondents were split over the question of whether operating under the auction or FEMAC was more conducive to being able to plan future business activities. All of those interviewed agreed that it was extremely difficult to carry out budgeting exercises or issue future price quotations to potential customers during the auction due to the rapid depreciation of the kwacha. For example, a company might order some imported item on the basis of an exchange rate of K5=US\$1, and by the time the item arrived three weeks later, be forced to pay for it at K7=US\$1. In such an environment, short-term business planning for as little as six to twelve months into the future was largely futile.

A representative of one of the major agro-chemical companies reported that his company had a cash-flow problem over the duration of the auction. Ironically, this might not have occurred if the auction had begun during some other period of the year. The marketing of chemicals is seasonal with the fourth quarter being the busiest and the second quarter being the slowest. The auction started in October 1985 and the company had ordered chemicals in August/September for the 1985/86 crop year. When they ordered, imports were based on an exchange rate of K2=US\$1. However, when they had to pay for the imports in October/November, the exchange rate had shot up to K5=US\$1 and they

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<sup>15</sup> Because smallholders are less dependent on imported inputs than commercial farmers and fertilizer subsidies remained in place during the auction period, they felt less cost pressure on the input side and responded more positively to producer price increases.

<sup>16</sup> Personal communication.



found themselves having a big shortage of kwacha for bidding on the auction. The firm sold a lot of chemicals at the prices set in September 1985. They raised prices slightly in late 1985 and received some kwacha on sales based on an exchange rate of K2-5=US\$1. The following year, the exchange rate was approximately K15=US\$1 and the previous year's sales which were based on the much lower exchange rate were insufficient for bidding for imports to be used during the 1986/87 crop year. If by chance the auction had begun in the second quarter of 1986 (the firm's slow period), the company might have done much better under the auction because they would have had time to adjust their import orders based on a more appropriate exchange rate.

Despite such problems, if one was willing to pay enough kwacha, priority items such as spare parts could be obtained with speed and certainty. As one representative of a farmer interest group put it, when a farmer's tractor breaks down in the middle of the planting season, the cost of a necessary spare part is no object -- timely availability is the overriding concern. In this sense, the auction was superior to FEMAC.

One strategy followed by a number of companies which bid regularly on the auction was to bid high for priority items (about 10% above the previous week's exchange rate) so that one was sure to get them in the same week's allocation and bid low for non-priority items for which one could perhaps afford to wait a bit if the bid was unsuccessful. Money was released one week after a successful bid and the importing process could then begin.

Under FEMAC, exchange rate uncertainty has been reduced and this has made the planning process somewhat easier. However, most company representatives were sure that there would be a major devaluation sometime after the national elections later this year. As long as the kwacha remains seriously overvalued, exchange rate uncertainty will continue to be a major concern for Zambian businesses because nobody can predict the date of a devaluation nor its magnitude.

If a company had enough kwacha to bid during the auction, it was a certainty that foreign exchange would be available for essential inputs. Now even with sufficient kwacha, there is no guarantee of receiving an allocation. Many company representatives felt that this severely hindered their capacity to plan. TNC representatives felt especially strongly because they are of the opinion that FEMAC is discriminating against them in allocation decisions.

Even if a company is granted an allocation, the question of timely release of funds remains. While everybody agrees that FEMAC is a vast improvement over the system that was in place prior to the auction, release of funds is slower than during the auction. Under FEMAC, funds are not automatically transferred to commercial banks, so letters of credit can not be quickly confirmed. The procedure is as follows: foreign exchange is deposited in a large New York bank by the Bank of Zambia. When FEMAC approves a foreign exchange allocation, funds are then transferred from the New York bank to the Zambian commercial bank of the company receiving the allocation. There can be delays during these transfers totalling as much as two to three weeks from the time of foreign exchange allocation approval to final confirmation of the

letter of credit. Suppliers will not begin processing an order until the letter of credit has been confirmed.

### 3. Overhead Costs

For most companies, establishment of the FEMAC system has led to higher administrative costs. Because one can never be sure of receiving an allocation the first time it is requested, companies apply for foreign exchange much earlier than would be desirable if they could import whenever they wanted. This results in excessive interest charges which are passed on to farmers in the form of higher input prices. A representative of one of the agro-chemical companies stated that even though he would prefer to order imported chemicals in August and September for the approaching planting season, he will now begin ordering as early as February or March. His rule of thumb is basically to get an allocation whenever possible. A representative of another company involved in fresh produce exports stated that on a recent order, there was a K120,000 interest charge (US\$15,000 at the official exchange rate) on a US\$180,000 tractor purchase because funds were tied up for so long.

Because of the often lengthy lead time involved, a number of companies ask foreign suppliers to provide a price quotation valid for 60 to 90 days. This makes planning a bit easier, but results in an added cost as suppliers charge a slight mark-up for locking in this price over the extended period.

Several company representatives felt that FEMAC required excessive paperwork. In addition to pro forma invoices, applicants must submit a minimum of six other forms to the FEMAC Secretariat in multiple copies. As mentioned earlier, if a private company does not also submit letters from one or more parastatals in support of the foreign exchange application, chances of FEMAC approval are slim. For foreign exchange requests in excess of US\$20,000, firms must provide three price quotations to assure that suppliers are not charging too much. According to one company representative, many companies get around this by obtaining three different quotations from three subsidiaries of the same parent company. Many applications are rejected because the committee does not have the time to evaluate all the supporting documents in a timely manner. In addition, they have very little technical expertise for evaluating the commodities that companies are planning to purchase. According to this company representative, the more paperwork FEMAC staffers ask for, the lower their ability to get through it all.

The end result is that every company must have extra cash solely earmarked for inflated interest costs and for processing foreign exchange applications to FEMAC. A lot of capital can be tied up in just bidding and getting refused. Table 12 illustrates this problem using data obtained from one of the companies interviewed. For FEMAC's 1 through 17, finance charges resulting from tying-up capital in the application process totalled approximately 5% of the amount of dollars actually allocated to the company

TABLE 12: FEMAC Applications, Estimated Finance Charges, and Approvals  
for a Representative Company, Zambia  
(US Dollars)

FEMAC Sitting	Date	Amount of Application	Estimated Finance Charges	Amount Approved
1	16-5-87	78,000	546	0
2	30-5-87	78,000	546	39,000
3	13-6-87	0	0	0
4	27-6-87	97,200	680	24,600
5	11-7-87	126,600	886	54,600
6	25-7-87	157,200	1,100	136,800
7	7-8-87	312,000	2,184	60,000
8	28-8-87	126,000	882	0
9	5-9-87	332,400	2,327	0
10	19-9-87	353,400	2,474	0
11	3-10-87	374,400	2,621	0
12	17-10-87	331,800	2,323	0
13	31-10-87	511,200	3,578	141,000
14	14-11-87	289,800	2,029	51,000
15	28-11-87	244,800	1,714	0
16	11-12-87	172,200	1,205	34,200
17	26-12-87	245,400	1,718	0
		TOTAL	26,813	541,200
		Finance Charges as % of Amount Approved	5.0%	

Notes: Finance charges calculated as 0.7% per FEMAC or 18% annually.

Source: Data supplied by one of the companies participating in the  
University of Zimbabwe/Michigan State University trader survey.

17. There is a "snow-balling" effect as unsuccessful applications are resubmitted along with new applications for upcoming import requirements. Finance charges may be actually understated because allocations were not necessarily granted at the most appropriate time considering the seasonal nature of agriculture and three to four month lead time requirements for importation of most variable cost items. Whereas successful applications through FEMAC 7 are timed more or less correctly, the FEMAC 13, 14 and 16 allocations are too late to be useful for the 1987/88 planting season. Additional expenses for storage will therefore be incurred until just before the next season.

While it is inevitable that some funds will be tied up regardless of what import procedures are in place, the only "excessive" finance charges during the auction were those attributable to bidding at an exchange rate below the market clearing rate for a given week. It is difficult to believe that finance charges attributable solely to bidding for foreign exchange would have approached the levels currently experienced by importers under FEMAC.

The snow-balling effect mentioned above is not an isolated phenomenon. In Figure 2, the number of successful and unsuccessful Main Application bids are plotted for FEMAC's 1 through 22<sup>18</sup>. The gap is clearly growing between demand for and supply of foreign exchange. As of FEMAC 32 (late July 1988), the number of unsuccessful bids had risen to 1286, while successful bids were only 314<sup>19</sup>.

#### 4. Prioritization of Agriculture

Companies were divided over the question of whether FEMAC attached sufficient priority to the agricultural sector. While some companies (especially TNC's) felt very strongly that FEMAC did not understand the critical need for the timely arrival of agricultural inputs, others felt that agriculture was getting its fair share, given the meager availability of foreign exchange.

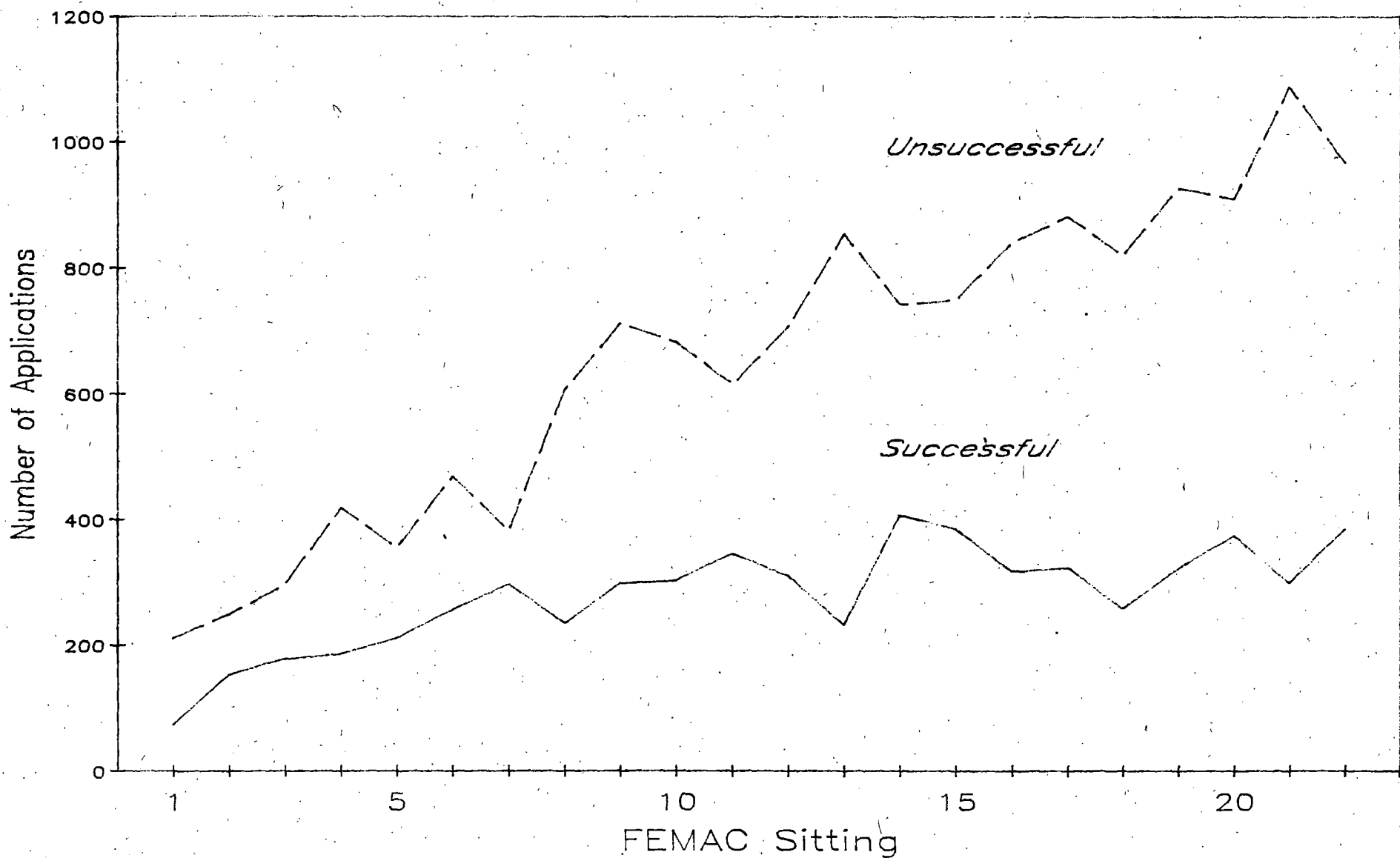
Evidence presented earlier suggests that agriculture's share of foreign exchange has not changed significantly with the establishment of FEMAC even though in its Interim National Development Plan (for the period July 1987 to December 1988), the GRZ attaches first priority to allocating foreign exchange to the agricultural sector. Moreover, it does not appear that adequate consideration has been taken of the seasonal nature of agricultural input requirements. Figure 3 presents the monthly dollar amounts and percentage shares allotted to the agricultural sector from May 1987 to March 1988. In general, higher dollar levels and percentage shares were apportioned to agriculture from November through March. However, due to the three to four

<sup>17</sup> This figure is calculated using an 18% annual rate or 0.7% for each FEMAC (as the committee meets once every two weeks).

<sup>18</sup> Unfortunately data on values of unsuccessful bids are not available.

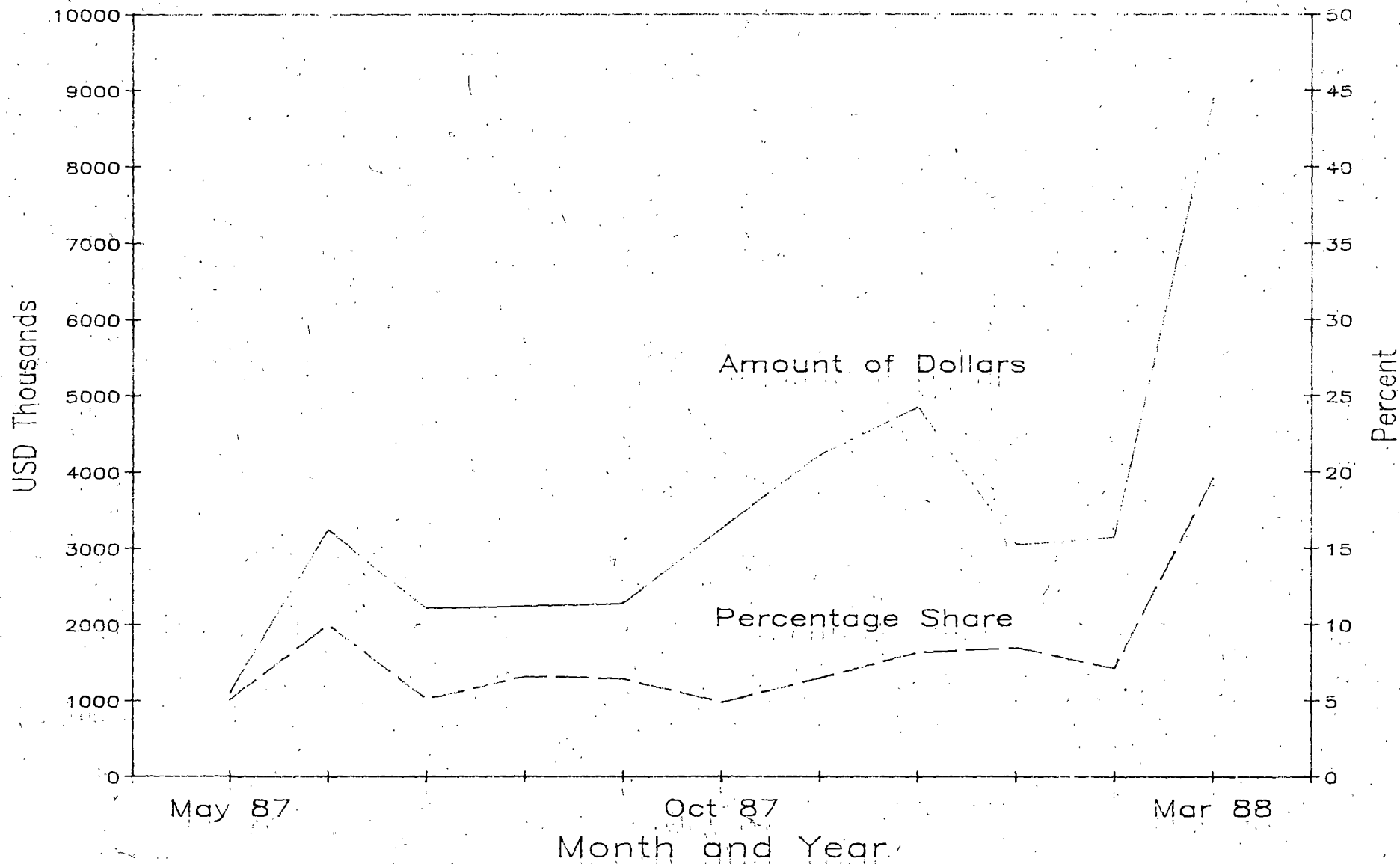
<sup>19</sup> Times of Zambia, July 28, 1988.

FIGURE 2: Numbers of Successful and Unsuccessful FEMAC Applications, Zambia (May 1987 - March 1988)



Source: Times of Zambia (various issues).

FIGURE 3: Monthly Amounts and Percentage Shares of Foreign Exchange Allocated to Agriculture, Zambia  
(May 1987 - March 1988)



Source: NCDP Progress Reports.

month lag between opening a letter of credit and arrival of the goods in-country, relatively more should have been allocated during the May to September period.

One reason why agriculture has not received greater priority under FEMAC may have to do with the fact that FEMAC allocates foreign exchange directly to individual companies. It is therefore difficult to see how the committee prioritizes across and within sectors. There is no formal flow of policy documents to the committee which deals with sectoral planning issues<sup>20</sup>. In contrast, the Zimbabwean system of foreign exchange allocation includes a process whereby representatives of agricultural interest groups serve on an Agricultural Input Prioritization Committee (AIPC) chaired by the Ministry of Agriculture. This committee formulates a recommendation for the aggregate foreign exchange needs of the agricultural sector for the upcoming allocation period. This recommendation is then carried to an inter-ministerial committee which allocates foreign exchange to each sector of the economy on a semi-annual basis. The Ministry of Agriculture then allocates funds to individual companies based on AIPC recommendations and documentation provided by the companies seeking foreign exchange (Murphy, 1987).

However, if a foreign exchange allocation system similar to that used in Zimbabwe were to be instituted, data needs and technical analysis requirements would probably be a significant burden for the Zambian bureaucracy to bear, given its scarce resources. Something akin to the Malawian foreign exchange allocation system might be a more realistic alternative for Zambia. Under this system, companies prepare an annual plan detailing monthly foreign-exchange requirements. Each month, companies submit pro forma invoices to the reserve bank justifying that month's required allocation. If reserve bank officials are unable to allocate the full sum requested, they will instead identify approved commodities for importation from among the pro formas. With the smaller sum of foreign exchange granted, companies are then free to prioritize what they will import from this approved list. With this system, there is some room for both the government and individual companies to prioritize and plan import needs. Moreover, the amount of paperwork is reduced as less official scrutinizing of each and every pro forma invoice is required than under FEMAC.

## VI. KEY VARIABLES FOR EVALUATING POSSIBLE EFFECTS OF FOREIGN EXCHANGE AUCTIONING ON OTHER SOUTHERN AFRICAN ECONOMIES

This section identifies factors that are important for thinking about the possible effects of foreign exchange auctioning on the general economy and the agricultural sector. Hypotheses are generated as a function of lessons learned from the Zambian experience. These lessons are drawn from both analysis in this paper and from other studies which have examined the Zambian experience as well as auctioning in other countries. To the extent that data

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<sup>20</sup> This situation may be changing as the Commercial Farmers Bureau recently submitted a schedule of agricultural sector requirements based on Interim National Development Plan targets (CFB, 1988). ZCCM has also submitted import requirement plans for the mining sector to FEMAC.

are available, key indicators for the general economy and agriculture are then identified for the SADCC countries (Zimbabwe, Malawi, and Tanzania) in an effort to distinguish how these countries' economies differ from or are similar to that of Zambia and how their economies might adjust if they were to move from foreign exchange rationing to a floating exchange rate. This section proposes hypotheses to stimulate thought about possible effects of foreign exchange auctioning. Its purpose is not to predict outcomes of auctioning for any country. The interaction of the variables identified (and variables left unidentified for this is not meant to be an exhaustive list) is too complex for reliable prediction.

Table 13 identifies key variables and hypothesizes potential short and long-run effects that might result if a system of foreign exchange auctioning were introduced. Data for some variables can be identified prior to establishment of an auction (extent of currency overvaluation, export concentration, etc.) and are related to the pre-auction structure of the economy. Drawing on the Zambian experience, variables are also identified which deal with the behavior of major actors during the implementation of an auction (money supply growth, budget deficit reduction, donor and government support for the reform process, etc.).

The degree of currency overvaluation is very important for providing an indication of the amount of adjustment that is likely to occur before the exchange rate stabilizes. The magnitude of currency overvaluation is most commonly calculated using a purchasing power parity method where price levels between a country and its trading partners are compared. However, there are a number of conceptual difficulties with this approach so results must be interpreted with caution (Krienen, 1983). Another way to roughly indicate the degree of overvaluation is to compare official and parallel market exchange rates. However, the parallel market rate is not an entirely reliable indicator of the exchange rate that would exist under an official floating exchange rate regime. This is because suppliers and demanders of parallel market hard currencies require a risk premium due to the possibility of getting caught and punished by the authorities (Roemer, 1984). Moreover, movement from a fixed to a floating exchange rate implies a degree of structural change that would significantly alter the nature of supply, demand, and investor confidence in the economy.

During implementation of an auction, careful monitoring of macro-economic variables such as money supply growth, the budget deficit, and interest rate movements is critical. As mentioned elsewhere in this paper, some analysts have suggested that the GRZ's inability to limit money supply growth and the budget deficit was the main reason for the failure of the exchange rate to stabilize during the auction.

It is also important to understand linkages between fiscal, monetary, and exchange rate policy. If government expenditures are not reduced and taxes are not raised, official borrowing must increase. In the short-run, government can raise treasury bill rates which will siphon money from the economy, reduce non-governmental investment incentives, and dampen demand for foreign currency. Alternatively, the government can leave interest rates unchanged (or raise them at a rate which does not keep pace with inflation),



TABLE 13: Indicators for Effects of Moving from Foreign Exchange Rationing to Auctioning

Key Variables	Hypothesized Short-Run Effects	Hypothesized Long-Run Effects
For the general economy:		
Degree of currency overvaluation prior to the auction	The greater the overvaluation, movement to market-determined exchange rates will: -increase domestic inflation; -increase exports; -decrease imports.	Unclear. The exchange rate may eventually stabilize at a rate consistent with purchasing power parity. On the other hand, severe fluctuations may continue due to uncertainties in the international economy.
Degree of concentration of export revenues prior to the auction	The more diversified the sources of revenues, the more widespread the incidence of benefits.	Production shifts to goods that the country can produce most efficiently, given its resource endowments.
Imports as percentage of GNP prior to the auction	The higher the percentage, the greater domestic inflation will be (magnitude depends on import elasticity of demand).	Share of imports in GNP falls as import substitution occurs.
Terms of trade for the country's exports during the auction	Determines supply of dollars to the auction. The greater the supply, the lower the levels of local currency depreciation.	Same as in the short-run.
Level of foreign debt repayment obligations during the auction	Determines supply of dollars to the auction. The greater debt repayment requirements are, the more constricted the supply of dollars, leading to local currency depreciation.	Currency depreciation and inflation can make the auction politically unsustainable.
Money supply growth during the auction	The greater the money supply growth, the greater the demand for dollars, leading to local currency depreciation.	Currency depreciation and inflation can make the auction politically unsustainable.
Size of government budget deficit during auction and actions taken to reduce it	See text for linkages to money supply growth, interest rates, and the exchange rate.	Currency depreciation and inflation can make the auction politically unsustainable.
Employment	Unemployment growth may be severe as industry contracts due to increased input prices and falling effective demand.	Employment shifts to sectors in which the country can produce most efficiently, given its resource endowments. Employment levels will depend on whether these sectors are more or less labor-intensive than sectors from which workers migrated.
Level of donor financial support to the auction	Increases supply of dollars, mitigating against local currency depreciation.	Helps ease transition to a stable market-based exchange rate.

TABLE 13 continued:

Key Variables	Hypothesized Short-Run Effects	Hypothesized Long-Run Effects
Extent of government commitment to the auction	If government assumes an educating role, citizens may become aware of reasons for short term sacrifice. If government abdicates this role, auction becomes scapegoat leading to lack of confidence in long-run prospects of the auction. This fuels speculation which contributes to local currency depreciation.	If government assumes an educating role auction may become accepted as exchange rate stabilizes. If government abdicates responsibility, the auction may be abandoned with a return to rationing.
For the agricultural sector:		
Extent of development of marketing infrastructure	The more developed the more rapid marketed supply response is to new price signals.	If the sector was taxed prior to the auction, improved incentives will lead to increased investment in marketing infrastructure. If the sector was subsidized prior to the auction, resources may move out of agriculture.
Extent of development of commercial relative to smallholder farming	The more prominent the role of commercial farmers, the greater the supply response because most commercial farm output is marketed.	A larger segment of smallholder farmers will move into the cash economy with increased price incentives.
Within smallholder sector, extent to which farmers are net sellers vs. net buyers	Net sellers will respond to higher prices with increased marketed output. Net buyers will experience decreased access to food due to inflation.	Net sellers will shift resources into production of export crops. To the extent possible, net buyers will also shift resources into production of export crops, but may be impeded by low liquidity, labor bottlenecks, and limited access to improved technology.
Level of dependence on imported inputs	Cost inflation will erode profitability but greater availability of spare parts will raise productivity.	Reduction in use of imported inputs with greater substitution of locally-produced inputs.
Producer price structure	If prices remain controlled but do not keep pace with inflation, farmers incur losses.	Farmers shift resources to crops whose prices are not officially controlled.
Value of imported inputs as a percent of agricultural exports	The sector increases its share of foreign exchange allocations as it is able to effectively compete for foreign exchange.	If comparative advantage exists, exports increase, and allocation shares rise accordingly.

TABLE 13 continued:

Key Variables	Hypothesized Short-Run Effects	Hypothesized Long-Run Effects
Share of agriculture in total merchandise exports	If the share is high, increased export revenues have a positive balance of payments effect. If the share is low, increased exports have little effect.	If the share is high, same effect as in short-run. If share is low, it may take many years for a significant positive balance of payments effect to be felt.
Level of national self-sufficiency in staple foods	The lower the self-sufficiency level, the greater the amount of inflation for food items.	Import substitution and greater demand for locally-produced foods may occur. However if export crops become more financially attractive, production may move away from staple crops, leading to greater dependence on imports.

but increase domestic credit by expanding the money supply. This does not dampen investment incentives, but with increased liquidity in the economy, exacerbates inflation, and runs the risk of raising demand for foreign exchange which in turn leads to further depreciation of the local currency. During the auction, the GRZ chose this second alternative for financing its deficit (Harber, 1988).

Employment levels and costs of essential commodities must also be monitored. Where possible, plans for subsidies targeted to vulnerable groups should be introduced. However, effective targeting may be extremely difficult to implement. Identification of appropriate commodities, populations, payments procedures, and timing may be problematic <sup>21</sup>.

Some explanation is necessary concerning donor support and government commitment. Some observers blame the donors for having proceeded too rapidly, without adequately considering Zambian political realities. Discussing the reform process in general, Colcough (1988) concludes:

...the Fund and the Bank (and by implication, all other Consultative Group members) pushed Zambia too hard and too fast. The extent to which they pauperized the wage earning classes, and pushed many at the fringes of the formal economy into starvation and destitution almost guaranteed that the reforms would become untenable. The speed and extent of enforced structural change was greater than the fabric of the polity would allow. Kaunda -- faced with circumstances on external account where things could hardly deteriorate further -- had little to lose, and much domestic popularity to gain, by turning his back on the IMF.

The nature of donor interaction with local governments is an important factor to be monitored during implementation of a reform programme. With regard to the Zambian auction, donor financial support contracted substantially after the July 1986 attempts by the Bank of Zambia to modify the auction. This reduced the flow of dollars to the auction and contributed to the accelerated depreciation of the kwacha that occurred from July 1986 to April 1987 (Figure 1).

Proponents put forth the argument that auctions are preferable to discrete devaluations because they remove some of the onus from governments resulting from the decision to devalue (Quirk et al, 1987). However in the case of Zambia, this proved to be a double-edged sword. If the government blames the IMF for forcing the auction upon the nation against its will, the auction quickly becomes a scapegoat for all the pain of adjustment (Sanderson, 1987). Citizens come to believe that there is no end in sight to economic and social upheaval, and that they are being made to suffer while foreign bankers and TNC's get rich. This is clearly not conducive to the adjustment process and ultimately imperils the survival of the entire reform programme.

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<sup>21</sup> To better appreciate these difficulties, see Weidemann et al. (1987) for a discussion of the developments in Zambian maize meal consumer pricing policy which led to the December 1986 riots in the Copperbelt.

With regard to the agricultural sector, one elementary hypothesis is that devaluation provides fresh incentive for export activities as well as import substitution. However, the ability of agriculture to respond to price signals is often constrained by lack of infrastructure, low liquidity, and a legacy of official neglect. Typically, long-run supply response is greater than short-run response, because with time, constraints are to some extent overcome. In general, an agricultural sector with extensive marketing infrastructure which is already well-integrated into the cash economy will respond more quickly to price incentives than an agricultural sector which is relatively underdeveloped.

The potential long-run effects on food self-sufficiency levels are ambiguous. While new incentives for import substitution may emerge due to higher import costs resulting from devaluation, resources may be transferred into the production of export crops whose prices also become more attractive as a result of devaluation. If there is a net movement away from food crop production without a corresponding fall in consumption, greater dependence on imported foodstuffs will occur. This issue can only be clarified through careful analysis of costs and returns at the farm level.

Table 14 presents data for important structural characteristics for Zambia and three other SADCC countries. The structure of the Zambian economy is quite different than that of the other countries in several ways. Exports are highly concentrated in the mining sector which accounts for over 90% of total 1985 exports. For the other three countries, export revenue sources are more diversified and agriculture plays a far more prominent role. Malawi and Tanzania are especially dependent on agriculture although no single commodity dominates to the degree that copper dominates Zambian exports. Zimbabwe has a more diversified economy than the other SADCC countries with several sectors (agriculture, mining, manufacturing) historically important for generation of export revenues. One could hypothesize that because the agricultural sectors are more developed in these countries, agriculture would be quicker to respond than in Zambia. In addition, export response would be relatively more broad-based than in Zambia.

Prior to the auction, Zambia's agricultural exports were very small relative to overall exports (less than 1%) and the agricultural sector consumed six times more foreign exchange than it generated (FAO, 1985). This meant that short-run adjustment would in all likelihood be painful as it would be difficult to generate enough export revenue to pay for imported inputs in the short-run. Secondly, from a macro-economic perspective, the chances of improved agricultural performance making a significant impact on Zambia's balance of payments problems were doubtful because the sector's export base was so small. In contrast, in each of the other three countries, one could hypothesize that adjustment would not be as painful because agricultural sector production is not so dependent on imported inputs. The percentage of imported inputs as a percentage of agricultural exports is only in the ten percent range for each of these countries. In addition, the relative prominence of the agricultural sector as a source of export revenue means that improved export incentives could have a greater positive short and medium-run balance of payments impact than was possible in Zambia.

TABLE 14: Indicators for Potential Effects of Moving from Foreign Exchange Rationing to Auctioning in Four SADC Countries

Indicator	Zambia	Zimbabwe	Malawi	Tanzania
Concentration of Exports (1985):				
1st Most Important and Percent	Copper 84.7%	Tobacco 23.5%	Tobacco 41.0%	Coffee 34.5%
2nd Most Important and Percent	Zinc 3.5%	Iron 12.0%	Tea 20.4%	Cotton 17.6%
3rd Most Important and Percent	Cobalt 1.5%	Cotton 9.8%	Sugar 10.5%	Sisal 5.5%
Cumulative Percentage	89.7%	45.3%	71.9%	57.6%
Share of Agriculture in Total Merchandise Exports (1982-84)				
	0.9%	40.7%	89.4%	84.5%
Ag. Input Imports as a Percent of Ag. Exports (1982-84)				
	629.1%	10.8%	12.6%	11.6%
Development of Marketing Infrastructure				
	LOW	HIGH	HIGH	MEDIUM/LOW
Development of Commercial Farming (Relative to Other African Countries)				
	LOW	HIGH	HIGH	MEDIUM
Self-Sufficiency for:				
Coarse Grains (2)	86.4%	100.0%	100.0%	93.8%
Wheat (2)	19.7%	60.1%	4.9%	36.4%

(1) September 1984 for Zambia.

(2) For a "normal year" which is calculated using trend production and imports as estimated by the FAO.

Sources: For Zambian commodity export shares, Bank of Zambia "Quarterly Financial and Statistical Review," March 1986;

For Zimbabwean commodity export shares, CSO, "Statistical Yearbook 1987";

For Malawian commodity export shares, Government of Malawi, "Economic Report 1987";

For Tanzanian commodity export shares, IMF, "International Financial Statistics," May 1988;

For agricultural imports as a percent of GNP, "International Financial Statistics," May 1988;

For agricultural exports as a percent of merchandise exports, and inputs as a percent of agricultural exports, FAO, "Trade Yearbook 1985";

For self-sufficiency in coarse grains and wheat, FAO, "Food Supply Situation and Crop Prospects in Sub-Saharan Africa: Special Report," April 1988.

## VII. CONCLUSIONS

In this section, we identify the most important lessons learned from the analysis. Some implications for decision-makers in government and business are also discussed.

For the most part, import priorities determined in the market-place during the auction and by the government under FEMAC have coincided.

Contrary to pre-auction fears and post-auction conventional wisdom, when people were relatively more free to import whatever they wanted, large quantities of foreign exchange were not "squandered" on unproductive luxury consumer goods. The share of auctioned foreign exchange allocated to consumer goods did not vary significantly from shares allocated under FEMAC. Shares going to "productive" items such as spare parts and capital goods also did not vary significantly. There is however some evidence that under FEMAC, variable cost items (other than spare parts) have received higher priority while financial and transport charges have received lower priority.

Sectoral prioritization has not differed markedly either. Under both the auction and FEMAC, manufacturing received a far greater share than any other sector while agriculture was third or fourth. Rankings of other sectors did not vary greatly between foreign exchange allocation systems.

As for company ownership status, allocations to 100% foreign-owned firms (TNC's) have fallen substantially under FEMAC while allocations to 100% private Zambian-owned firms have risen. Foreign exchange shares allocated to 100% GRZ-owned parastatals and mixed firms have not varied significantly between periods.

For the most part, these developments in the general economy are mirrored within the agricultural sector. One must however bear in mind that the auction only existed for nineteen months. Resource shifts (especially between sectors) would probably have been more substantial if the auction had lasted longer.

Both the auction and FEMAC have contributed to a volatile economic environment in which planning by government and business has been rendered extremely difficult.

It would be hard to say which system resulted in greater uncertainty. One can however conclude that the source and distribution of uncertainty has to some extent shifted. Under the auction, if one bid high enough, availability of foreign exchange was certain, both in the quantities and at the time desired. However due to exchange rate uncertainty, the amount of kwacha that one had to pay to obtain hard currency was very difficult to discern. Budgeting became an exercise in futility for both business and government. In addition, government had little control over what entered and left the economy. Under FEMAC, exchange rate uncertainty has been reduced although the possibility of devaluation still looms. Adequate and timely availability of foreign exchange has now become problematic. It would be hard to say that the ability of businesses to plan has improved under FEMAC. It is easier to

conclude that planning difficulties have been somewhat reduced for government.

For essential items such as agricultural spare parts where timeliness is often of greater concern than price, the auction is a superior system. For long-term investment items such as capital equipment, FEMAC may be preferable as immediate availability is not as important as having a reliable short to medium term indication of price and repayment schedules.

For a foreign exchange allocation system to be effective and lasting, both government and business must have some latitude to plan. This must somehow involve a compromise between total reliance on the free market and rigid state planning. At the same time, red tape needs to be minimized and the amount of technical analysis required must not surpass the resource limitations of government. Examination of the Malawian system might be useful to Zambian policy-makers.

Excessive finance charges and cash flow difficulties resulting from the tying-up of funds during the application process appear to have become major problems under FEMAC.

Although it is difficult to quantify the magnitude of these finance charges and what constitutes "excessive" charges, it is clear from interviews that importers consider the tying-up of funds to be a major problem. The ever-increasing number of unsuccessful FEMAC applications attests to this as more and more local currency is being set aside while the hard currency pie fails to grow commensurately.

Although there is substantial evidence that the agricultural sector responded to the auction by increasing exports, because the sector was starting from such a small base, it would have taken at least several years for significant positive balance of payments effects to be felt.

Historically, agricultural exports have only been in the range of 1% of total Zambian merchandise exports. Among the 51 African countries (South Africa excluded), Zambia ranks 43rd (FAO, 1986). Dependence on copper exports alone ranges between 80% and 90%. The export diversification challenge facing Zambia is perhaps more daunting than that of any other country in Africa. One could reasonably expect that agriculture's short and medium-term balance of payments contributions would be greater in many other Sub-Saharan African countries if they were to move to a floating exchange rate. This could be the case for nearby SADCC countries such as Malawi, Zimbabwe, and Tanzania which already have a strong agricultural export base.



## BIBLIOGRAPHY

- Colcough, Christopher. (1988). "Zambian Adjustment Strategy -- With and Without the IMF." *International Development Studies Bulletin*. 19:51-60. Institute of Development Studies. Sussex.
- FAO. (1986). "Atlas of African Agriculture". Rome.
- . "Trade Yearbook 1985". Rome.
- . "Food Supply Situation and Crop Prospects in Sub-Saharan Africa: Special Report." Report prepared by the Global Information and Early Warning System on Food and Agriculture. Rome. Various issues.
- Harber, Richard P. (1988). "Zambia's Foreign Exchange Auction: A Description and Analysis of its Functioning and Effects, October 1985 - May 1987." Unpublished paper prepared for USAID/Zambia. Lusaka. May.
- INDECO Ltd. (1987). "INDECO Annual Report and Accounts 1987." Lusaka.
- International Monetary Fund. (1988). "International Financial Statistics". Washington, D.C. May.
- Kreinen, Mordechai E. (1983). International Economics: A Policy Approach. Fourth Edition. Harcourt Brace Jovanovich. New York.
- Murphy, Peter. (1987). "The Allocation of Foreign Exchange (FOREX) for the Purchase of Essential Not Locally-Produced Inputs Required by Agriculture in Zimbabwe, and Other Related Matters." Harare.
- Quirk, Peter J., Christensen, Benedicte Vibe, Huh, Kyung-Mo, and Sasaki, Toshihiko. (1987). "Floating Exchange Rates in Developing Countries: Experience with Auction and Interbank Markets." IMF Occasional Paper No.53. Washington, D.C. May.
- Roemer, Michael. (1984). "Simple Analytics of Segmented Markets: What Case for Liberalization?" Harvard Institute for International Development Discussion Paper No. 175. Cambridge, Massachusetts. July.
- Sanderson, Murray. (1987). "Why Zambia's Auction Failed". Presented at an Economics Association of Zambia Conference on "Auctioning of Foreign Exchange: Recent Experiences in Third World Countries". Lusaka. June.
- "Times of Zambia". Lusaka. Various issues.
- USAID. (1987). "Zambia Auction Program Support PAAD Amendment." Washington, D.C. January.
- Weidemann, Wesley, Koropecy, Orest, and Thomas, E. Scott. (1987). "Zambia Agricultural Policy Impact Assessment." Prepared by Robert R. Nathan Associates, Inc. for the United States Agency for International Development. Washington, D.C. February.

World Bank. (1984). "Zambia: Industrial Policy and Performance." Washington, D.C.

Zambia, Bank of. (1986). "The Foreign Exchange Auction System: A Review of the First Year of Operations." Lusaka. November.

----. "Quarterly Financial and Statistical Review." Lusaka. Various issues.

Zambia, Republic of. (1985). "Monthly Digest of Statistics." Prepared by the Central Statistics Office. Lusaka. October - December.

----. (1986). "Country Profile: Zambia 1985." Prepared by the Central Statistics Office. Lusaka. September.

----. (1987). "New Economic Recovery Programme: Progress Report No.1 on the Implementation of the Interim National Development Plan." Prepared by the National Commission for Development Planning. Lusaka. October.

----. (1988a). "New Economic Recovery Programme: Interim National Development Plan Progress Report No.2." Prepared by the National Commission for Development Planning. Lusaka. June.

----. (1988b). "Economic Report 1987." Prepared by the National Commission for Development Planning. Lusaka. January.

ZIMCO Ltd. (1986). "ZIMCO Annual Report 1986." Lusaka.



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