AGRICULTURAL PARASTATALS SINCE INDEPENDENCE: HOW HAVE THEY PERFORMED?

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ABSTRACT

The paper examines the performance record of 17 agricultural parastatals, from independence to 1984. Data is presented showing capital invested, liquidity and gearing ratios, private and social returns to capital, real unit costs and real consumer and producer prices. Firms are classified as to which ones have had serious problems with cost control or social rates or return, and when those problems developed. About half of the firms currently operating are considered "good" performers. The data show that for most firms cost control problems preceded financial problems, and that pricing policies have not been a major cause of parastatal financial problems. Since 1976 several firms have developed severe financial problems, while before 1976 no firm had such severe problems. Efforts to restore cost control after serious problems developed have rarely succeeded. Current policies of government are aimed at increasing central government control of all aspects of operations of all parastatals, a strategy which is not likely to succeed.

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1. Purpose of the paper

The purpose of this paper is to report the results of a study of the performance of parastatals in the agricultural sector in Kenya, from independence until 1984. This paper is the first set of results from a larger study, covering approximately 40 of the largest parastatals in Kenya.[1] The aim of the research is to uncover what factors make for successful parastatal performance. A study was made of the performance of this group of firms over the 22 year period since independence. The purpose of the present paper is to present the results of the first stage of the research: the analysis of comparable financial data for 17 agricultural parastatals. A considerable volume of information which is anecdotal or specific to particular firms has also been gathered, but it has not been possible to integrate and present most of it here.

The organization of the paper is as follows. First there is a short theoretical discussion of how performance of parastatals should be studied. Next follows a discussion of the data base compiled. Then follows a section which describes the results. This section begins by giving a description of investment in the agricultural parastatal sector. Then follows empirical discussions of two important aspects of parastatal performance, social rates of return and efficiency. Next the information on rates of return and efficiency is integrated with information on trends in producer and consumer prices to answer the question "Who

benefits from parastatal operations?" This section is organized to consider all four performance indicators, one firm at a time. Finally, the results are summarized and policy implications are discussed.

2. What is performance?

2.1 Theoretical background

The term performance is ambiguous and must be defined. Parastatals serve many interest groups.[2] What is viewed as good performance by some of those interest groups may conflict directly or indirectly with what is viewed as good performance by other interest groups served. If one surveyed all those affected by the parastatals under study and asked for a rating of their performance, one could receive contradictory answers. This conflict of interests which revolves around parastatals is one of the most important factors in influencing their behavior. It is central to the story of parastatal performance, and not something that should be ignored by taking averages, or by deciding on one simple "social welfare function."

In a nutshell, the role of parastatals is to create and distribute surplus value. The major claimants on the surplus value they create can be categorized in four groups: the suppliers of the produce they process and distribute, the consumers of that produce, the state as owner of the capital which allows them to operate, and the managers through whose hands everything passes. Performance of parastatals must then be discussed in terms of how successfully surplus value is created and to whom it

accrues.

Given that performance must be discussed in such multidimensional terms, can one speak of "good" performance and "poor" performance? Are there generally accepted norms by which parastatals can be judged? The author has used two axioms to guide the discussion. They will be stated now and used implicitly in the rest of the paper.

The first axiom of desirable parastatal performance is that managers have no legitimate claim on surplus value created beyond the opportunity cost of their labor. It follows then that parastatals should be managed efficiently. Firms where real unit cost margins rise steadily due to managerial corruption or incompetence are poor performers.

The second axiom is that each firm should, on average, over the years, pay its own way. If a parastatal consistently makes losses which must be financed from the public treasury, it is failing in its job of surplus creation. Its operation is a drain on the economy, and it can be considered a poor performer.

Beyond these two axioms there is much room for disagreement. A firm which makes high social returns to capital exhibits one kind of success, a firm which pays its agricultural suppliers handsomely is successful in a different way, a firm which provides goods to wananchi at reasonable prices, succeeds in yet a third way. There is room for disagreement on what tradeoff should be made between these aspects of performance. In what follows the

actual tradeoffs made will be documented, but readers will be left to judge for themselves the desirability of the results.

2.2 Discussion of data base

The parastatal sector has been defined to include those firms which are supported primarily, or supposed to be supported primarily, through sales of goods and services. This definition rules out large numbers of statutory boards which have educational, regulatory, research, or regional development functions, and are supported primarily by grants from government. The paper covers a sample of 17 firms which have functioned in the agricultural sector since independence. The firms are listed in Table 1. Not all have functioned simultaneously, new firms have been created, and some firms have been reorganised into other firms. The study has focussed on those parastatals which buy and process agricultural commodities. Thus the Agricultural Finance Corporation, while it deals with agriculture, has been omitted, and will be included later when the results on financial parastatals are presented. Similarly, the Agricultural Development Corporation will be included with other firms which hold multiple subsidiaries. Within the limits of this definition of the agricultural sector, the sample of firms is virtually complete.[3] Data for 248 out of 272 firms-years has been assembled.

The study has relied almost exclusively on data from the audited annual accounts of the parastatal bodies themselves,

TABLE 1 FIRMS INCLUDED IN THE SAMPLE

	YEARS OF OPERATION SINCE INDEPENDENCE	MISSING YEARS
Chemelil Sugar Co.	68-84	68-72
Coffee Board of Kenya	63-84[a]	84
Cotton Lint & Seed Marketing Brd.	63-84	84
East African Sugar Industries	66-84	66-71,84
Horticultural Crops Dev. Auth.	67-84	67-71
Kenya Cooperative Creameries	63-84	
Kenya Meat Commission	63-84	83,84
Kenya Tea Development Authority	63-84	
Maize Marketing Board	63-66	
Maize and Produce Board	67-80	
Mumias Sugar Co.	73-84	
National Cereals and Produce Brd.	80-84	
Nzoia Sugar Co.	79-84	
Pyrethrum Marketing Board	63-84	78,81,82
South Nyanza Sugar Co.	80-84	
Uplands Bacon Factory	63-84	
Wheat Board of Kenya	63-80[b]	

Notes:
a. Before 1971 the coffee industry was handled by 2 firms, the Coffee Board of Kenya and the Coffee Marketing Board. In 1971 the latter was merged into the former. For comparability of presentation the accounts have been merged for previous years.

b. Most of the actual functions of the Wheat Board were carried out by the Kenya Farmers' Association on an agency basis. Before 1972 the Wheat Board accounts presented only the accounts for its own administrative costs, and excluded trading results. Therefore, most of the tables present data only after 1972.

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supplemented by data from government publications such as the Statistical Abstract. The annual reports were obtained mainly from the Government Investments Division of the Ministry of Finance, the Kenya National Archives, the Central Bureau of Statistics, with a few reports obtained directly from the parastatals themselves, or from the Inspectorate of Statutory Boards. It is likely that more complete coverage could be obtained if sufficient time were invested in contacting the firms themselves, but where

attempted this has generally proven to be a frustrating and unfruitful approach. The author also conducted interviews with managers of several of the firms. The interviews provided interesting insights into the perceptions of managers about the problems confronted by their firms, as well as information about particular events or institutional changes, which helped in the interpretation of the published data on which the paper primarily relies.

There are obvious weaknesses in the use of annual accounts as the major data source, and they merit comment here. First, the accounts are by and large oriented to meeting reporting requirements of the various statutes, including the Companies Act, under which the parastatals function. Thus their purpose is to satisfy legal accounting requirements, not to give the sort of data economists would most prefer to see. Sometimes the results reported may vary dramatically from economic reality. For example, many parastatals hold shares in other firms, some of which have performed poorly. Although the assets of these subsidiaries may be largely eroded away by accumulated losses, the shares continue to be carried on the books of other parastatals at cost, thus distorting the picture given of the parent firms. Another example involves problems of inflation accounting. It is normal accounting procedure in Kenya to list assets at cost less depreciation. Where there is significant inflation going on in capital goods markets, which there has been during some of the time since independence, this can

result in underprovision of depreciation and overstatement of rates of return.

Fiscal reporting years differ between the firms, and it is for this reason, combined with problems of missing data, that aggregate figures for the sector are not given in this paper. The firms vary dramatically in the level of detail in which they report. Some list their assets, costs and revenues in great detail along with other data such as employment levels and output levels, while others give the barest summary figures.[4] The quality of the data varies by firm. Some have well developed cost accounting systems, while others lack the most rudimentary of accounting and control systems. Sometimes these differences in quality can by surmised from the reports themselves, i.e. the auditor's statement will be negative, but one must assume that there are many cases of faulty data which go undetected.

Having considered these important weaknesses in the data base, one must perhaps justify its use. Two responses can be made. First while the data available are not ideal or complete for economic analysis, they still contain substantial information, most of which has never been examined in a systematic way to explore what parastatal performance has been. Thus, while many interesting questions about parastatal performance may remain unanswered, a start can be made. Major trends can be detected, if not all the factors which caused them.

Second, the author believes that, while the accounting systems of the parastatals may be inadequate for detecting

and preventing such problems as embezzlement, corruption and inefficiency, by and large the accounts are probably fairly accurate reflections of the financial transactions they report. Subject to the qualifications stated above, the statement of assets, revenues and costs is more or less accurate. If the costs are inflated by corrupt or inefficient practices, that will often be undetectable, but that the costs were incurred at more or less the levels stated can probably be relied on. Sometimes even this cannot be assumed, i.e. the auditor's statement for the Kenya Meat Commission for the years 1979-81 stated that they could not confirm the accuracy of even this type of information. But even in such cases it is thought that the accounts as reported reflect an accurate enough picture to merit inclusion. In the years mentioned for the Kenya Meat Commission there can be no doubt of large losses and a rapidly eroding capital base, though the exact amounts may differ from those reported.

3. Results

3.1 Trends in Financial Condition

Table 2 shows the capital invested in agricultural parastatals, from independence to 1984. These figures reflect access to capital, whether from retained earnings or from borrowing. The definition of capital invested which was used is net total assets, i.e. total assets less current liabilities. This definition was chosen instead of total assets, because it was felt that it was more robust to

TABLE 2. CAPITAL INVESTED (millions of current shillings)

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
CHEMELIL						n.a.	n.a.	n.a.	n.a.	54.95	60.90
CPK	7.38	7.26	7.70	8.72	9.01	8.23	7.71	11.02	10.81	11.29	16.60
CLAYMB	22.79	21.77	18.20	13.99	9.30	8.13	10.58	11.20	14.62	22.20	20.96
EABI				n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	26.31	51.66
HCDA					n.a.	n.a.	n.a.	n.a.	n.a.	.45	.77
KCC	21.58	21.51	21.38	23.59	24.44	25.61	30.15	38.02	40.35	39.09	35.75
KMC	33.46	33.92	34.48	34.48	28.66	30.61	32.59	34.63	36.87	42.45	48.07
KTDA	.85	4.09	2.48	7.19	9.49	11.67	11.77	14.67	15.56	18.69	23.06
MMB	23.23	13.33	15.71	19.16							
M&PB					34.41	17.89	41.54	42.32	54.10	131.96	197.97
MUMIAS										81.37	121.38
NCPB											
NZDIA											
PYBOARD	15.55	16.33	16.90	18.97	19.73	21.74	21.43	23.48	27.40	36.50	40.06
SONY											
UPLANDS	10.76	10.67	10.39	10.20	10.90	10.83	10.78	11.31	11.00	10.06	9.95
WHEAT				.44	.50	.58	.63	4.35	4.60	19.69	20.62

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
CHEMELIL	68.34	97.40	114.83	127.80	140.71	146.76	171.88	166.52	153.61	164.97	189.73
CPK	23.57	24.40	41.96	32.82	56.53	45.17	70.90	71.30	74.56	84.01	n.a.
CLAYMS	24.30	18.36	30.53		27.12	26.72	9.36	(10.18)	(28.13)	(58.51)	n.a.
EABI	51.77	50.38	72.58	84.73	107.59	112.58	261.02	242.34	240.24	246.51	n.a.
HCDA	.77	.66	.66	1.01	1.40	1.58	1.52	2.11	3.22	5.67	n.a.
KCC	59.38	77.22	84.59	34.47	14.80	23.76	79.75	160.38	172.98	243.88	432.85
KMC	47.44	61.89	70.09	85.39	66.60	32.05	22.87	6.23	(16.86)	(24.84)	(21.23)
KTDA	30.81	55.40	54.12	162.36	214.83	274.94	327.32	442.37	536.36	563.32	689.32
MMB											
M&PB	168.19	280.85	319.99	501.82	383.43	351.24	337.21				
MUMIAS	127.00	125.10	193.72	327.52	537.72	540.88	539.04	505.04	456.10	450.24	437.71
NCPB							(396.58)	(243.17)	(312.06)	(655.19)	(681.18)
NZDIA				217.70	351.02	416.68	454.38	385.62	287.89	172.64	13.20
PYBOARD	48.15	57.31	70.46	73.36	n.a.	74.93	89.59	n.a.	n.a.	142.67	143.31
SONY				39.99	226.38	435.54	521.32	467.35	373.38	286.24	206.94
UPLANDS	13.91	16.23	15.05	12.67	11.16	3.96	2.75	2.04	(6.14)	(10.72)	(22.55)
WHEAT	7.73	24.58	60.53	50.33	33.96	1.81	(1.54)				

Notes: Definition of capital invested = total assets - current liabilities

n.a. = not available.

Numbers in parentheses are negative.

SOURCE: annual reports for each firm, various years

coincidences in timing of financial transactions. For example, a firm may in one month have large current assets and large current liabilities because it has received the proceeds for sale of its crop but hasn't yet paid farmers. In the next month it does so, reducing both the current assets and the current liabilities. It was judged that this type of transaction doesn't reflect a change in the capital invested in the firm, which is in accord with the definition chosen.[5]

Several interesting conclusions can be drawn from the table. First, it is noteworthy that from independence to 1976, only one parastatal, the Cotton Lint and Seed Marketing Board, had significant trouble maintaining its capital base. The rest, though they suffered occasional bad years, or even several years of stagnation, were able to maintain their capital bases.

From 1976 the story changes, as can be seen in Figure 1. From 1976 four firms, including the Cotton Board, the KCC, Uplands Bacon, and the Wheat Board began suffering serious erosion of their capital bases. In 1977 they were followed by the KMC. In 1978 the Maize and Produce Board started the slide. In 1980 Nzoia, Mumias and Sony sugar companies all began serious and prolonged erosion of their capital bases. In 1981 the newly formed National Cereals and Produce Board began a steep decline in its already negative capital base.

Of all these 10 firms which have suffered significant declines in capital base, only the KCC has been able to

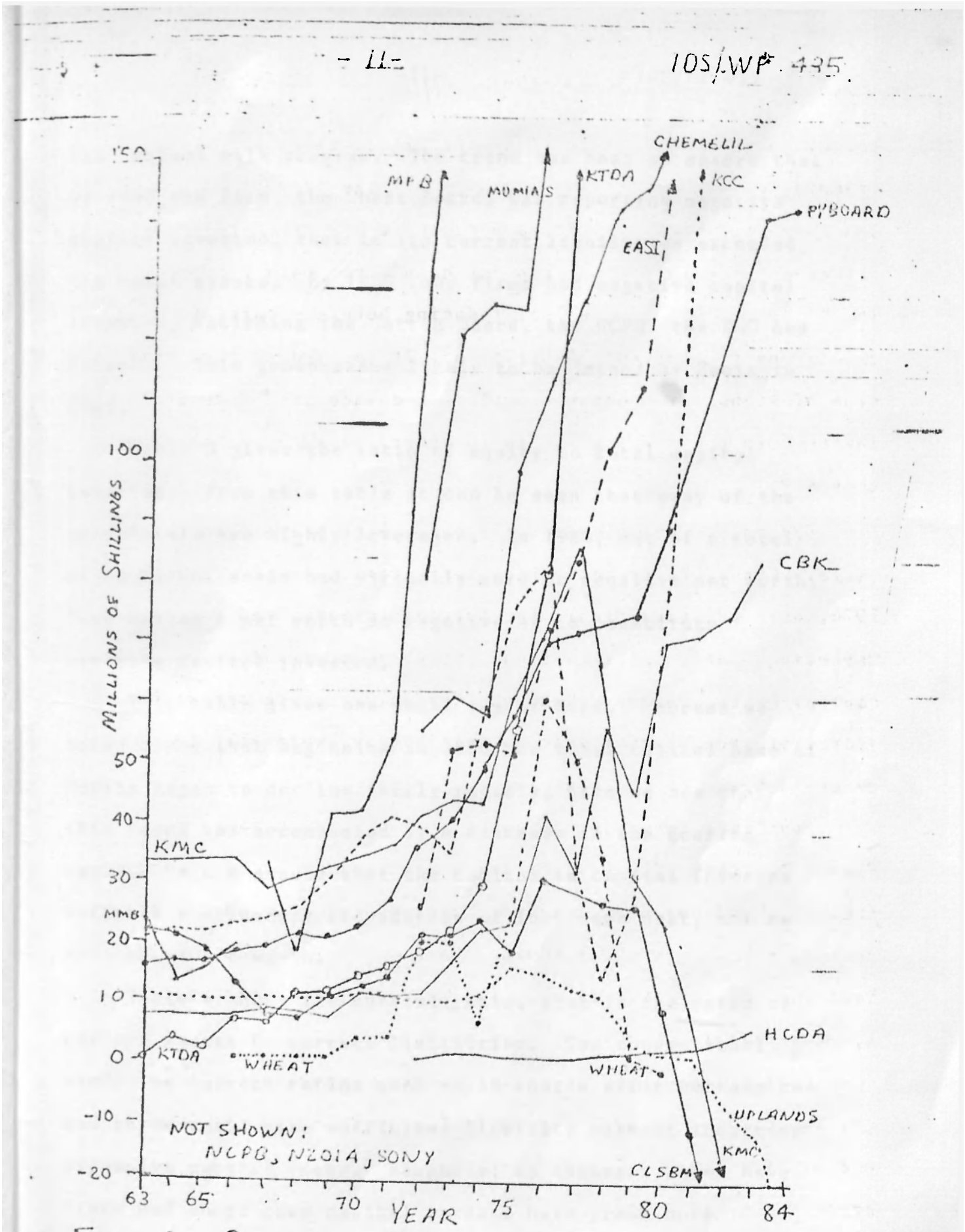

FIG 1: CAPITAL INVESTED

the school milk program. The trend has been so severe that by 1980 one firm, the Wheat Board, was reporting negative capital invested, that is its current liabilities exceeded its total assets. By 1983 four firms had negative capital invested, including the Cotton Board, the NCPB, the KMC and Uplands. This group seems likely to be joined by Nzoia in 1985.

Table 3 gives the ratio of equity to total capital invested. From this table it can be seen that many of the parastatals are highly leveraged. In 1983, out of a total of 13 firms, seven had virtually zero or negative net worth, four having a net worth so negative as to constitute negative capital invested.

This table gives one small ray of hope. Whereas we noted above that beginning in 1980 the total capital base of Numias began to decline fairly rapidly, here we see that this trend was accompanied by a decrease in the gearing ratio. We can assume that the decline in capital invested reflects a voluntary liquidation of long term debt, not an erosion of net worth.

Table 4 shows the current ratio, that is the ratio of current assets to current liabilities. The conventional wisdom on current ratios used to be that a ratio between two and three would give sufficient liquidity without incurring excessive capital costs. Recently, as interest rates have risen and short term capital markets have grown more sophisticated, the generally accepted guideline has fallen

TABLE 3. RATIO OF EQUITY TO CAPITAL INVESTED

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
CHEMELIL						n.a.	n.a.	n.a.	n.a.	(1.07)	(1.01)
CRK	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CL&SMB	1.00	1.00	1.00	1.00	1.00	.72	.78	.75	.80	.86	.87
EASI				n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	.92	.62
MCDA					n.a.	n.a.	n.a.	n.a.	n.a.	(.32)	(.31)
KCC	.77	.80	.82	.77	.80	.86	.77	.82	.85	.87	.71
KMC	.31	.32	.34	.34	.23	.28	.33	.40	.46	.55	.61
KTDA	(14.09)	(4.10)	(8.90)	(3.72)	(3.43)	(2.21)	(2.31)	(1.69)	(1.47)	(1.04)	(.56)
MMB	.90	.85	.87	.91							
MAPB					1.00	1.00	.90	.90	.62	.25	.12
NOMIAS										.12	.48
NCPB											
NZDIA											
PYBOARD	.52	.47	.44	.46	.46	.50	.46	.49	.55	.64	.65
SONY											
UPLANDS	.67	.68	.69	.70	.73	.75	.76	.77	.79	.80	.83
WHEAT				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
CHEMELIL	(.96)	(.37)	.51	.58	.63	.65	.73	.72	.70	.72	.80
CRK	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	n.a.
CL&SMB	.85	.70	.83		.78	.40	(1.57)	*****	*****	*****	n.a.
EASI	.62	.56	.49	.46	.49	.55	.78	.76	.66	.58	n.a.
MCDA	(.73)	(1.13)	(.75)	(.18)	.13	.08	.43	.67	.79	.89	n.a.
KCC	.69	.58	.59	.07	(1.22)	(.76)	(.05)	.14	.20	.25	.26
KMC	.51	.64	.70	.54	.16	(.72)	(1.95)	(10.06)	*****	*****	*****
KTDA	(.27)	(.08)	.06	.27	.31	.29	.22	.16	.04	.01	.17
MMB											
MAPB	.53	.30	.13	(.04)	(.05)	(.46)	(1.16)				
NOMIAS	.52	.63	.49	.52	.36	.34	.38	.40	.42	.48	.65
NCPB							*****	*****	*****	*****	*****
NZDIA				.14	.20	.09	.08	(.10)	(.41)	(1.07)	(20.59)
PYBOARD	.69	.73	.76	.76	n.a.	.75	.78	n.a.	n.a.	.84	.84
SONY				1.00	.52	.45	.30	.15	.00	(.76)	(1.72)
UPLANDS	.90	.75	.75	.90	.92	.86	(1.36)	(5.06)	*****	*****	*****
WHEAT	1.00	1.00	1.00	.94	.84	(1.45)	*****				

Numbers in parentheses are negative.

***** indicates negative equity and negative capital invested.

n.a. = not available

Source: annual reports, various years.

ABLE 4. RATIO OF CURRENT ASSETS TO CURRENT LIABILITIES

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
CHEMELIL						n.a.	n.a.	n.a.	n.a.	.46	.74
CBK	1.07	1.00	1.02	1.05	1.02	1.01	1.02	1.09	1.07	1.06	1.07
CL&SMB	30.98	18.92	5.36	1.38	.80	.71	2.00	1.51	4.63	5.70	3.94
EAS1				n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	.24	.34
HCDA					n.a.	n.a.	n.a.	n.a.	n.a.	1.61	2.47
KCC	1.31	1.30	1.28	1.26	1.22	1.14	.93	.94	1.12	1.05	.96
KMC	2.09	1.93	2.24	2.16	1.30	2.69	3.00	2.93	2.33	1.94	1.39
KTDA	1.01	1.45	.64	.72	.75	1.61	1.40	1.56	1.19	1.33	1.49
MMB	1.34	1.75	2.28	1.19							
M&PB					1.28	.95	1.34	1.67	2.58	3.79	13.76
MUMIAS										2.26	1.86
NCPB											
NZDIA											
PYBOARD	.99	1.09	1.59	1.50	1.15	1.37	1.52	1.76	1.92	2.22	1.85
SONY											
UPLANDS	2.27	2.32	2.51	2.52	2.26	2.41	2.29	2.33	2.11	1.49	1.57
WHEAT				74.26	144.94	221.79	108.74	1.26	6.29	2.59	1.41

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
CHEMELIL	.75	1.25	2.51	3.11	3.79	3.02	4.19	3.69	2.88	3.22	3.41
CBK	1.17	1.08	1.12	1.03	1.10	1.04	1.09	1.04	1.02	1.00	n.a.
CL&SMB	1.44	.96	2.53		1.15	1.02	.83	.62	.30	.32	n.a.
EAS1	.32	.38	1.31	1.26	1.25	1.04	1.19	.94	.76	.80	n.a.
HCDA	2.06	1.48	1.23	1.22	1.63	1.69	2.07	2.22	3.74	48.05	n.a.
KCC	1.32	1.45	1.55	.81	.76	.75	.76	.93	.98	1.28	1.70
KMC	.75	.95	1.14	3.34	1.50	.60	.60	.63	.52	n.a.	n.a.
KTDA	1.11	1.46	1.35	1.19	1.39	1.43	1.38	1.47	1.47	1.27	1.46
MMB											
M&PB	7.42	13.17	6.67	8.52	7.54	3.88	2.92				
MUMIAS	1.65	1.10	.97	.89	.58	.50	.60	.60	.53	.65	.79
NCPB							.39	.51	.68	.67	.63
NZDIA				4.28	.79	.93	2.18	1.47	.85	.52	.32
PYBOARD	1.15	1.29	1.43	1.47	n.a.	1.81	1.70	n.a.	n.a.	1.33	1.53
SONY				.02	19.83	2.28	.94	.83	.63	.54	.49
UPLANDS	1.22	1.55	1.24	1.06	1.00	.69	.63	.61	.29	.28	.19
WHEAT	.66	.93	1.46	.59	.47	.51	.57				

a. = not available

urce: annual reports, various years

as low as 1.4. Certainly a current ratio below 1.0 reflects a firm with liquidity problems, one which is bound to make late payments to its suppliers.

Table 4 shows that during the first decade of independence, only two firms suffered chronic liquidity problems, Chemelil and East African Sugar Industries. These two firms later recovered their liquidity. The KCC hovered at the edge of liquidity problems during the first decade of independence.

During the second decade of independence, illiquidity was a more general problem. KCC, KNC, Mumias, NCPB, Nzoia, Sony, Uplands and the Wheat Board all suffered severe and long-lasting liquidity problems. The fact that six firms established since independence, including the five sugar firms and the NCPB, suffered inadequate capitalization illustrates that this squeeze on parastatal operations can be considered to be a government policy, not just a condition developed by some of the older firms. The sugar firms were being starved of liquid funds at the same time that large revenues were being withdrawn as excise taxes.

There can be little doubt that the low levels of liquidity shown in this table are a direct cause of the late payments to farmers which are so often reported, and that such late payments have significant negative repercussions on farmers' incentives. It would be an interesting exercise to compare this form of credit from farmers to the parastatal sector to the totals of seasonal credit from

parastatals to farmers.

3.2 Social Rates of Return to Capital

Much of the popular image of the poor performance of parastatals is due to the large losses they earn. For the purposes of this paper, financial profit is not a suitable measure of the return to capital. Where a firm is owned by the government, the government has considerable leeway in how the firm is capitalized, i.e. debt vs. equity, and how its returns are realized, i.e. through profits, interest payments or excise or other taxes. To a large extent these differences are arbitrary, and to consider only one form of return to capital gives a distorted picture. Therefore the definition of social returns to capital includes pre-tax profits plus interest payments plus excise or export duties.

Table 5 gives two alternate sets of figures which give a different impression of the returns of the firms in the sample. The top half of the table gives pre-tax profit as conventionally defined, and as reported by the firms. It is from this set of figures that the popular impression of parastatals as sinkholes for public money is derived. Caution must be used in interpreting the totals on this table, because of missing data. Thus the totals for the top and bottom half of the table can be compared, but the time trends are not adequate measures for the entire sector.

This caution notwithstanding, it is obvious from the top half of Table 5 that the parastatals in the agricultural sector have lost large sums on aggregate since 1977. The total is mostly dominated by the performance of the maize

TABLE 5. RETURNS TO CAPITAL IN AGRICULTURAL PARASTATALS

	1963	1964	1965	1966	1967	1968	1969	1970
A. BEFORE TAX PROFITS								
CHEMELIL						n.a.	n.a.	n.a.
CBK	(898,640)	484,220	443,380	1,020,240	299,780	(776,900)	(474,400)	1,653,220
CLASMB	(648,140)	1,207,240	(5,156,260)	(4,706,100)	(4,187,740)	(3,431,800)	2,341,640	226,500
EASI				n.a.	n.a.	n.a.	n.a.	n.a.
HCDA					n.a.	n.a.	n.a.	n.a.
KCC	2,582,840	2,460,680	3,118,900	3,116,200	1,311,940	2,504,560	1,228,800	1,891,000
KNC	2,478,700	858,850	1,490,400	853.820	(6,997,680)	1,422,900	2,996,.40	3,808.120
KTDA	(3,283,620)	(4,823,920)	(5,517,820)	(5,450,040)	(2,753,540)	109,740	(3.551,340)	1,724.960
MMB	(18,080,920)	(11,987,400)	726,600	(7,166,380)				
M&PB					2,969,880	4,699,780	8.107,180	3,0.2,.00
MUMIAS								
NCPB								
NZOIA								
PYBOARD	0	(1,760,120)	0	0	0	0	200	0
SONY								
UPLANDS	806,400	513,980	(85,400)	533.140	391,780	500,800	663,580	1,044,420
WHEAT				81,920	60,640	79,340	54,420	(23,000)
Total	(17,043,380)	(13,046,440)	(4,989,200)	(11,717,200)	(8,904,940)	5,107,720	10,466,220	13,337,320
Number of firms making losses	4 of 8	3 of 8	3 of 8	3 of 9	3 of 9	1 of 9	2 of 9	1 of 9
B. SOCIAL RETURNS TO CAPITAL								
CHEMELIL						n.a.	n.a.	n.a.
CBK	(870,220)	8,185,520	14,256,600	19,801,940	15,527,980	6,630,640	7,696,460	1,653,220
CLASMB	(648,140)	1,207,240	(5,156,260)	(4,706,100)	(4,187,740)	(3,431,800)	2,341,640	226,500
EASI				n.a.	n.a.	n.a.	n.a.	n.a.
HCDA					n.a.	n.a.	n.a.	n.a.
KCC	1,246.900	1,419,440	1,512,000	1,263,280	1,534,180	2,722,880	1,508,600	2,461,280
KNC	3,637,320	1,971,480	2,600,400	2,043,820	(5,653,090)	2,962,340	3,247,400	4,986,080
KTDA	(2,538,400)	(3,837,240)	(4,205.040)	(3,862,940)	(793,400)	2,082,900	(1,288,260)	3,851,560
MMB	(17,199,780)	(11,026,380)	1,075,360	(6,509,500)				
M&PB					2,969,880	8,060,060	11,139,060	3,232,660
MUMIAS								
NCPB								
NZOIA								
PYBOARD	3,536,900	1,219,500	1,198,500	737,480	802,920	1,058,060	200	0
SONY								
UPLANDS	992,520	670,940	37,620	672,820	542,520	642,740	796,280	1,167,400
WHEAT				81,920	60.640	79,340	54,420	(23,000)
Total	(11,857,900)	(169,500)	11,321,120	9,546,720	10,803,900	20,807,160	25,495,800	17.555,700
Number of firms making negative social returns	4 of 8	2 of 8	2 of 8	3 of 9	3 of 9	1 of 9	1 of 9	1 of 9

n.a.=not available
Numbers in parentheses are negative.
Missing: Interest payments by Chemelil, 1971-72
Interest payments by the Pyrethrum Board 1969-74
Social returns include pre-tax profits, interest payments and excise and export taxes.

LE 5 CONT'D

	1971	1972	1973	1974	1975	1976	1977
FORE TAX PROFITS							
MEMELIL	n.a.	(14,380,080)	(25,473,720)	(19,905,860)	(3,191,960)	22,141,220	15,462,500
BK	1,080,340	1,142,300	5,390,720	6,965,040	832,980	17,562,060	(9,142,680)
L&SNB	3,309,480	8,028,440	2,026,960	3,157,000	(8,535,560)	12,355,480	
ASI	n.a.	n.a.	n.a.	1,452,641	686,254	7,691,426	4,663,775
CDA	n.a.	(36,276)	(146,580)	(347,264)	(357,313)	(2,308,795)	(1,724,820)
CC	1,103,000	(2,697,160)	(10,891,460)	13,695,920	8,628,360	30,060	(30,460,260)
NC	6,728,840	10,456,380	6,617,760	(5,063,320)	(10,927,660)	15,686,320	(12,867,980)
TDA	(295,640)	4,995,680	6,656,680	4,172,860	550,060	1,451,660	26,632,200
MB							
GPB	13,505,240	(6,271,860)	(8,240,260)	29,801,560	(5,236,920)	(62,763,380)	(70,156,300)
UMIAS			3,061,840	15,024,540	25,824,000	34,035,700	60,400,000
CPB							
ZDIA							
YBOARD	936,340	8,508,020	5,088,300	8,837,180	7,362,060	13,473,120	7,377,060
ONY							
PLANDS	266,200	(397,760)	433,540	3,775,140	43,080	(776,160)	369,440
HEAT	31,760	9,419,660	933,480	(12,893,880)	16,850,940	35,982,520	(13,342,440)
Total	26,665,560	18,757,544	(14,542,740)	48,671,557	62,728,321	94,531,231	(48,798,705)
Number of firms making losses							
	2 or 10	5 of 11	4 of 11	4 of 13	5 of 13	3 of 13	6 of 12
OCIAL RETURNS TO CAPITAL							
MEMELIL	n.a.	6,759,086	(3,618,667)	2,489,208	18,398,397	59,712,900	62,926,440
BK	1,080,340	1,142,300	5,390,720	6,965,040	832,980	17,562,060	71,158,000
L&SNB	3,309,480	8,028,440	2,478,140	3,438,040	(6,593,660)	13,500,240	
ASI	n.a.	n.a.	n.a.	17,597,505	16,008,904	29,292,226	32,114,651
CDA	n.a.	(30,104)	(142,095)	(325,502)	(316,634)	(2,248,201)	(1,680,812)
CC	1,532,040	(2,313,660)	(10,347,820)	13,695,920	8,628,360	30,060	(47,533,260)
NC	7,854,140	11,424,440	7,515,720	(3,618,840)	(6,520,440)	21,397,100	(9,449,180)
TDA	1,591,340	7,255,160	8,559,060	5,515,480	2,870,440	3,269,320	19,932,200
MB							
GPB	(14,253,080)	(3,389,560)	(1,102,620)	36,173,700	3,156,280	(46,973,700)	(42,885,980)
UMIAS			12,777,580	41,836,200	53,901,940	91,880,100	152,840,000
CPB							
ZDIA							
YBOARD	936,340	8,508,020	5,088,300	8,837,180	9,010,360	16,186,480	8,217,620
ONY							
PLANDS	386,600	(295,740)	552,580	3,893,280	204,760	(458,160)	788,040
HEAT	33,420	9,569,460	4,257,560	(8,227,480)	21,672,020	48,136,940	(1,259,660)
otal	30,970,780	46,857,842	31,408,398	128,271,731	120,753,707	250,287,365	245,165,059
umber of firms making negative social returns							
	1 of 10	4 of 11	4 of 11	3 of 13	3 of 13	3 of 13	5 of 12

TABLE 5 CONT'D

	1978	1979	1980	1981	1982	1983	1984
A. BEFORE TAX PROFITS							
CHEMELIL	15,408,660	6,411,620	29,744,020	(4,995,080)	(12,734,920)	13,036,740	47,430,840
CBk	23,705,420	9,129,500	9,227,140	2,657,660	6,754,900	13,162,720	n.a.
CL&SKB	(4,080,960)	(10,397,120)	(25,344,240)	(21,304,680)	(19,589,120)	(32,025,320)	n.a.
EASI	15,610,163	8,736,223	3,819,892	(21,090,455)	(24,190,291)	(15,950,836)	n.a.
HCDA	(248,207)	(61,784)	613,137	768,511	1,111,298	1,689,465	n.a.
KCC	(29,181,620)	(3,119,080)	12,495,240	24,161,720	2,292,200	991,640	37,704,400
KMC	(35,563,800)	(33,332,860)	(21,709,340)	(38,201,440)	(49,954,720)	(32,115,360)	(53,705,020)
KTDA	21,559,960	12,871,000	(10,595,000)	(7,870,000)	(65,334,000)	(42,560,000)	100,868,000
MMB							
M&PB	(65,920,200)	(174,924,640)	(270,279,260)				
MUMIAS	45,560,000	2,900,000	16,860,000	(1,540,000)	(5,020,000)	45,400,000	165,940,000
NCPB				(304,791,120)	(339,634,640)	(481,575,460)	(255,093,606)
NZDIA		(65,685,160)	(52,679,587)	(82,919,447)	(18,670,479)	(107,355,751)	(135,365,432)
PYBOARD	n.a.	(6,810,880)	19,925,180	n.a.	n.a.	12,541,820	(5,877,120)
SONY			(31,480,702)	(86,237,677)	(111,567,733)	(121,772,948)	(109,901,962)
UPLANDS	(1,046,260)	(6,696,560)	(6,873,200)	(6,368,880)	(7,865,860)	(4,274,200)	(11,517,320)
WHEAT	(18,778,380)	(31,033,380)	(1,684,380)				
Total	(32,975,444)	(292,413,121)	(327,958,101)	(547,700,388)	(744,403,365)	(750,607,488)	(189,457,220)
Number of firms making losses	7 of 12	9 of 14	8 of 15	10 of 13	10 of 13	7 of 13	5 of 9
B. SOCIAL RETURNS TO CAPITAL							
CHEMELIL	21,628,500	55,055,980	92,537,520	52,085,220	25,559,440	63,233,520	108,112,440
CBk	137,239,060	100,333,900	105,612,240	77,678,840	114,818,560	177,599,040	n.a.
CL&SKB	(1,875,960)	(5,480,920)	(12,772,260)	(5,934,680)	(1,046,680)	(11,053,740)	n.a.
EASI	63,044,557	61,985,643	60,459,419	22,693,666	13,917,373	29,367,930	n.a.
HCDA	(202,662)	(10,311)	657,020	786,131	1,125,661	1,697,305	n.a.
KCC	(21,671,200)	5,117,980	25,096,280	38,185,300	22,165,100	22,104,980	58,323,080
KMC	(32,315,980)	(28,381,780)	(15,913,080)	(28,837,400)	(35,557,380)	(19,489,040)	(38,094,460)
KTDA	21,559,960	12,871,000	(10,595,000)	(7,870,000)	(65,334,000)	(42,560,000)	100,868,000
MMB							
M&PB	(26,955,380)	(132,551,640)	(235,669,620)				
MUMIAS	156,320,000	151,580,000	212,780,000	210,260,000	190,160,000	243,140,000	367,277,000
NCPB				(220,469,560)	(205,093,180)	(235,019,960)	(11,546,546)
NZDIA		(28,132,169)	30,011,582	(397,264)	(29,249,178)	(8,874,347)	(32,973,070)
PYBOARD	n.a.	(6,244,960)	19,934,220	n.a.	n.a.	32,957,720	13,399,440
SONY			1,954,467	(15,174,165)	(29,631,225)	(40,218,562)	(23,092,102)
UPLANDS	(991,820)	(5,084,100)	(6,102,280)	(6,012,340)	(6,741,760)	(3,273,220)	(10,316,340)
WHEAT	1,896,340	(14,282,400)	5,150,100				
Total	317,775,315	165,769,323	273,140,628	116,973,748	(5,807,269)	209,612,526	531,757,442
Number of firms making negative social returns	6 of 12	8 of 14	5 of 15	7 of 13	7 of 13	6 of 13	4 of 9

trading firm--the Maize and Produce Board up to 1980 and the National Cereals and Produce Board since then. Most of the rest of the net losses can be attributed to the sugar firms which lose money--Nzoia and Sony, and the Kenya Meat Commission. Although the aggregate losses were largely accounted for by three firms, other firms also experienced difficulties. Throughout the period 1977-1984, over half of the firms for which data is available reported losses. Of the 16 agricultural firms which operated in that period, seven reported losses in every year for which data is available. In 1981 and 1982 10 of the 13 firms for which data is available reported losses.

Earlier profit performance of the agricultural parastatals was different. At independence the sector was earning small losses, which were steadily reduced so that by 1968 it had been turned into a small profit which persisted until 1976, with an exception only during the oil crisis year of 1973.

The lower half of the table uses "social returns" as defined above. A comparison of the totals from the upper and lower halves of the table quickly reveals that the use of the social returns measure gives a picture which is not nearly so bleak as the picture described above. The agricultural parastatals were making a positive social return by 1965. They continued to make a small positive return until the mid-seventies, by which time the aggregate amounted to over Shs 100 million per year, a performance which lasted until 1981. It is only in the difficult year

of 1982 that the social returns of agricultural parastatals has been negative, a condition which was strongly reversed in 1983 and 1984.

The difference in the picture which emerges derives from large excise tax contributions from the sugar sector and large export duties from the coffee sector. These taxes, together with the sum of interest paid, are enough to cancel out the losses of the biggest money losers.

Aside from the sugar and coffee sectors, switching from profits to social returns as defined above doesn't change the performance picture dramatically. In the 1977-84 period about half the firms were making negative social returns each year. The totals come out so positive because of the heavy tax burden borne by the sugar and coffee sectors compared with all other agricultural commodities.

Table 6 gives the social rate of return for each firm, that is, it gives social returns as reported in the bottom half of Table 5, divided by the net total capital invested, given above in Table 2. Based on this table we can classify those firms which have yielded significant social rates of return. This classification is shown in Table 7. There are five firms which have yielded substantial rates of return, though one of these has lately suffered a marked decline in social returns. Three firms have earned enough to be generally self-sufficient. On the other hand, nine firms have not yielded any substantial rate of return for any prolonged period, with many years of negative returns found.

TABLE 6. SOCIAL RATES OF RETURN

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
CHEMELIL						n.a.	n.a.	n.a.	n.a.	12.3%	(5.9%)
CPK	(11.8%)	194.1%	185.1%	227.0%	172.3%	80.6%	99.9%	15.0%	10.1%	10.4%	32.9%
CL&SMB	(2.8%)	5.5%	(28.3%)	(34.9%)	(45.0%)	(42.2%)	22.1%	2.0%	22.6%	36.2%	11.8%
EAST				n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HCDA					n.a.	n.a.	n.a.	n.a.	n.a.	(6.5%)	(18.5%)
KCC	5.8%	6.6%	7.1%	5.4%	6.3%	10.6%	5.0%	6.5%	3.8%	(5.9%)	(28.9%)
KMC	10.8%	3.8%	7.5%	5.9%	(19.7%)	9.7%	10.0%	14.4%	21.3%	26.9%	15.6%
KTDA	(298.2%)	(93.9%)	(169.5%)	(53.7%)	(9.3%)	17.8%	(10.9%)	26.3%	10.2%	38.9%	37.1%
MMB	(74.0%)	(92.7%)	6.8%	(34.0%)							
M&PB					9.4%	45.1%	26.8%	7.5%	26.3%	(2.6%)	(.6%)
MUMIAS											10.5%
NCPB											
NZDIA											
PYBOARD	22.7%	7.5%	7.1%	4.1%	4.1%	4.8%	0.0%	0.0%	3.4%	23.3%	12.7%
SONY											
UPLANDS	9.2%	6.5%	.4%	6.8%	5.9%	5.9%	7.4%	10.3%	3.5%	(2.9%)	5.5%
WHEAT				18.6%	12.1%	13.7%	8.6%	(.5%)	.7%	48.6%	20.6%

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
CHEMELIL	3.6%	18.9%	52.0%	49.2%	15.4%	37.5%	53.8%	31.3%	16.6%	38.3%	57.0%
CPK	29.6%	3.4%	41.8%	216.8%	242.8%	231.0%	155.0%	110.9%	158.7%	215.8%	n.a.
CL&SMB	14.2%	(35.9%)	44.2%		(4.2%)	(20.5%)	(136.4%)	*****	*****	*****	n.a.
EAST	34.0%	31.8%	39.0%	37.9%	58.6%	55.0%	23.2%	9.4%	5.4%	11.9%	n.a.
HCDA	(42.5%)	(47.6%)	(342.8%)	(167.1%)	(14.5%)	(.7%)	43.1%	37.3%	34.9%	29.9%	n.a.
KCC	23.1%	11.2%	0.0%	(137.9%)	(146.4%)	21.5%	31.5%	23.8%	12.8%	9.1%	13.5%
KMC	(7.6%)	(10.5%)	30.5%	(11.1%)	(48.5%)	(88.6%)	(69.6%)	(350.2%)	*****	*****	*****
KTDA	17.9%	4.3%	3.9%	12.3%	10.0%	4.7%	(3.2%)	(1.8%)	(12.2%)	(7.6%)	14.6%
MMB											
M&PB	21.5%	1.1%	(14.7%)	(8.5%)	(4.6%)	(37.7%)	(69.9%)				
MUMIAS	32.9%	43.1%	47.4%	46.7%	29.1%	28.0%	39.5%	41.6%	41.7%	54.8%	83.9%
NCPB							*****	*****	*****	*****	*****
NZDIA						(6.8%)	6.6%	(.1%)	(10.2%)	(5.1%)	(249.8%)
PYBOARD	18.4%	15.7%	23.0%	11.2%	n.a.	(8.3%)	22.3%	n.a.	n.a.	23.1%	9.3%
SONY							.4%	(3.2%)	(7.9%)	(14.1%)	(11.2%)
UPLANDS	28.0%	1.3%	(3.0%)	6.2%	(8.0%)	(157.6%)	(221.9%)	(294.7%)	*****	*****	*****
WHEAT	(106.5%)	86.2%	79.5%	(2.5%)	5.6%	(786.8%)	*****				

See note to Table 5 concerning certain missing data. Figures shown are social returns as shown in Table 5, divided by capital invested, shown in Table 2, adjusted, where necessary, for changes in fiscal year.

n.a.=not available

*****=negative returns on negative capital invested

Numbers in parentheses are negative.

TABLE 7 CLASSIFICATION OF FIRMS BY SOCIAL RATES OF RETURN

A. FIRMS WHICH HAVE EARNED SUBSTANTIAL RATES OF RETURN

Chemelil Sugar Co.	75-84
Coffee Board of Kenya	64-83
East African Sugar Industries	74-80
Horticultural Crops Dev. Auth.	80-84
Mumuias Sugar Co.	74-84

B. FIRMS WHICH HAVE EARNED LOW RATES OF RETURN, BUT HAVE LARGELY FUNCTIONED WITHOUT RECOURSE TO GOVERNMENT SUBVENTION

Kenya Cooperative Creameries
Kenya Tea Development Authority
Pyrethrum Marketing Board

C. FIRMS WHICH HAVE RUN CHRONIC DEFICITS REQUIRING GOVERNMENT FINANCE

Cotton Lint & Seed Marketing Board
Kenya Meat Commission
Maize Marketing Board
Maize and Produce Board
National Cereals and Produce Board
Nzoia Sugar Co.
Sony Sugar Co.
Uplands Bacon Factory
Wheat Board of Kenya

3.3 Efficiency

One important measure of performance for a firm is its efficiency, i.e. how well it transforms inputs into outputs. This can be measured by calculating unit costs[6]. Table 8 shows real unit costs, using the GDP deflator as the measure of inflation. The price paid to farmers is excluded. So are interest payments, as these are considered to be a return to capital, rather than a cost, and whether they are high or low is a function of how the government has chosen to finance the firm, and not of how the managers have

TABLE 8. REAL UNIT COSTS (1976 Shillings)

	Units	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
CHEMELIL	Shs/ton						n.a.	n.a.	n.a.	n.a.	1,257.9	1,592.8
CBK	Shs/ton	437.0	378.8	442.6	395.2	381.2	456.4	436.7	803.0	717.0	681.3	466.9
CL&SMB	Shs/ton	279.1	223.2	767.3	749.1	754.4	851.4	486.2	499.8	469.5	385.7	1,283.4
EASI	Shs/ton				n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
KCC	Shs/ton	236.9	268.6	319.0	368.5	352.7	396.8	409.0	468.4	567.2	500.8	457.3
KMC	Shs/hd	348.3	347.3	356.0	345.8	353.4	326.7	341.2	340.9	337.3	377.8	402.5
KTDA	Shs/ton	3,368.9	4,203.6	2,877.6	2,224.3	1,821.0	883.3	1,060.8	587.2	666.1	482.7	367.8
MMB	Shs/ton	192.3	167.5	257.4	227.5							
M&PB	Shs/ton					193.2	355.7	813.2	131.3	136.6	71.2	106.1
MUMIAS	Shs/ton											887.3
NCPB	Shs/ton											
NZDIA	Shs/ton											
PYBOARD	Shs/ton	3,984.1	4,241.2	4,726.5	3,413.9	2,449.9	2,791.7	3,802.9	4,112.0	3,981.0	2,549.8	3,390.8
SONY	Shs/ton											
UPLANDS	Shs/pig	321.3	332.9	321.9	305.0	399.3	391.6	359.1	363.5	397.4	505.6	525.2
WHEAT	Shs/ton	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	142.8

		1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
CHEMELIL	Shs/ton	1,350.9	1,095.8	863.0	875.4	947.3	980.4	904.2	962.1	1,134.4	934.7	810.7
CBK	Shs/ton	296.6	367.6	351.9	355.2	490.5	487.8	372.8	404.2	465.6	425.5	n.a.
CL&SMB	Shs/ton	1,552.5	2,302.8	2,140.7		1,259.7	1,384.9	1,835.7	1,500.7	1,884.1	1,868.8	n.a.
EASI	Shs/ton	428.2	773.3	853.9	878.3	765.0	724.7	778.6	1,012.9	1,078.8	878.0	n.a.
KCC	Shs/ton	476.4	607.0	564.4	532.8	512.6	820.9	1,171.2	1,048.5	918.3	657.1	1,115.2
KMC	Shs/hd	409.3	484.5	373.1	483.6	727.9	719.6	695.2	732.9	769.3	n.a.	n.a.
KTDA	Shs/ton	341.6	372.0	334.5	238.5	257.9	256.7	360.3	383.4	379.8	287.9	287.7
MMB	Shs/ton											
M&PB	Shs/ton	154.7	112.5	175.5	90.1	178.5	304.7	450.0				
MUMIAS	Shs/ton	831.2	1,035.4	1,010.7	987.6	888.1	1,229.7	908.4	1,099.5	1,254.2	1,057.0	924.1
NCPB	Shs/ton							238.2	262.4	228.1	241.1	408.8
NZDIA	Shs/ton						3,099.8	1,852.2	2,000.3	2,271.5	1,966.1	2,536.5
PYBOARD	Shs/ton	3,713.2	2,190.4	2,110.6	3,678.6	n.a.	2,962.2	2,513.8	n.a.	n.a.	4,656.5	n.a.
SONY	Shs/ton							1,096.1	2,547.5	2,944.5	2,862.1	2,038.3
UPLANDS	Shs/pig	496.3	485.9	473.0	440.9	515.8	548.1	515.0	591.4	577.1	533.1	538.7
WHEAT	Shs/ton	156.4	118.9	298.1	146.9	199.8	227.4	87.4				

Costs are measured exclusive of interest payments and payments to growers. The GDP deflator was used to arrive at real costs. Data was taken from the firms' annual reports.

performed.[7] The costs shown thus include costs incurred by the firms for transport, processing, marketing, storage, depreciation, administration, etc. The same information is shown graphically in Figure 2.

Unfortunately, we have no good absolute standard by which to say whether the firms are efficient or not, as no comparable data is available for any other firms in similar lines of business, except for the sugar firms, which can be compared with each other.

The firms were classified as good performers if their real costs didn't rise significantly, and as poor performers if costs rose noticeably faster than inflation. An attempt was made to detect general trends in real costs: endpoints which were far off the trendline were avoided. A summary of the cost trends, together with the classification of performance is found in Table 9.

Every possible typology of performance can be found among the 16 firms for which we have time series data on unit costs. Of the 16 firms, seven have exhibited fairly consistent "good" performance. Five firms have shown consistent real cost inflation for the years for which data is available. Two firms started out with their costs under control, but later experienced significant cost escalation. One firm started the period with significant cost escalation, which later ended, though it was not reversed. If we assume the firm became inefficient during the decade in which real costs were rising, then it continued to operate inefficiently in the second decade. Two firms,

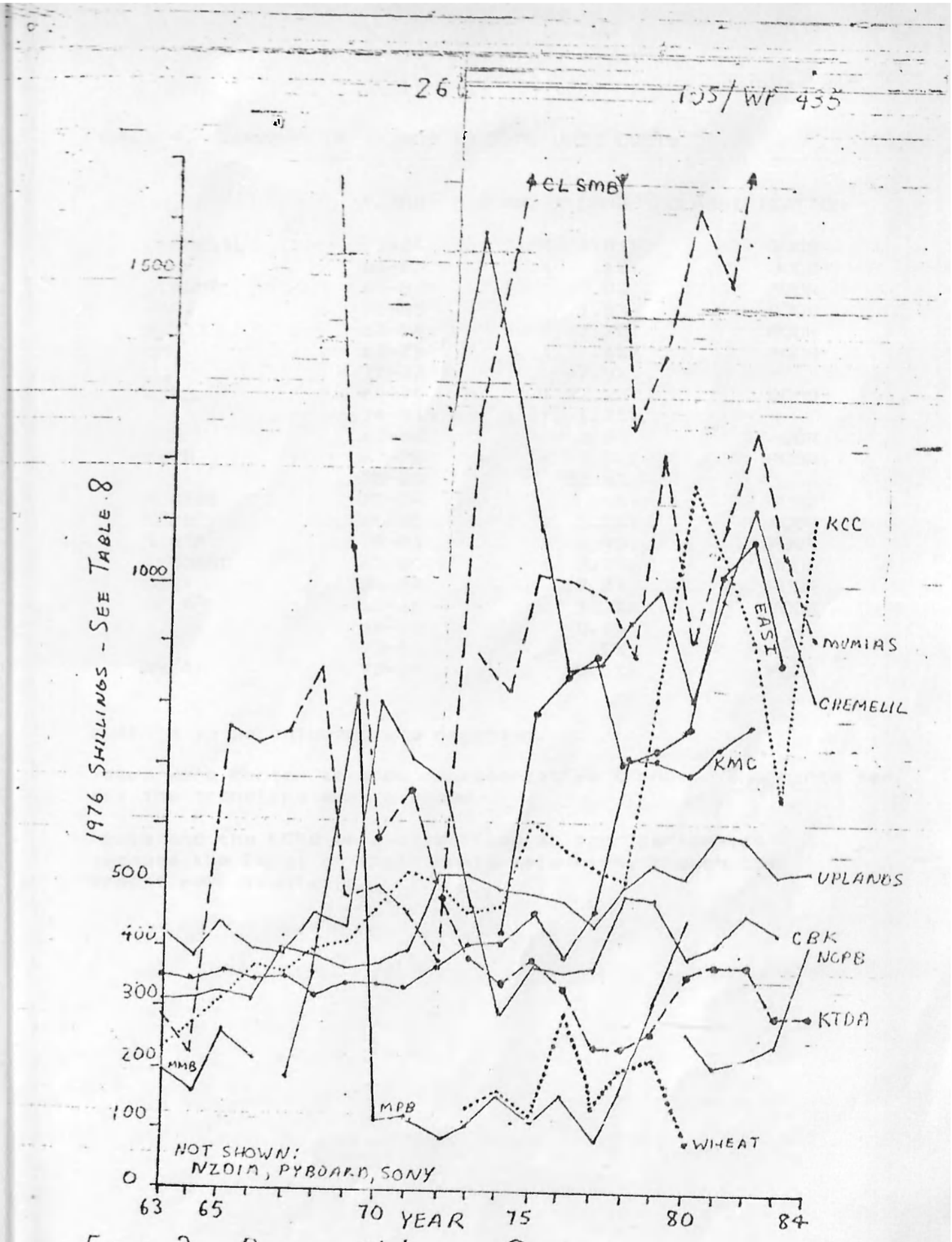

FIG 2: REAL UNIT COSTS

TABLE 9. SUMMARY OF TRENDS IN REAL UNIT COSTS

	YEARS	AN. % CHNG	CLASSIFICATION
CHEMELIL	71-84	(4.8%)	GOOD
CBK	63-83	(.1%)	GOOD
CL&SMB	63-83	10.0%	POOR
EAST	75-83	1.6%	GOOD
KCC	63-84	7.7%	POOR
KMC	63-71	(.4%)	POOR
	71-82	7.8%	
KTDA	64-74	(22.2%)	GOOD
	74-84	(1.7%)	
MMB	63-66	5.8%	POOR
M&PB	67-78	(.7%)	POOR
	78-80	58.8%	
MUMIAS	73-84	.4%	GOOD
NCPB	80-83	(2.3%)	POOR
NZOIA	79-84	(3.9%)	POOR
PYBOARD	63-80	(2.7%)	GOOD
SONY	80-84	17.0%	POOR
UPLANDS	63-66	(1.7%)	POOR
	66-73	8.1%	
	73-84	.2%	
WHEAT	73-79	8.1%	POOR

Numbers in parentheses are negative.

Years were chosen to show representative trends. Endpoints far off the trendline were avoided.

Nzoia and the NCPB were classified as poor performers because the level of their costs were high, though the trends were favorable.

was so high that it was classified as a poor performer. We can simplify the classification and say that there were seven firms which performed well, and nine that were performing poorly by the end of the period.

From Tables 8 and 9 we can see when cost escalation problems began in those firms which have been classified as poor performers. We have data from independence for eight firms. Of those, six underwent a major shift in orientation, from serving relatively small numbers of large scale white settler farmers to serving much larger numbers of small-scale African farmers. Of these six firms, four made the transition without any significant increase in unit [illegible] an impressive achievement. Those who made this successful transition were the Coffee Board, the KMC, the Pyrethrum Board, and Uplands Bacon.

The Maize Marketing Board experienced real cost increases of 5.8% p.a. from 1963 until it was disbanded in 1966. While such cost increases would surely be unacceptable over the long run, one could perhaps ascribe them to genuinely greater costs of serving smallholders. In any case, after maize marketing was reorganized under the Maize and Produce Board the upward trend in real unit costs for maize marketing ended, though occasional bad years [illegible]. So the transition to independence and smallholder orientation for maize marketing could be considered as moderately successful.

Two firms began to suffer severe cost escalation from

independence, the KCC and the Cotton Board. The former's problems must have begun with difficulties in reorientation. It's real costs rose at double digit rates from independence and have hardly slowed since then. Likewise, the Cotton Board has suffered real cost escalation averaging 10% p.a. for two decades.

Two other firms began to experience cost escalation during the first decade of independence, Uplands Bacon in 1966 and the KMC in 1971. Both firms lost expatriate managers at the time, both were in the livestock industry and developed severe supply problems. Both firms currently face vigorous competition from the private sector; it is possible that the supply problems date from the introduction of that competition. Unfortunately that information is not readily at hand.

The next firms to develop significant cost escalation problems were the grain trading firms, the Wheat Board in 1977 and the Maize & Produce Board in 1978. These two were reorganized in 1980 into the National Cereals and Produce Board, whose real costs were stable from 1980-83. The steep rise in costs in 1984 must be due at least in part to the drought and resulting famine, which is why 1984 has been excluded from the calculation of the trend.

Two firms were started with high unit costs, Nzoia Sugar Co., which began operating in 1979 and South Nyanza Sugar Co., which began operation in 1980. Both firms' early performance was hurt by severe undercapitalization at inception and by unfavorable management contracts with

expatriate managing agents. The management agreement for Uzoia was terminated and real unit costs have been brought down about 18%. Sony remains in the hands of managing agents and its performance has gone from bad to worse.

Of the 16 firms, three were firms which handled crops which were almost entirely exported. All three of these firms were good performers. Two firms served markets which had both substantial export and domestic consumption; both were poor performers.[3] Eleven firms served primarily the domestic market; of these four were good performers and seven were poor. So it seems that there are greater pressures on management of export oriented firms to perform well. There are several possible explanations for this. One is that there is no possibility of financing inefficiency by pushing up consumer prices. At the same time the government is probably less willing to finance losses of export firms because it could be perceived as subsidizing foreign consumers, which obviously has a lower political priority than does subsidizing local consumers. Finally, foreign exchange supplies are sufficiently important that if supplies are threatened by inefficient management, the situation is unlikely to be allowed to persist.

3.4 Who benefits from parastatal operations?

At this point we can integrate the above information on social rates of return and efficiency with information on producer prices, shown in Table 10, and consumer prices,

found in Table 11 to ask: Who have been the prime beneficiaries of each firm, and at whose expense have they benefited?

The methodology for answering the question is as follows. If the social rate of return is high then we conclude that the "shareholders" have benefited, and conversely. If real unit costs have risen significantly, we conclude that the firm's managers have increasingly benefited. If real consumer prices[9] have fallen, consumers have increasingly benefited. Conversely, if real consumer prices have risen, consumers have subsidized someone else's benefits. Likewise, if real producer prices[10] have risen, producers have increased their share of the benefits, and conversely.

Several important caveats must be mentioned which qualify the simple application of this methodology. First, the only absolute measure of benefits is the rate of return. The other measures of benefits only give changes in distribution of benefits; we need further information to say if the distribution of surplus favors managers, producers or consumers. Such information might include costs from comparable firms which would permit us to measure efficiency absolutely. Likewise, import parity prices could show whether consumers are paying world market prices, are being subsidized, or are subsidizing other parties through high prices.

Second, the term "shareholders" has been used loosely

TABLE 10. TRENDS IN PRODUCER PRICES

		1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Sugarcane	Shs/100 kg									4.5	5.0	5.2
Whole milk	Shs/litre	.48	.49	.55	.59	.57	.59	.62	.53	.69	.77	.73
CBK	Shs/ton	5,909.7	6,671.7	6,337.6	5,949.9	5,284.7	5,936.7	5,541.3	7,382.6	5,638.0	7,135.4	8,674.6
KTDA	Shs/ton	1,151.8	1,080.8	1,144.3	1,125.5	1,145.3	958.4	934.2	1,035.2	1,111.5	1,035.2	978.6
CL&SMB	Shs/100 kg	132.6	123.2	140.2	132.7	136.5	149.7	134.6	123.1	132.2	128.1	120.7
SAQ Beef	Shs/kg	2.64	2.73	2.88	3.08	3.23	3.08	3.41	3.49	4.06	4.43	4.77
4th grade beef	Shs/kg	1.27	1.94	2.05	2.2	2.31	2.31	2.4	2.38	2.47	2.63	3
Wheat	Shs/100 kg			52.0	54.5	56.8	56.3	54.5	45.1	50.6	50.6	56.7
Maize	Shs/100 kg	32.95	36.19	35.53	40.07	35.26	39.9	27.55	27.5	33.33	35.89	38.39
Rice	Shs/100 kg									48.35	50.83	50.16
PYRGARD	Shs/ton	3,692.6	3,797.5	4,687.0	4,696.2	4,784.6	3,913.7	3,849.0	3,463.6	4,897.6	5,090.3	5,369.3
UPLANDS	Shs/md	236.8	213.1	216.8	217.6	251.8	267.5	234.3	232.2	225.7	270.8	290.3
GDP deflator	1976=100.0	49.0	49.1	48.8	49.6	50.7	51.6	52.1	53.5	56.1	60.4	66.0

		1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sugarcane		6.2	8.9	10.5	12.7	13.3	13.3	13.3	14.5	17.0	22.7
Whole milk		.77	.85	1.05	1.32	1.32	1.32	1.46	1.85	2.15	2.15
CBK		9,750.4	9,303.4	22,073.4	39,189.5	25,738.0	26,093.0	24,844.1	21,120.4	27,641.0	34,640.8
KTDA		1,211.8	1,397.5	1,597.7	3,424.1	2,376.3	2,335.4	2,752.4	2,503.3	2,617.8	3,641.6
CL&SMB		122.8	210.3	221.3		140.3	322.6	327.0	295.0	348.0	301.8
SAQ Beef		5.29	5.98	6.68	7.47	8.23	8.31	9.65	10.43	15.2	16.31
4th grade beef		3.64	4.12	4.18	4.54	5.37	5.39	6.21	6.93	8.05	8.44
Wheat		80.4	164.7	120.3	133.3	133.3	143.6	163.9	166.7	187.6	222.2
Maize		46.43	69.79	76.59	98.89	88.89	88.89	95.37	100	107.74	153.9
Rice		58.64	104.49	136.88	136	144.85	150.83	150.44	147.96	150.07	178
PYRGARD		5,858.9	5,736.0	6,208.8	7,057.1	n.a.	10,170.3	11,933.2	n.a.	n.a.	18,483.7
UPLANDS		341.6	453.8	485.7	491.6	493.4		513.0	600.9	930.6	1,024.2
GDP deflator		77.9	86.0	100.0	118.0	121.9	128.1	140.5	154.7	170.2	182.8

SOURCES: Data listed by firm name comes from the annual reports for that firm.
Data listed by commodity comes from the Statistical Abstract, various years.

TABLE 11. TRENDS IN CONSUMER PRICES

	Unit	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Sugar	Kg	1.47	1.47	1.47	1.54	1.54	1.54	1.55	1.55	1.65	1.85	1.85
Milk	1/2 liter	.65	.65	.7	.7	.7	.7	.7	.75	.75	.8	.8
Coffee	1/2 Kg	8.33	8.33	8.25	8.26	7.97	7.3	7.13	7.75	8	8.25	9
Tea	1/2 Kg	5.84	5.79	5.74	5.75	5.68	5.63	5.98	6.62	6.44	6.44	7.06
Printed cotton	Meter	3.37	3.27	3.29	3.25	3.32	3.35	3.53	3.5	3.5		10.5
Beef-low grade	Kg	3.43	3.5	3.74	3.96	4.56	4.56	5.27	5.34	5.87	5.84	6.4
Beef-high grade	Kg	6.73	7.26	8.1	8.48	9.97	9.87	10.82	11.76	11	11	12.28
Wheat flour	Kg	1.21	1.21	1.27	1.32	1.32	1.32	1.35	1.33	1.33	1.34	1.35
Maize flour	Kg	.59	.57	.84	.88	.77	.77	.55	.55	.55	.7	.7
Rice, local	Kg	2.2	2.11	2.49	2.42	2.2	1.76	1.75	1.65	1.65	1.65	1.65
GDP Deflator		49.0	49.1	48.8	49.6	50.7	51.6	52.1	53.5	56.1	60.4	66.0

	Unit	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sugar	Kg	2.4	3.5	4.5	4.5	4.5	4.5	4.5	4.84	5.75	6.3
Milk	1/2 liter	.8	.95	.95	1.24	1.3	1.3	1.38	1.63	1.95	2.13
Coffee	1/2 Kg	16.02	16.32	17.64	22.45	53.12	52.7	60.56	61.19	79.02	83.96
Tea	1/2 Kg	7.02	7.11	7.05	7.79	7.11	7.29	7.44	8.44	12.15	13.97
Printed cotton	Meter	13.75	14.5	14.5	15.19	19.19	22.67	24	24	29.17	39.5
Beef-low grade	Kg	6.4	7.4	7.4	8.2	10.13	10.52	13	13.22	15.6	18.44
Beef-high grade	Kg	12.6	13.33	15.06	15.32	19.47	19.73	25.46	25.49	32.88	39.45
Wheat flour	Kg	2	2.5	2.52	2.74	2.79	2.88	3.12	3.45	4.21	4.51
Maize flour	Kg	.93	1.19	1.2	1.51	1.45	1.46	1.65	1.65	1.92	2.3
Rice, local	Kg	2.25	3	3.06	3	3.32	4.48	4.29	5.72	7.36	8.17
GDP Deflator		77.9	86.0	100.0	118.0	121.9	128.1	140.5	154.7	170.2	182.8

SOURCE: Statistical abstract, various years

to represent the state in its role of entrepreneur. The firms in the sample operate under several different arrangements in this regard. Some operate under the Companies Act, have share capital, and pay dividends out of profits. Others have no such share capital, and surpluses earned are retained. The definition we have used of social returns to capital includes not only profits, but also interest payments and excise and export taxes. It may be misleading to speak of the retention and reinvestment of surpluses in the same way as the payment of interest or excise taxes, since the former presumably benefits the other members of the coalition, probably suppliers or managers, while the latter benefits the Treasury, and hence the Republic as a whole. Thus it is desirable to examine the disposition of social returns as well as their magnitude. This distinction is less important where the returns are negative. In that case the demand is made for infusions of capital, and whether as interest free loans or as additional equity subscriptions, the effect on the firm and the Treasury is equivalent.

Third, there are limits to how far one party can push the operations of the firm in its own favor, limits arising from the fact that all parties' participation is necessary for the firm's continued operation. For example, if management inflates costs too much, at the expense of the farmers who supply the firm, the supplies will dry up, leaving managers with a big share of a small pie. The same can happen if any of the parties is pushed too far. Such a

situation of over-reaching may not be easily recognized using the proposed methodology.

Fourth, the equation of increased unit costs with benefits to management is an oversimplification. The assumption being made is that there are two primary reasons for real cost escalation, managerial corruption and managerial incompetence. In the first case managers are clearly the beneficiaries, since they have pocketed the increased costs, whether as cash, goods and services, or the building of a patronage network. In the second case the managers are also beneficiaries, since they are being paid to do jobs for which they are unqualified. There are, of course, other reasons for unit cost escalation. Drought may be one, if it causes lower recovery rates, as in sugar or pyrethrum processing. Another may be when a firm is compelled to provide additional services to suppliers, such as transport, for which costs are not recovered from suppliers. In such a case there is a disguised transfer of benefits to suppliers, one which our methodology is ill-equip ped to detect. Another cause of high unit costs, which undoubtedly applies to several firms in the sample, is low capacity utilization due to liquidity problems.

Fifth, the analysis assumes that all other things are equal, which, of course they may not be. Our figures may show that producer prices have risen, but if such a rise is accompanied by increasingly late payments, or an increase in such malpractices as under-measurement of produce delivered,

the benefit may be illusory. Where such other dimensions of benefits to one party change materially, the analysis will be misleading.

Sixth, it should be noted that the creation and distribution of surplus is a non-zero sum game for Kenyan participants, especially with an export crop. If the major portion of the product is consumed overseas, and prices are set largely independently of the Kenyan market, then there is no reason to think that one party's benefits must be paid for from another's losses, or that all parties might not experience simultaneous increases or decreases in benefits.

Despite this formidable list of caveats, there is still a great deal which can be said about the performance of agricultural parastatals, and the distribution of costs and benefits. Let us consider each firm in turn.

Sugar Sector

Data on sugar firms' operations begins in 1971, so we begin the analysis from then. From 1971 to 1976 real consumer sugar prices rose at a rate of 8.9% p.a. while real producer sugar prices rose 5.5% p.a. Thus during this period producers were increasingly being favored at the expense of consumers, with a bit left over to benefit someone else. In contrast, from 1976 to 1983, real consumer sugar prices fell 3.7% p.a., while producer prices continued to rise, at the slower rate of 2.4% p.a. Thus for each firm we wish to determine who absorbed the increasing margin between consumer and producer prices in the 1971-76 period, and who suffered the squeeze since 1976.

Chemelil

Chemelil's social rate of return rose steadily through the early period, reaching 52% by 1976. During that period unit costs fell by 9.1% p.a. Clearly shareholders and suppliers gained at the expense of consumers and managers.

During the 1976-83 period, the social rate of return fell noticeably, though it remained high, while real unit costs crept up at about 1% per year. Thus the main conclusion is that both consumers and producers gained at the expense of shareholders, with management also gaining, but to a negligible degree.

East African Sugar Industries

In EASI real unit costs nearly doubled from 1974 to 1976, though they remained the lowest in the sugar industry in 1976. Meanwhile, the social rate of return hovered in the 35% range, high, but lower than that achieved by Chemelil.

During the 1976-83 period, EASI's real unit costs stayed rock steady, rising only 0.4% p.a., and EASI retained its position as the lowest unit cost sugar producer in the industry in 1983. EASI showed very high rates of return in the late '70's, over 50% p.a., which fell to much more moderate levels in the 1980's. Thus the benefits paid to producers and consumers in the 1976-83 period have come at the expense of shareholders.

Mumias Sugar Co.

At Mumias real unit costs drifted up by about 14% between 1973 and 1976, putting them about 17% above those of

Chemelil and EASI. During the same period the rate of return rose to about 45%. Thus management and shareholders seem to have shared the benefits of the increasing spread between consumer and producer prices.

During the 1976-83 period real unit costs remained steady, creeping upward only during the effects of the drought of the early '80's. Rates of return fell in the late '70's, but climbed back upward in the '80's, reaching the prodigious rate of 83.9% for 1984.

Nzoia Sugar Co.

Nzoia began operations in 1978, so has only operated in a period of increasing squeeze on the sugar firms. From 1979-83 its real unit costs declined by about 12% p.a., though they remain high in comparison with the older sugar companies'. The decline in unit costs has not been enough to protect the rate of return, which has been negative every year except 1980.

South Nyanza Sugar Company

Like Nzoia, Sony is a newcomer on the scene, beginning operations only in 1980. When it began operations its unit costs were within the range of those of the established firms. However, from 1980-83 real unit costs shot up at a rate of 38% p.a., making Sony management far and away the worst in the industry, with unit costs more than double those of the older firms. This extravagant bad management came at the expense of shareholders, as social returns have been consistently negative.

Coffee Board of Kenya

The Coffee Board has gone through three distinct periods. During the first decade of independence, real producer prices were volatile, but untrended. Real consumer prices fell about 24%, while real unit costs rose 7% from 1963 to 1973.

In the coffee boom years of 1974-79 everyone benefited except local consumers, for whom real prices shot up at more than 15% p.a. This, combined, of course, with high prices overseas, allowed real producer prices to rise about 10% p.a.(though at their peak they went higher), real unit costs to grow at about the same rate, and the social rate of return to exceed 200% p.a. for three years running.

In the years since the coffee boom, the social rate of return has never fallen below 100%, and again surpassed 200% in 1983. This has been achieved at the expense of producers, whose real unit price has fallen 7% from 1979 levels; consumers, who pay 10% more; and managers, since real unit costs have been brought down 13%.

Cotton Lint and Seed Marketing Board

The history of the Cotton Lint and Seed Marketing Board is one of cost increases. From 1964-74, real unit costs grew seven-fold. From 1974-83 they rose another 20%. In the first period, up to 1974, real producer prices declined, falling 40% over the decade. Since then they have been held more or less steady, with some fluctuation. Local cotton consumers didn't suffer real cost increases in the period 1964-71. However, from 1971-83 real prices to

consumers for printed cotton cloth have increased 350%. Probably some of the responsibility for this staggering increase lies with the textile firms who manufacture cloth using locally grown cotton. Unfortunately the data needed to sort out these margins is not readily available. The Cotton Board has never yielded any substantial rate of return. Not surprisingly, it did best in the years 1971-74 when both producers and consumers were being squeezed.

Kenya Cooperative Creameries

The history of the KCC is also one of cost increases. Real unit costs rose 70% from 1964-73, the increase being more or less evenly spread over the years. Since 1973 real unit costs have continued to rise, more than doubling in that period. In the years 1964-80 managers were joined as beneficiaries by consumers, to whom real prices fell by 26%, while real producer prices stagnated. The increasing benefits to managers and consumers came at the expense of shareholders, who seldom got even a decent return and sometimes sustained large losses. After 1979 producers received an increase in prices, amounting to about 14% in real terms, while consumer prices rose 19% in real terms. During this period shareholders also benefited, achieving rates of return which more than covered the opportunity cost of capital for the first time. These favorable results for producers, managers, and shareholders were largely financed by the school milk program, which increased demand by about a third, at a time of substantial real price increases.

Kenya Meat Commission

A distinct break in performance of the KMC occurred around 1971. Before that real unit costs were contained, shareholders enjoyed a modest but positive rate of return, producers enjoyed real price increases from 15-30%, depending on grade. These benefits were financed by consumers who faced real price increases in the range of 40-50%, depending on grade.

After 1971, real unit costs began a steady march upward, partially, but not lastingly, arrested in 1976. By 1982 real unit costs were more than double the level of 1971. The pressure on profits was supplemented by pricing policy: real consumer prices fell nearly three times as fast as real producer prices until 1977. Since 1977 this fiscally dangerous price trend has bee reversed; both real consumer and real producer prices have risen, the former much faster than the latter. However, these attempts to save the KMC through favorable pricing policies have failed. Unit costs have risen 65% since 1977, while volumes have shrunk due to competition from the private sector. The resulting large chronic losses have completely eroded the capital base of the KMC. It has been illiquid almost continually since 1974. By 1982 short term liabilities exceeded total assets.

Kenya Tea Development Authority

The most impressive fact about the performance of the Kenya Tea Development Authority is the relentless decline in real unit costs, a decline which averaged about 13% p.a. for

two decades, a decline not even reversed during the coffee boom. Just as managers' benefits have been held down, so too returns to capital have been small or negative throughout nearly the entire period, including the coffee boom. Local consumers were allowed to reap some of the benefit of this restraint on managers and shareholders, as real consumer prices fell by about half from 1964 to 1981, since which time they have climbed rather steeply.

With extreme restraint of the interests of managers and shareholders, and with local consumers constituting only a small share of the market, producers were left to face the vagaries of world tea markets. Real producer prices declined 17% from 1964-69. Since then they have fluctuated, reaching a peak in 1977, but apparently averaging at levels attractive to farmers, as supply has grown steadily over the period.

Pyrethrum Board of Kenya

The performance of the Pyrethrum Board of Kenya has been dominated by world market conditions. Stiff competition from synthetics caused real producer prices to fall about 16% from 1964-70, since then fluctuating at higher levels. Real unit costs have fluctuated widely, but not shown an upward trend. The Board earned low to moderate rates of return throughout the period.

Kenya's share in the world market for pyrethrum exceeds that in any other crop, so it must aborb much of the fluctuation in the world market. The Pyrethrum Board

liquidity levels have proven inadequate to finance stocks which could even out demand, so suppliers experienced severe shocks in the early 1980's when supply temporarily exceeded demand. Because of missing data it is hard to be any more specific than this.

Wheat Board of Kenya

Wheat pricing policies from 1973-80 guaranteed that the Wheat Board would run into financial problems, since real consumer prices rose only 8% while real producer prices rose 36% in the same period. The squeeze on returns to capital was exacerbated because real unit costs were allowed to rise by 60% in the 1973-79 period. Although the Wheat Board started the period with high rates of return, they were quickly eroded and the Board ended its existence with large accumulated losses and even larger debts to the Cereals and Sugar Finance Corporation.

Maize Marketing Board

From 1963 to 1966 real maize prices rose rapidly, about 14% p.a. for consumers and about 6.4% p.a. for producers. Cost control was erratic and social returns were highly negative. Apparently producers and managers enjoyed benefits at the expense of consumers and shareholders.

Maize and Produce Board

After the creation of the Maize and Produce Board, the balance between maize producers and consumers reversed, with real producer prices falling by 15% from 1967-71 while real consumer prices fell 35%. The trends in consumer and producer prices for rice followed similar patterns. Cost

control was still erratic, especially in 1968 and 1969, but effective overall. Rates of return to capital varied from moderate to high.

In the period from 1971 to 1976 the balance between maize producers and consumers was reversed again. Real consumer maize prices rose 22.4%, real producer prices by about 29%. The Board continued to experience intermittent cost control problems, with spikes in unit costs in 1974-76. Rates of return were volatile, fluctuating from -14.7% to +26.3%. The pattern for rice was similar, but more prone to causing the board financial problems: Real consumer rice prices rose 4% while real producer prices shot up almost 60%.

In the period from 1976-80 management was the big gainer, at the expense of producers and shareholders. Real unit costs increased by 156% in a four year period, while real producer prices for maize fell by 11% and for rice by 22%. Rates of return were consistently negative. Consumers came out undamaged, as real consumer prices fell marginally.

National Cereals and Produce Board

Since the NCPB was created in 1980 producers have been favored over consumers. Real consumer prices of maize rose 7% from 1980-83, during which time the real consumer price of wheat rose 11% and rice by a massive 46%. However, these consumer price rises were inadequate to finance the real price increase to maize producers of 24%, with wheat producers receiving a 4% increase. Rice producers helped to

finance the benefits to maize and wheat producers, as their real producer price fell 9%. Real unit costs were fairly steady in the period 1980-83, but unfavorable price trends ensured that the NCPB would make large losses every year.

Uplands Bacon Factory

During the period 1964-78 the management of Uplands took an increasing share of benefits, at the expense of suppliers and shareholders. During that period real unit costs rose at a rate of 3.2% p.a. Real producer prices fell a bit, around 7% between 1964 and 1971. They recovered in the mid 1970's, fut fell again in the late 1970's. During most of this period rates of return hovered in the single digits, turning negative at the end of the period. During this period pig supplies declined from a peak of 60,245 in 1971 to less than 40,000 from 1973-78. After 1978 cost control improved and real costs rose only 3.3% between 1978 and 1983. An attempt was made to increase pig supplies by raising real producer prices by 38% during the period. This effort was unsuccessful, and supplies fell to less than 15,000 by 1983, and returns were strongly negative. Unfortunately, data on consumer pork prices is not readily available to complete the picture, but it seems clear that management has been the only party to benefit significantly from Uplands' operations.

4. Conclusions

4.1 Performance of agricultural parastatals

The first conclusion which stands out is that the current fashion in some circles of speaking in blanket terms

of how poorly parastatals perform is ill-founded. In the agricultural sector in Kenya there have been seven firms which have performed well, some for two decades since independence. All have served large numbers of smallholder farmers, a role which requires a fairly large and complex organization, which makes the success achieved all the more impressive. Several of the firms have weathered unfavorable market conditions, both domestic and international, but unfavorable external conditions have not resulted in institutional decay.

Second, those who view expatriate managers either as a panacea for, or the main cause of, management problems in parastatals are mistaken. Ample examples can be found of both good and bad managers, both African and expatriate. There is no alternative which can substitute for the government playing a strong role in recruiting, appointing and retaining good managers. The best which can be hoped for from the use of expatriates is to buy time while a proper training program is put into place, a program which will require continued supervision and support from government. The Kenya government has accumulated a good deal of successful experience in this area over the years. Presumably if the political will was there the lessons learned could be applied to the other parastatals with good results.

Third, the successful experience of these seven firms calls into serious question the current government approach to parastatal problems, which is to try to increase the

control of central government over all aspects of parastatal operations. The seven firms succeeded over long periods without the kind of detailed scrutiny of budgets which is now being attempted, without having their access to capital tightly controlled by the Treasury, without having terms and conditions of service set to correspond with those of the civil service. Undoubtedly one can find examples of abuses by management in these firms, but overall they have delivered good results. It seems likely that the good results achieved would have been substantially less had the type of policies now being attempted been in force all along.

Fourth, the firms operated under two different types of pricing regimes, which gave different results. The first type will be called a "free pricing regime," and it applied to the export crop parastatals. All four of these firms sold their products at whatever price world markets would bear, and passed on the proceeds to their suppliers, after deducting enough margin to cover the firms' costs. This is quite different from the "fixed pricing regime" under which the other 13 firms operated, whereby the firms bought and sold their produce at prices set by the government.

The open pricing regime has some obvious advantages over the fixed pricing regime. It makes it virtually impossible for a firm to lose large amounts of money, since producer prices become the residual, instead of profits. Since a portion of the producer price is paid as bonuses

after the crop has been marketed, liquidity problems are also less likely. The success of the open pricing regime obviously depends on good managers; if management began deducting larger and larger margins producer prices could fall to levels which endangered supplies.

Implicit in the use of the free pricing regime is the political decision that producers will bear the full risks of the market and will not be subsidized either by consumers or by shareholders. Under a free pricing regime the opportunities for using a parastatal to redistribute wealth on a regional or other basis are limited. Thus there is a political cost in switching to a free pricing regime, in that it may mean the end of cross-subsidization.

While a free pricing regime clearly contributes to parastatal solvency, it doesn't follow that such a regime is appropriate for all the other firms. Where a firm dominates the domestic market for a foodstuff, it would be undesirable to leave it to operate with instructions to maximize returns from sales, as is done in a free pricing regime.

The fifth conclusion is that there is a strong correlation between efficiency and financial performance. In earlier sections we have identified those firms which have experienced problems with either aspect of their performance. Table 12 lists the troubled firms in chronological order of the appearance of their problems. It can be seen at a glance that all the firms suffered both problems. Furthermore, in virtually every case, it was cost

TABLE 12 FIRMS WITH TROUBLES, BY TYPE AND DATE OF INCEPTION

	Neg. profit	Cost control
Maize Marketing Board	1963	1963
Kenya Cooperative Creameries	1977	1963
Cotton Lint & Seed Marketing	1978	1963
Uplands Bacon Factory	1978	1966
Kenya Meat Commission	1977	1971
Maize and Produce Board	1976	1976
Wheat Board of Kenya	1977	1976
Nzoia Sugar Co.	1979	1979
Sony Sugar Co.	1980	1980
National Cereals and Produce	1980	1980

NOTE: Years were chosen when persistant trends began. Isolated years of negative profit or high cost may have occured previously.

control problems which occurred first, with financial problems coming later. There are few if any cases where a parastatal was squeezed into insolvency solely or even mainly by unrealistic pricing policies. This is not to say that price control has always functioned smoothly. There have been periods of unsustainable trends, as well as periods of unjustified delay in price adjustment. But overall the temptation to use price control as a mechanism to hand out something to everyone, or as a substitute for anti-inflation policies, has been avoided. Instead, the problem seems to have been one of poor management which has been allowed to persist long enough to land the firm in serious financial problems from which it cannot extricate itself.

4.2 Government response to parastatal performance problems

The state has not often succeded in reversing problems

with parastatal performance when they have occurred. Most of the firms found in Table 12 have had inefficient management which has persisted over long periods, sometimes persisting through several rounds of sacking and replacement of managers. Given the evidence that the main problem is inability on part of government to reverse inefficient management when it occurs, what can be said about current government policies which are aimed at improving parastatal performance? We offer several comments. The tolerance which has been shown toward development of private sector alternatives has had positive results which open up new options to government. However, policies directed at parastatals per se have been misdirected and have had negative effects. They have been too focussed on control mechanisms of an accounting and approval nature, and have been over-ambitious, so that government is severely over-extended in its ability to apply the controls it has. The focus should instead be on recruiting and appointing good managers and establishing procedures which allow them to manage the firms efficiently. The practice of neglecting investment in parastatals until they are starved for working capital and on the verge of collapse has been counter-productive. Each of these points will be amplified in turn.

There has been considerable tolerance for the development of private sector alternatives to several of the most troubled agricultural parastatals. This has resulted in a decline in the market share of several, including the KMC, Uplands, the KCC and the NCPB. This development has

greatly reduced the negative impact of parastatal performance, in that producers and consumers have not been held ransom to the interests of inefficient parastatals. Some of the development of the private sector has been manifested publicly and officially, such as licensing of competitors to KMC and Uplands. Much has occurred through the development of semilegal or illegal parallel markets, including large volumes of unlicensed trading in milk and cereals.

The government should now reconsider the role of the troubled agricultural parastatals, taking full account of the possibilities presented to it by the existence of the private sector. It is possible for government to pull back from the over-extended state in which it finds itself, without sacrificing major social objectives.

Without pretending to present a complete analysis of the operations of the firms involved, it is possible to indicate the type of possibilities now available. Consider, for example, the role of the government in the cereals markets. The main objectives of government are to ensure adequate supplies of cereals and their proper distribution. At independence the transport and distribution sectors were underdeveloped compared with today, and were dominated by non-citizens. Hence it was appropriate at that time for the government to take responsibility through the maize and wheat boards to see that grain was distributed through all parts of the Republic. Now, however, there is a transport

sector which is dynamic, competitive, and locally owned, and which is playing a major role in transporting and distributing cereals. Given that the parastatal cereal firms have had chronic problems organizing distribution of cereals, the existence of a competitive and efficient private distribution sector should be welcomed as a positive development. If the role of the NCPB were restricted to maintenance of strategic reserves and importing and exporting as appropriate, no important social objectives would be sacrificed, but the proper monitoring and supervision of the NCPB would become more feasible. Such a policy could be implemented in phases, to ensure that the results materialized as planned. For example, a first phase would be to legalize private trade and transport of grain, while the NCPB continued to distribute grain. As it became clear which areas were well served by the private market, redundant NCPB facilities could be divested.

Similar analyses could find creative ways of adjusting the roles of the other troubled parastatals. For example, virtually the only role which the KMC still plays is to guarantee minimum prices and hence incomes for pastoralists. This function might be more effectively served by permitting export of pastoralists' livestock[11], by subsidizing private abattoirs to purchase such stock at prices fixed by government, by freeing KMC of certain restrictions so that it could compete more effectively in the more lucrative markets for grade cattle, or some combination of these policies. Given the existence of a fairly competitive and

efficient private sector, the government now has far more options than previously, and it can use these options without sacrificing the welfare of meat producers and consumers, which KMC originally was set up to safeguard.

There is a further step which government could take before major decisions on restructuring of parastatals are made or implemented, a step which could make successive steps much easier. The government should review the financial condition of severely troubled parastatals and assume the burden for past losses, leaving the firms with a realistic capital structure. This exercise should be carried out regardless of whether future decisions on these firms will involve restructuring them and retaining them in the public sector, selling them as going concerns, or liquidating them.

This step is important, because government currently seems to be paralyzed from pursuing any of the options, since each appears to involve realizing large losses. Of course this appearance is illusory--the losses occurred over the last decade and will never be recouped. But the accounting fiction of carrying the losses on the firms' books as debts to be repaid is creating the false impression in some circles that it is the act of divestment which creates the losses. Similarly, carrying the losses on the books unfairly distorts the performance picture of firms which will remain in the public sector. Such firms may earn a fair return on a realistic capital base, but they are

unlikely to be able to make up for years of mismanagement.

Government has responded to chronic abuses in some parastatals by introducing policies which make all parastatals more like extensions of the civil service. These policies include: the recommendation of the Philip Ndegwa committee that senior parastatal officers should be transferable with civil servants[12]; the freezing of top parastatal officers' salaries to bring them into line with those of the civil service[13]; the directive issued by Treasury that parastatals cannot have access to capital, whether it be retained profits or external borrowing without specific approval of the government; and the integration of parastatal forward and annual budgets with the national budget whether or not they depend on funds from the national budget[14]. The connection between these policies and the view widely held in government that parastatals are and will continue to be run by incompetents, was noted by the Waruhiu committee.[15]

Clearly, government is incapable of the kind of detailed supervision of parastatal operations which it professes to be attempting. The parastatal sector employs as many people as the civil service, yet there are probably fewer than a hundred people in all the branches of the civil service whose duty is to supervise parastatals. The organization and deployment of these few could not be characterized as effective. If this group were to concentrate its efforts on such obviously necessary tasks as assisting parastatals in trouble to set right their

operations, providing timely and well thought out policy guidance and effective representation on boards of directors, providing timely and accurate administration of government funds, and taking notice of parastatals which are obviously in great problems, such as ones which go for three years without producing any accounts, then a great deal would have been accomplished. Given that the government has been unable to accomplish these things, such exercises as integration of annual budgets must be seen as questionable.

A major factor which has contributed to the intractability of management problems once they develop is the appointment process. All the board members and top managers are political appointees. At least in recent years the perception has become widespread that the logic of parastatal appointments derives only from the larger political process of patronage and coalition network building. Most top managers and board members believe that their appointment comes because of who they are and who their friends are, not because of how well they manage. In such an atmosphere the sacking and replacement of managers becomes ineffective as a control measure. This is extremely unfortunate, since the power of appointment is the single most powerful control mechanism available to government. If managers aren't competent and energetic, all the audits, budget approval processes and procurement procedures in the world will not elicit good performance from parastatals.

A more productive approach to parastatal appointments

would be to ~~estimate a deliberate politics of~~ positive ~~parastatal performance~~. Given the important positive benefits which are created by parastatals which perform well, it should be possible to mobilize popular political support based on the government's record in supplying parastatals which run well, support which could be used to stave off demands for traditional patronage appointments which might erode such performance. Such a system has functioned with the export crop parastatals, it should be feasible for others.

The ongoing effort to harmonize salary structures with that of the civil service must be seen as a policy to drive those possessed of business acumen out of the public sector. According to interview data gathered by the author, this exodus has clearly begun, though it has not yet proceeded to an irreversible stage. A period of general economic prosperity will certainly provide the conditions for it to accelerate. Other negative aspects of the civil service have intruded into parastatal operations. Some managers feel themselves tightly constrained by practices such as security of tenure of employees which have been carried over from the civil service. One manager stated in an interview that he could never get rid of an employee, no matter how lazy or incompetent the employee might be. With such practices it is no wonder that unit costs have remained high for years, or that good managers are leaving for the private sector. Such policies can be expected to cause the appearance of problems in parastatals which have previously

run well, and to necessitate recourse to expensive management agency and expatriate contracts.

Since the late 1970's the government has been reluctant to invest in the parastatal sector because it realized it was over-extended and because further investment was seen as throwing good money after bad. In Table 2 it was shown that since 1976 the level of capital invested in several agricultural parastatals has sharply declined. While the overall direction of this policy is probably wise, its implementation has been seriously flawed. The form of disinvestment which seems to have been chosen, albeit by default, is to allow the parastatals to run out of money. Several are near the point of collapse. The decision to terminate them has not been taken yet, and their lives have been prolonged by infusions of capital which permit them to keep operating, but which don't come near to capitalizing them properly. This policy of running the parastatals on the verge of collapse must have contributed to poor management, demoralizing staff and forcing managers to focus on surviving crises rather than on setting up sound long run management systems.

This policy of keeping parastatals undercapitalized means that they have run at much less than full capacity, a fact which has contributed significantly to high unit costs and financial losses. This is apparent in the sugar industry, where Mzoia and Sony were both starved for working capital from the beginning. Their resultant inability to

pay farmers on time and to finance adequate cane development means that both have been underutilized since their inception. Nzoia has averaged 67% capacity utilization, while Sony has averaged only 50%. Thus overhead unit costs are 50 and 100% higher than necessary, respectively. Since both firms were covering variable costs from revenues, additional production would have contributed to covering overhead costs, even if one assumes that management of these firms is inefficient and likely to remain so. Thus the refusal of government to capitalize these firms adequately must be seen as short sighted and counter-productive. Such short-sightedness is all the more difficult to understand, given that funds were available from the World Bank sugar rehabilitation loan.

4.3 Summary

The paper has shown that poor performance by parastatals is far from inevitable. Half the firms currently functioning in the agricultural sector can be considered good performers. Government response to poor parastatal performance has been misdirected, in that it has attempted much greater centralized control of all parastatals. Instead, government should focus on appointing good managers, providing realistic levels of capital, seeing that social programs mandated for parastatals are realistically provided for, and providing a policy environment in which managers are free to manage parastatals like businesses. The growth of the private sector provides government with various options for pulling back from the

over-extended state in which it finds itself, without sacrificing major policy objectives. If past losses and the concomitant debts were assumed by government, it would be easier for government to realisticly contemplate the options it has.

4.4 Directions for further work

There are several directions in which the research might profitably be extended. One is to increase coverage to include sectors other than agriculture. This extension is well under way.

Other data could be gathered which would strengthen the conclusions presented. One obvious set of data which would be useful would be comparative cost data from other firms which would permit absolute judgements of efficiency, instead of the time trends presented here. An obvious source for such data would be private sector firms which compete with parastatals. Such an exercise would face many pitfalls, in that the services and configurations of these other firms may not be comparable. This might, of course, provide the opportunity for measuring the cost of certain arrangements imposed on parastatals, a worthwhile exercise.

With sufficient investment of time, one could gather data which would permit a much more detailed explanation of movements in unit costs. Is it overheads or operating costs which have risen? Are the reasons controllable by the firm, imposed by the market, or due to policies mandated by government? Do changes observed correspond with such events

as changes in management teams? Do other indicators of efficiency, such as labor productivity tell the same story as that told by trends in total unit costs?

The issue of the quality and integrity of managers has been raised as perhaps the most important factor which has spelled the difference between good performance and poor performance. It would be worthwhile to examine in more detail what are the attributes of successful managers. How important is formal education and what training is most productive? What effect does civil service experience have, and does it matter when in a manager's career the move is made from the civil service? What factors are most important in job satisfaction for effective parastatal managers, and hence essential for the retention of a cadre of effective public sector professional managers?

Finally, there is a need for more in-depth studies of the market environments of the various firms, especially the most troubled ones. What role does a parastatal properly serve in a market where there is substantial private sector participation? If there are essential social or political objectives to be served they must be defined and costed, and proper mechanisms set up to permit their satisfaction. If the only goal of the firm was to ensure that the market was served, and it is well served by other firms while the parastatal loses money, then divestiture or liquidation may be a sensible answer.

Notes

1. The author has incurred many debts of gratitude in the course of the research, only a few of which can be acknowledged here. Financial support came from the Institute for International Studies at University of California, Berkeley, and from a Fulbright Doctoral Dissertation Research Abroad Fellowship. The ambitious scope of the research was made possible only by the generous cooperation of the Government Investments Division of the Ministry of Finance, who made available much of the data. The author is grateful for the many frank and friendly discussions with GID staff. Thanks are also due to the staff of the Kenya National Archives and the library of the Central Bureau of Statistics, whose collections supplemented that of the GID. Some of the most interesting moments in the research came in the interviews with managers of parastatals and the author is grateful for cooperation received. John Nordin drafted the graphs in the paper, edited earlier versions, and provided unflagging moral support.

2. Barbara Grosh, "Improving Parastatal Performance: an Organizational Approach," IDS Working Paper No. 409, July, 1984.

3. The Kenya Sisal Board was excluded because according to one of their own publications, "The Sisal Industry", 1983, they are a regulatory board, not a trading corporation.

4. Attempts have been made throughout to recalculate and present the accounts based on common definitions. The most common problems in the calculations merit discussion.

The calculations from the balance sheet (capital invested, gearing ratios and current ratios) were generally straightforward. Some firms operated more than one set of accounts, which needed to be merged to reflect the operation of the firm as a whole (example: the results reported for the Cotton Lint and Seed Marketing Board reflect a merger of the Ordinary and Cotton Price Assistance Funds).

The calculation of returns to capital involved several difficulties. Some of the firms, especially the statutory boards, don't present their accounts on a normal commercial basis. Profit may be calculated but given a different name, such as "surplus." Sometimes, however, the accounting concepts used have differed, as when payments to suppliers have been treated as disposal of surplus rather than as an expense. Some firms have taken various items straight to their balance sheets without having them pass through the profit and loss statement, one of the hardest practices to detect and adjust. The other items needed to calculate social returns, that is duties, taxes and interest payments, were not always identified easily. The latter were often

listed net of interest received, and it was necessary to dig through the detailed notes to the accounts to find actual interest payments.

The most difficult and problematic calculations involved unit costs. The intent was to take all costs incurred, excluding interest costs and payments to growers, and divide by total units. The most common obstacle to this is the maintenance of several separate trading accounts with only the balance carried to the profit and loss account. This practice reached its most extreme in the Maize Marketing Board, which used 15 separate operating accounts in the space of 6 years, though no more than 6 or 8 accounts in any one year. Sometimes the different categories of costs are presented in a confusing manner which changes over time. In such cases it is easier to calculate total costs by subtracting profit from total revenues. Care must be taken to include all revenues; other sources of income aside from sales of the main product are generally included in the section with non-operating costs, rather than with revenues.

Various other problems can occur in any of the calculations. Sometimes the firms changed their own accounting definitions, necessitating adjustments. For example, up to 1968 the KCC treated pool payments as a disposal of profits, whereas in later years they were treated as an expense item. Sometimes the meaning of certain unusual ways of keeping accounts was not described, and it must be hoped that the author guessed correctly in their interpretation. For example, in the years 1963-65 the Pyrethrum Board stated clearly the total payouts to farmers. From 1966-70 they only stated clearly the interim payments made, with a balance being carried to a current liability category called "Growers' accounts." Since no amounts are carried over from year to year in that account in those years, it was assumed that during those years the balances were paid out in final payments. But the presentation for the years 1971-83 where interim and final payments are clearly specified is much more satisfactory and sure of interpretation. Sometimes the level of detail changed between years, making it impossible to present the accounts in the desired format. For example, between 1969 and 1974 interest payments by the Pyrethrum Board were subsumed into administrative costs, so that data presented on rates of return to capital are not comparable with the same data for other years. Fortunately the latter kind of problem, which was insoluble, was rare. It is hoped that the former types of problems were all caught and dealt with appropriately. Details of the calculations are available on request. The author welcomes comments from those well acquainted with any particular firm's accounts, which might clarify or correct their interpretation.

5. The definition may seem unsatisfactory when the firms misuse the accounting categories. For example, in recent

years, some firms have run up large losses which they are financing through "short term" borrowing. In several cases these current liabilities amount to more than the total assets of the firms, thus the definition used shows negative capital invested in the firm, an anomalous concept. However, it was judged that the problem is not in the definition of capital invested, but rather in the classification of liabilities. In the cases cited, there is little doubt that the accumulated losses will never be repaid, certainly not within one year, as their classification in current liabilities implies. In any case, the definition shows that disinvestment has occurred in these firms, which is an accurate perception.

6. These measures are not truly definitive, because it is a bit tricky to get a meaningful definition of units for some firms. For example, to arrive at unit costs for the NCPB, it was necessary to aggregate tons of all types of grains and produce. To the extent that handling costs vary between the different products handled and the composition of the aggregate product changed, the results may be misleading. Similarly, the KMC and Uplands measure units handled it terms of head. It would probably be more meaningful had they given kilos of meat produced. While these measurement problems are real, it was judged that they were not so severe as make it uninteresting to examine the degree to which unit costs have been controlled over the years since independence.

7. The same analysis was performed with costs redefined to include interest costs. The general classification of results wasn't different, but the poor performers generally appeared slightly worse. This is because the finance policy of the government has generally been not to finance deficits with fresh inflows of equity capital; instead firms are left to finance their deficits through borrowing, so that for firms in trouble the interest charges will tend to grow as a percentage of total costs.

8. Interestingly, as performance in these firms deteriorated they showed opposite tendencies: the Cotton Board lost its export market while the KMC lost its domestic market. The KMC claims (personal interview) that it lost its domestic market because price controls did not allow it to pay a sufficient premium for high quality beef. Private abattoirs have been less effectively bound by price controls, offering higher prices than those officially set. The result is that high quality beef gets sent to private abattoirs. The KMC is left to process pastoralists' cattle, most of which is suitable only for making into corned beef, for which the market lies in Europe rather than in Kenya. On the other hand, the author suspects that the Cotton Lint and Seed Marketing Board may have drastically reduced exports not because it is incapable of exporting, but because it is forced to supply local textile mills first.

If volume were greater export levels could be restored.

9. In most cases it is possible to speak meaningfully of the trends in output prices for the firms under study. In some cases it was necessary to simplify by considering only the price for one product which was considered to be the "main" output, though the firm may have supplied a range of products, including different qualities.

10. For most of the firms one can calculate unit price paid to farmers for their produce. In a few cases this was not possible. For example, the Horticultural Crops Development Authority purchases such a long list of commodities that it is prohibitive to try to speak of unit price to suppliers. In the sugar industry the nominal producer price is set by government. The data presented are somewhat misleading since the gross margin realized by farmers differs dramatically, depending on the deductions made for services provided. See J.E.O. Odada, "Possible Incentives for Increased Sugarcane Production in Kenya," presented at a seminar on "Incentives for Increased Agricultural Production: A Case of Kenya's Sugar Industry," in Kericho, 18-21 November, 1985.

11. For estimates showing that such an export market has the potential of significantly raising prices of pastoralists' livestock, see Michael Schluter, "International Constraints on Kenya's Agricultural Exports to Oil Exporting Countries," I.D.S. Working Paper No. 405, June, 1984.

12. "Review of Statutory Boards: Report and Recommendations of the Committee appointed by His Excellency the President," chairman, Philip Ndegwa, Government Printer, Nairobi, May, 1979, p. 5.

13. A Circular issued by the Office of the President, OP.9/21/2A/IV/(171), Circular no.1/81, dated 18 February, 1981 set maximum salaries for Chief Executives. The maximums set were, for many firms, lower than salaries already in effect. Incumbents will be allowed to continue to receive their former salaries, but when a position turns over, the new officer will be paid in accord with the maximums set. The firms are left to harmonize their internal salary structures, with the approval of their parent ministries and the Parastatals Advisory Committee. This regulation has had the effect of greatly magnifying the role of the government in setting terms of service and approving wage negotiations of all parastatals. Some parastatals have found themselves in anomalous positions, for example unionisable wage employees may be earning more than the lower level managers who supervise them. The effect of this on management morale can be guessed at.

14. See Treasury Circular No. 12, dated 25th January, 1985, which details these policies.

15. "Report of the Civil Service Review Committee 1979-80," Chairman S.N. Waruhiu, Government Printer, Nairobi, September, 1980, p. 204.