

THE CREDIT MARKETS OF AFRICA
A series of monographs under
the general editorship of
Professor Giordano Dell'Amore

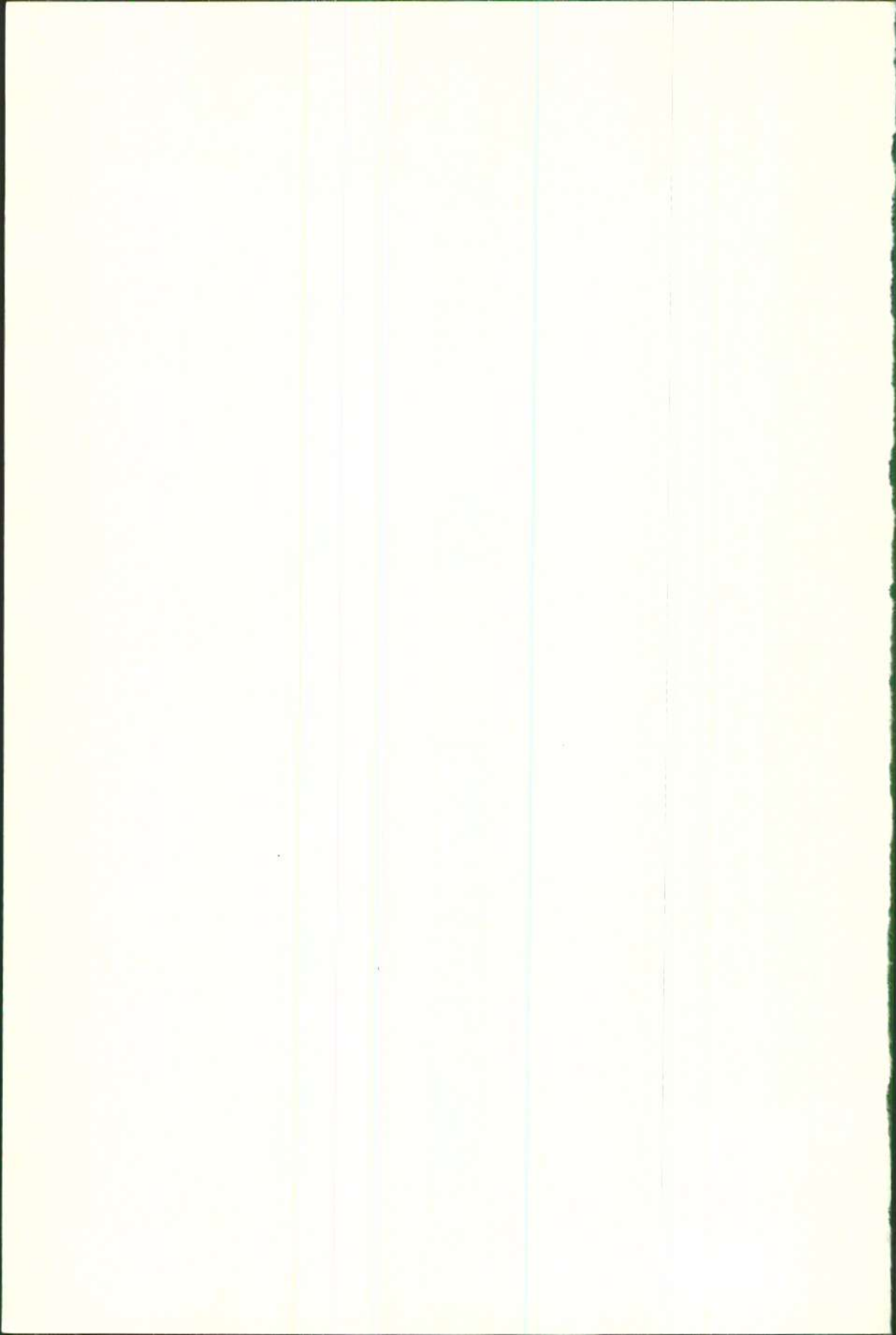
Lorenzo Frediani

THE LIQUIDITY POLICY OF DEPOSIT BANKS IN KENYA



cassa di risparmio delle provincie lombarde — milan





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12

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LORENZO FREDIANI

THE LIQUIDITY POLICY
OF DEPOSIT BANKS
IN KENYA

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FOREWORD

The purpose of this study is to analyse the liquidity policies of deposit banks which are either branches or subsidiaries of foreign banks and operate in economic systems possessing the following distinguishing features:

- (a) the presence of subsidiaries of multinational firms;
- (b) a high degree of openness to the rest of the world;
- (c) shortage of liquid financial assets;
- (d) an open circuit of loan-deposit financial flows.

The investigation is limited to the deposit banks of only one country, Kenya, and to the period between January 1955 and February 1973. Separate consideration is given to two sub-periods within this timespan, one running from January 1955 to September 1967, and the other from October 1967 to February 1973. The first of these belongs to the era of the East African Currency Board and its immediate aftermath, when capital was free to move among correspondent banks in British East Africa and between them and British banks. The second sub-period is set apart by the existence and activities of Kenya's own new central bank, by the monetary authorities' restrictions on free capital movements, and by the mounting claims of the Treasury on the domestic and foreign credit market.

For this second sub-period, special attention was devoted to an analysis of the following economic quantities:

- (a) interbank current accounts with domestic and foreign correspondents, with a view to ascertaining the contribution of these economic variables to the creation and better utilization of the banking system's cash holdings;
- (b) the Treasury deposit ratio;
- (c) transactions cost and opportunity cost, with a view to identifying their influence on the demand for liquid assets on the part of the public and of deposit banks;
- (d) accounting duplications as factors of expansion of the money supply (M_1);
- (e) the aims of the monetary authorities and the instruments used by them in order to control M_1 and M_3 , with a view to discovering the effects of given measures on the management of the deposit banks' voluntary liquidity reserves;
- (f) the movements and composition of loans and deposits, as well as the influence of these variables on the degree to which the circuit of loan-deposit financial flows is closed;
- (g) the relations between the banks' liquidity management, the movements of loans and deposits, and the time horizon of bank managers.

Movements of the economic quantities concerned were determined on the basis of trend-adjusted monthly flows, obtained from the balance sheets submitted every month by deposit banks to the central bank. The parameters to which reference is made in estimating the movements of the above-named economic variables are the result of spectral and co-spectral analysis applied to the trend-adjusted monthly flows.

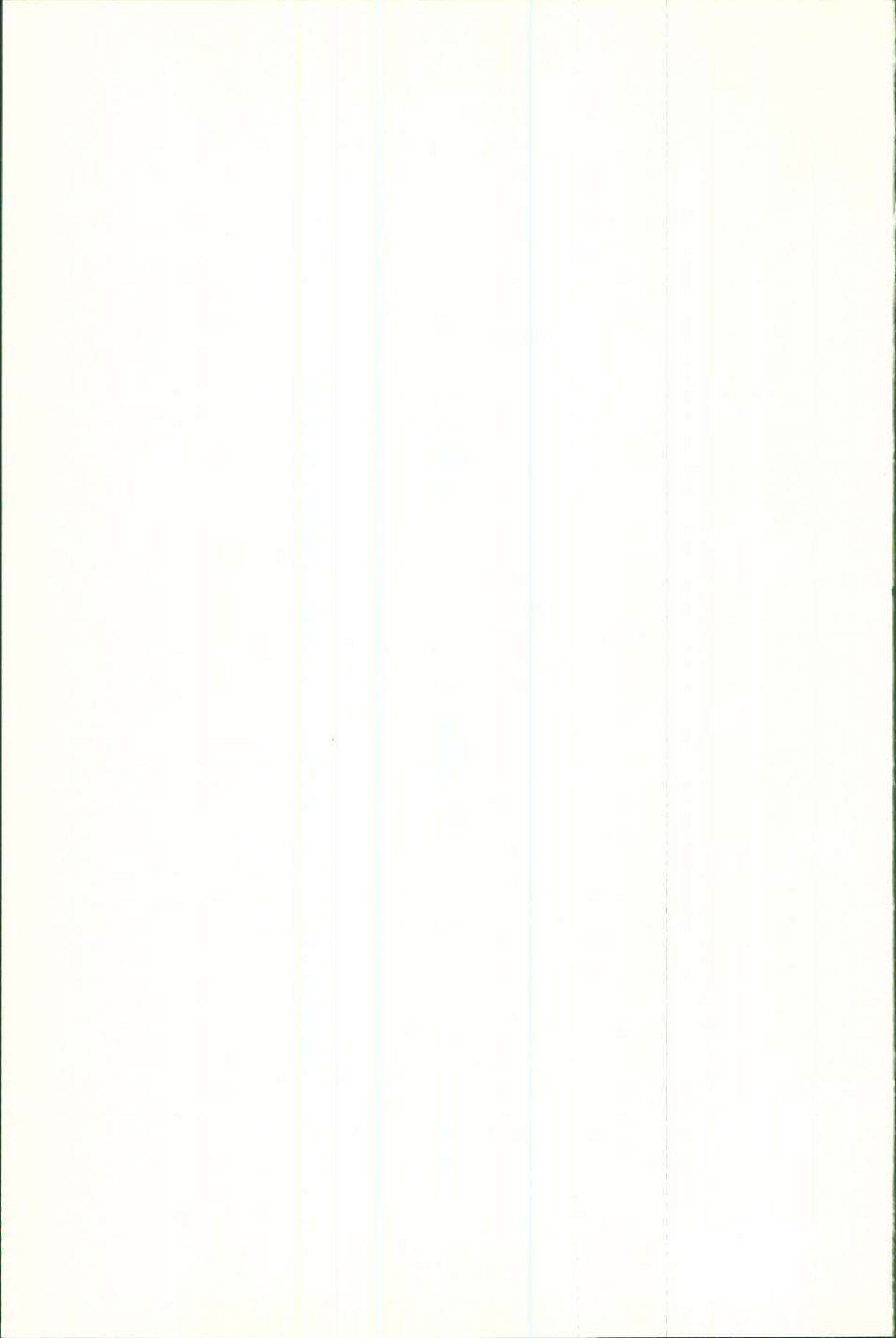
My thanks are due in the first place to the monetary authorities of Kenya for allowing me access to the material necessary for my research. I am grateful, too, to the *Cassa di Risparmio delle Provincie Lombarde* for constant encouragement and support in this project, and for discussions and checks which greatly helped to improve my work.

I acknowledge a grant from the National Research Council.

Finally, I wish to express my very special gratitude to Professor Eugene M. Cleur, who designed the complex programme for the calculations required by the spectral and co-spectral analyses.

Responsibility for the judgments and opinions expressed is entirely my own.

LORENZO FREDIANI



Chapter I.

THE LIQUIDITY POLICY OF DEPOSIT BANKS IN KENYA, 1955-1967

1. THE HISTORY OF THE BANKING SYSTEM

Any discussion of the liquidity management of deposit banks in Kenya must needs begin with at least a brief outline of the structural and functional characteristics of the credit system in which these banks operate.

These characteristics naturally do much to influence the aims and behaviour of banks, and have an important bearing, too, on the mechanism by which monetary policy is transmitted to the real sector of the economy. So far as Kenya is concerned, the first thing to bear in mind is that all financial intermediaries, bank and non-bank, were at that time branches of multinational foreign companies.

Until the end of 1967, Kenya's banking system consisted of branches of the following foreign banks: the Bank of Baroda Ltd.; the Bank of India Ltd.; Barclays Bank D.C. & O.; the General Bank of the Netherlands; Habib Bank (Overseas) Ltd.; National and Grindlays Bank Ltd.; the Ottoman Bank; the Standard Bank Ltd.; the Commercial Bank of Africa Ltd.; and the African Banking Corporation (E.A.) Ltd.¹

¹ Some of these supra-national banks (e.g. the last two named in the text) chose to set up separate companies in Kenya which they controlled. But this made

The first foreign bank to do business in Kenya was the National Bank of India¹, which in 1896 opened its first branch at Mombasa. The Standard Bank of South Africa followed in 1910, and the National Bank of South Africa in 1916. The latter merged in 1926 with the Colonial Bank and the Anglo-Egyptian Bank to form Barclays Bank (Dominion, Colonial and Overseas). Of these three banks, two were branches of British banks.

They were indeed the only three banks in Kenya's banking system until after the end of the second world war, and between them they had a network of 17 permanent offices. The other banks listed above did not enter the market until the fifties².

Geographical coverage was very uneven, with a marked concentration in Nairobi and Mombasa. However, by 1965 the "Big Three" British banks, which between them accounted for some

little difference, for under the Exchange Control (Lending to Banks Exemption) Order (Government Notice 1346/1950) there is a specific exemption from the prohibition for residents to lend money or securities to firms in Kenya, Tanzania and Uganda that are directly or indirectly controlled by non-residents: "there shall be exempted [from these provisions] the lending of any money or securities by any resident in Kenya to any office or branch in Kenya of a Bank which is by any means controlled (whether directly or indirectly) by persons resident outside the scheduled (Tanzania, Uganda, Kenya) territories."

¹ This branch was subsequently incorporated by the National and Grindlays Bank.

² The first to do so was the *Nederlandsche Handel-Maatschappij*, which opened a branch at Mombasa in 1951; this was actually a German bank registered in the Netherlands and later assumed the name of *Algemene Bank Nederland N.V.* Two Indian banks, the Bank of India and the Bank of Baroda, followed in 1953, and then a Pakistan one, the Habib Bank (Overseas) Ltd., in 1956. Two years later, in 1958, the Ottoman Bank, of Turkey, and the Commercial Bank of Africa each opened a branch in Kenya, and in 1963 the African Banking Corporation, a member of the Standard Bank group, secured a licence to engage in banking business in the country.

80 per cent of the banking system's total deposits, did have a combined network of 177 offices — 50 belonging to National and Grindlays, 86 to Barclays and 41 to the Standard Bank¹.

Although these banks certainly discharged monetary functions, their policies were — at least until the creation of the central bank and the entry into force of the Banking Act in 1969² — subject to virtually no institutional or monetary policy constraint. The upper limit of 48 per cent imposed upon the lending rates of all financial intermediaries by the Moneylenders Ordinance of 1 January 1933 really cannot be regarded as a constraint at all, nor did the Exchange Control Act and connected legislation in practice interfere with the banks' freedom of action, especially since all Kenya banks with the exception of the African Banking Corporation (E.A.) Ltd. were agencies. Otherwise the only obligations placed upon banks were those of the Banking Ordinance of 31 December 1956; in practice these meant having to obtain a licence for the exercise of credit business, and, up to a point, accountability to the Registrar of Banks. The latter had certain powers of bank supervision and in any case could issue, or withdraw, the necessary licence³.

¹ See Christopher Davis, "Banking in Kenya", *The Banker*, September 1973, p. 1059. Even now the northern part of the country is virtually without either banks or post offices, and the central and southern parts, while served well enough by the Post Office Savings Bank, have few bank branches.

² These problems will be discussed in more detail in Chapter II.

³ The Registrar, who was appointed by the Finance Minister, indeed had a number of discretionary powers. Under para 2 of Article 9 of the 1956 Banking Ordinance, for instance, he was free to apply, or not to apply, to branches of foreign banks the regulations which (Art. 9, para 1) required banks registered in Kenya to allocate 20 per cent of their profits to a reserve fund until the latter matched paid-up capital.

2. THE HISTORY OF NON-BANK FINANCIAL INTERMEDIARIES

Under the Moneylenders Ordinance and the 1956 Banking Ordinance non-bank financial intermediaries were subject to exactly the same regulations as deposit banks, even though they differed from the latter by their much more specialized activities and did not issue financial liabilities transferable by cheque. It was not until the Banking Act of 1968 that different rules were applied to deposit banks and to non-bank financial intermediaries, only the former being explicitly entitled to accept deposits on current account.

In the light of their functions, non-bank financial intermediaries in Kenya can be classified as either private or public; the former can be further subdivided into hire purchase houses, building societies and others ¹.

At the end of 1967 there were three hire purchase houses in Kenya: the Credit Finance Corporation, the National Industrial Credit Corporation and the United Dominions Corporation (East Africa).

The Credit Finance Corporation was set up in February 1955, with a share capital of K£ 250,000 ². Control of the company always lay with James Finlay & Co. Ltd., of the United Kingdom, and Harold Travis, a resident of Nairobi. These two shareholders were joined in 1960 by National and Grindlays Bank, which now

¹ Hire purchase houses accept and discount hire purchase contracts for durable consumer goods; building societies lend mostly for housing construction, and the group labelled "others" includes all financial institutions which do not specialize in any particular technical form of lending.

² K£ stands for Kenya pound, made up of 20 Kenya shillings, which are the currency unit. As of December 1973, the dollar parity of the Kenya shilling was 6.900 (IMF, *International Financial Statistics*, February 1974).

has 22 per cent of the equity, compared with a 20 per cent stake by James Finlay & Co. and 15 per cent in the hands of Harold Travis; the remaining 43 per cent are dispersed among other shareholders.

In its turn, the National Industrial Credit Corporation was set up in September 1959 and in May 1960 obtained authorization to transact banking business¹. Its initial capital was K£ 500,000 and a majority holding was acquired by the Standard Bank and the Mercantile Credit Company of London. The branches of the Standard Bank, like those of National and Grindlays in the case of the Credit Finance Corporation, acted as agents of the parent company throughout the whole country.

In the same year, 1959, the third hire purchase house, the United Dominions Corporation (East Africa) Ltd., an associate of the London-based United Dominion Trust Ltd., entered the consumer credit business, although it actually dated back to 1939.

For a while the Lombard Banking (East Africa) Ltd. was likewise active in consumer credit, via Lombank Ltd., but after heavy losses in the early sixties the company closed all its offices in British East Africa. What happened, according to John Loxley², was that competition became very keen around 1960, after Lombank had greatly increased its market share by sharply undercutting prices, a policy which became all the more costly for the company as at the same time it assumed higher loan risks. In trying to defend their own market shares, other financial intermediaries went in for price competition and adopted unduly permissive standards

¹ On 7 April 1970 this was replaced by a Financial Institution Licence under the 1968 Banking Act.

² *The Development of the Monetary and Financial System of the East African Currency Area, 1950-1964*, Ph.D. Thesis, University of Leeds.

in their appraisal of creditworthiness. Eventually all four companies accumulated a large amount of bad debts.

The situation was not helped by the financial panic unleashed by the Lancaster House Constitutional Conference of February 1960 and its declaration of impending independence for Kenya; because of the source of their funds, the liquidity position and earnings of the hire purchase houses suffered more heavily than most. Their supply of funds in fact depended entirely on the behaviour of the deposit banks, in so far as they relied on the latter for placing their liabilities with the public¹ and had borrowed fairly heavily from the banks. But the banks themselves experienced a liquidity squeeze² when private business was seized by panic, and tried to stem the loss of cash by refusing to lend any more to the finance houses and indeed tried to persuade their clients to switch in their portfolios from finance house to bank liabilities.

The ill effects of their high-risk lending eventually led the hire purchase houses to revise their policies and to adopt much more caution both in their lending and supply of funds.

The United Dominions Corporation henceforth concentrated on the government-sponsored car loan scheme, and the other two corporations extended direct loans to producer firms and individuals of sound creditworthiness. Consequently, the volume of credit outstanding to hire purchase houses dropped steadily until the end of 1963, though their deposits had regained their pre-1960 levels

¹ The Credit Finance Corporation placed its own liabilities only in Kenya, and left the deposit banks to do so in the other countries of East Africa, where, like the other Finance Houses, it had its offices.

² The situation is illustrated by Table 3. Just how serious it was can be gleaned from the fact that in the course of 1960 the deposits of the Credit Finance Corporation dropped by 57 per cent, and that National and Grindlays ceased guaranteeing them.

by the end of 1961. Clearly, the finance houses were using their rising deposits to reduce their debts to commercial banks¹.

The second major category of non-bank financial intermediaries in Kenya was that of building societies.

The first on the spot was the Kenya Building Society. It was joined in 1949 by the Savings and Loan Society of the Pearl Assurance group. This society was actually incorporated in Tanganyika but had its head office at Nairobi and did nine tenths of its business in Kenya. A year later, in 1950, the First Permanent Building Society, of Northern Rhodesia, entered the market.

In 1959, these three building societies between them had some K£ 8.5 million of credits outstanding, and had placed about K£ 9.5 of their financial liabilities. But then came the politically motivated capital flight, and in 1961 the societies had to redeem some K£ 4 million of their liabilities, while their mortgage loans outstanding were still as high as in 1959. Naturally, a liquidity crisis ensued and the building societies were forced to look for, and draw on, other sources of funds. The most prolific of these was the Commonwealth Development Corporation, which in 1962 lent some K£ 2.5 million to the three societies.

The Savings and Loan Society obtained further funds from Pearl Assurance, and the Kenya Building Society borrowed from commercial banks and also from Norwich Union, an insurance company². The First Permanent, finally, besides taking up bank

¹ In 1964, for example, 42 per cent of loans were financed by deposits, 34 per cent by bank debts and the rest by own capital. See Burke Dillon, *Financial Institutions in Kenya: 1964-1971*, University of Nairobi, Institute for Development Studies, Working Paper No. 61, September 1972, p. 2.

² The three major insurance companies operating in Kenya — the Prudential, Norwich Union and Old Mutual — not merely finance building societies but also extend mortgage loans directly. They also often issue declarations to banks by

credits, obtained large loans from the governments of Kenya, Tanganyika and Northern Rhodesia¹.

But these loans were costly, and the effects were not slow to become apparent. In June 1962, the First Permanent (East Africa) Ltd., which was set up in December 1961, took over all the British East African assets of the old First Permanent. Of the new company's capital 60 per cent was provided by the Commonwealth Development Corporation, and 20 per cent each by the governments of Kenya and of Tanganyika.

There followed the takeover of the Kenya Building Society² by the Commonwealth Development Corporation in 1963, and that of the Savings and Loan Society by Pearl Assurance in 1965 and its reconstitution as Savings and Loan Kenya Ltd.

All three companies decided in the early sixties to cut down their business in Kenya. They did not extend any new loans, closed some of their offices³ and widened the spread between their lending and borrowing rates by raising the former and reducing the latter.

On the supply side, all three companies preferred borrowing from the Commonwealth Development Corporation, from the

which they commit themselves to pay a certain sum if specified work is not completed. This enables the banks to prefinance builders with negligible risk.

¹ For a more detailed analysis of the activities of building societies at the time, see John Loxley, *Building Society Instability in Kenya*, University of Nairobi, Economic Research Centre, Discussion paper No. 8, February 1965.

² This society, too, was reconstituted and, like the First Permanent (E.A.) Ltd., thereupon formally ceased to be a building society, in so far as both companies obtained a banking licence under the Banking Ordinance. See Burke Dillon, *op. cit.*, p. 7.

³ The Savings and Loan, for instance, closed its Mombasa branch and its Nanyuki agency, while the First Permanent closed its Nakuru branch and its Kisumu agency.

Norwich Union and from commercial banks, rather than raising funds directly on the market.

In looking at the situation of housing credit as a whole, the following factors are relevant:

- (a) the average cost of funds to financial intermediaries was not less than 7.5 per cent annually;
- (b) average interest paid on savings deposits did not exceed 5 per cent annually;
- (c) annual administrative costs connected with deposit accounts were barely 2.5 per cent of the value of deposits;
- (d) savings deposits with building societies rose continuously from 1962 on;
- (e) at the same time, a large part of the demand for mortgage credit remained unsatisfied¹.

In these circumstances the slow growth of mortgage credit must probably be attributed to the policies of the Commonwealth Development Corporation and of the government rather than to market forces. Be that as it may, the fact remains that between 1963 and 1967 the deposits of the three building societies² rose by 16 per cent, while their loans declined by 40 per cent³.

The contrast between market opportunities and building society policies is further confirmed by the results obtained by a newcomer of 1959, the East African Building Society. This company too was hit by withdrawal of deposits, but instead of borrowing

¹ The rate charged for such loans was 10 per cent and they were all but riskless, seeing that mortgage loans were normally extended only up to half the value of the mortgaged building, on the building society's own valuation.

² It should be mentioned perhaps that in 1965 the deposits of the Kenya Building Society were transferred to the First Permanent. See Dillon, *op. cit.*, p. 9.

³ *Ibid.*, p. 8.

from the Commonwealth Development Corporation, it worked out repayment schedules with its depositors. To meet these commitments, it tried hard to attract savings by means of publicity campaigns and the use of mobile units. As a result, both the company's deposits and its loans rose, until 1965, at annual rates varying between 30 and 50 per cent ¹.

Another newcomer among building societies, the Kentanda Mutual Building Society, which was set up in July 1958, did most of its business with Africans and hence suffered no decline at all in its funds during the years 1960 and 1961. But its debt certificates thereafter encountered strong competition from those of the East African Building Society, and this was most probably the reason why the volume of its paper in circulation dropped so sharply in the following years that the company had to go into bankruptcy in 1965. Its loans still outstanding at that date were taken over by the Kenya Building Society.

To round off the picture of institutions concerned with mortgage loans, mention must be made of the foundation, in November 1965, of the Housing Finance Company of Kenya Ltd., whose initial capital of K£ 50,000 was subscribed by the Commonwealth Development Corporation (60 per cent) and the Kenya Government (40 per cent). The society began doing business in 1966 with money borrowed from the First Permanent.

Besides hire purchase finance house and building societies, we still have to look at the history of financial intermediaries which do not fit into either category. The most important among them is the Diamond Trust of Kenya Ltd., which dates back to 1946, established its head office at Dar es Salaam and opened branches

¹ *Ibid.*, p. 8.

at Mombasa and Kampala. Its equity was owned by some 8,000 members of the Ismailite community, whom, until 1965, it served almost exclusively. For this reason it suffered little loss of liquid assets in 1960 and 1961.

In 1965 the Trust was subdivided into three companies, one each for the countries of former British East Africa. Each shareholder received for every old share three new ones, one in each of the three new companies. Notwithstanding a policy of geographical risk spread, the funds of the three companies are managed by a joint management committee, called Diamond Jubilee Services.

Other financial intermediaries in Kenya, too, do the bulk of their business with Ismailites. This applies to the Ismailia Corporations Ltd., with seats at Mombasa, Kisumu and Nairobi¹, as well as to Industrial Promotion Services (Kenya) Ltd., a company set up in 1963 to promote—with the help of technical and financial assistance—the establishment of industrial firms by members of the Ismailite community.

Lastly, there is Overseas Finance Ltd., a company dealing mostly with Asians and relying for funds almost exclusively on its own capital.

So much for private financial intermediaries other than banks. It remains to look at the history of the public ones. These can readily be classified according to their specialization as dealing with:

- (a) agricultural credit;
- (b) industrial and commercial credit;
- (c) tourist promotion;
- (d) housing credit.

¹ For more information, see Dillon, *ibid.*, p. 13.

At the end of 1967, Kenya had three agricultural credit institutes—the Agricultural Finance Corporation, the Agricultural Development Corporation, and the Cereals and Sugar Finance Corporation.

The Agricultural Finance Corporation was set up in 1963, under the Agricultural Credit Act, for the purpose of deploying funds almost exclusively of government origin in all types of farm credit, including medium- and long-term loans¹. From the outset it was responsible, as the government's agent, for the administration of the so-called Medium Return Scheme², with funds provided for the purpose by the Cereals and Sugar Finance Corporation³.

The Agricultural Development Corporation was set up in 1965 by the Agricultural Development Corporation Act, with the intention of fostering the creation of small farm enterprises and devising schemes for the promotion of agricultural development. It was made responsible for the management of loan funds provided by the British government under the so-called Stamp Scheme and British

¹ Actually, mortgage credits for land purchases were the responsibility of the Land and Agricultural Bank until 1969, when it was taken over by the Agricultural Finance Corporation. Notwithstanding the formal autonomy of these two institutions, however, both had been governed by a joint board of directors since 1966. The Land and Agricultural Bank was founded in 1931 and retained sole responsibility for all medium- and long-term agricultural credit until 1963. Its funds came from the Treasury, from government-guaranteed bank credit lines and from private deposits, though the latter gradually dwindled away to almost nothing. See Central Bank of Kenya, *Economic and Financial Review*, October-December 1969, p. 9.

² Under this scheme maize and wheat growers can obtain advances repayable at harvest time; in case of partial loss of the crop, farmers have to repay only such proportion of the loan as corresponds to the proportion of produce actually harvested.

³ The credits concerned do not show up in the balance sheets of the Agricultural Finance Corporation.

Government Scheme for facilitating the transfer of British estates in Kenya to African ownership. These schemes work as follows. British-owned estates are purchased by a company called Lands Limited, an associate of the Agricultural Development Corporation, and then transferred to the latter for temporary management, generally until such time as they can be sold or leased to technically competent African farmers disposing of the necessary minimum capital. The corporation never accepted private deposits, but financed its activities almost entirely with government funds provided either as loans or venture capital; for the rest it relied on bank borrowing.

The Cereals and Sugar Finance Corporation, finally, was set up in 1955 by the Cereals and Sugar Finance Corporation Act for the purpose of providing loans to the government or government agencies to finance sugar and grain purchases as well as domestic sugar price stabilization. It also made advances to the government and government agencies against their expected proceeds from sugar and grain sales¹. The corporation had no capital of its own nor any endowment fund, but was authorized to borrow up to a specified ceiling (which initially was K£ 5 million), subject to modification by Parliament, from time to time. All its liabilities were guaranteed by the government². The corporation also made direct issues of its own debt certificates, in unit amounts of not less than K£ 5,000³.

Furthermore, the corporation was authorized to issue bills

¹ Cereals and Sugar Finance Ordinance of 22 November 1955, Section 3, 1. Article 1.

² *Ibid.*, Section 4, 2.

³ *Ibid.*, Section 10, 1.

both at home and on the London market¹. Its cash transactions had to be handled by banks specified by the Minister of Finance².

The public credit institutes concerned with the promotion of industrial and commercial enterprises in Kenya are the Industrial and Commercial Development Corporation and the Development Finance Company of Kenya, Ltd.

The first of these was set up in 1954 with the name of Industrial Development Corporation. It provides equity capital and loans for the creation of subsidiary companies. It has no capital of its own and accepts no deposits from the public; its funds come in part from government loans and for the rest from loan issues on the domestic capital market or abroad, subject to the amount and all other conditions of such issues being approved by the Minister of Finance.

It was this corporation which in 1963 established the Development Finance Company of Kenya on behalf of the Kenya government, the Commonwealth Development Corporation and the *Deutsche Gesellschaft für Wirtschaftliche Zusammenarbeit*, joined later, in 1967, by the Dutch *Financierings Maatschappij voor Ontwikkelingslanden, N.V.* The company's authorized capital is K£ 4 million, of which half is paid up, in equal parts, by the four shareholders, who are in addition committed to subscribe income notes up to K£ 1 million. The Development Finance Company of Kenya does not accept deposits from the public, but operates entirely with its shareholders' funds.

While both these institutes share the common purpose of promoting the creation and development of industrial and commercial enterprises, they differ to the extent that the

¹ No London issues have been made since 1962.

² *Ibid.*, Section 7, 1, 2 and 3.

Development Finance Company relies much more heavily on foreign groups, both for finance funds and for management assistance. Another difference is that the latter company does not handle subsidized credit, but only loans at market terms.

On very much the same lines as the Industrial and Commercial Development Corporation, the Kenya Tourist Development Corporation was set up in 1965 by a homonymous Act. It, too, has no capital of its own and raises the funds it needs for the development of the tourist industry by borrowing from the government and by loan issues on the domestic and foreign capital markets, again subject to authorization by the Minister of Finance. There is a statutory ceiling of K£ 7 million for medium- and long-term indebtedness, and bank borrowing is limited to half a million. Technically, this corporation's operations take the same form as those of the Industrial and Commercial Development Corporation.

Finally, it remains to look at housing credit. There was only one specialized public institution in the field at the end of 1967, the National Housing Corporation of Kenya, a successor of the Central Housing Bank. This latter had been set up in 1953 and made loans to local authorities for the implementation of various housing schemes.

To enable it to carry on with these loans, the National Housing Corporation was entrusted with the management of the so-called housing fund, a special fund made up of grants from the governments of Kenya, the United States and the United Kingdom. Additional resources came from the returns on local authority loans under housing schemes, as well as from domestic and foreign bond issues. But the Corporation was not authorized to accept deposits from the public.

restrictive sense, since in effect he allowed the Board only to invest in securities issued or guaranteed by the British government.

It stands to reason that a price had to be paid for these restrictions on the Currency Board's activities. The Board had no control over the country's monetary base, which depended entirely upon the balance of payments, nor over the banks' liquidity reserves, nor over the public's liquidity preference; in these circumstances, the currency circulation came to depend mainly upon the decisions of expatriate business, that is, British banks, exporters and importers.

The policy of foreign bank branches was determined by their central management, which settled in occasional meetings with the executives of the local branches what aims the latter should pursue, and laid down the transfer rates for interbank accounts between head office and overseas branches. Clearly, the credit policy of the overseas branches was subordinate to choices made at head office, and the wide discretionary powers they enjoyed was bound to, and did, have harmful repercussions on local economic development—if only because such development as they did promote was far from balanced¹.

The Currency Board was subject to criticism also as regards its investment of reserves. The rule was that reserves had to be invested partly in public securities of the colonial power, and partly held in liquid form. The result was that the Currency Board directly financed the British public sector and the Bank of England, and indirectly the development of the British economy. For the colonies and overseas territories this practice was extremely harmful, especially since the Currency Board mechanism involved severe

¹ On this point see Mauri, *ibid.*, p. 44, and W.T. Newlyn, *Money in an African Context*, OUP 1967, p. 44. The IBRD report quoted earlier, on the other hand, takes a different view (Chapter 9).

restrictions on local imports of factors of production. The only choice left open to the overseas territories was the date of maturity of the securities to take up¹.

This system was obviously quite inadequate for meeting the needs of African countries. Accordingly, the British authorities relaxed their interpretation of the currency coverage and allowed the Currency Board to invest some of its reserves in securities issued or guaranteed by one of the local governments, up to a specified maximum². This new interpretation had far-reaching consequences, because it meant, in effect, authorizing the Currency Board to make fiduciary issues via investment in such securities. Eventually, the Board was in addition authorized to issue currency by rediscounting

¹ On the policy of the East African Currency Board with respect to the maturity of its financial assets see, e.g., IBRD, *The Economic Development of Kenya*, *op. cit.*, p. 258 and Table 1.

² The upper limit was originally fixed at 10 million pounds, and was subsequently raised on several occasions. The countries of British East Africa did not, however, fully use their quota of fiduciary issues, as can be seen from the following table.

FIDUCIARY ISSUES OF THE EAST AFRICAN CURRENCY BOARD, 30 JUNE 1965
(thousand pound sterling)

Country	Taken up	Unused	Total authorized
Kenya	3,478	6,380	9,858
Uganda	9,428	430	9,858
Tanzania (mainland)	6,197	3,661	9,858
Tanzania (Zanzibar)	893	333	1,226
Total	19,996	10,804	30,800

Source: East African Currency Board, *Report for the Year Ended 30th June, 1965*.

Differences in the extent to which governments and monetary authorities availed themselves of this facility may be explained with reference to certain rules regarding investment returns, to time lags and to the actual amount of currency reserves at hand. See Erin E. Jucker-Fleetwood, *Money and Finance in Africa*, London, 1964, p. 225, and Central Bank of Kenya, *Money and Banking in Kenya*, Nairobi, 1972, p. 6.

bills of exchange on behalf of commercial banks; again, a ceiling was fixed for such issues, initially at 5 million pounds. This facility was meant to be seasonal, in connection with the harvesting and marketing of crops, and as such it became predominantly important in the evolution of the Currency Board's functions. Fiduciary issues via security investments depended strictly on the financial requirements of the public administration; those via rediscounts served to adjust the currency supply to the fluctuating transactions demand of the economic system, for they were flexible enough to offset hoarding as well as such decreases in aggregate demand as might result from fluctuating export proceeds¹.

In an effort to create the conditions for an autonomous monetary and credit policy², the East African Currency Board—hamstrung by its rigid statutes though it was—decided to make refinancing facilities accessible to deposit banks, for which it also ran a clearing house, subject to their depositing a specified proportion of their liquidity reserves with the Currency Board, in a freely disposable, interest-bearing account³.

But even in this new setting the Currency Board still had no legal powers vis-a-vis the financial institutions operating in British East Africa. It became increasingly clear that nothing short of a central bank was needed for the creation of the conditions and instruments of independent liquidity control. There were earnest attempts to set up a common central bank for the whole of British East Africa, but in the event it proved too difficult to reconcile the

¹ Naturally, these possibilities were of major interest only to the extent that they could be activated, within the limits of disposable external reserves, without repercussions on local price levels.

² It will be remembered that Kenya obtained its independence in December 1963.

³ See Mauri, *ibid.* p. 51, and Central Bank of Kenya, *ibid.*, p. 6.

concept of a supra-national central bank with that of national sovereignty in monetary policy. And so the countries of the East African currency area each set up their own national central bank¹.

Kenya did so by the Central Bank of Kenya Act, which received Presidential approval on 24 March 1966. The bank started operating in September of the same year.

The central bank's relations with financial intermediaries and with the government, as well as its external relations, as defined by its statute, may briefly be summarized as follows.

As regards financial intermediaries, the salient rules are those which govern reserve requirements, regulation of interest rates paid on liabilities, refinancing, and credit control. Reserve requirements are dealt with in Section 38: "The Bank may . . . (1) require specified banks to maintain minimum cash balances on deposit with the Bank as reserves against their deposit and other liabilities: Provided that such balances shall not exceed twenty per cent of each specified bank's total liabilities; (2) . . . specify different ratios for different types of liabilities and may further specify the method of computing the amount of total liabilities of a specified bank. Provided that the ratios specified shall be the same for all specified banks; . . . (5) . . . pay interest at such rates and subject to such qualifications as it may determine on minimum cash balances deposited with the Bank." Note that provision for reserve requirements is not made for financial intermediaries other than banks.

As regards interest, the central bank may, under Section 39, "from time to time, determine and publish the maximum rates of interest which specified banks or specified financial institutions may pay on deposits. Provided that the Bank may determine different

¹ See Central Bank of Kenya, *Annual Report 1967*, p. 5.

rates of interest for different types of deposits and for different types of specified financial institutions." Refinancing facilities are available only to banks. Under Sections 36 and 37, rediscounts are limited to 180 days and loans and advances to 6 months, the first limit being extendable to 270 days at the Bank's discretion. Loans and advances may be made against government or government-guaranteed securities, subject to an upper limit of K£ 12 million for direct advances to the government and for the value of securities accepted as security for loans and advances to banks (Section 48).

The central bank's powers of credit control are defined in Article 40 with respect to banks. "The Bank may issue instructions specifying in respect of any loans, advances or investments by specified banks:

- (a) the purposes for which they may or may not be granted;
- (b) the maximum maturities or, in the case of loans and advances, the type and minimum amount of security which shall be required, and in the case of letters of credit, the minimum amount of margin deposit; or
- (c) the limits for any particular categories of loans, advances or investments or for their total amount outstanding."

Furthermore, under Section 41, "The Bank may issue instructions designed to control the volume, terms and conditions of credit, including instalment facilities, in the form of loans, advances or investments, extended by specified financial institutions."

Among the rules governing the central bank's relations with the state, the most interesting are those which set limits to government borrowing. There is an absolute limit of K£ 3 million on the value of securities which mature later than twelve months from the date of acquisition or acceptance as security by the central

bank (Section 48). Total lending to the government ¹, as mentioned above, may not exceed K£ 12 million, including direct advances as well as the value of government securities either purchased by the central bank or held by it as security against loans and advances to banks ². Since December 1966, the central bank is banker to the government (under Section 44), a task previously discharged by the National and Grindlays Bank ³.

Finally, there are the important provisions regarding minimum external reserves. These are expressed in terms of import coverage: "The Bank shall at all times use its best endeavours to maintain a reserve of external assets of an aggregate amount of not less than the value of four months imports as recorded and averaged for the last three preceding years" (Section 26) ⁴.

¹ The conditions of central bank direct and indirect lending to the government are strictly defined in Sections 36(b), 46, 47 and 48, and Section 49 explicitly rules out any other direct or indirect credit to any public entity.

² There are some interesting points about this upper limit: (a) neither the amount of short-term advances, nor total permissible holdings of government securities are specified; (b) the limit is rigidly fixed in an absolute amount, without reference to ordinary budget revenue; (c) the permissible maximum includes central bank advances to deposit banks against public securities.

³ Central Bank of Kenya, *Annual Report 1967*, p. 6.

⁴ On this point the statutes of the three central banks which were created in British East Africa after the demise of the East African Currency Board differ, as indeed they do also in regard to the specification of the upper limit of government borrowing. In Kenya and Tanzania the provisions for the minimum value of external reserves leave room for flexibility, whereas Uganda has the rigid rule that external reserves must never be less than 40 per cent of total demand liabilities. Formally speaking, the three central banks have different powers of resistance against government borrowing, for in Uganda, whenever external reserves dropped to levels close to the specified limit, the latter became a legal barrier to any further credit expansion; this barrier, moreover, was in the short period all the more effective when credit expansion was due to capital spending by the Treasury. Other conditions being equal, therefore, it is arguable that the rules contained in the statutes of the Bank of Uganda may not only limit the process of capital accumulation

4. LIQUIDITY POLICY OF DEPOSIT BANKS

Having outlined the historical background of Kenya's system of financial intermediaries and its central bank, it remains to look at the movements of the chief economic variables in bank management. It is from these that the banks' liquidity policy can be deduced.

But first, a few more preliminary remarks on the characteristics of Kenya's banking system during the period concerned are called for. Until 1967, it will be remembered, virtually all deposit banks were branches or associates of foreign banks which, because of their decentralized organizational structure, exercised management control on the basis of individual cost centres and profit centres¹, and with the help of budgeting and programming techniques.

For purposes of this study, it is well to recall that the quality of management performance is defined in terms of cost/benefit analysis directly relating to the activities of the unit concerned, over which its managers have reasonable control². It follows that

in the country, but may generate forces tending to expand current spending by the public sector. For discussion of this point, see W.T. Newlyn, *Finance for Development*, *op. cit.*, p. 27 ff., and *Money in an African Context*, *op. cit.*, p. 120, as well as David Kern, "Public Sector Deficits", *National Westminster Bank Quarterly Review*, May 1974, p. 21-22.

¹ Any one organizational unit of a bank is considered a cost centre or a profit centre according as it provides services to other organizational units of the same bank, or sales services to the bank's clients.

² This criterion of measurement presupposes that the behaviour of multinational banks is ruled solely by the profit motive. However, in the light of the network coverage organized by the branches of the three British banks during the period under consideration, it is possible to argue that they were aiming at a given minimum growth of deposits with a view to maximizing profits.

On the subject of bank behaviour reference is made to the following works as recommended reading: O. Castellino, "Di alcuni modelli di comportamento delle banche ordinarie", *Ratio*, 1970, No. 6; W.C. Brainard and J. Tobin, "Pitfalls in

a key element is the internal transfer rate chargeable on interbank financial flows among the units belonging to one and the same banking group¹. This rate should reflect the effective economic potential of deposits transferred from one profit centre to another, and hence coincides with the marginal cost of deposits obtainable by the bank on international money markets².

In Kenya, interbank flows were relatively large in comparison with total bank business (See Table 3), because there was neither

Financial Model Building", *American Economic Review*, May 1968; Stephen M. Goldfeld and D.M. Jaffee, "The Determinants of Deposit Rate Setting by Savings and Loan Associations", *Journal of Finance*, June 1970; Stephen M. Goldfeld, *Commercial Bank Behaviour and Economic Activity. A Structural Study of Monetary Policy in the Postwar United States*, Amsterdam, 1966; Mario Monti, *A Theoretical Model of Bank Behaviour and its Implications for Monetary Policy*, Tilburg, 1973. For an empirical analysis of bank behaviour in a credit system where no interest is paid on demand deposits, see B.C. Cohen, "Deposit Demand and the Pricing of Demand Deposits", *Quarterly Journal of Economics*, August 1970, where the author maintains that even in this context one can speak of decisions in terms of an optimal implicit rate of return to offer on such financial assets.

¹ It must be stressed that even on international interbank markets the amount of deposits transferred may differ from the amount available for use in case deposits are subject to a minimum compulsory liquidity ratio. See Andrew F. Brimmer, "Multinational Banks and the Management of Monetary Policy in the United States", *Journal of Finance*, May 1973, p. 453, and, by the same author, *The Banking Structure and Monetary Management*, Paper read at the San Francisco Bond Club, 1 April 1970. However, even without such institutional constraints, the amount of deposits used may differ from the amount transferred to some extent, depending on such factors as the public's liquidity preference, the Treasury deposit ratio ($t = \frac{\text{the Treasury's sight deposits with the banking system}}{\text{private sight deposits with banks}}$), the banks' liquidity preference and the degree of aversion to risk of bank managers. On this subject see J.L. Jordan, "Relations among Monetary Aggregates", *Federal Reserve Bank of St. Louis Review*, March 1969, p. 8 and 9, and Albert E. Burger, *The Money Supply Process*, Belmont, 1971, p. 21 and 22.

² This technique makes room for a fairly sophisticated control mechanism, by which, even though the banking group is considered as one single unit, it can be subdivided into separate components for purposes of management control.

an efficient capital market (See Tables 9 and 13)¹ nor a central refinancing institute and because, at the same time, the public's liquidity preference was high and so was the interest elasticity of capital flows². In these circumstances the transfer rate was an important item in the banks' cost and earnings flows and had considerable influence on the credit market as a whole. As a result the structure of interest rates and all credit business came to depend on expectations regarding interest rate movements on international capital markets³.

These influences were further enhanced by existing management control methods. In assessing the rate of return on the sums assigned to any one profit centre, the parent bank naturally had to establish by how much that centre's profit rate diverged from the minimum target rate set by head office. It was not only the structure of interest rates, therefore, but the very behaviour of bankers that was ruled by factors exogenous to the system⁴.

Since until 1965 several London banking groups had profit centres in the three countries of British East Africa, the period under consideration was one of close integration between the credit markets of East Africa and of London. The behaviour of deposit banks in Kenya must therefore be seen in connection with the structure and movements of their interbank balances with correspondents abroad (Table 5).

¹ See IBRD, *Economic Progress and Prospects in Kenya*, 1972, Vol. II., *The Mobilization of Private Savings*, p. 21 and 22.

² Note that until 10 June 1965 capital flows between Kenya and other parts of the sterling area were not subject to any controls.

³ See Milton Friedman, "The Eurodollar Market: Some First Principles", *The Morgan Guaranty Survey*, October 1969, and Andrew F. Brimmer, "Multi-national Banks", etc., *op. cit.*, p. 452.

⁴ See Robert Lindsay, "The Economics of Interest Rate Ceilings", *New York University Bulletin*, No. 68-69, December 1970, p. 42-43.

Until the middle fifties the banks of British East Africa had fairly substantial credit balances abroad (about one third of total assets), most of all with their London head offices. Later these balances declined more or less continuously (Table 5).

The 1960 capital flight, mainly from Kenya, was the chief reason which led the banks to borrow in London, and from that time on, barring a brief reversal in 1962, deposit banks in Kenya always were overdrawn on their London head office either throughout the year or seasonally¹.

This striking change was due to the deposit banks adopting a policy of domestic credit expansion and to the behaviour of depositors².

In this connection it is extremely interesting to look at the results of W.T. Newlyn's enquiry into the extent to which the East African banking system has treated the three countries as a single area of operation in relation to the London market³. In order to obtain a reasonably long continuous and consistent time series, Newlyn had to use quarterly figures and was able to consider only two categories of interbank balances, those with banks abroad and

¹ Certainly, the ability of the expatriate banks in Kenya to borrow on the London interbank market was overstated in the balance sheets, which included under bank debts the capital sums assigned to each profit centre by the parent bank.

² It needs stressing that in the countries of East Africa the banks' credit policy has a determining influence on the foreign transactions of private business. See J.J. Polak and Victor Argy, "Credit Policy and the Balance of Payments", *IMF Staff Papers*, March 1971, and J.J. Polak and J. Boisson-Neault, "Monetary Analysis of Income and Imports and its Statistical Application", *IMF Staff Papers*, April 1960.

³ W.T. Newlyn, *Finance for Development*, *op. cit.*, p. 3-37. The author used aggregate banking statistics and therefore, given the high degree of concentration in the East African banking systems, his conclusions in effect reflect the behaviour of the "Big Three" British banks.

those with other East African banks¹. In addition, Newlyn also considered advances.

For each of the three series Newlyn fitted a trend by means of a four-quarter moving average of quarterly data 1951 to 1964, and calculated for each country the coefficient of correlation between the deviations from the trend of the advances series and those of the series of net interbank balances with the other two East African countries. He obtained the following values:

Uganda:	— 0.49
Tanzania:	— 0.51
Kenya:	+ 0.70

The negative correlation obtained for Uganda and Tanzania is evidence of a high degree of integration among the three systems. This was due to banks in Uganda and Tanzania borrowing from Kenya banks to finance seasonal fluctuations in credit demand. The positive correlation in the case of Kenya Newlyn interpreted as a reflection of two factors: the coincidence of seasonal peaks in Kenya and Uganda, and the practice of the Kenya banks to borrow enough in London to meet seasonal credit demand not only in Kenya but to some extent also in Uganda and Tanzania.

This interpretation was confirmed by the correlation between the deviations in Other East African balances and External balances; in the case of Kenya this was found to be — 0.96, in the case of Tanzania and Uganda it was insignificant².

Much the same picture emerges from the annual reports of the East African Currency Board. Looking at the statistics of

¹ Although it is a fair approximation to equate external interbank balances with those in London, the balances due to or by other East African banks ought to be reduced by interbank balances in the same country. But these account for relatively little and the resulting error can therefore be regarded as negligible.

² Newlyn, *ibid.*, p. 33.

transfers between the East African countries themselves and between each one and London (Table 8), it is clear that especially in later years these flows of funds were, in the main, directed through Nairobi.

However, while Kenya banks acted as interbank intermediaries, it does not follow that as a whole they were always net lenders.

Until 1955 the banks of Kenya were persistent debtors to those of Tanzania, thus enabling the latter to deploy their otherwise unused resources. Thereafter the Tanzanian banks went in for local lending on a much larger scale and Kenya became a net creditor, so much so that Kenya's interbank overdraft of 7 million pounds in 1953 had turned into a credit balance of more than 13 million by 1964 (see Table 6). Once again, we must conclude that the major external flows were channelled through Kenya banks, and that the banking systems of British East Africa were highly integrated.

This was so, at any rate, until the joint currency area, and with it the joint credit system, broke up into three parts in 1965¹. In order to discover the effects of this separation on the liquidity management of deposit banks, we have to look at a time series of interbank balances during a period when all other conditions can be presumed to have remained unchanged.

Newlyn therefore chose the period from January 1964 to December 1965 (Table 7). The figures for net interbank balances² among the three countries show an unmistakable inflection of trend from December 1964 on. In the course of 1965 the balances due

¹ Formally, this break can be dated to 10 June 1965, when the three Finance Ministers simultaneously announced that each country was to have a central bank of its own.

² See W.T. Newlyn, *ibid.*, p. 35-36. This time the figures are monthly and net of balances due to or by banks in the same country.

to Kenya banks by those of Uganda and Tanzania diminished by 10 million pounds¹.

The effects of the separation of the three credit systems on net interbank indebtedness are dramatically illustrated in the tabulation below which shows changes between December 1964 to December 1965².

Country	Change in net other East African balances (thousand £)	Change in net external balances (thousand £)
Kenya	- 14,269	+ 15,126
Tanzania	+ 2,836	- 3,852
Uganda	+ 10,043	- 7,173

These figures are eloquent. Three major changes occurred: the financial flows among the three African banking systems diminished; the volume of credit extended by London banks to banks in Kenya declined; the banks in Tanzania and Uganda obtained more credit from foreign banks.

These figures suggest not so much a diminution of interbank flows as such, but a reduction in the degree of integration among the three banking systems³.

As a result of the change in the structure of these interbank flows, liquidity management became much more costly, other conditions being equal, if only because of the loss of economies

¹ Newlyn, *ibid.*, p. 36.

² It should be remembered that initially the banking system of Kenya had a net credit balance with the banks of the other two East African countries, and a net debit balance with banks abroad. See Tables 5 and 6.

³ There are not enough data to permit firm conclusions. But they do gain strength in the light of subsequent institutional changes in the three countries, such as bank nationalization in Tanzania and the suspension of currency convertibility in Uganda.

of scale and because, in the absence of sufficiently liquid domestic financial assets, the three banking systems became more dependent on abroad, most probably to the detriment of their efficiency¹.

5. FIRST CONCLUSIONS

At this point it may be useful to outline the structure of a typical circuit of financial flows in an open economy financially dependent on abroad, such as Kenya². This should serve to illustrate the consequences of two types of policies pursued by deposit banks in Kenya, namely, their liquidity policy and, after 1964, their diversification of financial liabilities by the creation of non-bank financial intermediaries³.

In such an open, financially dependent system credit creation is necessary for two main reasons:

- (a) the inability of the credit system to transfer money assets from surplus units to deficit units;
- (b) the need for continuous expansion of credit, and of money in particular, to ease the development process.

Credit expansion encounters a limit in the amount of disposable foreign exchange reserves and in the time required for real investment at home to reassume monetary form. Hence it is necessary to analyse the influences of credit creation on the liquidity reserves of banks.

¹ The wider — *ceteris paribus* — is the spread between lending and borrowing rates in any banking system, the lower is the degree of its efficiency likely to be. On this point see Francesco Masera, *La riserva obbligatoria nel sistema istituzionale italiano*, Rome, 1972, p. 28-36, and Giordano Dell'Amore, *Economia delle aziende di credito*, Vol. I, *I prestiti bancari*, Milan, 1965, p. 52-53.

² From the figures of Tables 13 and 14 it can be calculated that from 1964 to 1967 the degree of openness of the economic system was 0.69 on the average.

³ See Table 10.

Looking at the activities of banks during the period 1956 to 1964, three points emerge:

- (a) deposits grew by 7.07 million pounds;
- (b) foreign exchange and liquidity reserves declined by 6.52 million;
- (c) the banking system created credit in an amount of 13.38 million.

In other words, the expansion of bank credit would have required money supply (M_3) in the same amount (13.38 million pounds) if, at the same time, there had not occurred an excess of foreign exchange outflows over inflows (£ 6.52 million) which took effect in a reduction of the banking system's liquidity reserves and deposits.

It would seem, therefore, that in the years 1955-64 the deposit banks increasingly used their resources to expand their local lending¹, and reduced their demand for liquid assets².

Furthermore, from the behaviour of the ratio of private loans to private deposits and of the banks' liquidity ratio it appears that the degree of closure of the loan-deposit circuit did not improve in spite of a rising trend of the Treasury deposit ratio³.

It follows that in a very open economy, with a high average and marginal propensity to import⁴ and a growing demand for

¹ See the loan/deposit ratio in Table 2.

² See the liquidity ratio in Table 2. The logical result of such a liquidity policy is an increase in the private cash ratio (currency in the hands of the public divided by their demand deposits). Furthermore, it is likely that during the period under consideration this ratio was in any event being pushed up by the growing monetization of the economy.

³ This is also known as the coefficient (t). See Table 4 and Note 1 on p. 25.

⁴ During the period 1964-67 the average propensity to import oscillated between 36.19 and 40.09 (Tables 13 and 14).

money on the part of the public, credit expansion is limited by the scarcity of liquid financial assets.

This statement needs to be demonstrated. To this end, it is useful to construct a model which allows us to quantify the influences of credit expansion on bank liquidity.

The notation used in the model is as follows:

s	= marginal propensity to save
t	= marginal coefficient of taxation
m	= marginal propensity to import
v	= velocity of circulation of money
α	= coefficient of credit spent directly on imports
a	= marginal propensity of the public to hold currency rather than sight deposits
b	= bank liquidity ratio expressed in terms of monetary base
ξ	= cash drain coefficient in the case of credit expansion not generating further expansionary effects
τ	= monetary base freely disposable by the banking system
σ	= cash drain coefficient in the case of expansion of τ
M	= imports
L	= bank loans and advances
$\frac{1}{m+s+t}$	= Keynesian income multiplier
σ_d	= coefficient of cash drain due to a unit increment of domestic credit
σ_m	= coefficient of cash drain due to a unit increment of credit for imports

To clarify the structure of the model, suppose that one additional unit of bank credit is used in part (α) to finance imports directly, while the remaining part ($1 - \alpha$) is spent on the domestic

market, where, according to the Keynesian income multiplier ($\frac{1}{m+s+t}$), it will generate an income increment (ΔY). Suppose, further, that imports ($M = mY$) and the velocity of circulation of money ($M_o = vY$) are functions of income.

The increase in GNP induced by the amount of additional domestic expenditure financed by additional credit ($1 - \alpha$) [this increase in GNP equals $(1 - \alpha) \frac{1}{m+s+t}$] in its turn will cause new imports in the value of $m(1 - \alpha) \frac{1}{m+s+t}$, and these will further diminish the cash base holdings of banks.

For any one unit increase in the volume of credit not originating in a change of monetary base held by the banking system, the latter's net liquidity reserves must then diminish by the value (expressed in national currency) of the foreign exchange needed to finance the imports induced by the prior expansion of bank credit.

The value of these additional imports equals the sum of α (proportion of additional credit used directly to finance imports) and such other new imports as are generated by the GNP increment resulting from the multiplier effect of the domestic use of the credit proportion ($1 - \alpha$). It follows that the amount of monetary base destroyed by a unit expansion of credit can be written ¹

$$\xi = \alpha + m(1 - \alpha) \frac{1}{m+s+t}$$

Now let us generalize the model and introduce the assumption that the credit increment is due to an injection of additional

¹ The behavioural equation $M = vY$, on the basis of which the coefficient ξ is determined, does not imply that an expansion of M_o (currency in circulation) is necessarily imputable to an increase in the monetary base.

monetary base into the economic system. This requires the model to be altered somewhat.

Assume that the banks wish to expand credit in such wise that their own and the public's demand for monetary base can be satisfied by the quantity left at their disposal after all the effects of credit creation have worked through. If this is to happen, the level of free bank reserves, after the credit expansion, must equal the banks' and the public's combined demand for monetary base. It follows that the additional credit must not destroy more reserves than are unwanted by the deposit banks.

If the level of free reserves is τ , the amount of new credit (L) must be so determined that the cash drain (ξL) imputable to this credit expansion does not reduce reserves below the minimum level desired by the banks and the public.

We write ¹

$$(\tau - \xi L) \frac{1 - b}{a + b} = L$$

Solving this equation for L , the equilibrium value of L can readily be found. It is given by the expression

$$L = \left(\frac{1 - b}{a + b} + \frac{1}{\xi} \right) \tau \quad (1)$$

from which, in the case of τ equalling unity, the credit multiplier ² in an open economy can easily be derived.

¹ From this relation it is clear that the coefficient b is calculated on the banking system's total deposits, including those of the public sector, the variations of which strongly influence the liquidity of deposit banks.

² This multiplier (β) is extremely simple and therefore can give only approximate indications. There is a hazard, too, in assuming that at all times equal volumes of free reserves have approximately the same effect on the behaviour of banks. In the model described in the text it has been assumed that bank behaviour will probably be influenced by the difference between the

We call this multiplier β . Having established its value, it is then relatively easy to determine the destruction of monetary base caused by a unit increment of bank credit, which, in its turn, results from an expansion of the monetary base¹.

To this end it is best to divide the analysis into two parts, in the interests of clarity. First, let us try and determine the effects on the banks' cash holdings due to the credit portion used to finance imports, and then those due to the credit portion spent on domestic markets.

Suppose, then, that the system acquires one unit of monetary base. This will be used in part (α) to finance new credits to importers, and for the rest ($1 - \alpha$) to expand domestic credit. Of this latter portion of monetary base, an amount ($1 - \xi$) will

actual and the desired level of free reserves (see the assumptions underlying the determination of the coefficient β). However, the model does not take account of the fact that the level of the free reserves of different banks is bound to differ by reason of a number of circumstances, including the rate of change in the monetary base and the level of actual reserves. One of the things, furthermore, which seem to be of basic importance in the determination of the desired level of free reserves is the yield on short-term financial assets. To the extent that this assumption really reflects the behaviour of banks, therefore, it can be deduced from it that a rise in interest rates will lead to a reduction of the banks' liquidity ratio and a rise of the loan/deposit ratio. On this subject see James A. Meigs, *Free Reserves and the Money Supply*, University of Chicago Press, 1962, p. 22 and 50-59.

¹ Potential credit creation from the monetary base varies according to the source, or combination of sources, of the latter's origin. Given the structure of the credit system under consideration, it seemed right virtually to rule out any direct acquisition of monetary base on the part of the banking system. When, therefore, the monetary base expands by one unit, the deposit banks will get a freely disposable part of it equal to $(1 - b)(1 - \xi)$.

Two interesting papers on this subject are: Stephen L. McDonald, "The Internal Drain and Bank Credit Expansion", *Journal of Finance*, December 1953, and James Tobin, "Commercial Banks as Creators of Money", in: D. Carson, ed., *Banking and Monetary Studies in Commemoration of the Centennial of the National Banking System*, Homewood, Ill., 1963.

come back to the banking system. But only part of $(1 - \xi)$ can be used for further credits, namely, the portion $(1 - b)$; hence the amount of monetary base disposable at each successive stage of the process is $(1 - b)(1 - \xi)$.

If we substitute, in equation (1), the value of free reserves $(1 - b)(1 - \xi)$ for the coefficient τ , we obtain the value of monetary base destroyed owing to the secondary effects deriving from an expansion of credit for imports.

In our assumed case, then, the total cash drain is

$$\sigma_m = \alpha[1 + \beta(1 - b)(1 - \xi)] .$$

So much for the import portion of new credit. In its turn, the portion of new credit spent domestically can set in motion an income multiplier equal to

$$(1 - \alpha) \frac{1}{m + s + t}$$

which, by virtue of the behavioural equation $M = mY$, gives rise to additional imports equal to

$$m(1 - \alpha) \frac{1}{m + s + t} .$$

However, since the primary expansion entails a cash drain ξ , only the residual portion $(1 - \xi)$ finds its way back to the banking system and can be used for new credits in the amount $(1 - b)(1 - \xi)$, as above. If now we apply to this monetary base the coefficient of cash drain due to a unit increment of bank credit, it will be found that the value of monetary base destroyed by this secondary effect equals¹

$$\beta(1 - b)(1 - \xi) .$$

¹ Note that equation (1) in the text presupposes that in the process of credit creation the unwanted monetary base τ is completely destroyed by the end of this process. Hence the ratio L/τ can also be interpreted as a coefficient measuring the destruction of monetary base.

The total cash drain due to an increase $(1 - \alpha)$ in domestic credit, therefore can be written

$$\sigma_d = m(1 - \alpha) \frac{1}{m + s + t} \left[\frac{1 + \beta(1 - b)(1 - \xi)}{m + s + t} \right]$$

From this we get, for the total value of cash drain caused by an increment of credit to imports, α , plus an increment of domestic credit $(1 - \alpha)$, the following expression:

$$\sigma = \alpha[1 + \beta(1 - b)(1 - \xi)] + m(1 - \alpha) \frac{1}{m + s + t} \varepsilon$$

where $\varepsilon = \left[\frac{1 + \beta(1 - b)(1 - \xi)}{m + s + t} \right]$.

The coefficient β cannot, in any event, be less than unity, and in an open economy of the type here discussed it does not generally assume values significantly above unity. It follows that in the long run, other conditions being equal, the deposit banks are bound to lose their capacity of credit creation¹. This is implicitly demonstrated by what follows.

¹ Our model takes no account of the time lags which occur in the adjustment of imports to credit expansion, nor of the absorption of cash in the transactions balances of the public in consequence of the growth of personal incomes, which in turn depends on the velocity with which a given cash injection is transmitted through the economic system. This velocity, it will be recalled, depends on three factors: the lag in income distribution, the lag in the adjustment of the propensity to consume of households to the new income levels, and the lag in the adjustment of industrial production to increases in demand. These three factors determine the velocity of circulation of money, which in our model is assumed constant. On this point, the following works make useful reading: Walter T. Newlyn, *The Theory of Money*, OUP 1962, especially Chapter IV; A.A. Walters, "The Radcliffe Report - Ten Years After", in: David R. Croome and Harry G. Johnson, eds., *Money in Britain 1959-1969*, OUP 1970, and the bibliography listed therein; Yung Chul Park, "Variability of Velocity: An International Comparison", IMF *Staff Papers*, November 1970; Milton Friedman, "A Theoretical Framework for Monetary Analysis", *Journal of Political Economy*, March/April 1970; J.J. Polak, "Monetary Analysis of Income Formation and Payments Problems", IMF *Staff Papers*, November 1957; A.A. Walters, "Professor Friedman on the Demand

To make the working of the various coefficients more immediately perceptible, two diagrams have been prepared. Both show the values of ξ and σ as continuous functions of m . But the value of $s + t$ is assumed to equal 0.1 in chart 1, and 0.5 in chart 2. In both cases two curves of monetary base destruction were obtained, equating α to 0.5 and 0.1 respectively.

The results show clearly that the cash drain coefficients¹ are increasing functions of the marginal propensity to import and

for Money", *Journal of Political Economy*, August 1965; Joseph O. Adekunle, "The Demand for Money: Evidence from Developed and Less Developed Economies", *IMF Staff Papers*, July 1968; S.J. Prais, "Some Mathematical Notes on the Quantity Theory of Money in an Open Economy", *IMF Staff Papers*, May 1961. The last-named paper examines another problem of very great interest, namely, the determination of the lags between Y and Mo .

¹ The model assumes foreign exchange reserves high enough to allow the credit multiplier to produce its effects. Polak and Argy (*op. cit.*) construct the following model:

- (1) $Y = vMo$
- (2) $M = mY$
- (3) $\Delta Mo = B + \Delta D$
- (4) $B = X - M + K$

where v = velocity of circulation of money; ΔMo = money supply; B = balance of payments at time 0. This model, of which ours is a derivation, assumes (a) that demand for money is a function of income and inelastic with respect to the rate of interest; (b) that money supply is determined, at least in large part, by the basic balance of payments.

The long-period solutions (the method of solution is set out in Note 5 of the paper) which satisfy the equilibrium conditions of the balance of payments ($B = B_{-1}$) are the following:

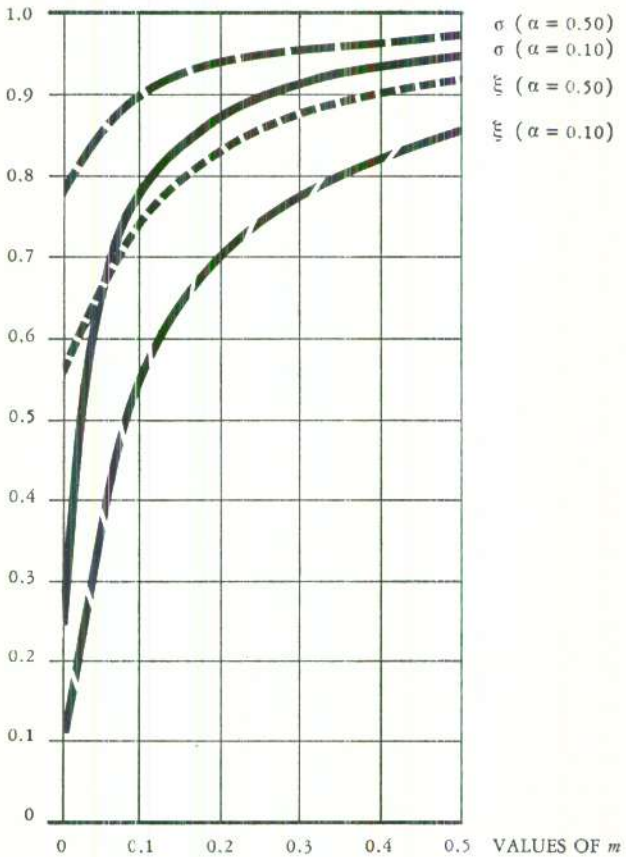
$$B = 1/mv\Delta(K + X) - \Delta D$$

$$Y = 1/m\Delta(K + X)$$

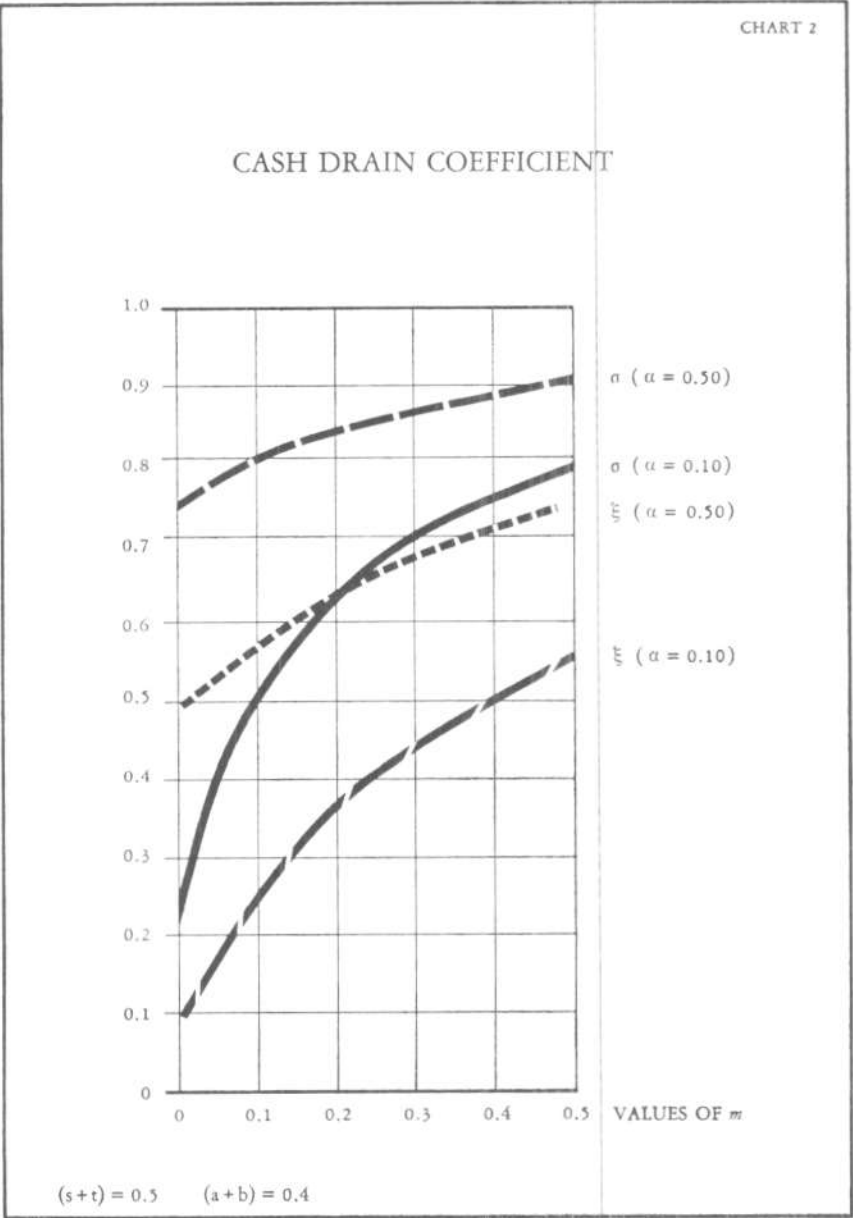
If, therefore, it is assumed that one of the model's exogenous variables undergoes a variation, the model makes it possible to determine the effects of variations in the exogenous variables K , X and D on the basic balance of payments and on the national product. If the average and the marginal propensity to import, and the average and the marginal velocity of circulation of money are both assumed equal, the coefficient mv equals M/Mo .

CHART 1

CASH DRAIN COEFFICIENT



$(s+t) = 0.1$ $(a+b) = 0.4$



of the differing effect of the coefficient α (proportion of credit spent directly on imports) depending on the value of m .

What is of fundamental importance for the purposes of the present study, however, is the influence which the coefficients of the propensity to save and of tax pressure exercise on the efficiency of the loan-deposit circuit. Comparing the values of σ in the two diagrams, it becomes clear that the smaller is the value of $(s + t)$, the more quickly the value of σ tends to rise towards unity, even when initial import levels are extremely low.

There could be no plainer evidence of the strategic importance of the public's propensity to save not only for a country's economic development, but for the liquidity management of deposit banks, in so far as this propensity has a determining influence on the efficiency of the multiplying process of liquidity reserves, on the reduction of monetary base requirements, and on the country's external reserve requirements.

In these circumstances it will clearly be the easier for banks to try to close the loan-deposit circuit, the higher is the domestic propensity to save.

As regards Kenya during the period under consideration, our previous analysis suggested that the conditions of the economic system were such that the cash drain coefficient was likely to be close to unity. If, therefore, the deposit banks were taking the long view, it was an absolute necessity for them to close the financial circuit of loans and deposits by means of the promotion and mobilization of private domestic savings and by financing those economic sectors which had the potential to reduce the country's marginal propensity to import.

Looking at the years 1964 to 1967, it would seem that the behaviour of bankers was not appropriate to this purpose. Although

they did try to broaden the range of financial assets available to savers by supporting non-bank financial intermediaries, their interest was in effect limited to hire purchase companies¹.

In any case, in spite of keen price competition non-bank financial intermediaries as a whole were at the time losing some of their market share to banks. Their deposits, compared with bank deposits, dropped from 34.36 to 23.02 per cent, and similarly their lending from 17.67 to 13.96 per cent.

This was a difficult enough situation in a setting where the supply of monetary base depended so largely on the balance of payments², and it was made worse still by the simultaneous deterioration in the public's propensity to acquire long-term financial assets³.

¹ The domestic lending of these financial intermediaries rose by 83.03, and their domestic deposits by 74.79 per cent.

² During the period considered the average propensity to import rose from 0.36 to 0.39.

³ The proportion of long-term government stock taken up by private investors dropped from 7.62 to 6.02 per cent during the period 1964 to 1967.

