BANKING DISTORTIONS

IN THE

FINANCIAL STRUCTURES

OF

POST-WAR ECONOMIES

(The Experience of Jamaica, Korea,
Trinidad and Tobago and the U.S.A)

by

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Dear Dr. Clarke,

I am pleased to inform you that the University Academic Committee at its meeting on the 14th November, 1986 approved the recommendation of the Board for Higher Degrees that you be awarded the Doctor of Philosophy degree in Economics of this University.

Please accept our congratulations.

Yours sincerely,

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"Dedicated to the people of the developing world--especially those millions who may never share these cherished academic and other opportunities, which the blood, sweat and tears of our ancestral generations have fortunately consistently afforded me in the past and in the present."

ABSTRACT

BANKING DISTORTIONS IN THE FINANCIAL
STRUCTURES OF POST-WAR ECONOMIES
(The Experience of Jamaica, Korea, Trinidad and Tobago
and the U.S.A.)

This study assesses the evolution of the banking system in the financial structures of selected economies in the post-war years 1960 through 1980. In an examination of Jamaica, Korea, Trinidad and Tobago and the United States of America, the study identifies and speaks to the emergence of a largely financial phenomenon which it calls financial asphyxiation. This phenomenon is deemed to exist when, contrary to orthodox theory and historical experience,the banking subsector (central and commercial banks) systematically at the margin, commands a larger share of the financial system, despite markedly less efficient incremental operational performance than non-banks. Thus, in time, the banking system succeeds in stifling or 'asphyxiating' the healthy evolution of the non-banking system, introducing into the financial system major distortions, that are readily transmittable to the economy at large.

A theory of financial asphyxiation formulate in the study, attributes the phenomenon to a complex of largely non-market factors and find some evidence of empirical support. In the empirical investigation,

the study identifies the occasional presence of the financial asphyxiation phenomenon in all four of the economies, especially the United States. The most overwhelming determinate factor appears to be government, whose role in and influence over the financial system of most economies appears to be not only substantial but usually highly skewed in favour of their banking systems. Another factor appears to be inflation, itself largely government driven.

In terms of the impact of the phenomenon, the costs to economic welfare in the survey countries is estimated at as much as two percent of their annual Gross National Product, often being higher. Thus, the resultant distortive economic effects are quite significant and deserving of urgent remedial responses.

With specific reference to the Caribbean economies (the Caricom region), the study concludes that policy responses for this financial sector imperfection must necessarily center around a comprehensive program of financial innovations and reforms designed to radically deepen the 'lukewarm' process of indigenization and integration now obtaining in the region's financial systems. Central to these reforms must be an increasing role for the private sector, given the sustained and significant roles of the public sector in the first post-independence phase of the indigenization and integration efforts in these economies—factors themselves partially responsible for the presence of financial asphyxiation. In this context, some specific thoughts are presented covering the years 1987-2002.

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A GLOSSARY OF SYMBOLS USED REGULARLY IN THE TEXT

A	=	Index of full asphyxiation
A^1 or A prime	=	Index of partial asphyxiation
AA^1 or AA prime	=	Index of quasi-partial asphyxiation
b	=	Concerning the banking system
D	=	Change in or increment of (before another variable)
Δ	=	Percentage increase or growth in
DEB	=	Change in weighted aggregate efficiency for banks
DNEB	=	Change in weighted aggregate efficiency for non-banks
E	=	Aggregate efficiency = SUM (E_s, E_o)
E_o	=	Operating efficiency = SUM (X_7 - X_{12})
E_s	=	Structural efficiency = SUM (X_1 - X_6)
FIR	=	Financial Interrelations Ratio (defined in study as total assets of financial institutions/GNP)
GNP	=	Gross National Product
ICP	=	Index of consumer prices
IMF	=	International Monetary Fund
KAPPA, k	=	Capital formation ratio = gross capital formation/GNP
LDC	=	Less developed country
MDC	=	More developed country
M_1	=	Narrow money supply
M_2	=	Broad money supply
MU, u	=	Monetization ratio = Narrow money supply/GNP
M	=	Mean or average

nb	=	Concerning the non-banking system
RIE	=	Relative Index of Incremental Efficiency ($\Delta E_b / \Delta E_{nb}$)
RILM	=	Relative Index of Incremental Long-term Deposits (input) Market Share ($\Delta S_b / \Delta S_{nb}$)
RIM	=	Relative Index of Incremental Asset (output) Market Share ($\Delta 6_b / \Delta 6_{nb}$)
S	=	Measure of share of market for long-term deposits/ liabilities (input)
6 or sig	=	Measure of share of market for assets (output)
S_b, S_{nb}	=	Share of banks, non-banks respectively for long-term liabilities (input)
6_b, 6_{nb}	=	Share of banks, non-banks respectively for assets (output)
TA	=	Total assets
TLTL	=	Total long-term liabilities
TD	=	Total deposits
TOE	=	Total operating expenses
X_1	=	TCAP/TLTA (total capital/total long-term assets)
X_2	=	TLTA/TLTL (total long-term assets/total long-term liabilities)
X_3	=	TA/TCOG (total assets/total claims on government)
X_4	=	TLTA/TD (total long-term assets/total deposits)
X_5	=	TFA/TSTCR (total foreign assets/total short-term credit)
X_6	=	TRA/TLTL (total reserve assets/total long-term liabilities)
X_7	=	NI/TA (net income/total assets)
X_8	=	TR/TOE (total revenues/total operating expenses)
X_9	=	NI/TSTA (net income/total short-term assets)
X_{10}	=	NI/TLTL (net income/total long-term liabilities)

X_{11}	=	TLTA/TOE (total long-term assets/total operating expenses)
X_{12}	=	NI/TRA (net income/total reserve assets)
XX,x	=	Foreign financing ratio = TNFA/GNP

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BANKING DISTORTIONS IN THE FINANCIAL STRUCTURES OF POST-WAR ECONOMIES

(The Experience of Jamaica, Korea, Trinidad and Tobago and the U.S.A.)

INTRODUCTION

A. The Problem and Its Significance

Traditional economic theory holds that in the general passage of time, there has historically been a number of consistently similar patterns in the evolution of the financial sector, structure and development of a typical economy. These include, inter alia, a rough parallel relationship between the behaviour of the financial sector and that of the economy itself, the tendency being for both to broaden and deepen over time. Theory has also suggested that in the evolutionary process of a financial sector, the banking system (central and commercial/deposit banks) has consistently emerged as a critical dimension, not only for the financial system itself, but also in general economic development.

Behaviourally, in the early stages of development the banking system has been observed to play an extremely crucial role, its growth often outstripping that of the other major segment of the financial system, the non-banking system. Thus, Raymond Goldsmith, one of the leading authorities on the structure and dynamics of the financial system of economies, has observed that "As economic development has progressed,

the share of the banking system in the assets of all financial institutions has declined, though its share in the country's total financial assets has continued to increase for a while. Simultaneously, the share of the newer types of financial institutions [non-banks essentially] has increased in relation to both the assets of all financial institutions as well as total financial assets."[1]

A casual observation of the emergence of the banking system of several economies in post-war years has generally indicated an increasingly significant role for the banking system, which at the margin, has consistently tended to acquire a larger share of financial resources. This appears to be applicable in both developed and developing economies, and thus appears to represent a radical departure from the historical trend and the body of theory.

This uncharacteristic enlarging by the banking system over time may in itself not have been a significant development had it not have been for a simultaneous 'prima facie' feature in the U.S. economy, in particular. Writing about banks and securities markets and their relative depth and efficiency in these systems, David Gill noted that "In general government policy tends to provide strong support for both banks and their deposit holders,"[2] support that is generally not available to other segments of the financial system in most

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[1]R. W. Goldsmith, Financial Structure and Development (New Haven, Conn.: Yale University Press, 1969), pp. 46-47.

[2]D. Gill, "Banks and Securities Markets: Some Thoughts on Evaluating Financial System Depth and Efficiency," Unpublished Draft Paper (Washington, D.C.: International Finance Corporation, April 1979), p. 8.

countries. He went on to point out that by "opting for reliance on bank intermediation rather than bond market development, [for instance], governments often ignore some of the social costs of bank dominance of the long-term debt market as well as some of the benefits foregone because of the absence of a bond market. The costs and benefits are not always obvious ones."[3] Further analyses in this and other studies have tended to suggest that in several countries there was an emerging tendency for this 'dominance' by the banking system to prevail, despite banks being relatively less efficient, financially and socially, than other segments of the financial system.

The emergent phenomenon, then, in post-war economies appears to be one of a systematic enlarging of the banking system, at the margi in the face of a simultaneous decline in operational efficiency by these institutions, relative to non-banks. This phenomenon appears to be inconsistent not only with the specific theories of financial structure and development, but even more fundamentally, with general economic theory, where in the perfectly competitive case, performance in the 'output' market place is expected to be directly correlated with efficiency in the 'input' markets (or consumption of factors of production).

The real significance of this bank-led distortive process cannot be underestimated. The traditional role of non-banks is principally to provide long-term finance, especially in developing countries, and thus act as the catalysts for national development. The systematic weakening

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[3]Ibid., p. 11.

of their roles by banks, therefore, has real adverse implications for social welfare over time. Excessive and uncontrolled evolution of the banking systems of economies can, by implication, not be permitted to go unchecked.

It is this phenomenon of potentially substantial distortions by the banking subsector in a financial system that gives substance to, and lies at the center, of this study.

B. Objectives of the Study

As broadly sketched above, the central thesis of this study is that there is a clear feature, process or phenomenon at work in the post-war economies of both developed and developing economies, such that, over time, the banking subsector of their financial systems continues to acquire an increasing share of the incremental growth of financial resources, despite obvious declines in banking efficiency relative to that of non-banking. This phenomenon infers significant and often increasing dominance by the banking subsector over the non-banking subsector, a feature that is likely to have substantial costs to economic welfare in any given system.

Taking a decidedly neo-classical and orthodox economic approach, the study attempts to identify this phenomenon, define its characteristics, symptoms and determinants and measure its real impact on any economy in which it is specifically established. Merely to determine the presence of this phenomenon and its costs would be necessary and useful, but certainly not sufficient, for enhancing general

financial and economic management in any country. It is further important to prescribe specific policy solutions for redressing and reversing the structural underpinnings of the process. Specific emphasis is, thus, also placed in the study on these aspects.

The general phenomenon, 'prima facie,' that is central to this thesis is specifically labelled as 'financial asphyxiation.' This infers that there is an 'asphyxiating' or 'stifling' process emerging in the financial sector of a given economy over time. The concept suggests that the banking subsector of post-war economies has been consistently stifling or asphyxiating the healthy evolution of the vital non-banking subsector for several reasons to be amplified later. Thus, the concept being developed focuses on an economy's financial system and its two constituent parts, the banking and non-banking subsectors.

In the development of the central thesis and concept of financial asphyxiation, the study attempts to recognise two major dimensions: an 'efficiency' one and a 'market-share' one. It is around the dynamic and comparative static elements of these efficiency and market-based criteria that the notion of financial asphyxiation in an economic system centers. Thus, the banking system becomes the 'asphyxiator,' while the non-banking system is the 'asphyxiated.'

The general view of the study is that the concept of financial asphyxiation is capable of application, both at the level of developed and developing economy. It is thus developed and tested in this broad framework. However, for a number of reasons, prescriptive measures are subsequently only provided for developing economies, where the process

is theoretically likely to be more intense, as is usually the case for most financial sector imperfections, such as this.

C. Selected Orthodox Dimensions and Issues

In the development, testing, evaluation and prescription of corrective approaches for the concept of financial asphyxiation, a number of critical features and issues impinging on traditional approaches to financial and economic analysis and policy readily emerge. In this context, the broadest and most immediate issues revolve around concepts of (a) financial structure and (b) 'operational' versus 'structural' efficiency in financial systems. These are by no means mutually exclusive concepts, there being a number of natural and strong links between them.

The concept of financial structure is inextricably tied up with the financial sector of an economy itself. It is a multidimensional phenomenon involving the complex of financial instruments, institutions and techniques in a financial system. It is the framework that subsequently emerges from the active and passive interaction of the process of finance and financing in an economy, which draws exclusively on its instruments, institutions/intermediaries and techniques/methodologies for its substance and significance. Thus, the financial structure at a given point in time is a product of the interactions of these constituent elements in prior periods and is, therefore, conceptually an amalgam of past operational experiences in the financial system.

Financial structure can be viewed in terms of an aggregate size, in which case it is closely approximated to the 'financial

superstructure' of an economy, the amalgam of the total financial instruments of an economy. This financial superstructure actively contrasts with the 'real infrastructure' or the processes of the real or non-financial sector of an economy. Viewed in this dimension, financial structure is then approximated in measurement by the Financial Interrelations Ratio (FIR), which relates the size of the financial system to that of the real economic system. In a typical system, the higher the FIR, the more generally developed the financial and economic structures tend to be in a typical system.

While the more well known representation of financial structure is that of 'size,' of even greater importance to this study in particular, are some of its other dimensions, such as its composition and penetration in an economy. These reflect the texture or fabric of financial structure and refer to constituent institutional structures, characteristics and relationships, such as those of the banking subsector and the non-banking subsector, the key elements in this study.

The measurement of financial structure has traditionally tended to be fairly static, and at best only 'quasi-dynamic.' This is largely because the traditional form of measurement of the financial structure of an economy and its elements is largely within an accounting framework in which there is the identity of total assets and total liabilities. These assets and liabilities merely represent financial conditions of institutions at given points in time and can be distorted or 'window dressed,' as is well-known, to satisfy end of accounting period requirements. Interperiod changes in these stock balance sheet positions are considered 'flow' approaches, designed to convey the

'dynamics' of a situation, but these are at best quasi-static or quasi-dynamic. Real dynamic aspects of financial sector activity can only be captured from the analysis of operational features (profit and loss as opposed to balance sheet situations).

Thus, with respect to the analysis of efficiency of banking and non-banking operations, special emphasis is placed on introducing operational variables. A series of six measures are introduced in twelve financial relationships, designed to measure mainly operational financial efficiency, the other six reflecting more 'structural' features. These twelve variables in turn aggregate to form a composite measure of efficiency, which play a major part in the identification and measurement of the central process of financial asphyxiation.

The introduction of these dimensions of operational efficiency within the general analysis of financial structure and development, represents a major departure from the orthodox thinking in the area and is a cornerstone of the research effort.

D. The Study Framework And Methodology

1. The Sample

The central thesis of financial asphyxiation in this study is presented and tested from the analysis of four countries--Jamaica, Korea, Trinidad and Tobago and the United States of America--over the post-war years 1960 to 1980. Three of these countries can be considered developing, although Trinidad and Tobago and Korea can equally be considered 'middle-income' developing countries. The United States experience is included to permit testing of the concept in a developed

country framework and for straight comparison with the developing country situations.

2. The Methodology

Data for the twenty-year period for banks (central and commercial) and non-banks (three types of institutions constituting the bulk of the non-bank sector) are collected for each of the four economies. These are then analyzed by a Statistical Analysis Systems Computer Program, using statistical and econometric techniques. A framework developed to test for financial asphyxiation is applied to these data. The main pillar of the framework, the efficiency variable, is determined by a system of financial efficiency measures, as already noted. Asset and long-term deposits conditions determine the output and input market-share-criteria respectively in the framework.

3. The Structure, Sequence and Principal Results of the Study

The study is divided into two parts--I and II. Part I sets out the theoretical dimensions of the process of finance, the role of money in finance, savings and the process of financial intermediation, and the nature and complexion of financial and banking structures in the financial system. It, thus, lays the concrete basis for the development of the central thesis of the study. Part II discusses the financial asphyxiation process, elaborating the theory, identification, measurement, and effects of the phenomenon, as developed in the study.

Part I contains three chapters. Chapter I first discusses the process of finance itself, stressing the role of money as an integral part of this process. It establishes that, in any economy, money serves

both as the conventional medium of exchange as well as an intrinsic financial asset.

Chapter II examines the concept and characteristics of financial structure, relating this to the key processes of financial intermediation and savings, which facilitate intermediation. While no strict causal factor is determined, it is agreed that the process of financial intermediation is key to the evolution of an economy's financial superstructure. Taking the position that finance leads, and not follows, real economic activity, the study then relates the emergence of a financial superstructure to real economic transformation. For the sample countries, the deeper and broader finance is in general, the more emergent does the process of economic development appear, although cause and effect differences cannot be categorically separated.

Chapter III then discusses the critical role of the banking system in financial structures with a clear assessment made of the former's potentially central role to economic development. It concludes that, while banking structure and evolution over time are fairly well correlated to economic growth, there is a dimension that may have been consistently overlooked in the evaluation of the contribution of the banking intermediary to economic development. This is the way in which a complex of factors merge to cause the banking system to possibly dominate the rest of the financial system. A 'prima facie' observation in the four sample economies confirms the overt signals of this feature between 1960 and 1980.

In Chapter IV a possible theory of financial asphyxiation is explored. It is hypothesized that a series of historical, institutional and general economic factors are likely to be the main determinants. These are also likely to be largely non-market factors (government, legal/regulatory and inherent), as opposed to market-factors (operations, structure and inflation). Chapter V then develops a framework for the measurement of the phenomenon, with efficiency and market-share-based criteria at its root.

In Chapter VI evidence of the presence of financial asphyxiation is empirically established from tests in eleven instances (i.e. bi-yearly) in the twenty-year period, 1960-1980, on at last two occasions in each of the four countries surveyed. In general, the more intense the process of asphyxiation observed, the lower the index of asphyxiation tends to be. Most instances, and the most intense cases of the phenomenon, are found for the United States of America. Several aspects of the empirical evidence also reveal a striking underlying fragility in the financial system of Trinidad and Tobago, despite its significant 'prima facie' expansion over the review period. While financial asphyxiation is determined to be largely a financial phenomenon, it is apparently significantly propelled by real sector weaknesses.

Chapter VII determines that the existence of the phenomenon, particularly in LDCs, is determined to result mainly from non-market factors, though these are often reinforced by market forces. The main determinants appear to be government and inflation, with the efficiency criterion tending to weigh much more heavily in the basic framework for

measuring the phenomenon than the two market-based criteria. Structural efficiency variables seem to be more determinate than operational efficiency ones. Largely government-induced inflation apparently fuels this essentially financial process of asphyxiation, whose effects are then transmitted to the real sector, both by the price level distortions themselves and general operations in the credit markets. Real sector distortions then apparently feed back to the financial sector to complete a cycle of transmission. The analysis does not reveal any strong predictive powers, mainly on account of scarcity of estimates from the regression output.

Chapter VIII assesses the financial and economic costs of financial asphyxiation and finds that the sustained presence of financial asphyxiation can be quite costly to a country in economic welfare terms, often averaging as much as 1-4% of GNP per year. Economic costs arise essentially as a result of a reduction in financial sector competition, giving rise to increasing concentration by the banking subsector. Direct and opportunity costs also arise from reduced levels of aggregate investment financing and increasing repression in general in the financial system. Financial costs, though not specifically measured, are found to result from increased concentration in the financial sector on account of financial asphyxiation, in turn inducing diseconomies of scale in the operations of financial institutions and thus lower profitability performances.

Chapter IX, the last in the study, argues that the major financial policy decisions to redress financial distortions arising from financial asphyxiation in LDCs, hinge mainly on the reversal of the

dualistic and repressed nature of financial structures in these economies. A structured, comprehensive program of financial innovations and reforms designed to deepen whatever process of financial indigenization and integration already obtain in and affect a given economy, appear to be a necessary and, most likely, sufficient step in restoring balance in the financial structure of such an economy. In this process, a more than usual developmental role devolves on national monetary authorities, working in close coordination with existing and new regional integration bodies, both of a financial and non-financial nature.

As is the nature of economic structural adjustment in general, the process of financial de-asphyxiation and restructuring has necessarily to be a long-term one, involving solid Government and private sector symbiosis and commitment. In the context of the present day CARICOM-country environment, this is unlikely to become a real reality before the start of the twenty-first century. Steady positive progress in the transformation process can, however, be made over time with consistent political and technical will.

PART I. ELEMENTS AND DYNAMICS OF THE FINANCE AND BANKING PROCESSES

CHAPTER I

THE PROCESS OF FINANCE AND THE ROLE OF MONEY

The initial chapter of this study examines the process of finance, as it relates to economic activity and assesses the role of money within this process. This largely conceptual analysis is relevant and necessary at the outset in view of the central role the process of finance plays in an economy, it being the back bone of the financial sector and, by implication, financial structure. Money, apart from being a financial asset itself, has historically been the most tangible measure and expression of financial activity, both at the 'micro' (firm) level and, more relevantly, at the 'macro' (national) level. Failure, therefore, to appreciate the significance of money and money-related dimensions of the finance process in any study of this nature, is to misconstrue the real underpinnings of the financial sector and structure of an economy and, by implication, not recognize an important motor of the very process of economic development.

This chapter is divided into four main sections: Sections A, B, C and D. Section A first defines finance as it relates to the concept of the financial sector in the typical market economy. Section B then surveys dimensions of the finance process, identifying a number of features and characteristics that are likely to arise from economy to economy. Section C examines aspects of the theory of money as it ultimately affects the finance process and economic activity at large.

The chapter concludes by attempting in Section D to establish the consistent link between, and interdependence of, the financial and real sectors of an economy. The basis is, thus, set at that stage for further development of the critical conceptual elements underlying the central thesis of the study--the existence often of unbalanced development in the financial structure of economies, arising from the dominance of one financial subsector by another.

In an effort not to do violence to, but rather ascribe significance to the flow of the theoretical issues raised in this chapter, little reference is made to empirical situations. The validity of these theoretical positions and their relevance and applicability to both developed (MDCs) and less developed economies (LDCs) will be challenged and tested in later chapters, as the analysis in the study evolves.

A. Elements of the Finance Process

1. A Framework of the Financial Sector

Conceptually, the financial sector in any economy can be viewed as an amalgam of its financial institutions, financial instruments and financial techniques. These three variables in aggregation can be alternatively viewed as embodying the "financial structure" of an

economy.[1] More precisely, financial structure relates to the types and characteristics of financial instruments and institution in existence.

Financial institutions have been defined by Raymond Goldsmith, a pioneer in the field of financial structure and development, as entities "characterized by the fact that financial instruments constitute their main assets habitually, not only occasionally, and that their activities are concentrated on, and hence their income is mainly derived from, the holding of and transactions in, financial instruments.[2] Financial instruments can be considered "evidences of claims" against, or of ownership by, one economic unit relative to another in the financial system. At the 'macro' level, these aggregate claims can be viewed as the "financial superstructure" of an economy. In a sense, financial institutions (or as will be more frequently used later, financial intermediaries), and financial instruments (because of their relatively easy susceptibility to measurement and valuation) can define the structure and magnitude of the financial system. By contrast, financial techniques and, by extension, technology can more appropriately define the system's level of sophistication or development, although these do also have a bearing on financial structure itself.

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[1]The general view tends to be that only two variables--financial institutions and instruments-comprise the financial system, or ultimately financial structure of an economy. This paper takes the view, however, that a more dynamic element of the financial market process is brought out in including financial techniques in the definition, since it is the skillful application or not of these techniques that gives any significance to the dynamics of the market itself. The question of financial structure is elaborated in Chapter II.

[2]R. W. Goldsmith, Financial Structure and Development, p. 14.

In reality, financial institutions divide into two broad types: monetary and non-monetary (or bank and non-bank). Monetary intermediaries administer the payments mechanism and are the main creators of monetary liabilities in an economic system. In broad terms, they differ from non-monetary intermediaries to the extent that the latter generally more readily facilitate the administration of the payments mechanism, rather than actually administering it themselves. In addition, non-monetary intermediaries issue and create claims that are essentially different in character (largely in terms of their relative maturity spectra and degrees of liquidity) from those of the monetary intermediaries.[3]

In most economies, monetary or bank financial intermediaries (BFIs) can be decomposed into two groups: (a) the central bank, and (b) the commercial banks (or other such related institutions). Non-bank intermediaries (NFIs) include insurance companies, building societies, credit unions, pension funds, savings and loan associations and mutual funds,[4] which tend to be the major types in this category. Financial institutions can be of the first degree or of the second degree. The basic distinction is that the latter tend to receive from and/or avail virtually all their resources to other financial institutions, e.g. credit cooperatives and savings banks, unlike the former in which the

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[3] The rapidly reducing distinction these days between these two types of intermediaries and their issued liabilities will be explored in greater detail in the next chapter.

[4] Chapters II and IV examine in greater depth these types of intermediaries and their relative sizes and significance in economies, as defined largely by their holdings of financial assets.

non-financial sector plays an important part both in their resource mobilization and deployment operations.

Financial instruments tend to vary in character, significance and value, depending on the specific institution that issues them. They divide broadly into two types: (a) equities, and (b) debt. Equities represent claims by the holder on the ownership of assets of the intermediary, as opposed to debt instruments which confer prior contractual and discrete rights to share in usually specific portions of an institution's income, as distinct from its net profitability is the case of ownership. The value of a given type of financial instrument to a holder is strongly linked to its liquidity, marketability, potential for profitability, safety and security features, several of which qualities tend to relate to the character and status of the issuer itself. The most common type of equity security relates to shares of stock issued by institutions, on which the payment of dividend represents the principal, and often only source, of financial reward to the holder (during the tenure of the security). Debt instruments include money (the most well known), bonds, debentures, treasury bills, promissory notes, bank deposits and all forms of credit and insurance contracts. Issuers of financial instruments can be broken down into three main types: business entities, governments, and households, apart from the financial sector itself. Business entities can be further subdivided into financial and non-financial categories.

Financial techniques are less easily definable and quantifiable than the institutions and instruments which employ them and give substance to their existence respectively. Financial techniques can vary

with the degree of sectoral sophistication and technological evolution. In a sense, financial techniques may also be viewed as the operational devices or innovations utilized to concretize financial policy decisions. Financial techniques can be expansionary or contractionary, inflationary or deflationary, innovative or adaptive, aggressive or defensive, revolutionary or conservative, mechanical-related or manual-related. The specific techniques and profiles that a given institution chooses to pursue in effecting financial transactions will ultimately be manifested in the intermediary's financial condition at the end of a given period. Thus, the final structure of an intermediary's assets and liabilities will largely be reflective of the interaction between acquired financial instruments and the specific financial techniques it employs over a given time frame.

In a typical economy, the financial sector can be viewed as representing two broad types of financial sub-markets. The first, traditionally for short-term, liquid assets called the "money market," is dominated by monetary or quasi-monetary assets (such as money itself, treasury bills, short-term certificates of deposit, etc.) The other for medium- and long-term types of investments (such as bonds, debentures, stocks and shares) is called the "capital market." While money-markets tend to exist, even in the most rudimentary economies, capital markets are more a feature of less undeveloped economies.

Because the principal function of the financial sector is to channel finance between deficit and surplus units in an economy, the financial sector is inevitably closely linked to the real sector of the economy. The framework of the financial sector is, therefore, best

depicted in relation to real economic variables and parameters. It will be shown in later sections that there is a strong interactive transmissionary process involving the financial sector or more definitively, the monetary sector and real economic activity. This relationship is captured in a rudimentary economy, without financial intermediation (discussed in Chapter II), by a simple neo-Keynesian system of equations, as follows:

Given an output market (real sector) in which:

$C = C(i, Y, W)$ -- real demand for consumption ..... (1)

$I = I(i, Y, K)$ -- real demand for investment ..... (2)

$Y = C + I$ -- aggregate supply = aggregate demand ..... (3)

$W = \bar{M} + K$ -- composition of real wealth ..... (4)

and in which:

i = the interest rate prevailing

$\bar{M}$ = nominal money stock exogenously determined (outside money)

Y = output

K = the real stock of capital,

then a rudimentary financial sector, without financial intermediation, can be defined as consisting of:

(a) a money market, with only one monetary asset, 'money,' in which:

$M_d = L\ (Y,\ i,\ W)$ -- demand for money ..... (5)

$M_s = \bar{M}$ -- supply of money ..... (6)

$M_d = M_s$ -- money market equilibrium ..... (7)

and (b) a capital market with only long-term debt securities (bonds) and equity securities, with its stream of income (yields) 'r':

$B_d = B\ (Y,\ i,\ r,\ W)$ -- demand for bonds ..... (8)

$B_s = S\ (Y,\ i,\ r)$ -- supply of bonds ..... (9)

$B_d = B_s$ -- capital market equilibrium ..... (10)

$E_d = E\ (Y,\ i,\ r,\ W)$ -- demand for equity security ..... (11)

$E_s = H\ (Y,\ i,\ r)$ -- supply of equity security ..... (12)

$E_d = E_s$ -- equilibrium in the equity market .. (13)

It is thus evident that the main links between the financial and real sectors of the economy are through output, or alternatively, aggregate expenditure and interest rates. These relationships will be amplified in the last section of this chapter.

B. Some Determinants and Characteristics of the Process of Finance

As was earlier noted, the financial superstructure of an economy represents an amalgam of total financial sector claims on both financial subsectors themselves[5] and on the real sector or infrastructure of the economy. In a relatively developed economy, the financial superstructure tends to be larger than its real infrastructure.[6] Goldsmith[7] has pointed out that the financial superstructure of an economy tends to vary roughly with the economy's level of development. Studies of the developed countries indicate that the size of the financial superstructure has increased relative to that of the infrastructure from about two-thirds to about one-and-one-fourth over an 80-year period or so, if the duplicative layer of intra-sectoral financial is included and if GNP is used as the measure of the real sector. The relationship will be smaller if national wealth is used in lieu of GNP. The actual size of an economy's financial superstructure at a given point in time is influenced by several factors, including the nature, structure and size

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[5]There is included in the Goldsmith definition of the "financial superstructure" a "layer" of finance representing transactions between subsectors of the financial sector itself, e.g. deposits by an insurance company in a commercial bank, which, in effect, represent an intra-sectoral transfer of resources. Goldsmith identifies the relationship between the volume of such transactions (issues) to that of total issues by the financial sector to non-financial intermediaries, as the "layering" ratio.

[6]One of the main reasons for this is related to the explanation in footnote 3 above. Another relates to nominal changes in the valuation of financial assets, arising from price level appreciation.

[7]See R. W. Goldsmith, Financial Structure and Development, especially Chapter 9.

of financial and non-financial institutions, as well as their instruments issued and techniques employed. The specific nature of the major determinants of the size, structure and characteristics of institutions and instruments of a typical financial sector--hence its overall structure in large measure--will be examined in greater depth in the next chapter.

With respect to techniques, several approaches have been used from time to time, and have in themselves been determinate over the final structure of an economy's financial sector at a specific point. Finance can be directly channelled, where the instruments issued are "primary"[8] and not "secondary," and in which these primary securities are sold, without intermediation, directly to ultimate lenders. Alternatively, finance can be indirectly channelled in the sense that there is an intermediating party between ultimate borrowers, issuing the securities and ultimate lenders buying the securities. Indirect finance induces the issue of indirect securities such as bank deposits, savings and loan shares issued by financial intermediaries, in return for claims against them by surplus economic units. Thus, finance is also likely to arise as a result of the purchase of primary securities by any type of financial intermediary.

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[8]It should be observed, however, that "primary securities" do not necessarily have to be involved in direct financing. They can be sold to intermediaries and facilitate intermediation, through the issue of indirect monetary (money or demand deposits) or indirect non-monetary securities (e.g., time and savings deposits). These latter types of 'non-primary' securities, on the other hand, evidently cannot be classified as direct financing.

Direct or indirect finance cannot be obtained when financing is internal to an entity, financial or non-financial. Internal finance is finance arising from the generation of surplus funds from operations, including those freed by the depreciation process and net profits. External finance relates to the raising of funds outside of the entity itself, through the issue of either debt or equity instruments. In terms of the economy as a whole, indigenous finance is finance from within the economy (i.e., domestic finance), while foreign finance involves the use of the foreign sector in the process.

Finance can be narrow in that the financial sector's array of financial instruments is limited and confined to those issued by only a few intermediaries. Alternatively, it can be broad in that there is a full array of financial instruments and issues represented in the financial structure of the economy. Finance may be shallow, especially in the context of one subsector in the financial system dominating another subsector (or in terminology of the main thesis of this study, in which one subsector "asphyxiates" the growth of another). In this case, the array of financial instruments in the sector as a whole will be largely limited to that of the "asphyxiating" or "dominating" subsector.

Narrow finance does not necessarily infer shallow finance, which can be interpreted most appropriately as the absence of deep finance. According to Edward Shaw,[9] deep finance can be closely associated with liberalized finance. Shallow finance is synonymous with repressed

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[9] E. S. Shaw, Financial Deepening in Economic Development (New York: Oxford University Press, 1973).

finance. He further suggests that the symptoms of financial deepening or financial liberalization can be manifested through numerous indicators, including financial stock, flow and price variables. Specifically, some of these indicators include: (a) growing international reserves, induced by better internal domestic pricing mechanisms and reduced foreign financing; (b) increasing domestic liquidity; (c) a rapidly expanding financial superstructure, not dilated by inflation, but by real growth in financial activity relative to positive changes in income and national wealth; and (d) improved access to financial markets, accompanied by broader finance. Signals of shallow or repressed finance will include: (a) relatively heavy dependence on government fiscal policy; (b) flight of domestic capital; (c) dominance of or asphyxiation by the non-banking system by the banking system, which "behaves as a high cost, high profit oligopoly;"[10] (d) non-specialization of financial functions by financial intermediaries; and (e) fragmented financial and output markets in the economy. Markets are fragmented in situations where "firms and households are so isolated that they face different effective prices for land, labor, capital and produced commodities and do not have access to the same technologies."[11] Above all, Shaw argues that:

> ...financial prices are perhaps the least ambiguous evidence [of the presence of shallow or deep finance]. Where finance is shallow, demand for financial assets is repressed by low real rates of interest and supply of primary securities on these terms is repressed by credit rationing. Even the curb market is subject to usury laws and regulations. The financial markets

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[10] Ibid., p. 9.

[11] R. I. McKinnon, Money and Capital in Economic Development (Washington, D. C.: The Brookings Institution, 1973), p. 5.

> are required to trade at interest rates that overvalue the future in terms of the present ... shallow finance is commonly associated with overvaluation of domestic money on the official markets for spot foreign exchange.[12]

Shallow finance has a natural complement in inflationary or deficit finance, as the economy's productive capacity falls short of the aggregate demand bottled up in the system and as the economy's heavy dependence on the foreign sector mainly for imports and borrowing, distorts an already malaligned price system and level. When the economy becomes overheated, then deflationary finance, accompanied by high interest rates, falling stock market indicators, suppressed aggregate demand and possibly resulting recessionary conditions, ultimately become necessary. Inflationary finance represents the use of fiscal or monetary aggregates to facilitate budgetary balance and to attain projected levels of real sector activity. Deflationary finance defines a converse context.

These, therefore, encapsulate the main elements, determinants and interrelationships of the process in a typical economy. This process is inherently dynamic, closely linked as it is to real sector activity. As already noted, one of the critical links in this real/financial sector paradigm is the financial asset "money" itself. The absence of money from the finance process radically alters the entire structure and complexion of an economy's financial sector and, as is agreed in this study, impairs its capacity for promoting self-sustained economic growth over time. The next section, thus, attempts

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[12]E. S. Shaw, Financial Deepening in Economic Development, pp. 8-9.

to examine aspects of money in greater detail, especially its significance to financial and economic activity.

C. Money--The Unique Financial Asset

1. Definition and Concepts of Money

Money is undoubtedly the single oldest and best known type of financial asset, acquiring several forms and uses over time. While historically there have been several theories about its origins, concept and use, in modern day context money is generally considered an asset capable of satisfying four principal functions. These relate to its value as (a) a medium of exchange; (b) a store of value; (c) a unit of account and (d) a means of deferred payments. These broad-based and key functions have accorded to money a unique role in the financial and monetary processes, which as will be shown in the next several sections have a significant impact on real economic activity. This uniqueness ascribed to money is captured by Newlyn,[13] who observes that the outstanding feature of money is that its use does not reduce its volume nor disturb the prevailing balance within the financial market, something that underscores the uncharacteristic "indestructibility" of the asset. Money can be defined narrowly or broadly. In its narrowest form (M_1), it is considered as currency and non-interest bearing deposits (demand deposits), while a broader definition (M_2) includes other types of bank deposits such as savings and time. Thus,

$$M_1 = C + D_d \quad \ldots\ldots \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (14)$$

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[13] W. T. Newlyn, Theory of Money, 2d ed. (Oxford: Clarendon Press, 1971).

and $M_2 = C + D_d + D_s + D_t$ ..... (15)

where C = currency and

D_d, D_s and D_t = demand, savings and time deposits, respectively.

Not all the definitions of money have, however, been confined to its expression in terms of currency and bank deposits. Polak[14] has defined money alternatively, not in terms of liabilities, but in terms of assets. He argues that money can be defined as:

MO = NFA + DCE ..... (16)

where NFA is the net foreign assets or reserves of the economy and DCE is the net domestic credit of the banking system at any given point in time.

As in the case of finance, money has been historically expressed in several forms and types in the body of literature, connoting specific purposes and situations. Karly Polanyi has, for example, spoken about "impersonal all-purpose moneys" in modern societies, which he contrasts to moneys in primitive societies which were assumed to be "special-purpose moneys."[15] Frederick Pryor has noted that primitive moneys were limited in the "functions they fulfill, the extent to which they facilitate exchange, and the degree to which they possess the

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[14] J. J. Polak, "Monetary Analysis of Income Formation and Payments," IMF Staff Papers, Vol. 6, No. I (Nov. 1957).

[15] K. Polyani, "The Semantics of Money Uses," in Primitive, Archaic and Modern Economies: Essays of K. Polyani, edited by G. Dalton (Garden City; N. Y. Anchor Books, 1968).

'necessary' physical characteristics of money."[16] Distinction has also been made between commercial money and non-commercial money, the basic difference being the ability or not of the asset to be used for facilitating exchange. External money, as opposed to internal money, has been used to reflect differences in the financing of foreign as opposed to domestic trade respectively. Active money has been interpreted as "a necessary and sufficient means for obtaining goods and services,"[17] while passive money "often accompanies certain transactions but does not have these strong properties."[18]

Money, like all other financial assets, however, has no real significance unless put to use or is demanded for use. Largely because of its unique properties, the demand for no other asset has had such profound repercussions on the holdings of other financial assets and on real economic activity as that for money.

2. The Demand for Money

Classical economists argued that the demand for money revolved around the need for satisfying transactions and precautionary requirements of societies. In their view, money balances would be held largely for meeting predictable cash requirements for transacting day-to-day business, driven by customary and institutional factors, and for meeting unpredictable contingencies. They suggested that the actual size of the

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[16]See F. L. Pryor, "The Origins of Money," Journal of Money, Credit and Banking (August 1977): p. 392.

[17]Ibid., p. 394.

[18]Ibid., p. 394.

transactions demand for money would vary with an individual's level of income and the rate at which funds are actively expended, i.e., its velocity of turnover. In the classical system, the demand for money is derived from the well-known quantity equation of money in which MV = PY and can be represented as:

$$M_d = kY \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (17)$$

where the real demand for money (M_d) is related to the level of income, and where k is considered a "Marshallian ratio" representing the reciprocal of the money velocity or, in effect, the average time period money is retained between transactions.

Later, Lord Keynes, in his "General Theory of Employment, Interest and Money" work significantly modified this classical approach on the grounds that the demand for money must be viewed not only in terms of transactions and precautionary motives, but more crucially as also reflecting the need for holding "speculative" balances for "liquidity preference" purposes. In his reformulation, the aggregate demand for money is not only determined by the level of income, as under the classical system, but also varies inversely with the level of interest rates.[19] An individual's preference for liquidity or money balances varies inversely with interest rate movements on alternative financial

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[19] Of course, it is well known that the inverse relationship between money demand and the interest rate under the speculative demand for money is not infinite and that there is a "liquidity trap" position that can be attained at a critically low level of interest rate, beyond which no further increase in the money supply will increase the level of demand for money.

assets, conceptually labelled 'bonds.' In Keynesian terms, therefore, the demand for money is more appropriately reflected as:

$$M_d = kY + L(i) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (18)$$

where the real demand for money is a function of the level of income (Y), and the rate of interest (i), k being the proportion of money balances relative to the total volume of transactions.

Post-Keynesian economists have, however, modified the 'pure' Keynesian version of the money demand function, arguing that the interest rate influence on the demand function was not only critical to the speculative aspect of the demand, but also to the transactions and precautionary aspects. They, thus, reformulated the equation to:

$$M_d = L_1 (i, Y) + L_2 (i) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (19)$$

where L_1 refers to transactions and precautionary demands and L_2 to speculative demands. Equation 18 may, in fact, be also appropriately compressed to:

$$M_d = L (i, y) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (20)$$

as an alternative approach to the demand function for money.

While accepting the basic lines of argument of the classical, Keynesian and neo-Keynesian schools of thought, neo-classical scholars have taken exception to the Keynesian/neo-Keynesian formulations of the demand for money on four major grounds. These relate to:

> ...the separation of the demand into a transactions demand dependent on income and a liquidity-preference demand dependent on the rate of interest; the emphasis on the speculative element in liquidity preference; the neglect of wealth as a determinant of liquidity preference; and the aggregation of all assets other than money into bonds implicit in the use of a single (long-term) rate of interest.[20]

As a result, several new approaches to money demand theory were presented, from which two broad positions stand out. These are: (a) the portfolio balance or "wealth" approach, and (b) the capital or "inventory theoretic" approach. Under the portfolio balance approach, wealth is explicitly introduced as a variable in the money demand function. This approach accepts that income and interest rate shifts are significant to shifts in demand for money balances, but adds that such shifts take place only if people become wealthier. Proponents of this position, among the major of whom was Tobin,[21] argue that increments in wealth induce portfolio redistribution. This redistribution in turn affects money demand, to the extent that money represents one of the assets in one's portfolio, which has to be constantly kept in balance. In this alternative framework, the money demand function becomes:

$$M_d = L\ (i,\ Y,\ K) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (21)$$

with K representing the capital stock or carrying capacity of a society.

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[20] H. G. Johnson, Selected Essays in Monetary Economics (London: George Allen and Unwin, 1978), p. 27.

[21] See J. Tobin, "A Dynamic Aggregative Model," Journal of Political Economy, 63 (April 1955): pp. 103-115.

Under the capital or inventory theoretic approach, capital theory is used to explain the transactions demand function, in which money is viewed as a kind of working capital asset, in effect, inventory serving identical functions as in normal production and consumption activities. This approach suggests that, in the same way as there is optimisation behaviour with respect to inventories of goods, so is there optimisation behaviour with respect to the inventory of money.

Other notable approaches to the study of the demand for money have focused on the interpretation of the combination of these two main later modifications of earlier formulations. One such reformulation was by Milton Friedman,[22] who applied capital theory to monetary theory by in effect viewing income as the "yield on capital" and capital as the "present value" of income itself. Johnson considers this development by Friedman as "probably the most important development in monetary theory since Keynes' "General Theory," and argues that "its theoretical significance lies in the conceptual integration of wealth and income as influences on behaviour."[23] Above all, in presenting this new formulation, Friedman's interpretation of income represented a major departure from the traditional view of income, which up to then was viewed only as the present stream of returns from the employment of productive factors. Friedman saw income as being not only the present stream of returns, but as including also past streams of services, thus

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[22] M. Friedman, "The Quantity Theory of Money--A Restatement," in M. Friedman, ed., Studies in the Quantity Theory of Money (Chicago: University of Chicago Press, 1956), pps. 3-21.

[23] H. Johnson, Selected Essays in Monetary Economies, p. 33.

the concept of "permanent income." Thus, in Friedman's approach, the demand function for money is:

$$M_d = PL\left(\frac{Y}{P}, i\right) \quad \text{..... (22)}$$

where P = the price level

$\frac{Y}{P}$ = real permanent income

i = the rate of interest on alternative assets.

In essence, these represent the major approaches over time to the demand for money. While there has recently been increasing preoccupation with the "rational expectations" approach to this issue and increased focus on 'micro-level' analysis (particularly on transactions and information costs as crucial factors in macro-economic monetary demand analysis), there has really been no fundamental departure from these positions in recent times.

3. The Supply of Money and Monetary Policy

Both classical and Keynesian economists have treated the supply of money as fixed and exogenously determined. Keynes himself assumed the Central Bank to be in control of the money supply and shaped his theoretical monetary analysis in the context of a given stock of money. While present day scholars have moved away from the notion of a fixed money supply, much controversy still remains over the aggregates affecting money supply and monetary policy. Some scholars argue that adjustments in the "high powered," "base" money consisting of cash in the hands of the public and bank reserves, tend to have the greatest

influence on the total money supply, defined by Gurley and Shaw as change in the money stock. In a way, this view is linked to the traditional money multiplier concept, involving the two variables of the public's holdings of currency and the reserve requirements of commercial banks in particular.

Over time, the issue of the money multiplier assumed several complexions, dividing at one point into one of a "cash ratio," as distinct from a "liquid assets" commercial bank deposit multiplier issue. The commercial bank liquid assets multiplier approach has, by far, received greater attention among scholars than the "cash ratio" multiplier approach. One of the earlier advocates of the liquid-asset multiplier approach has been Richard Sayers,[24] who argued that this multiplier was indeed more representative of the bank-deposit creation process. He dismissed the "cash ratio" approach as irrelevant in the context of the United Kingdom and pointed out that money, treasury bills and other quasi-monetary assets, as well as currency, represented the essence of a bank's reserves, and that there was virtually full substitutability between the other named quasi-monetary assets and actual currency itself. He suggested that for the U.K., the value of the money multiplier was about three-and-one-third. Sayers' arguments were, however, later strongly challenged by several specialists, including Harry Johnson and, in particular, R. L. Crouch.[25] The basic objection

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[24] R. Sayers, "The Determination of the Volume of Bank Deposits," Banco Nazionale dei Lavoro Quarterly Review (December 1955).

[25] See R. L. Crouch, "A Re-examination of Open Market Operations," Oxford Economic Papers (July 1963).

raised by these economists was that totally discarding the cash ratio bank deposit multiplier was not analytically appropriate.

Subsequent analysis of the money supply and its determinants and impact centered on the introduction of non-bank financial intermediaries into the model. Proponents argued that it was not significant to consider multipliers only in terms of BFIs, but that given their likely effectiveness and influence on the deposit creation process also, NFIs were to be appropriately included in such analyses. Thus, some analysts have linked the bank and non-bank intermediary multipliers into the analytical process. Others such as Don Patinkin[26] have, however, challenged this position by alluding to the relatively "light" treatment provided regulatory authorities in developed economies to BFIs, compared with NFIs. Patinkin argued that this approach by authorities was inequitable, given the only minor functional differences in the operations of banks and non-banks. Failure to recognize these real similarities, he contended, did grave violence to the potency and effectiveness of monetary policy and control.

As in the case of the demand theory for money, monetarists have recently applied capital theory to the analysis of the money supply. In this approach, attempts have been made to relate money supply behavior to the central banks, commercial bank reserve requirements and public behavior, in which the public's holding of assets can be divided into currency and deposits. Further, the banks' holdings of reserves are

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[26]See D. Patinkin, "Financial Intermediaries and the Logical Structure of Monetary Theory," American Economic Review, Vol. 61 (March 1961).

viewed as a stock of inventory, subject to varying levels of cash holdings, adjustable to depositors' demand.

Consistent with the demand for money scenario, recent trends in money supply analysis have emphasized approaches of rational expectations, highlighting their likely impact on monetary policy and the ability of the authorities to control the money supply. In the United States, in particular, in the wake of an alleged failure of Keynesian demand economics, the recent thrust has been more towards "supply side" economics, a factor likely to indirectly induce focus on the rational expectations type of analysis.

Thus, while the theoretical analysis summarized above underscore, inter alia, the relationship between money as a financial asset and that of other financial assets, the real significance of money in the context of financial sector analysis, and of this study, hinges on the role of money in real sector spending and in the income determination process. The next subsection presents a prelude to this money transmission process. This analysis is significant to the extent that it both raises questions and provides confirmation as to the validity of the claims by monetarists, in particular, that money matters in economic development, a position generally endorsed by this study.

4. Monetary "Neutrality" and "Inside"/"Outside" Money

One of the fundamental issues raised in both static and growth models of monetary analysis, is that of the "neutrality" of money. In comparative static terms, neutrality of money infers that a change in the rate of growth of the quantity of money will not impact on real

sector economic activity, but will work itself out instead through adjustment in prices. In this case, money will be merely a "veil." In the context of growth analysis, neutrality of money infers that:

> ...a difference in the rate of change of the money supply maintained by the monetary authority would make no difference to the speed with which the economy approaches its equilibrium growth path, and, most fundamentally, that a difference in the rate of change of the money supply would make no difference to the output and consumption per head characteristics of the equilibrium growth path.[27]

One of the major contributions in this area has been that of John Gurley and Edward Shaw,[28] who have not only elucidated some of the issues raised in Don Patinkin's earlier "real balance effect" analysis, but have also argued that the necessary expansion of financial intermediaries in the growth process does in fact have important implications for the development and effectiveness of monetary policy and the definition of a true role for money. In a monumental work on the theoretical aspects of finance, the authors first establish, in neo-classical conditions, the neutrality of money in the context of what they call "rudimentary finance," without financial intermediation, where money is the only financial asset and where there is no 'money' illusion. In this context, the authors consider money as of the 'outside' variety, which they define as fiat money issued by the Government "in payment for governmental purchases of goods and services or in transfer payments."[29] In a more sophisticated economic setting, the business sector, one of

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[27] H. Johnson, Selected Essays in Monetary Economics, p. 163.

[28] J. Gurley and E. Shaw, Money in a Theory of Finance (Washington, D. C.: The Brookings Institute, 1960).

[29] Ibid., p. 73.

four available, is then allowed to issue primary securities in exchange for money. This creates "inside" money, which represents money backed by the debt of the private sector, as distinct from "outside" or "fiat" money. In this situation, where both "outside" and "inside" money obtain, the authors argue that changes in net asset and wealth compositions induced by changes in the demand/supply situation for either type of money, will have repercussions on spending patterns, affecting aggregate demand in the real sector. Money in this case is no longer 'neutral,' but does in fact matter.

The real significance of Gurley and Shaw's model lies in the fact that to the extent that holdings of monetary assets of modern financial institutions are largely issues of the private sector, and that in effect the typical monetary system comprises a mix of outside and inside money, to that extent will monetary policy normally be expected to have a significant impact on aggregate economic management. Further, because of the central role the financial intermediary process plays in coordinating monetary policy (as will be elaborated in Chapter II), careful monitoring of the role and evolution of all types of such intermediaries must be a "sine qua non" for the pursuit of appropriate stabilization and growth policies in the economy. Thus, the implication of this analysis for meaningful financial/real sector interaction becomes stronger, as the last section of this chapter amplifies.

D. Money and the Financial/Real Sector Linkage

As earlier noted, money represents the critical link in the financial/real sector interactive process. In the typical modern-day developed or developing economy, money does matter in the process of

economic activity, as a result of the transmission of its influence on real sector economic behavior, through several "channels." "Monetarists argue that changes in the stock of money are a primary determinant of changes in total spending,"[30] and that this represents the basis of their claim that money cannot be a veil or 'neutral.' Non-monetarists, on the other hand, contend that "although they may readily admit that money matters, [they] also regard changes in the various components of aggregate demand as having an important influence on the level of economic activity; they, therefore place as much emphasis on fiscal policy as on monetary controls."[31] While the debate on this point appears continuously alive, there is virtually full unanimity among both schools of thought that there are at least six acceptable avenues through which the influence of money on real economic activity can be traced.[32] These are through (a) the interest rate or cost of capital; (b) wealth; (c) credit rationing; (d) portfolio balance; (e) the financial constraint itself and (f) inflation/price expectations. Some of these avenues are more direct than others, but it is generally agreed that they are all possible transmitters of repercussions from the monetary or financial sector into the real sector of an economy.

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[30] Ibid., p. 1.

[31] Y. C. Park, "Some Current Issues on the Transmission Process of Monetary Policy," IMF Staff Papers, Vol. 19, No. 1 (March 1972): p. 1.

[32] For an excellent survey article on this area, see Y. C. Park's article referenced in footnote 31 above.

1. The Cost-of-Capital or Interest Rate

Traditional Keynesian income/expenditure analysis postulates that the interest rate--usually related solely to long-term government bonds--is the vehicle through which monetary policy is conducted. It is argued that this unique rate brings the money market into equilibrium and that, within the well known Hicksian IS-LM framework, adjustments in this rate will impact on the real sector through repercussion on investment demand, with multiplicative effects on income, ultimately. The significance of this link is well established in the literature, though post-Keynesian economists have been long in their criticisms of the 'uniqueness' of the rate of interest in the market, as well as the general 'short-term' and static nature of the analysis itself.

2. The Wealth Effect

Protagonists of this channel argue that the Pigovian breakthrough in the use of wealth to refute the well established Keynesian 'underemployment equilibrium position,' illustrated a fundamentally direct link between the monetary and real sectors. Along with Pigou,[33] Haberler,[34] and Patinkin's[35] 'real balance effect,' analyses have recast money as a form of net wealth and, thus, another form of asset worthy of substitution depending on circumstances. By classifying money as

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[33] See A. C. Pigou, "Economic Progress in a Stable Environment," Economica, New Series, Vol. 14 (1947): pp. 180-88.

[34] See G. Haberler, Prosperity and Depression, 1st ed. (Geneva: League of Nations, 1940).

[35] See D. Patinkin, "Price Flexibility and Full Employment," in Readings in Monetary Theory, ed. by F. A. Lutz and L. W. Mints (Princeton: Princeton University Press, 1951), pp. 252-83.

wealth, a change in the demand or supply of money, necessarily means a change in the relative composition of the other components of wealth, with implied changes in spending. This change in spending in effect constitutes the reaction of the real sector to variation in the monetary sector. Although there is by no means unanimity in the literature as to what kind of 'money' can be considered as wealth (ranging from Johnson's preference for 'outside' money, Gurley and Shaw's 'inside' money, to Pesek and Saving's[36] commercial bank demand deposits), it is generally accepted that ultimately the central issue is the real impact a change in wealth is expected to have on income itself. The theoretical basis of this approach, thus, lies in the analytical approach to the money demand function of Friedman and others.

3. Credit Rationing

The credit rationing channel challenges the Keynesian single rate of interest position and the underlying assumption of the perfectness of the capital markets inherent in Keynesian models. The approach argues that the cost of funds passed on to borrowers is in fact not market-determined, but rather institutionally controlled. The implication is that financial intermediaries, particularly commercial banks, are capable of directly influencing spending by controlling the volume of lending at will. The interest rate mechanism, which varies as between borrowing and lending, is in fact not a direct transmission vehicle, but a more indirect and remote one. In practice, this channel is perhaps the most well known in developing countries, where markets

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[36] See B. P. Pesek and T. R. Saving, Money, Wealth and Economic Theory (New York: Macmillan, 1967).

are fragmented and where there is continuous financial sector disequilibrium. Opponents of the credit rationing approach contend that disequilibrium situations are really only transient. As a result, they contest that the full impact and significance of this approach will be difficult to measure, in effect, undermining its authenticity as a transmission channel.

4. Portfolio Balance

This approach is fully recognized and accepted by neo-Keynesians and monetarists alike, though for different reasons. There is a strong relationship between this approach and that of the wealth effect outlined earlier. The portfolio balance approach hinges on assets adjustment within a given portfolio, based on variations in the demand/supply situation of other assets therein. Some of these assets, e.g. money, will have the properties of net wealth, in which case a change in their demand/supply positions will induce the same effects on real sector spending, as under the wealth effect previously outlined. The portfolio balance channel is best appreciated in circumstances in which there are only two assets in a given portfolio--money and physical capital. In this context, monetarists suggest that:

> Money balances are assumed to vary proportionately with money income, there being no sensitivity to changes in interest rates. Thus, if income remains constant and the stock of money increases, individuals would wish to substitute capital for money in their portfolio. This would lead to higher expenditures and correspondingly higher imports, in a completely open economy.[37]

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[37] W. E. Barton, "Money in the Process of Income Determination: A Case Study of Guyana's Economy," (Ph.D dissertation, University of the West Indies, 1978), p. 67.

The Keynesians, of course, see an interest rate link in the process. In effect, the portfolio view posits that it is the change in relative prices among financial and real assets in a given portfolio, induced by an initial monetary disturbance that will cause changes in real spending.

5. The Financial Constraint

To some extent this approach represents a variation of the credit rationing channel of monetary transmission. The basic argument hinges on the fact that a given economy is faced with clearly defined financial constraints in attempting to balance aggregate demand and supply in the system. Shortfalls in domestic financial resources must be supplemented by net capital inflows through foreign finance. This inflow triggers a monetary reaction through the banking system, which increases loanable funds and ultimately impacts on the real sector through investment spending. The critical variable here is the exogenously determined initial shock compared with the Keynesian endogenously determined one, resulting from changes in aggregate demand behaviour. While in the credit rationing situation the domestic economy itself tends to be constrained by limited loanable funds, inducing relative price distortions, the financial constraint argument goes beyond this and embraces both the domestic and external sectors of the economy. It is essentially a purely monetary phenomenon, which takes a contradictory view of the workings of an economy under the Keynesian system. Domestic or national savings is determinate in this approach, while under the Keynesian system saving is determined by income considerations. In fact, it is a shortfall or surplus in savings that

initiates the monetary transmission mechanism under the financial constraint approach, since, according to Newlyn:

> Unless the gross savings rate is high enough to finance investment resulting in a growth rate significantly higher than that of population, the financial constraint on nationally financed, investment based growth is absolute. Fortunately, not all growth is investment based; more efficient use of existing resources, foreign finance and export-led growth can break through the vicious circle....[38]

6. *Inflation/Price Expectations*

This centers on the well known argument of the distortive effects of the real sector by the financial phenomenon of inflation. The exact channel or mechanism by which inflation effects are transmitted through the economy is subject to much speculation and tends to vary according to the definition of inflation or with the particular school of thought assessing inflation as a phenomenon. Inflation is generally accepted as substantially sustained rise in prices and in the price level. There are two schools of thought on inflation, the Keynesian and the quantity-theory. The nature of the transmission process will depend on which of these two views is assumed. The Keynesian approach to inflation posits that it causes a redistribution of real income, which induces increases in real savings. Under this model, spending is related only to income, and it is through this mechanism that inflation--regardless of its source (cost-push, demand-pull or sectoral-demand-shift)--impacts on the real sector. The quantity-theory or monetary view of inflation postulates that "there is a stable demand function for money in real terms, into which the rate of

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[38]W. T. Newlyn, The Financing of Economic Development (Oxford: Clarendon Press, 1977), p. 20.

inflation enters as a cost of holding real balances, which cost influences the quantity of real balances held."[39] This approach further argues that it is the change in the money supply that determines the inflation rate. One fundamental difference between the two approaches is that under the monetary approach, price expectations play a pronounced role in the adjustment process to the extent that the public grows to expect the rate of inflation and adjusts its stock of real balances to it. It is these changes in real balances that impact on wealth and portfolio positions, facilitating the transmission process here. The Keynesians, on the other hand, argue that wage and price adjustments respond only to past changes and not future expectations, once the inflationary process is under way. While it is clear that in both situations significant price level changes will affect real sector performance, there is by no means any conclusive position 'per se' on inflation's final effects on economic growth. There are strong arguments for and against a positive effect, though it appears that one of the basic determining factors relates to the type of economy, developed or undeveloped, under consideration.

In summary, this chapter, 'inter alia,' established that the links between financial sector activity and real sector behaviour are several and real, irrespective of the specific channel through which the intersectoral effects are transmitted. Central to this is the process of finance, which has its theoretical base in money and monetary developments. While, for the purpose of facilitating theoretical

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[39]H. G. Johnson, Selected Essays in Monetary Theory, p. 122.

analysis, the role of institutions in this finance process has been generally limited to either the issue or holding of direct or primary securities, institutional intermediation in the finance process can be equally, if not more, significant and effective.

The following chapter elaborates the role of financial intermediation in the typical financial sector and assesses its significance to the final shape of the financial structure of an economy. It also highlights the need for balanced evolution of the financial intermediation process in a typical economy, if financial dualism is to be averted in an economy, with one financial submarket asphyxiating or retarding the growth of another over time.

CHAPTER II

FINANCIAL INTERMEDIATION AND THE EVOLUTION OF FINANCIAL STRUCTURE

The previous chapter examined the process of finance in an economy and established the key role money and monetary relationships play in this process. Reference was also made to the central role of the process of finance in economic development, largely through the impact of finance on real sector spending. Critical to the finance process in any economic system, also, is the question of savings and its accumulation within the financial sector. Saving, which facilitates finance itself, can be mobilized through direct sources or through indirect sources. As was noted in the previous chapter, the process of savings transformation into the supply of finance can equally be by direct means (i.e., directly from surplus units to deficit units) or, especially in less developed economies, through intermediaries (see Figure 2-1 below).

This chapter examines this process of financial intermediation and assesses its relationship to the evolution and characteristics of an economy's financial structure.

The chapter is divided into three main sections, A, B and C. In Section A, the financial intermediation process is first examined from a conceptual stand-point. This is followed by an analysis of the role of savings and the case for and against intermediation as an engine of economic growth. In Section B, the concept and significance of financial structure are first reviewed, followed by an assessment of the forms/types evident in various economies. Some determinants and indicators of financial structure are then identified, including the significance of the financial intermediation process. These indicators are subsequently selectively applied to the four sample countries of the research--Jamaica, Korea, Trinidad and Tobago and the U.S.A.--to highlight aspects of the evolutionary process of an economy's financial structure in the historical course of economic development. The final section, C, presents a critique of a number of issues directly related to the broad question of an economy's financial structure and to financial development in general, which, according to Goldsmith, can be conceptually viewed as a "change in financial structure"[1] over time.

A. The Financial Intermediation Process

1. Definition

Intermediation as a process relates to the mobilization by institutions of resources from surplus units and their subsequent deployment to deficit units within a given economic system.

In his significant work with respect to developing countries, U Tun Wai specifically defined the financial intermediation process as:

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[1] R. W. Goldsmith, Financial Structure and Development, p. 37.

> ...the act of collecting savings (and perhaps other funds) by financial institutions and the rechannelling of these funds to borrowers for financing investment. There are financial institutions in both the organized and unorganized sectors of the money and capital markets....[2]

Although economic surpluses can be both financial and non-financial, virtually all involvement by financial intermediaries tends to be with financial surpluses or savings. Deficit spending units are continually in search of capital for satisfying current and development investment requirements. Surplus spending units are constantly in search of alternative channels for directing those financial resources for which there is no immediate consumption or direct investment need. Financial intermediaries are, therefore, the bridge between these two types of spending units, as illustrated in Figure 2-1 below.

Gurley and Shaw[3] ascribe the phenomenon of rising financial ratios in an evolving economy (with the resultant increasing differentiation of deficit and surplus spending units) as an inevitable one, which they argue, stem directly from three forms of division of labor in economic activity. These are: (a) production, involving factor services and inputs; (b) accumulation and consumption/allocation--that it, savings and consumption/investments; and (c) intermediation--that is the specialization between savings (acquisition of secondary instruments)

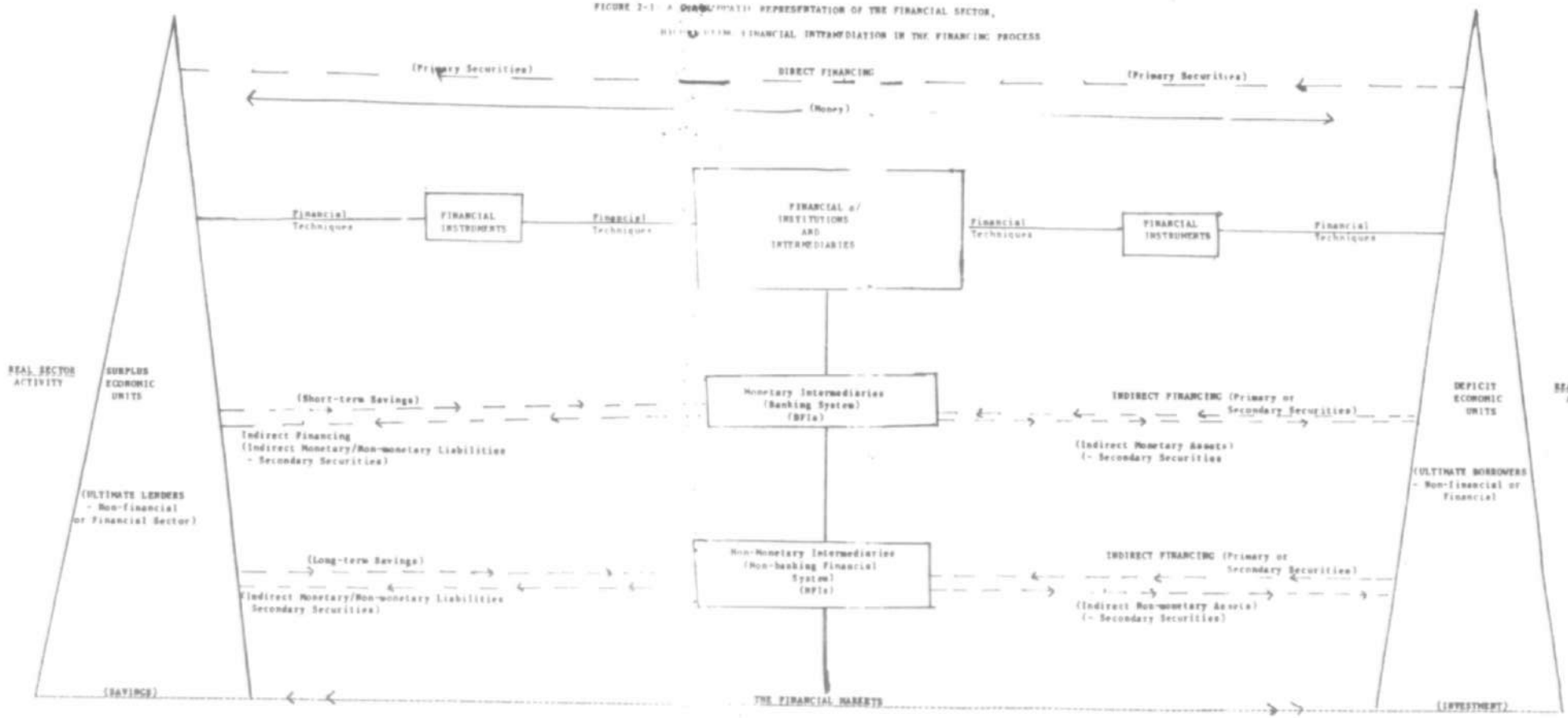
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[2]U Tun Wai, Financial Intermediaries and National Savings in Developing Countries (New York: Praeger Publishers, 1972), p. 3.

[3]J. Gurley and E. Shaw, "Financial Structure and Economic Development," Journal of Economic Development and Cultural Change, Vol. 15, No. 2 (April 1967).

FIGURE 2-1 A [illegible] REPRESENTATION OF THE FINANCIAL SECTOR,

[illegible] FINANCIAL INTERMEDIATION IN THE FINANCING PROCESS



a/ Financial intermediaries can also at times issue primary securities, as in the case of direct placements of debentures or other paper they themselves issue, as part of their liability management operations.

and ownership of primary securities. They argue that these three forms of division of labor are by no means independent. As an economy evolves and becomes more mature, productive activities differentiate and specialization of the productive functions emerge. If only merely because all business activity in an economic system does not commence at the same moment chronologically, some economic units will have greater volumes of financial resources and operating surpluses than others. Surplus economic units will save those funds over and above requirements for present consumption, direct investment or reinvestment. Through intermediaries or direct channels, savings are transformed into investment to sustain and fuel the cycle of economic activity.

Pyle, in examining the theoretical underpinnings of the financial intermediation process, distinguishes between financial and non-financial intermediaries. He notes that the "essential characteristic of a financial intermediary is that it issues claims on itself and uses the proceeds to purchase other financial assets."[4] While this definition, in fact, suggests the basic tenets of financial intermediaries, it is not correct in the strictest sense. In fact, all institutions, including non-financial ones, are capable of issuing claims on themselves (e.g., they can float stock and eventually invest surplus funds, even if only momentarily, in other types of securities--such as government bonds or, more commonly, Treasury bills). In that sense, therefore, they can be considered to perform functions of intermediation. As noted in the previous chapter, the crucial feature

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[4]D. H. Pyle, "On the Theory of Financial Intermediation," Journal of Finance, Vol. 20 (June 1971): p. 737.

of financial intermediaries is that the bulk of their assets represent financial claims on other parties and/or in their favour.[5]

As was implied in the last chapter, financial intermediation can be generated by monetary (BFIs) or non-monetary (NFIs) institutions. Insofar as their functional distinctions and relative effectiveness in the process go, there are contrasting positions in the literature. Gurley and Shaw, for instance, argue that the basic distinction relates to the fact that each type of intermediary issues its own unique form of indirect financial securities or debt (usually demand, compared with time or savings deposits). In addition, both types can create their own specific forms of indirect financial assets (e.g., consumer versus mortgage loans), which assets, in fact, specifically represent the "product of intermediation...bearing its own bundles of assets."[6] On the other hand, Newlyn sees a more fundamental distinction, in that BFIs are those institutions whose:

> ...liabilities act as a medium of exchange, are unique in being able to create credit in the form of money and [that] they can do this autonomously simply by increasing their own liabilities in favour of the borrower. All other forms of financial institutions have first to attract money from those who hold it in order to create credit by lending it.[7]

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[5]Gurley and Shaw in their Money in a Theory of Finance, suggest that, in fact, only non-financial institutions issue primary securities, while financial intermediaries create indirect securities. This would not be totally accurate, as it is conceivable for a financial institution to issue primary securities and make a direct placement, if permitted, in a given country situation.

[6]Ibid., p. 193.

[7]W. T. Newlyn, The Financing of Economic Development, p. 26.

He has, in fact, invoked a sharper distinction here between these two types of intermediaries, further inferring that the increase in NFI credit enhances the velocity of circulation of any given money stock, but not the creation of new money. Indeed, he further injects significant doubts about whether the special feature of monetary intermediaries in creating their own funds, as opposed to mobilizing these from outside of the system, is in fact intermediation in its orthodox form. This issue will be indirectly addressed again in Chapter 7, when the specific factors inducing banking system-led financial asphyxiation are analyzed.

2. The Significance of Savings

Savings is the catalyst of the financial intermediation and, ultimately, growth process in an economy. At the theoretical level, there are two major schools of thought on the significance of savings to the process of economic development. These are: (a) the classical/neo-classical; and (b) the Keynesian. Classical economists such as Marshall,[8] Wicksell[9] and Fisher[10] contend that savings impact on economic activity via the rate of return or interest rate mechanism. They contend that the higher the rate of interest in the market place, the larger will be the supply of savings. By extension, the greater the

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[8]See A. Marshall, Principles of Economics, 3d ed. (New York: Macmillan, 1895).

[9]See K. Wicksell, Lectures in Political Economy, Vol. 1, "General Theory," trans. by E. Classen (New York: Macmillan, 1935).

[10]See I. Fisher, The Theory of Interest as Determined by Impatience to Spend Income and Opportunity to Invest It (New York: Kelley and Millman, 1954).

volume of savings, the greater the capacity for investment in the economy. Keynesians, on the other hand, as well as some of the leading modern economists, including Friedman and Modigliani, have accepted that the interest rate does have some impact on savings, but argue that it is income that in fact exerts the strongest influence on savings.

As was noted earlier, Friedman views income not only in 'current' terms, but also as 'permanent,' including past streams. Relatedly, Modigliani and Ando[11] posit that income should be viewed as a 'life cycle' phenomenon. Duesenberry[12] introduced the concept of 'relative' as opposed to 'absolute' income in his studies on the United States. The basic argument by the modern economists is largely rooted in the neo-Keynesian position that the propensity to save is an increasing function of changes in income, due largely to diminishing marginal utility from consumption over time. Both schools of thought are, however, agreed that the rate of interest and income were not the only determinants, by any means, of savings and that there were other economic and non-economic considerations, including price stability, political confidence, the general investment climate, the availability and development of intermediaries and sociological and cultural phenomena.

Savings can be physical or financial. In terms of the financial intermediation process, what is of more significance is financial

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[11] See A. Ando and F. Modigliani, "The Life Cycle Hypothesis of Saving: Aggregate Implications and Tests," American Economic Review (March 1963).

[12] See J. Duesenberry, Income, Saving and the Theory of Consumer Behaviour (Cambridge, Mass.: Harvard University Press, 1949).

savings or accumulation. It is in this process of financial accumulation and transformation that financial intermediaries act as important productive conduits. The body of available literature today describes several methods of mobilizing financial savings or accumulating financial surpluses in an economy. Among some of the more conventionally accepted forms are (a) self-financing; (b) foreign borrowing; (c) fiscal means; (d) inflation; and (e) the debt-asset or intermediation techniques, which to the firm in economic deficit, in effect represents a form of external borrowing. While the literature is controversial on which of these measures optimises economic welfare in a given time period, the relative strengths and demerits of each measure are directly related to specific economic circumstances. However, particularly in the context of developing economies, the debt-asset, intermediation approach is undoubtedly gaining increasing importance, as financial market mechanisms become increasingly sophisticated and as the efforts at enhancing the domestic savings ratio in these economies intensify.

The distinction and relative significance of savings and financial savings vis-a-vis the rest of a typical economy can be seen in the following identity:[13]

$$\frac{S}{Y} = \frac{S}{\Delta F} \cdot \frac{\Delta F}{I} \cdot \frac{I}{Y} \quad \ldots\ldots \quad (1)$$

where the ratio of national savings to GNP $\left(\frac{S}{Y}\right)$ could be expressed as the produce of the financial savings multiplier $\left(\frac{S}{\Delta F}\right)$, times the proportion of

[13] These identities were set out by U Tun Wai in Financial Intermediaries and National Savings in Developing Countries, p. 62.

domestic investment financed by financial savings ($\frac{\Delta F}{I}$), times the investm coefficient ($\frac{I}{Y}$). The inference here is that the higher the level of domestic investment relative to income, the more will national savings expand. A more explicit relationship can, however, be:

$$\frac{S}{Y} = \frac{S}{I} \cdot \frac{I}{\Delta F} \cdot \frac{\Delta F}{Y} \quad \text{.....} \quad (2$$

where the larger the proportion of financial savings to income ($\frac{\Delta F}{Y}$), the greater will be the national savings ratio. This is so because "the greater availability of loanable funds in the hands of banks would enable them to make more loans to finance investment--[which] could cause the financial investment multiplier to rise,"[14] thus, in a way, underscoring the significance of the intermediation process. This significance was confirmed by U Tun Wai in his study of the experience of 25 developed and developing countries during the 1950s and 1960s.[15]

3. The Case for and against Intermediation

While there is generally no question as to the significance of the accumulation process (economic or financial) in economic growth, there is some doubt about the capacity of the intermediation process itself to effectively induce such growth. The positive elements

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[14] Ibid.

[15] Ibid.

ascribed to financial intermediation are usually: (a) its ability to mobilize and enhance the level of savings in the system; (b) because of scale economies, both informational and technical, its ability to "ensure the most efficient transformation of mobilized funds into real capital;"[16] (c) its capacity to increase liquidity in the system, through the 'financialization' of surpluses; and (d) its capacity, on balance, to pass on a higher rate of return to the average investor, given operating scale and scope economies.

These notwithstanding, empirical research has still not been very conclusive about the direction of causation of the financial intermediation process itself, when these 'benefits' above are evident in an economy. While Goldsmith, for instance, has noted a "rough parallelism" between economic development and financial growth, of which an integral stimulant was supposedly the intermediation process, he was unable to specifically:

> ...establish with confidence the direction of the causal mechanism, i.e. of deciding whether financial factors were responsible for the acceleration of economic development or whether financial development reflected economic growth whose mainsprings must be sought elsewhere.[17]

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[16] R. J. Bhatia and D. R. Khatkhate, "Financial Intermediation; Savings Mobilization, and Entrepreneurial Development: The African Experience," IMF Staff Papers, Vol. 22, No. 1 (March 1975): p. 133.

[17] In Financial Structure and Development, Goldsmith notes that one way in which the intermediation process can positively induce growth is in the facilitating of incremental capital expenditure and financing. He notes that "...part of secondary issues (securities of financial intermediaries)--the proportion varying from case to case--elicits saving and permits capital expenditure that would not have come into existence if economic units had been limited in their choice of uses and sources of funds to primary securities," p. 395.

Further, in the context of developing countries, a study by Bhatia and Khatkhate of eleven countries between 1960 and 1970, found no definite relationship between financial intermediation and growth in many of the African countries.[18] On the other hand, there was equally not found any logical basis for denying the presence of such a relationship in the sample countries.

These facts notwithstanding, it is generally accepted in the literature that one of the reasons why funds are still hoarded and, thus, loanable funds are scarce in 'lagging' economies, for instance, is the absence of appropriate financial institutions. On the contrary, opponents of this view contend that even if this is true, this cannot be a major consideration, since the Central Bank in these countries usually has the power to create money or use the printing press. There should, therefore, be no real shortage of investment resource funds, even if there were no other traditional financial institutions. In other words, the absence of financial intermediation, they argue, does not make all that difference in terms of the mobilization or deployment of investible funds.

The question of the "higher interest rates" intermediaries are capable of providing holders of indirect securities, is also frequently the subject of much contention in the literature. It is argued that in a well-organized financial market, savers can be equally effective as

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[18] R. J. Bhatia and D. R. Khatkhate, "Financial Intermediation: Savings Mobilization, and Entrepreneurial Development--The African Experience." Measures of financial intermediation utilized in that study include currency, bank deposits, shares, etc., while GNP is used as the aggregate economic variable.

institutions in structuring their portfolios to reduce average risk, as suggested by Modigliani and Miller.[19]

On balance, however, the weight of intuition and limited empirical evidence to date, seem to come solidly down in ascribing a positive causal relationship between deepening of the financial intermediation process and financial development in typical economies. The main link in this process appears to be the ability of the financial intermediation process to enhance financial savings. The nature, methods and intensity of the interrelationships of financial institutions in the process of intermediation do, therefore, have clear implications and influence on the ultimate characteristic of an economy's financial structure. This is the essence of the analysis in the next section of this chapter.

B. The Dynamics of Financial Structure

1. Definition and Concept

As is the case with so many generic and specific economic concepts, the term 'financial structure' can be defined and bear clear reference to both 'micro' and 'macro' level economic contexts. At the 'micro' level, financial structure can be construed as the systematic ordering or organization of a firm's, company's, or entity's financial assets at a given point in time or over an identifiable period. This must then be distinguished from 'capital structure,' which generally relates to the long-term liability or funding side of an institution's activities. Alternatively stated, at the 'micro' level, financial

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[19] See F. Modigliani and M. M. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," American Economic Review, 48, No. 3 (June 1958): pp. 261-297.

structure relates to the application or deployment of an institution's financial resources, while capital structure relates to the resource mobilization or financing aspects. Although, however, this is the strict technical definition, it is not unusual for these terms to be utilized interchangeably. Utilization of the concept of financial structure in this way tends to be more frequent in the pure business or commercial context.

By contrast, in the general field of economics, a 'macro-level' interpretation is more usual. In this context, financial structure represents the process and actual consolidation of the financial assets of an economic system. More specifically, it represents the amalgamation and structuring of all financial instruments held by constituent financial and non-financial institutions. Goldsmith, in effect, fully crystallizes the notion, when he states that "the presence, nature and relative size of financial instruments and financial institutions of the various types...characterizes a country's financial structure."[20]

As was earlier noted, while the shape of a country's financial structure is a function of the sum of the asset management tactics pursued by its individual financial institutions, it is also distinctly influenced by their specific liability management techniques. This is because in a given economy, "while the structure of a company's assets is important,...the converse is also true. The availability of different types of liability will influence a company's asset

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[20] R. W. Goldsmith, Financial Structure and Development, p. 26.

acquisitions."[21] By implication, to the extent that a country's financial markets are significantly related to the evolution of its financial structure, it is reasonable to expect a close positive correlation between the maturity of such markets and the stability and level of development of the economy's financial structure. Thus, an organized financial market tends to generate a 'strong' national financial structure, in contrast to a largely unorganized financial market, which will tend to have a less robust financial structure. U Tun Wai has pointed out, for instance, that in economies in which the unorganized market is significant, the value of indebtedness in the agricultural or rural sector, far outstrips the claims of the banking system in the official market. The influence of the banking system then in the indigenous economy tends to be relatively less significant than normal, thus affecting the overall composition, distribution and shape of the ultimate financial structure of that economy.[22]

Conceptually, a country's financial structure can be expressed in stock or flow terms. Thus, the aggregate value of all financial assets at a given point in time, relative to some other macro-economic parameter, may indicate the size of the financial structure or more precisely its financial superstructure. Size, however, represents only one facet of financial superstructure. Closer analysis reveals other characteristics of the structure such as its composition, penetration,

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[21]G. S. Dorrance, National Monetary and Financial Analysis (New York: St. Martin's Press, 1978), p. 82.

[22]See U Tun Wai, "Interest Rates Outside the Organized Money Markets of Underdeveloped Countries," IMF Staff Papers, Vol. 6, No. 1 (November 1957): pp. 80-142.

complexion, depth or width. These can all be represented in 'stock' forms. Alternatively, the aggregate volume and composition of new securities issued over a specific time span can equally represent these concepts in 'flow' terms. In this connection, it should be noted that the flow concept is fundamentally liability-oriented, insofar as the change in total assets of an institution between two periods in essence represent its net sources of financing. While either stock or flow interpretation of the financial structure concept has its specific merits and demerits, the flow concept can be particularly important, to the extent that it readily raises questions about the nature and other characteristics, including the source, of financing. Such questions further raise the issue of the 'fragility' or 'robustness' of the financial structure itself. The larger the volume of external financing in an economy's financial structure, for example, the less resilient is the economy likely to be to external shocks.[23] By contrast, with specific reference to LDC economic analysis, where flow of funds data tend to be unavailable, the 'stock' interpretation tends to lend itself more readily to access and measurement. This study, therefore, utilizes the 'stock' concept of financial structure.

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[23] See H. P. Minsky, "A Theory of Systematic Fragility," in Financial Crises--Institutions and Markets in a Fragile Environment, ed. by E. I. Altman and A. Sametz (New York: John Wiley and Sons, 1977). Minksy argues that the flow of funds accounts of an economy can indicate that an economy is on a "robustness-fragility scale," even though these numbers measure changes and trends and cannot tell us what will happen. He has argued here that the U. S. economy of the 1970s had a fragile financial structure, "which is a precondition for a financial crisis," that originated from the way in "which investment and positions in the stock of capital assets are financed in our economy" (p. 138).

2. Types of Financial Structures

As would be expected, financial structures may vary from economy to economy, based firstly, on the complex of factors comprising the economy's financial sector and secondly, on those underlying the economy itself, especially real factors. Close study of this area by Goldsmith corroborates this intuitive position, except that he categorically relates distinct types of financial structures to the level of financial and economic development a given economy has attained. As set out in Table 2-1 below, Goldsmith identifies three broad types of financial structures. In general, inter-category distinctions tend to transcend even economic system differences, based on ideological diversity. Thus, while he does identify specific differences between the financial structures of planned and market-oriented economies,[24] the crucial basis for distinction between types of financial structures have tended to be the relative stages of economic development among countries, more than any other single discriminating factor.

Of particular relevance in this context, is the variation in the size of the financial superstructure of countries characterized within each of these three types. Assuming the size of its financial superstructure as one dimension of an economy's financial structure, Goldsmith identifies an enlargening of this superstructure

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[24] Goldsmith notes that while there are several similarities in the array of instruments and institutions in market-oriented and command economies, there are several distinct differences in their financial structures. Essentially, these basic differences relate to organization, scale of structure, functions and asset/liability ordering and composition.

TABLE 2-1

TYPES OF FINANCIAL STRUCTURES IN ECONOMIES

Type	General Economic and Financial Characteristics	Contemporary and Historical Country Examples	Estimated Average per caput GNP	Average Size of FIR
1	. Predominance of claims over equities . Poor share of financial institutions in total economic system . Commercial banks dominant . Scriptural money superseding metallic money	. Tribal, primitive societies . Today's developed countries at beginning of 19th century	Very low (less than US$200) a/	Very low (0.20-0.50)
2	. Claims also exceed equities . Banks predominate among financial institutions . Government and public financial institutions play significant role . Large corporate sector emerging . Small indigenous financial sector emerging	. Most Latin American, Middle East, Caribbean, Asian and African countries of today and present day Spain, Norway . Also modern USSR, Yugoslavia, Hungary, Bulgaria	Low to middle income (US$300-US$1,000) a/	Low (0.35-0.70)

(TABLE 2-1 CONTINUED)

Type	General Economic and Financial Characteristics	Contemporary and Historical Country Examples	Estimated Average per caput GNP	Average Size of FIR
3	. Claims still dominate equities, but less than in Type 2 . Higher share of financial institutions in economy . Well diversified financial system present . Declining share of banking system in total financial system	. Modern North America . Western Europe . Japan--Ever since early 20th century to today	High income (US$2,000-US$3,000) a/	High (0.75-1.50 +)

SOURCE: R. W. Goldsmith, Financial Structure and Development, R. W. Goldsmith, The Determinants of Financial Structure (Paris: OECD, 1965) and research estimates.

a/Estimates in current U.S. dollars.

b/Financial Interrelations Ratio -- Total Financial Superstructure divided by Total National Wealth.

relative to their real wealth (infrastructure) as economies become more developed and their financial systems more sophisticated. This marked variation in the financial interrelations ratio (FIR), as between the three types of financial structures identified, underscores one major feature of the determination of financial structure; this is that the final complexity, character and evolution over time of an economy's financial structure is a product largely of financial and real sector economic processes, which will intrinsically vary with relative levels of relative development.

By implication, one important variable in the shape of the financial structure of an economy is the nature of the financing process itself. An economy in which finance is largely "demand-following" is likely to have a different financial structure from one in which finance is "supply led," regardless of its stage of development. Hugh Patrick ascribes this to the fact that "the demand-following approach implies that finance is essentially passive and permissive in the growth process,"[25] citing late eighteenth and nineteenth century England as a historical example. The basic thesis of this approach is that the financial system's evolution is responsive to the demand for these services by entrepreneurs and savers in the real economy, hence the presence of a clear lag in the level of financial development relative to economic development. A relatively immature financial structure is,

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[25]H. T. Patrick, "Financial Development and Economic Growth in Underdeveloped Countries," Economic Development and Cultural Change, Vol. 14, No. 2 (January 1966): pp. 174-75.

therefore, likely to be found in a poorly developed country, characterized usually by low levels of entrepreneurial development and drive.

In the "supply-leading" framework there is "the creation of financial institutions and the supply of their financial assets, liabilities and related financial services in advance of demand for them, especially the demand of entrepreneurs in the modern, growth-inducing sectors."[26] This process is similar to the Schumpeterian concept of "innovative financing" in essence, and according to Alexander Gerschenkron,[27] it is likely to be the one more utilized, the more backward an economy is relative to its contemporaries. It is generally held also that this type of approach is inherently more appropriate in command-type economies, where state capital can be used to create the financial stimulus for the development of specific sectors and of the economy as a whole. Under the "supply-leading" approach, significant subsidies are, however, often required from the state. By extension, the roles of the banking system and government involvement in the financing process tend to be greater than in the demand-following process, where the private sector is more heavily implicated. This study prefers the "supply-leading" hypothesis for the finance process in an economy and argues in subsequent chapters that, it is partly this significant control that the typical banking system in LDCs, in particular, derives from this approach, that largely induces their

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[26] Ibid., p. 176.

[27] A. Gerschenkron, Economic Backwardness in Historical Perspective--A Book of Essays (Cambridge: Harvard University Press, 1962), p. 363.

asphyxiating behaviour over the non-banking system. This in turn promotes dualism in most financial sectors and distorted financial structures.

3. Determinants of Financial Structure

Before an analysis of the major determinants of financial structure is made, it is important that the distinction be clearly established for a given economy between its financial structure and its financial superstructure, the latter being often loosely used as a measure of both the size of the financial sector and even the financial structure itself. As will be elaborated later on, one measure of the financial structure of the economy is the ratio of the financial superstructure to the real infrastructure or the FIR. 'Size,' therefore, is only one variable in a country's financial structure. Other variables include, as was earlier noted, the composition, distribution, penetration and concentration of the country's financial resources within the financial sector and economy as a whole (see Table 2-2 below). Size, however, has tended to play the most dominant role as a measure of financial structure. Hence, a country is considered to have a weak or rudimentary financial structure, if its financial ratio[28] is low, or its financial superstructure relative to its real infrastructure is small (that is its FIR is low). This general approach appears to be related to the close historical relationship between low FIRs and underdevelopment, hence, likely identical implications for composition,

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[28]The finance or financial ratio relates total assets of financial institutions to Gross National Product.

distribution, penetration and concentration in financial sector variables.[29]

Given the importance and general application of measures of 'size' as indices of financial structure, the tendency has also been to equate those factors closely determinate of the FIR, with those for financial structure in general.

In this respect, the literature has generally identified some eleven factors determinate of financial structures, most of which are considered "financial." Of these, theory suggests that the FIR is negatively correlated with three--namely the capital/output, inflation rate and growth in GNP--and is positively correlated with the balance. Thus, 'a country...will have a relatively large financial superstructure...if the monetization ratio,[30] the capital formation ratio, the ratio of non-financial and financial institutions issues to capital formation, the layering ratio among financial institutions, the foreign financing ratio, and the valuation adjustment terms (i.e the rise in financial assets prices and the share of price-sensitive in total issues), are

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[29]While this chapter elaborates the size dimension of financial structure, composition and distribution variables will play critical roles in several of the later chapters as the central thesis of the study develops.

[30]A. G. Chandavarkar, in his "Monetization of Developing Economies," IMF Staff Papers, Vol. 24, No. 3 (1977), has pointed out that there is a clear relationship between monetization and two other terms often used interchangeably "commercialization" and "financial intermediation." He has argued they are distinct concepts, though monetization is a necessary condition for both commercialization and financial intermediation.

TABLE 2-2

PRINCIPAL INDICATORS AND MEASURES
OF THE FINANCIAL STRUCTURE OF ECONOMIES

Dimension of Financial Structure	Common Name of Indicator	Ratio(s)/ Relationship(s)
(i) SIZE	(a) Financial Interrelations Ratio (FIR)	(a) Total Financial Assets ÷ Total Tangible Assets (Net Wealth)
	(b) Finance, Financial Ratio	(b) Total Assets of Financial System ÷ GNP or Total Net Wealth
	(c) 'Monetary' Ratio	(c) Total Monetary Assets or Total Assets of Monetary System ÷ GNP or Total Net Worth
(ii) COMPOSITION	--	(a) Distribution of Specific Types of Financial Instruments (or Institutions) ÷ Total Volume of Financial Instruments (or Institutions)
	--	(b) Distribution of Total Assets of a Financial or Non-financial Subsector ÷ Total Assets of the Financial or Non-financial Sector
	--	(c) Sources and Uses of Funds of Various Sectors

(TABLE 2-2 CONTINUED)

Dimension of Financial Structure	Common Name of Indicator	Ratio(s)/ Relationships
(iii) PENETRATION	--	(a) Total Number of Accounts, Individuals, etc. ÷ Total Population of a Given Area or Economy
	--	(b) Total Number of Branches, Units or Agencies of a Type of Institution ÷ Total Population of a Given Area or Economy
	--	(c) Total Number of Stockholders, Borrowers, Lenders of a Type of Institution ÷ Total Population of a Given Area or Economy
	--	(d) Total Assets of an Institution, or Financial or Non-Financial System ÷ GNP.
(iv) INTERDEPENDENCE/ INSTITUTIONALIZATION	(a) Financial Layering Ratio	(a) Total Intra-Financial Sector Assets ÷ Total Financial Assets
	(b) Financial Intermediation Ratio	(b) Total Assets of Financial Institutions ÷ Total Financial Assets

SOURCE: Sundry pieces of literature and research formulations.

high."[31] It will tend to be relatively small, on the contrary, ceteris paribus, "if the real rate of growth, or the capita-output ratio are high, or if the rise in the general price level has been pronounced."[32]

According to Goldsmith, the eleven major determinants of an economy's financial structure are specifically:[33]

(A) Non-Financial (largely involving real variables)

(1) The Monetization Ratio (M)

(2) The Gross National Product (Y)

(3) The general price level change, or inflation rate (π)

(4) The Capital Formation Ratio (K)

(5) The Capital/Output Ratio (σ)

(B) Financial (largely involving financial variables)

(1) The new issues of financial instruments by non-financial units (δ)

(2) The ratio of new issues of financial instruments (ϕ), held by financial institutions to new issues by domestic and external non-financial units ($\delta+X$) or the financial intermediation ratio (ϵ)

(3) The 'layering' ratio among financial institutions (λ)

(4) The average annual increase in financial assets subject to price increases (ψ)

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[31] R. W. Goldsmith, The Determinants of Financial Structure, p. 24.

[32] Ibid., p. 24.

[33] Ibid.

(5) The proportion of net new issues subject to asset price changes, mainly equities of corporations (θ)

(6) The proportion of GNP that net foreign investment is (χ) (foreign borrowing ratio).

Goldsmith further determined that the size of an economy's FIR $\left(\frac{Ft}{Wt}\right)$ at any point in time can be calculated both by observation, and more synthetically, by a formula which he constructed from the determinants above as:

$$\left(\frac{Ft}{Wt}\right) = \beta^{-1}[\text{illegible}] = \beta^{-1}\alpha\epsilon(1+v) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

in shortened form. In effect, FIR at any point in time is equal to the products of (a) the sum of all past issues of financial instruments, appropriately adjusted, and divided by current Gross National Product or tangible assets (β^{-1}, ϵ); (b) an intertemporal valuation adjustment factor (1 + v); and (c) a GNP inflation-adjusted multiplier (α). ($\hat{\eta}$ is the ratio of issues of non-financial units to their gross capital formation).

Of the determinate variables for an economy's financial structure above, the monetization, capital formation and financial intermediation ratios are particularly significant, although in practice for most LDCs, only the first two are usually susceptible to ready calculation. To some extent, however, the capital formation ratio gives an indication of the degree of financial institutionalization or intermediation in the system, since it is largely related to the savings

ratio in the economy, which tends to be related in LDCs to the degree of intermediation, as earlier noted.

Given their specific importance to the research, the next subsection examines, 'prima facie,' the evolution of the monetization and capital formation ratios, relative to one measure of the size of the financial structure of the four research economies over the survey period 1960 to 1980.

4. The Evolutionary Experience (1960-1980)

Before a 'prima facie' analysis of the experience of the financial structures of Jamaica, Korea, Trinidad and Tobago and the U.S.A. over the two decades 1960 to 1980 is made, it is important to briefly highlight the real significance of monetization and capital formation ratio concepts to the financial structure of an economy and to the central thesis of this research.

The monetization ratio measures the proportion of a country's output that is monetized or sold for money. It tends to be low in countries with a strong subsistence sector, or where bartering still plays a predominant role, and high in those in which a strong monetary and financial system prevail. The significance of this ratio as a determinant of a country's financial structure lies in the fact that the higher this ratio, the larger the economy's monetary system tends to be. The larger the latter, the larger the volume of financial instruments in

general. Gurley and Shaw have argued that "diseconomies of finance-in-kind induce monetization,"[34] which, in a way, makes the monetization phenomenon increasingly significant in developing economies over time.

Monetization of an economy has implications for both its monetary and fiscal policies. It can affect money demand and velocity through the transactions, precautionary, as well as speculative or asset motives. As a result, via changes in cash balances and portfolio compositions, it can influence the effectiveness of national economic policies to a large extent.

Several proxy variables have been traditionally used as measures of the monetization ratio (M). One such measure is the ratio of a country's monetary liabilities or money supply (broad or narrow), or its components, to GNP. Using this ratio, for instance, McKinnon has argued that it is "the mirror image of outstanding bank finance provided to both government and the private sector," and that "it seems to be the simplest measure of the importance of 'real size' of the monetary system in the economy."[35] Another is the relationship between the size of the monetary system (i.e central and commercial banks) to that of GNP. This parameter signals the relative magnitude, and by implication potential power for domination, of the banking system in the financial sector as a whole, and therefore underscores the importance of the monetization variable to this research. In this section of this study, the first

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[34] See J. K. Gurley and E. S. Shaw, "Financial Structure and Economic Development."

[35] R. I. McKinnon, Money and Capital in Economic Development, p. 91.

measure is utilized, the second being used in the next chapter as a measure of the relative significance of the banking system in total financial structure at various points in the survey period.[36]

The capital formation ratio measures the level of gross or net investment over a period in an economy in relation to GNP. It is significant to the general economic process of an economy, given its underlying implication, as already noted, for the level of resource mobilization in the economy itself. The significance of the capital formation ratio (K) in the real and financial economy is seen in the following identity:

$$GS + \Delta FL = GDCF + \Delta FA \quad \ldots\ldots (4)$$

or,
$$GS = GDCF + NFI \quad \ldots\ldots (5)$$

where GS = Gross non-financial savings

ΔFL = Increase in financial liabilities in the system

GDCF = Gross Domestic Capital Formation

ΔFA = Increase in financial assets

NFI = Net financial investment,
omitting net capital transfers

The capital formation ratio, which in a closed fully employed economy is an alternative measure of the size of capital accumulation to GNP, can exert its leverage on the financial structure of an economy through its

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[36] This appears to be so even in the command economy. Garvy has pointed out, for instance, that in the U.S.S.R., one impact of increased monetization is a greater reliance on the banking system for monitoring the performance of the entire socialized economy. See G. Garvy, Money, Financial Flows and Credit in the Soviet Union (Cambridge: Ballinger for NBER, 1977), pp. 36-51.

impact on both the liability and asset sides of the financial system. This is so for both the market and planned types of economic systems. The larger the degree of capital formation in any economy, the greater is the economy's growth potential, which in itself will have direct later round effects on the financial system and structure of an economy as a whole. Given its indirect relationship to financial intermediation and accumulation, this ratio is significant to the study as a measure of the likely repressed state of a financial system resulting from the presence of financial asphyxiation. The more intense is the presence of asphyxiation, the less stable is likely to be the national savings ratio, as the banking system dominates the mobilization of resources. In general, monetary (short-term) deposits tend to be less stable than longer-term deposits characteristic of NFIs.

Table 2-3 below illustrates the evolutionary experience of the financial structure of the four research countries between 1960 and 1980, utilizing three determinants: the finance, the monetization and capital formation ratios.

In respect of the financial structure itself, approximated here by its size (the finance ratio), there is support for the theory that with development, the size of the finance structure enlarges. Of significance also is the fact that the upward trend of the ratio for the three LDCs is much more significant than that of the more mature U.S.A. economy. Average growth in the LDC financial structures of Jamaica and Trinidad and Tobago exceeding that of the economy as a whole, in marked contrast to that for the U.S.A. and less so for Korea, whose financial superstructures have evidently begun to level off (as is later

illustrated in Figure 2-3). The significantly larger and more stable absolute values for the U.S.A. in all years, relative to the developing economies, is also consistent with theory, which also holds that stronger growth in a country's financial superstructure relative to the real infrastructure does not continue 'ad infinitum.' When the FIR reaches between 1 and 1.5, its growth slows up significantly, later levelling off. This typical behaviour in the finance ratio for the U.S.A. is evident here.

In a recent study of the behaviour of the monetization ratio in LDCs, Chandavarkar observed a distinctly parallel trend of this ratio with economic development. He notes that the path of monetization for a typical developing economy is usually markedly upward over time, with the curve levelling off or flattening in the course of advanced economic evolution. This finding supported earlier observations made by Goldsmith. Such earlier experiences have also been corroborated in the case of the three LDCs surveyed in this study. The monetization ratios for Jamaica, Korea and Trinidad and Tobago were consistently higher in 1980 than twenty years earlier, almost doubling for the currently least developed of the countries, Jamaica. The trend of the evolution was generally mixed during the course of the period, except for Jamaica, which was consistently upward, and for the U.S.A., which generally declined--a phenomenon largely attributed in the last five years, in particular, to the strong American efforts to reduce inflation, hence monetary contraction.

TABLE 2-3

SELECTED INDICES OF THE EVOLUTION OF
FINANCIAL STRUCTURE OF SURVEY ECONOMIES
(JAMAICA, KOREA, TRINIDAD AND TOBAGO, AND U.S.A.)
(1960 - 1980)
(Nominal Terms)

A. Finance Ratio[a/]

	1960	1966	1972	1976	1980	Av. p.a. Change over Period[d/][e/] (%)	Av. p.a. GNP Growth over Period[d/][e/] (%)
JAMAICA	0.34	0.61	0.78	0.82	1.17	+12.2	+12.0
KOREA	0.28	0.48	0.94	1.05	1.26	+17.5	+28.4
TRINIDAD AND TOBAGO	0.33	0.31	0.55	0.80	1.31	+14.8	+13.3
U.S.A.	1.02	1.03	1.08	1.09	1.09	+ 0.3	+ 8.6

B. Monetization Ratio[b/]

JAMAICA	0.11	0.12	0.13	0.14	0.20	+ 4.1	+12.0
KOREA	0.09	0.08	0.13	0.12	0.11	+ 1.2	+28.4
TRINIDAD AND TOBAGO	0.12	0.10	0.11	0.10	0.19	+ 2.6	+13.3
U.S.A.	0.29	0.24	0.22	0.19	0.16	- 2.9	+ 8.6

a/Finance Ratio -- Total Assets of Financial Institutions divided by Gross National Product. This is a proxy measure for the FIR.

b/Monetization Ratio -- Narrow Money Supply (M_1) divided by Gross National Product.

TABLE 2-3 -- continued

C. Capital Formation Ratio[c/]

	1960	1966	1972	1976	1980	Av. p.a. Change over Period (%) [d/]	Av. p.a. GNP Growth over Period (%) [d/]
JAMAICA	0.22	0.23	0.26	0.17	0.16	- 1.0	+12.0
KOREA	0.11	0.20	0.21	0.24	0.32	+ 6.1	+28.4
TRINIDAD AND TOBAGO	0.32	0.23	0.31	0.27	0.59	+ 4.1	+13.3
U.S.A.	0.18	0.18	0.18	0.17	0.18	+ 0.2	+ 8.6

SOURCE: Sundry issues of International Financial Statistics and research calculations.

c/Capital Formation Ratio -- Gross Capital Formation divided by Gross National Product.

d/Crude arithmetic average over 20 years.

e/Average change for Finance Ratio arithmetically calculated; all other changes geometrically calculated.

The literature suggests that the capital formation ratio, like that of the monetization ratio, has shown a definite upward trend for both developed and developing countries over the past century. According to Goldsmith, this ratio has also been statistically closely associated in both developed and developing economies with both the level and growth of real per caput GNP. This empirical experience derives strong support from the sample of countries surveyed here. The capital formation ratio was higher in 1980 for Korea and Trinidad and Tobago and identical for the U.S.A. as in 1960, but lower for Jamaica. In closely analyzing the trend of the ratio for Jamaica, it is noticed that the ratio emerged upwards until 1972 and started to decline thereafter. This experience appears closely correlated with the general macro-economic decline of the Jamaica economy shortly after the first oil crisis in 1973, a trend that has since worsened. Negative real growth in the past five years, in particular, is likely to have adversely affected the nation's savings ratio, hence the capital formation ratio, which is expected to have declined even further since 1980. (See the experiences of selected macro-economic denominators for the Jamaican economy between 1955 and 1982 in Figure 2-2 overleaf).

In an examination of the magnitudes of the capital formation ratio also, one striking feature is its unusual size for Trinidad and Tobago. This is largely due to the significant change in the behaviour of the Trinidad government sector after 1973, which Bourne notes then "emerged as the main surplus sector. Its share escalated from 3 percent

FIGURE 2-2(a): JAMAICA: RATIO OF REAL BROAD MONEY STOCK (M3) TO REAL GDP AND PATIO OF NARROW MONEY STOCK (M1) TO BROAD MONEY STOCK

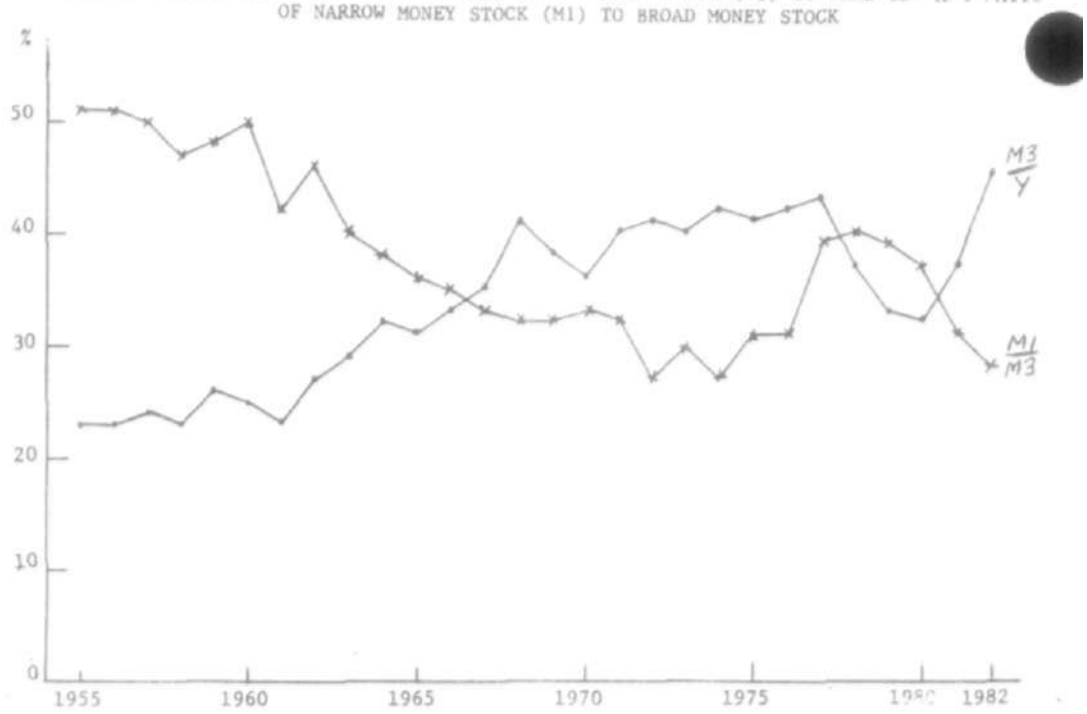
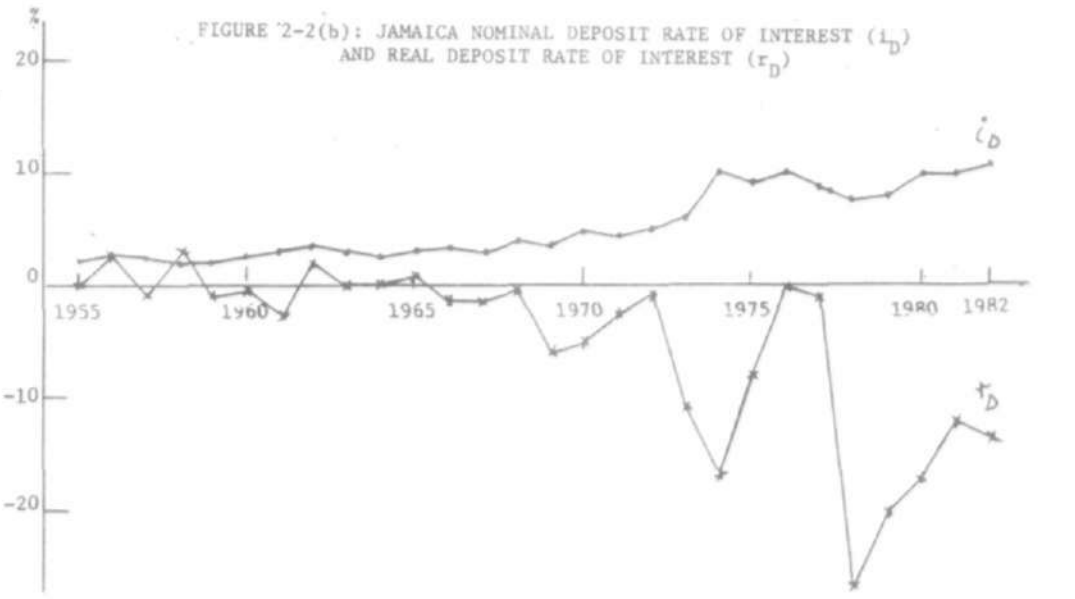


FIGURE 2-2(b): JAMAICA NOMINAL DEPOSIT RATE OF INTEREST (i_D) AND REAL DEPOSIT RATE OF INTEREST (r_D)



SOURCE: C. Bourne, "Financial Deepening, Domestic Resource Mobilization and Economic growth--Jamaica, 1955-1982," Unpublished Paper (May 1985).

in 1972 to 36 percent in 1974 and by 1978 amounted to 70 percent.[37] In addition, Bourne draws attention to "the rapid decline of the foreign corporate sector as a contributor to financial deficits from 1974 onwards."[38] The deficit in this sector, was about 50 percent since 1966, but declined to only about 20 percent in 1978. At the bottom of both of these phenomena, and at the root of the sharp upward movement of Trinidad's capital formation ratio, is the "huge balance of payments surpluses and the counterpart rapid accumulation of official international reserves,"[39] which effectively transformed the Trinidadian economy from a net debtor to a net creditor by the late 1970s. Additionally, a 1970 Trinidad government directive to foreign-owned companies to divest some ownership to nationals had a positive impact on the domestic savings ratio, hence on the capital formation ratio itself.

Of final note in this regard, is the interesting feature that, consistent with expectations in a developing economy such as Trinidad, sharp increases in the capital formation ratio and the finance ratios between 1960 and 1980 were matched by equally sharp increases in the layering ratio and modest increases in the financial intermediation ratio. These in general underscore the growing interaction among financial institutions in the economy and the increasing role of financial intermediation in any financial system.

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[37] C. Bourne, "Notes on Financial Changes in Trinidad and Tobago, 1966-1978," Social and Economic Studies, Vol. 31, No. 4 (1982): p. 177.

[38] Ibid.

[39] Ibid.

C. A Critique of the Orthodox Analysis of Financial Structure

Sections A and B have reviewed the theoretical elements and some historical dynamics of financial structures of the research economies. As in so many other facets of economic analysis, however, the existing body of literature on this area is quite long on the analysis of the experience of the developed countries and relatively short on that of the developing countries. This is in itself a severe weakness in the corps of knowledge in the area as it exists today. Of even more significance, however, is the existence of a number of areas of "wooliness" in the related literature as largely developed by Goldsmith, Patrick, Gurley and Shaw, McKinnon and other leading writers on the financial sector. Some of these concerns of relevance to this study, include:

(i) the relatively "static" treatment of the analysis of financial structure;

(ii) the limited analysis of risk;

(iii) the 'lukewarm' approach to inflation in the basic formula model/formula;

(iv) the scanty treatment accorded to the role of the unorganized sector in the financial structure of an economy; and

(v) the apparently limited appreciation of the real significance of the banking system in the financial structure of economies.

Each of these areas will be briefly discussed in this section. It should, however, be noted at the outset, particularly in the case of Goldsmith, whose contribution to the area has unquestionably been

monumental, that a reasonable body of financial sector literature has been built up over the past three decades. There, nevertheless, remains much scope for more intense and detailed research in this area, especially in light of the increasingly strong role 'supply-side' economics is likely to play in future international economic management. Less focus on demand-oriented Keynesian type of economics will induce increased reliance on monetary and financial type of economic strategies. More reliable data and a stronger appreciation of the behaviour of financial parameters in the average economy will, therefore, be crucial to better and more effective national economic management. Hence, the need for greater and more detailed assessments of some of the areas, as below.

1. Operational Efficiency

As was evident in Sections A and B, conventional analysis of financial structure has been couched largely in terms of balance sheet aggregates, related to some real, or another, financial variable. Attempts are usually made to contrast this 'stock' approach with a 'flow' approach, which in effect is a change between interperiod balance sheet positions. While useful for purposes of indicating the general framework or structure of the financial relative to the real sector, however, this approach does not scientifically enough mirror the underlying workings of the financial sector itself. The stock approach is undeniably static, while the 'flow' approach is at best 'quasi-static." It is well known, for instance, that year-end balance sheets of financial institutions can be "dressed up" for 'appropriate' accounting purposes of presentation. Year-end financial aggregates can, therefore,

conceivably submerge underlying weaknesses in operational performances over a given period. It is, for example, possible for a company to incur a loss and still have an expansion in total assets. The financial superstructure will actually have grown. This then begs the question as to the real significance of an enlarged financial superstructure in the context of efficient operations in an economy.

It may be argued that the capital-output ratio in the basic formula (or more accurately, its reciprocal form as it enters the equation) takes care of this operational efficiency concept. This is, however, not necessarily accurate for several reasons. One major reason is that 'output' in macro-economic theory relates to aggregate 'value added,' while revenues or sales in terms of a financial institution is a more all-embracing accounting phenomenon, usually involving more than the 'value added' concept. There is generally an 'accrual' concept in accounting. By this 'accrual' concept, revenue for which the actual value or cash will be received in another 'accounting period,' usually appears in an entity's profit and loss statement for the current period of analysis. A similar treatment on the debit side can be used for 'deferred expenditure,' that is expenditure due now, but to be paid in another accounting period. The effect of an accounting, as opposed to an economic output treatment, can, therefore, be quite significant at the aggregate level.

It follows that an analysis of financial structure merely on balance sheet-type parameters is then not as useful as if some consideration is given to inclusion of aspects of the operational performances of the financial sector. Although taken by itself, the

profit and loss experience could conceivably suffer some of the identical drawbacks of the balance sheet. When used with the latter, a more balanced picture emerges. The 'profit and loss' experience of a firm should be integrated into the basic formula for determining the characteristics of a country's financial structure. An adjustment parameter perhaps called an "operational efficiency ratio" might be added to the basic formula (Equation 3 above) to reflect at least the average net operational performance of at least financial institutions, though ideally it should reflect both financial and non-financial, corporate type entities.

One way in which some adjustment may be made to the basic formula to reflect operational efficiency can be to relate aggregate average net profit of the institutions, both financial and non-financial, to the average GNP (or more appropriately, net wealth of the economy as a whole) for a given period. The value of this 'operational efficiency adjustment ratio' may be added to the FIR value provided by the basic formula. The impact on the overall formula becomes significant to the extent that, in general, the larger the efficiency of the productive entities in the system, the larger the corrective factor, ceteris paribus, and the higher the FIR, relative to its position without the adjustment. An alternative approach may be to relate the average change in net capitalization or equity of these institutions to the average change in GNP or net wealth. Even if the statistical data are available, this is less preferable to the earlier approach, in that changes in capitalization might be influenced by increased capital

contributions, for instance, and not only increased profitability from one period to a next.

Additionally, there are a number of other ways in which such an adjustment factor can be incorporated into the analysis of the financial factor, and not necessarily only on the 'size' variable, as the FIR tends to define. Cost/volume or profit/volume relationships may be introduced in the analysis of penetration, composition or 'interdependency' aspects of financial structure, as required. One additional and important feature that such an adjustment introduces into the basic financial structure formulation is the impact of scale economies factors. The inference here is that the larger and more efficient an operation, the greater are the benefits to be derived from scale economies, inasmuch as opinions in the literature on this appear divided.[40] This entire area of operational efficiency as it relates to financial structures is crucial to this research, to the extent that the study's central thesis raises questions about the relative operational efficiency of banks and non-banks in financial systems. Implicit in analysis is the fact that while financial structures may continue to emerge and appear relatively robust on the surface, in fact one subsector of the financial structures may well be stifling the evolution of the other, by commanding increasing phases of the growth in the financial market (hence, change in financial structures), while being less

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[40] For a survey of the literature and reassessment of the experience of economies of scale in financial institutions, in particular, see G. J. Benston, G. A. Hanweck and D. B. Humphrey, "Scale Economies in Banking--A Restructuring and Reassessment," Journal of Money, Credit and Banking, Vol. 14, No. 4 (November 1982, Part II): pp. 317-360.

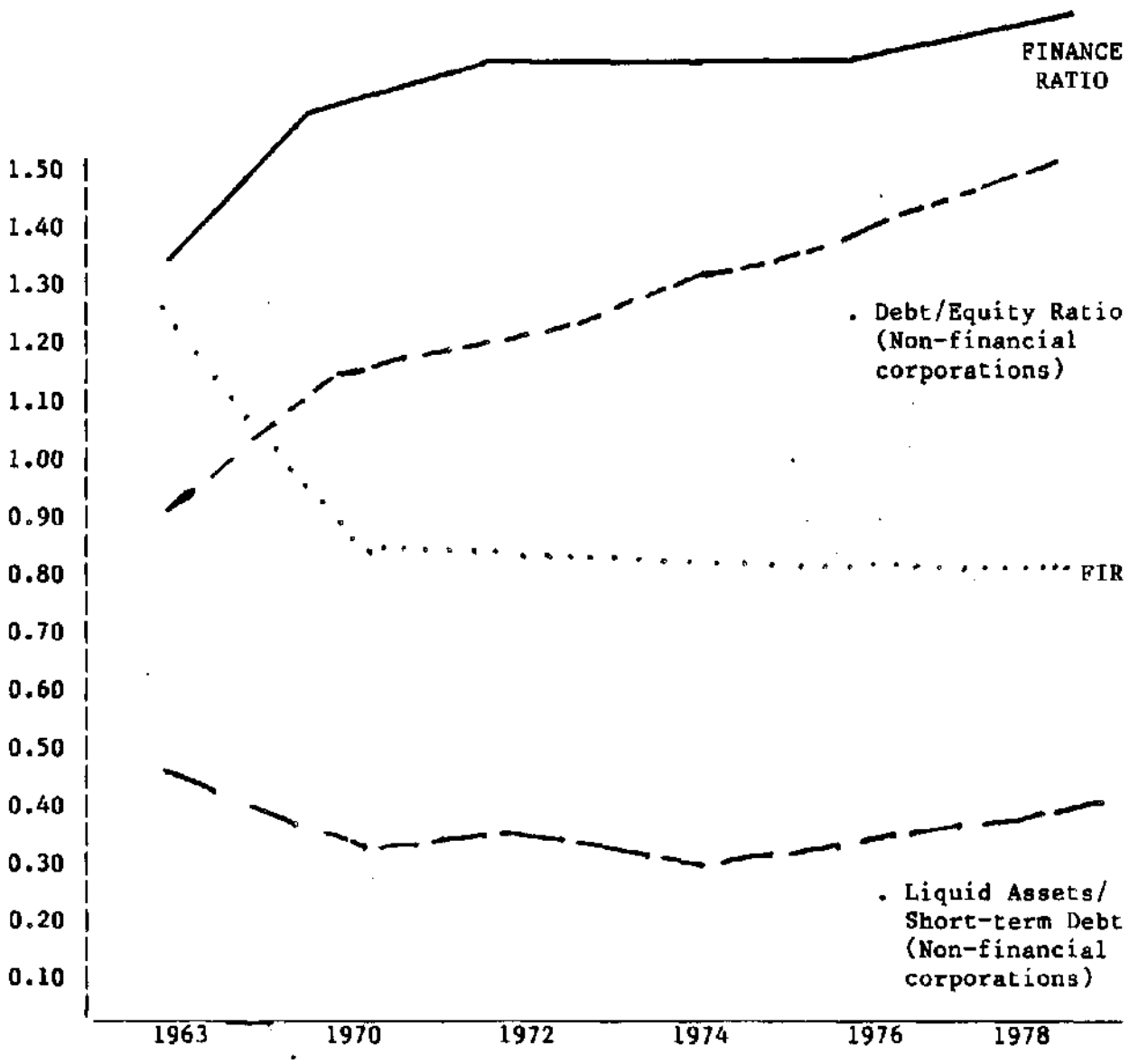
efficient operationally. Emphasis in this study will, therefore, be on this approach, rather than on the more static balance sheet approach, although this latter method has its distinct relevance and usefulness to the analysis, especially in light of data constraints and its theoretical significance.

2. The Treatment of Risk

To some extent, the issue here is an extension of the argument in (1) above. However, it is an equally distinct and important issue as to warrant separate analysis, since traditional analysis of financial structures does not explicitly indicate how "fragile" or "robust" a financial sector really is. Risk in an institution can be expressed in several ways, either in terms of purely operational variables (e.g. the degree of financial debt service requirement in relation to earnings at a given point in time), or in pure balance sheet terms (e.g. total debt or claims to total equity or capitalization). There may also be a mixture of both (e.g. debt service requirements as a percent of total equity or liquid assets--a cash flow phenomenon). The critical point is that it is conceivable that a country's financial structure may appear consistently strong by conventional analysis and even grow, while in fact, it may be increasingly less robust, insofar as management of its risk is concerned. Figure 2-3 below sets out, for instance, the relationship between the FIR and two measures of risk for the U.S.A. Although over the last decade or so the FIR has been relatively stable in value, both the non-financial, and financial sectors have been assuming increasing amounts of debt relative to both its level of capitalization and volume of business activity. This is particularly evident in

the upward trend of the debt to equity ratio and the downward trend of the liquid assets/short-term debt indicator.

FIGURE 2-3: U.S.A.--RELATIONSHIP BETWEEN RISK AND FINANCIAL STRUCTURE VARIABLES



SOURCE: International Financial Statistics and other publications.

The relevance of this feature to the research is largely related to the observation made above concerning 'operational efficiency' in financial structure analysis.

3. Inflation

Inflation is introduced into the analysis of financial structures by the use of two "operators" included in the basic formula, namely the change in prices of price-sensitive financial instruments such as equities (Ψ) and in the general adjustments made for changes in GNP and net wealth (π) reflecting the overall national rates of inflation. The impact of inflation on FIR is generally to depress the value of FIR except "if the average long-term rise in stock prices far outruns the rise in the general price level, or if the average share of stock issues in all net new issues of non-financial sector is unusually high."[41] In this case, there will be a net increase of FIR. In this treatment, however, inflation plays a relatively 'passive' role, compared with an alternative interpretation which tends to have a more dynamic connotation. In this connection, it is well known that inflation is often used as a technique for mobilizing financial resources, perhaps to finance government expenditure (mainly through the excessive expansion in money stock). As a technique for mobilizing savings, this inflation-based technique is designed to alter relative prices and, hence, incomes with the aim of increasing savings and directing them to potential private investors.[42] This process tends to increase internal financing and reduces the economy's dependence on the financial system. However, if this 'active' inflation is later reinforced by demand-pull

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[41] R. W. Goldsmith, The Determinants of Financial Structure, p. 21.

[42] See J. G. Gurley, "Financial Structures in Developing Economies," in D. Krevine ed., Fiscal and Monetary Problems in Developing States (New York: Praeger, 1962).

factors, in which the money supply is relatively restrained but in which output is systematically cut back, then it is quite likely that with a fall in the size of the real infrastructure, which enters the denominator of the basic formula, FIR may be larger. Inflation can then have a different effect on the country's financial structure, especially on its size and composition. Further, and perhaps most importantly, in the case where inflation is induced by sustained government deficit financing through the banking system, there is a consistent enlarging of the banking subsector, relative to the rest of the financial sector. This is likely to be partly symptomatic of and induce financial asphyxiation, with resultant social costs to an economy. Conventional analysis of financial structure of itself is incapable of detecting such costs, which can be significant, as will be seen in Chapter 8 of the study.

4. The Unorganized Financial Sector

Because of the difficulty associated with its measurement, discussion in the literature of the role of the unorganized financial sector is relatively limited. U Tun Wai,[43] in his substantial work on this sector, has pointed out the overwhelming significance that this sector has played in both developed and, more so, post-war developing economies. The disruptions of international and national economies caused by the precipitous rise in oil prices in the 1970s, with the resultant chronic shortage of foreign exchange, has given rise to an unprecedented evolution of the unorganized financial sector in virtually

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[43]See U Tun Wai, "Interest Rates Outside the Organized Money Markets of Underdeveloped Countries."

all developing economies. Failure to account for these in the analysis of the financial structure of LDCs, as does the body of literature currently, omits a significant dimension of the issue. It is estimated, for instance, that in some countries like Ghana, Jamaica and Guyana, growth in the unorganized financial sector has been several times larger than the formal sector in recent years. While this is, in fact, a recognized weakness in traditional analysis, not much can be done in the context of the study to redress it, except to note that it has indirect relationship to financial asphyxiation and dualism, to the extent that a large part of financial activity likely to benefit non-banks, for instance, is usually kept out of the formal system. The loss to non-bank, in relative terms, tends to be greater than banks, given the size usually of the latter.

5. The Role of the Banking System

Finally, while orthodox analysis does address the role of the banking system in a country's financial structure and, as will be elaborated in the next chapter, has noted some distinct behavioural patterns, there appears a less than adequate appreciation of the overwhelming influence this subsector may have, not only on the financial sector itself, but on the economy as a whole. A usually large or expanding banking system has clear monetary and fiscal implications for the economic system in general. In respect of the monetary impact, McKinnon has noted that normally "the banking system should be expanded until the real return in holding money, plus the marginal costs of providing banking services, are equal to the marginal returns on new

investments."[44] In the reality of developing countries, in particular, however, little or no attention is paid to this maximization rule. As a result, tremendous social costs arise in the economy out of inflation, unduly strained budgetary arrangements and, of increasing significance, asphyxiated financial and economic development.

In this connection, it is this particular aspect of the relationship of the banking system to total financial structures of post-war economies that will be explored much more closely in the next chapter and, thus, form the basis for the development of a theoretical foundation for subsequently testing the empirical experience of the phenomenon of financial asphyxiation.

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[44] R. I. McKinnon, Money and Capital in Economic Development, p. 122.

CHAPTER III

BANKING IN FINANCIAL STRUCTURES

--THEORY AND DYNAMICS

The two previous chapters have defined the finance process in an economy and have identified the central elements of its workings and evolution over time. The end-product of the finance process, the financial structure of an economy, was also examined and related to the broader context of economic development. In this respect, one of the major dimensions of financial structure was highlighted, namely its size, with only marginal reference being made to other significant facets, such as its composition and penetration of an economic system.

This chapter seeks to emphasize perhaps the most significant dimension of the financial structure of an economy with respect to the central thesis of this study, namely its composition. Specifically, the role and significance of the banking subsector in the financial sector and structure is amplified, as a crucial background to further development of the main thesis.

The chapter has three broad sections, A, B and C. Section A sets out the conceptual framework of the banking system in an economy, identifying the specific roles of its two main pillars, the central bank and commercial banks. Section B examines the major dimensions of the

evolution of post-World War II banking, citing the implications of these global developments for banking structures of both MDCs and LDCs. Section C examines the well-known symbiotic relationship between banking and financial and economic development, with specific reference to Jamaica, Korea, Trinidad and Tobago and the U.S.A. Some hypotheses to be tested later in the research, about the impact of post-war structural developments in banking on the process of financial asphyxiation in these economies, are finally introduced.

A. The Conceptual Banking Framework

1. Banking as a Financial Subsector

Despite its overwhelming significance to both economic and financial relationships, there has historically been no universally accepted legal definition of the term 'banking' or 'banker.' In English law, for instance, to which most other countries turn for guidance in this field, a banker is generally defined only as a person engaged in the 'business of banking' with no further elaboration on what banking 'per se' actually is. Custom and usage over time, however, have established that basically banking involves the acceptance of deposits and payment of these funds on demand, the principal distinguishing feature from other intermediaries traditionally being the ability of banks to create and use their liabilities as a means of payment or purchasing power. Typically, the characteristic of the demand or sight deposit has been the basis for distinction between banks and non-banks, although this distinction is rapidly becoming blurred in today's changing financial world, as has been already noted.

Conceptually, the banking subsector or industry of a financial system can be viewed in both a narrow and a broad sense. In practice, a number of institutions worldwide have used the name 'banks' or 'banking,' inasmuch as they do not necessarily perform the generally accepted characteristics of banking 'per se.' This constitutes the broad or aggregate view in which the banking subsector embraces a number of financial intermediaries, apart from the traditional central and commercial banks. Under this approach, institutions divide into three broad groups:

(a) Banks of issue--the central or reserve bank--the banker's bank;

(b) deposit-taking banking institutions,[1] which can be broken down into thrift[2] institutions (savings, trustee savings, postal savings banks) and non-thrift or money (commercial, chartered [Canada] or clearing [U.K.] banks);

(c) long-term specialist banking institutions--all types of development banks, investment banks or other institutions performing specialized functions.

Table 3-1 below details some of the essential characteristics and functions of these broad types of banking institutions, excluding central

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[1]That is, where deposits represent the bulk of their sources of funds.

[2]Time deposits generally play a greater role in the deposit structures of thrifts than demand or sight deposits.

and commercial banks, to be examined in detail later. Savings types of institutions, one form of deposit-taking institutions, appear to play a much greater role in financing non-financial companies. In terms of the developed economies, the array of bank-type institutions appear to be very similar for most countries, except for the virtual absence of development banks in the U.S.A. These development banks are often replaced by federal and other private types of specialized institutions. In most developing economies, virtually all of these types of institutions typically appear, with investment banks tending to be less prevalent, in contrast with development banks which operate in virtually every LDC today.

In developed economies, deposit banks represent, by far, the largest share of both the liability and asset submarkets, not only for banking institutions themselves, but even for financial intermediaries in general. A recent study by the Inter-Bank Research Organization (IBRO) in the U.K. of the financial systems in eight developed economies, for instance, has indicated that, on balance, in none of the country cases has the share of deposit-taking banking institutions been less than 36 percent of the claims on or in favour of non-financial corporations.[3] Among LDCs, institutions performing the traditional functions of commercial banking appear to represent the largest category, although, as will be shown later (in the case of Trinidad and

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[3] See T. Hindle, P Frazer and R. Brown, Banking Systems Abroad: The Role of Large Deposit Banks in the Financial Systems of Germany, France, Italy, the Netherlands, Switzerland, Sweden, Japan and the United States, ed. D. Vittas (London: Inter-Bank Research Organization, 1978).

TABLE 3-1

PRINCIPAL FEATURES OF MAJOR TYPES OF BANKING INSTITUTIONS[a]

	SAVINGS BANKS[b]	DEVELOPMENT BANKS[c]	INVESTMENT BANKS[c]	OTHER SPECIALIZED BANKS[c]
SPECIFIC TYPES OR ALTERNATIVE NAMES	- Giro companies, banks - Trustee savings banks - Cooperative banks - Postal savings banks - Savings and loan associations - Mutual banks - credit unions/cooperatives	- Agriculture - Mortgage or Housing, Savings + Loan Assoc. - Local Authorities or Municipal Banks - Development Finance Cos. - Public Works - Industrial - Building Societies - Consolidated Loan fund	- Investment companies - Mutual funds - Mutual trusts - Unit trusts - Investment funds - Trust banks	- Long-term credit banks - Export Import Banks - Foreign Trade Banks - Export Finance Banks - Govt. (Federal) Credit Agencies
MAIN SOURCES OF FUNDS	(1) Private and public deposits (2) Equity (3) Limited debt (4) Operations	(1) Long-term debt (2) Specialised deposits (3) Ordinary deposits (4) Equity (5) Operations	(1) Long-term deposits (2) Long-term debt (3) Equity (4) Short-term money market debt (5) Operations	(1) Long-term debt, largely public sector (2) Equity (3) Limited large deposits (4) Operations
MAIN USES OF FUNDS	(1) Mortgages (2) Consumer lending (3) Automobile lending (4) Private and public securities - mostly money-markets	(1) According to specific sector, long-term lending (2) Short and long-term securities investment	(1) Securities investment - often specialised (2) Margin lending to investors	(1) Export/Import financing to sales/purchases (2) Securities investment (3) Interest rate subsidies, etc.
ESTIMATED % OF TOTAL LOANS TO NON-FINANCIAL COMPANIES (1975)[d]				
(a) US	(a) 20%	(a) —	(a) 8%	(a) 7
(b) UK	(b) 4%	(b) 20%	(b) 4%	(b) 1
(c) GERMANY	(c) 38%	(c) 19%	(c) 9%	(c) 52
MAIN SIMILARITIES TO (a) COMMERCIAL BANKS	(a) - Acceptance of time deposits in large volumes - Involvement in consumer for financing spending. - Investment in money market instruments	(a) - Acceptance of public deposits	(a) - Investment in securities - Broker and financial advisory services available	(a) Ability to make credit to long-term sectors
(b) CENTRAL BANKS	(b) - Investment in money market instruments.	(b) Ability to invest in public and private securities, large government funding usually.	- Investment in securities, often specialized	(a) - Ability to invest in long-term securities (b) - Large government equity funding usually.
MAIN DIFFERENCES FROM (a) COMMERCIAL BANKS	(a) - No reserve requirement - Inability to issue money usually - Inability to pay interest on demand liabilities (not in US) - Concentration mainly in capital markets	(a) - Concentration mainly in capital markets - No reserve requirements - Less restrictions in equity and credit activities	(a) - Commercial banks often restricted in securities investment and broker/dealer services - Margin lending often very controlled - No access to central bank loans	(a) - Less control over investment activities - No power to create money - Less control over resource mobilization activities - No reserve requirements
(b) CENTRAL BANKS	(b) - Less control over other banks - Inability to issue money	(b) - Less control over other banks - Inability to issue money	(b) - No power to issue money - No direct statutory control over other banks.	(b) - No power to issue money - No direct statutory control over other banks.
ANY OTHER RELEVANT FEATURES	- Gradually assuming many traditional commercial banking functions in US and UK in particular - Playing critical role in long-term monetary and resource mobilization in communist countries.	- Largely a phenomenon of developing countries - Special sectoral long-term securities often issued - Investment almost exclusively in sector specific area.	- Securities largest part of asset portfolio - Securities largest part of liability portfolio - Wide range of corporate and financial services usually possible	- Mostly a phenomenon of developed countries, designed to develop the export sector and international trade - Often very useful political and commercial tool.

SOURCE: Research compiled.

a/Using the broad definition of banking institutions.

b/Together with commercial banks are considered "deposit-taking" institutions.

c/Generally considered specialized long-term types of banks.

d/From IBRD Study, "Banking Systems Abroad, etc."

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Tobago and Jamaica), this trend appears to be rapidly reversing. Of the three categories of institutions in this 'broad' definition of the banking subsector, banks of issue appear to command the smallest share of the market, though these institutions undeniably direct the evolution and tone, not only of the banking system itself, but of the entire financial system, as will be elaborated in the next section.

By contrast, the narrow approach to banking equates the banking system to what can alternatively be considered the 'monetary system.'[4] In this case, the central bank[5] and non-thrift deposit banks or commercial banks, whose liabilities are specifically employed as a means of payment, constitute the banking system. Primarily because of the nature of the main thesis itself, in which an explicit comparison is made between the behaviour of the banking system relative to the non-banking system (which often includes several of the institutions in Table 3-1), this study utilizes the narrow concept for the banking subsector. The next section, thus, explains some conceptual issues related to central and commercial banking, the cornerstones of the banking subsector, narrowly defined.

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[4]Central banks will be used as a proxy for the monetary authorities from now on.

[5]Any future reference to the banking system will, therefore, cover only commercial banks (or equivalent) and central banks, unless otherwise defined.

2. Central Banks--Alternative Interpretations

The functions of a 'bank of issue' or central bank are generally indispensable to any financial system, irrespective of whether the economic system is free enterprise or centralized in nature. While institutionally central banking relations are usually distinct in market economies and tend to be less integrated with other banking activities than in the 'monobank' planned economic model, functionally central banking, tends to be essentially similar in both systems. With specific reference to market economies, the role of the central bank is generally well known to include:

(a) Regulation and supervision of monetary policy activities;

(b) management and development of the financial system;

(c) service as banker to the rest of the banking system and government;

(d) issuing of the legal currency; and

(e) management of the economy's external sector activities, especially its foreign reserves portfolio.[6]

These are operationally broad functional areas, subject to alternative tactics of execution from system to system. Of the above functions, monetary policy is generally considered the most important and is perhaps one of the most thoroughly studied and controversial areas of economics, particularly with respect to the tools and instruments to be

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[6] In developing countries, central banks are often required to manage specialized developmental funds, usually in priority sectors, such as agriculture.

utilized in any given economic context. The gist of the controversy appears to relate to whether monetary policy should normally be implemented through manipulation of credit availability, rather than credit cost (a traditional European approach) or by means of changes in the money stock or 'high-powered' money (a traditional American approach).

One issue concerning central banking of specific relevance to developing countries in the 1960s and 1970s has been the particular form the structure of a central bank should assume to optimize its effectiveness in a given economic system. A recent study clearly relates close operational and administrative effectiveness to specific structural characteristics and urges care by developing economies in its final choice. Table 3-2 below sets out major types of central banking institutions and an assessment of their likely impact with respect to specific functions and activities, identified in that study.

Traditionally, there has been so much preoccupation with the role of monetary policy within the portfolio of central banking activities, that the very important function of intermediation which such institutions also perform is often very much overlooked. Like commercial banks and other intermediaries in the financial sector, central banks do in fact play an important intermediation role, to the extent that they lend or invest some of the 'costless' reserves of the commercial banking system and sometimes issue financial instruments for their own account, or to facilitate 'open market' operations. In this context, this study takes the view that sub-optimal performance of this crucial intermediation function by central banks noticeably enhances the

TABLE 3-2

ALTERNATIVE CENTRAL BANKING INSTITUTIONS

Institution	Currency Issue	Banker to Government	Banker to Commercial Banks	Regulation of Financial Institutions	Operation of Monetary Policy	Promotion of Financial Development
Full-fledged central bank	3	3	3	3	3G	1
Supranational central bank	3E	2E	2	2	2E	2
Open economy central banking institution	3C	2C	2	3	1	3
Transitional central banking institution	3CG	2C	2	1	2G	3
Currency enclave central banking institution	1,2CE	2CE	2	1	1	3
Currency board	3C	1	1	1	1	1

Key: 1 = limited involvement
2 = substantial involvement
3 = full involvement
C = considerable constitutional restrictions
E = considerable external influence
G = considerable government influence

SOURCE: C. Collyns, "Alternatives to the Central Bank in the Developing World, IMF Occasional Papers (Wash., D. C.: July 1983): p. 22.

phenomenon of financial asphyxiation by the banking system. This facet of the thesis will be developed in later chapters.

3. Commercial Banks--Some Conceptual Approaches

In terms of financial sector institutions, perhaps none other has been more actively studied at both theoretical and empirical levels than commercial banks. As in the case of central banks, one of the main reasons for this is the special place these institutions have held within the framework of monetary policy and the financial and economic systems in general. Commercial banks are the principal institutional mechanisms through which (directly as in the case of the 'credit availability' approach or less directly as in the 'manipulation of the cost of credit' approach), the major elements of an economy's control over monetary aggregates and policy are effected by the monetary authorities. Yet another reason of more relevance to this study is the central intermediation role also played by commercial banks. As a result of this intermediation function, commercial banks are in some respects the most powerful institutions in the financial sector, often owning as much as thirty to forty percent of the financial assets of an economy.

At the firm theoretic level, the literature on commercial banking can be decomposed into two broad areas--those presenting 'partial' models and the others with 'complete' or 'general equilibrium' models. Most of the former types concentrate on the portfolio management approach. Thus, given an exogenously determined portfolio size,

optimization is concerned with asset allocation.[7] Alternatively, emphasis is on basic liquidity management, in which the central issue is the optimal choice between holding bank reserves and earning assets.[8] Less frequent among the 'partial' models are those concerned with liability management, a technique which, prior to the 1960s, was considered unconventional in commercial banking. In the early post-war years, banking practice traditionally centered around the "bills only" or "golden rule theory" of banking as opposed to the more recently evolving concepts of the 'sediment theory'[9] and related approaches. Prior to the evolution of liability management models, total volume of capital and deposits used to be assumed away as exogenously determined variables, not subject to optimization problems, with the all important role of bank equity as a cushion and protective layer for resources

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[7]One of the earliest of this type of model was D. Orr and W. G. Mellon, "Stochastic Reserve Loans and Expansion of Bank Credit," American Economic Review, Vol. 51 (September 1961), and one of the latest was by J. Niemans, The Theory of Money (Baltimore, Md., 1978).

[8]See R. C. Porter, "A Model of Bank Portfolio," Yale Economic Essays (Fall 1961): pp. 323-359; J. Pringle, "The Capital Decision in Commercial Banks," Journal of Finance, No. 29 (June 1974): pp. 779-795; and R. A. Taggart and S. I. Greenbaum, "Bank Capital and Public Regulation," Journal of Money, Credit and Banking, No. 10 (May 1978): pp. 158-169.

[9]The "sediment theory" of banking suggests that from every deposit acquired by a bank, a certain small proportion at least, remains as 'sediment' in the bank's operations, after normal customer withdrawal. It infers that banks should be able to lend longer than previously, as a result now of the predictability attached to this 'sediment.' It, therefore, is generally a contrary view to the "bills only" doctrine, which in classical, commercial banking held that commercial banks were short-term institutions that should only operate within the short-term spectrum of the market, being involved only in self-liquidating financial assets. The "bills preferably" approach suggested that the "bills only" doctrine be dominant, but not supreme in the operations of commercial banks.

being ignored. With the emergence of liability management, however (Section B below), there is now also strong emphasis on the deposit and capital bases of the banking firm.

By contrast, the general equilibrium models take a more holistic view of the banking firm, after emphasizing a specific dimension of system-wide relevance and significance. Among the complete or total models in the theory of commercial banking, three basic types can be identified:

(1) The 'real resource' or 'real production' models, in which banking activities are expressed in terms of real resource flow and stock costs.[10]

(2) The 'risk aversion' models, employing the general theory of portfolio balance as articulated by Tobin and Markowitz.[11]

(3) The 'monopolistic price setters' models, which, unlike the bulk of theoretical models of the banking firm which assume that the banking firm operates in a competitive environment, present the firm in an alternative framework of monopolistic competition. Because of their specific relevance to the central thesis of this research, monopolistic models of banking are briefly more closely examined.

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[10]For typical presentations of this model, see B. Pesek, "Bank's Supply Function and the Equilibrium Quantity of Money," Canadian Journal of Economics (August 1970): pp. 357-385; and T. Saving, "A Theory of Money Supply with Competitive Banking," Journal of Monetary Economics, Vol. 3 (July 1977): pp. 289-303.

[11]See, in particular, J. Tobin, "A Dynamic Aggregative Model," (1955).

One of the earliest treatments of commercial banks within the monopolistic framework was that of Lester Chandler's.[12] In a seminal article, he refuted the orthodox approach of pure competition for banking and went on to define the banking firm within the context of monopolistic competition. From then on, Alhadeff[13] and a number of others introduced supporting views, with a few writers casting the analysis in an oligopolistic framework. By the end of the second World War, the basically pure market treatment of the banking firm had been relegated to a less important place.[14]

The basic monopolistic banking models of which Klein's[15] perhaps stands out the most, determine bank portfolio structure and scale, through revenue maximization (MC = MR) along demand functions for banking services determined by the market. In so doing, however, as is the case for the risk aversion models, resource cost aspects are generally omitted, since to the monopolist, production and supply characteristics of bank services do not have real significance, except that operating costs are fully covered by the set price.

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[12]See L. Chandler, "Monopolistic Elements in Commercial Banking," Journal of Political Economy, Vol. 46, No. 1 (February 1938).

[13]See D. A. Alhadeff, Monopoly and Competition in Banking (California: Berkeley University of California Press, 1954); and J. Powers, "The Existence of Economies of Structure and of Economies of Scale in Commercial Banking," Staff Memorandum, Federal Reserve Bank of Chicago (January 1967).

[14]For a fairly recent treatment under assumptions of pure competition, see E. F. Fama, "Banking in the Theory of Finance," Journal of Monetary Economics, Vol. 6 (January 1980): pp. 39-57.

[15]See L. A. Klein, "A Theory of the Banking Firm," Journal of Money, Credit and Banking, Vol. 3 (May 1971): pp. 205-218.

One major criticism of such models is that they break down "completely as soon as the bank has to operate as a price-taker in competitive markets."[16] Another is that the cost of banking activities is generally not satisfactorily analyzed. Costs of liquidity management and producing and maintaining liabilities are often omitted. Notwithstanding these weaknesses, the monopolistic or, more appropriately, the monopolistically competitive model appears to have the most direct relevance to the situation of developing countries, where the banking subsector is generally very dominant.

Further, it is this approach, rather than the largely academic "pure market" type of model that more closely explains one facet of the asphyxiating role of the banking subsector in the financial sector of economies.

4. Towards a Synthesis in the Banking Subsector

The links between commercial banking and the monetary authority or central bank in a given economy are well known. The central bank can be considered the commercial bank's banker, and normally its banker of "last resort."[17] As was already noted, these two types of institutions, when consolidated, can be viewed as the monetary system or the banking system narrowly defined. In terms of a simple system of equations, the

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[16] E. Baltensperger, "Alternative Approaches to the Theory of the Banking Firm," Journal of Monetary Economics, No. 6 (1980): p. 19.

[17] Though often, particularly in LDCs, the view is taken that the central bank ought to be a lender of "earlier" or even "first resort" for the commercial banking system, rather than one of 'last resort.' The basic argument here is that the central bank ought to play a greater developmental role in the financial system as a whole, than the one ascribed in the orthodox models, prescribed usually for MDCs.

basic link between commercial banking and central banking can be expressed as follows:[18]

TOTAL ASSETS = TOTAL LIABILITIES :

$NFA + NCG + CPS = CY + DM + ONI$ -- Monetary Survey or Aggregate Monetary (Narrow Banking) System ... (1)

$NFA + NCG + CDMB = RMO + ONI$ -- Central Banking System .... (2)

$NFA + NCG + CPS = DM + CDMB + ONI$ -- Commercial or Deposit Banking System ..... (3)

$NFA = FA - FL = (FA_c + FA_d) - (FL_c + FL_d)$ ..... (4)

$NCG = CG - GD = (CG_c + CG_d) - (GD_c + GD_d)$ ..... (5)

$RMO = CY + CA$ ..... (6)

where subscripts c and d represent central and commercial (deposit) banks respectively, and:

(a) NFA = net foreign assets, consisting of the difference between foreign assets of the banking system ($FA_c + FA_d$) and foreign liabilities ($FL_c + FL_d$);

(b) NCG = net government claims, consisting of the differences between credit to or claims on government by central bank and commercial banks ($CG_c + CG_d$) and government deposits with central bank and commercial banks ($GD_c + GD_d$);

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[18] For a summary presentation and detailed explanation of the framework, see G. S. Dorrance, "A Framework for the Determination of Central Banking Policy," IMF Staff Papers, Vol. 17 (July 1970).

(c) CDMB = central bank claims on deposit-money banks,

(d) CPS = claims on private sector;

(e) CY = currency in circulation outside banks;

(f) ONI = other net items, for both (ONI_c) and commercial banks (ONI_d);

(g) CA = deposits at central banks.

In this partial representation, the major links between the two major components (central and commercial banks) of the narrow banking subsector or monetary system are identified. Essentially, this is bank reserve money, representing the mandatory reserve requirements under the fractional reserve system.[19]

By extension, the link between the banking system and the rest of the financial system can be seen through an addition to the above system of equations as follows:

$$NFA + NCG + CPS = CY + DM + ODM + OFL + ONI \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (7)$$

where NCG and CPS are adjusted to include transactions of other financial institutions, with ODM, largely term deposits, and OFL, other financial liabilities (e.g. insurance reserves being explicitly included). CY + DM + ODM can then be considered M_2 - a broad measure of money supply .

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[19] Other links between the central and commercial banks can be through the central bank lending to commercial banks, or foreign exchange accounts held by the central bank, or the commercial banks for the respective benefits of the other institution(s).

From the above identities, therefore, the close interrelationships between the major elements of the financial sector are evident. As is well known, to the extent that the ultimate custodians of the nation's money stock are largely banks, to that extent, 'inter alia,' is the banking subsector particularly important in the financial sector.

B. The Emergence of Post-War Banking Structure

Globally, post-World War II banking has witnessed an unprecedented metamorphosis. Radical changes and reforms were the order of the day through the 1950s, intensified in the 1960s and were sustained in the 1970s in virtually all the more developed economies. It is also highly likely that these fundamental international reforms characterizing the banking industry have also rippled through LDCs. In general, reforms were multi-dimensional, but broadly divide into two types: (a) administrative and (b) operational. In the context of these reforms, however, what is of critical significance is the impact that these developments have had on banking structures themselves and how these in turn relate to the financial structures of individual economies. In this respect, this study hypothesises that several of these post-war banking activities have in fact induced the phenomenon of financial asphyxiation in economies, both developed and developing. Before this point is more closely examined, however, it may be useful to review aspects of the theory of an optimal banking structure. It can then be conjectured to what extent post-war international banking developments have in fact induced banking structures to diverge from optimal behavioural patterns.

1. The Optimal Banking Structure

Under a market system, economic welfare is optimized in Paretian terms, if a specific change in the banking system confers increased benefits for both consumers and producers. Typically, for consumers "the banking structure is optimal where financial institutions have the desire and ability to serve them and are rewarded accordingly. In general, this situation prevails when firms are wealth-maximizing competitors that are neither subsidized, penalized, or regulated by the government, and where entry into and exit from the market is not constrained."[20] Producers will then provide banking services according to consumer demands, as expressed by the willingness of the latter to exchange their financial resources for services. The existence, then, of perfect competition appears a critical precondition to optimality in banking structure.

George Benston specifically defines four main criteria for banking operators to optimize behaviour. These are: (a) no restrictions to entry into the market; (b) no restrictions to exit from the market, by merger or failure; (c) the absence of collusion leading to the formation of oligopolies or monopolies; and (d) the absence of economies of scale, resulting in 'natural' monopolies. Any banking structure emerging in these circumstances is likely to optimize welfare.

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[20] G. J. Benston, "The Optimal Banking Structure: Theory and Evidence," in Current Perspectives in Banking Operations, Management and Regulation, eds. T. M. Havrilesky and J. T. Boorman (Illinois: AHM Publishing Corp., 1980), p. 365.

A determination of the real impact of change in post-war banking structures of MDCs will, therefore, be a function of the degree to which pure competition is constrained and the extent to which efficiency is, by extension, impaired. This assumes, as Greenbaum does,[21] that banking structure is, in fact, a dynamic means to performance (as Gurley and Shaw[22] interpret the financial structure of an economy to be) rather than a passive end in itself. This notwithstanding, the view taken in this paper is that optimality of banking structure is a relative factor, varying from economy to economy and from one economic system to another.

2. Post-War Banking Reforms[23]

As already noted, post-war banking reforms were essentially of two types, administrative and operational. Administrative restructuring of the banking industry between 1955 and 1980 emphasized (a) increased formalization, (b) enhanced liberalization, and (c) improvements to efficiency in existing banking environments. Although often the specific motive of individual pieces of legislation of new directives in a given economy did impinge on all three of these areas, some distinct categorization is still possible.

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[21] S. I. Greenbaum, "Competition and Efficiency in the Banking System--Empirical Research and its Policy Implications," Journal of Political Economy, 75, Pt. 2 (August, 1967): pp. 461-79.

[22] See J. Gurley and E. S. Shaw, "Financial Structure and Economic Development."

[23] Because of overwhelming significance of commercial banking in banking dynamics, emphasis in this section is largely on commercial banks. Post-war changes in central banking were largely related to changes in techniques of monetary policy, in response to particular domestic economic circumstances.

In respect of formalization of banking arrangements, the major example over the period was in the U.K., where the 1979 Banking Act, which arose partly because of the 1973-74 fringe banking crisis and the First Directive of the European Economic Community,[24] moved to codify banking laws and categorize banking institutions there for the first time. Three categories of banks were created, as follows: (a) recognized, (b) licensed and (c) exempt banks. In addition, for the first time, a mandatory deposit insurance scheme was created. Prior to the 1979 Act, banking in the U.K. was based largely on tradition. The 1946 Bank of England Act, Sundry Company Acts and the Depositor's Protection Act provided the legal framework within which banking was circumscribed in the past.

Efforts to liberalize existing banking systems in the post-war era were many. In the socialist economies, changes in banking essentially responded to macro-economic changes. The mid-1960s and early 1970s witnessed significant attempts at broadening operational activities and redefining aspects of credit and liquidity management. Less reliance was placed on the budget for provision of credit to the economy and increased dependence was placed on the banking system. Interest rates were made more determinate over credit allocation processes and internationalization of trade between COMECON and non-COMECON trade was expanding, largely as a result of the creation of the International Bank for Economic Cooperation in 1964 and the International Investment Bank in 1971. In these changes, virtually all

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[24] See EEC: Official Journal of the European Communities, Report No. L322/31 (December 17, 1977).

socialist countries--including East Germany, Poland, Hungary, Yugoslavia, Romania, Bulgaria and the U.S.S.R.--were involved to varying degrees.[25]

For the market economies, prior to 1967, the French system strictly adhered to traditional "bills only" doctrine in commercial banking. There was, however, a marked shift thereafter to a more broad-based system, with less distinction between commercial and investment banking activities, as was the case in West Germany earlier. In 1969, banks in Sweden were permitted for the first time to engage in virtually all financial activities, while in 1973 Holland reformed its credit control system, making it more responsive to market mechanisms, including the lifting of credit controls. Undoubtedly, the greatest post-war reforms aimed at increased financial system liberalization took place in the U.S.A., when in 1980, the Deregulation and Monetary Control and Depository Institutions Deregulation Act,[26] with widespread implications for banking institutions, in particular, was passed. Most of these very reforms had specific impact on and implications for operational and financial efficiency, the essence of which are elaborated in the next subsection.

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[25]For an informative analysis of post-war socialist economic reforms, see P. T. Knight, "Economic Reform in Socialist Economies: The Experiences of China, Hungary, Romania, and Yugoslavia," World Bank Staff Working Papers, No. 579 (Wash., D.C.): 1983.

[26]Most of the deregulatory and other aspects of this Act are already in effect with mixed results to date.

3. Functional/Operational Dimensions

In general, virtually all the post-war administrative reforms introduced in developed countries had the ultimate objective of enhancing banking and financial system-wide operational efficiency. However, there were a number of specific innovations directly aimed at broadening and deepening operational dimensions of banking in both Europe and North America. Most important among these were: (a) changes in monetary policy, (b) innovative techniques in liability management; and (c) increased internationalization of banking. Because of their specific significance and implication for changing banking structures not only in MDCs, but more importantly in LDCs, these three areas are briefly reviewed. The extent of the influence of these developments in the banking and financial structures of the four research economies are later hypothesized.

(a) Changes in Monetary Policy Techniques: In part influencing and in part adjusting to the changes in the regulatory and administrative environment, post-war banking experienced a number of functional shifts, both at the level of central and commercial banking. Primarily in the area of monetary control:

> One aspect of the reforms introduced in several countries in the late 1960s and early 1970s has been the change of emphasis in credit control from interventionist policies to market-oriented techniques. However, in most countries there has been a return since 1973 to direct restrictions of one form or another. Credit ceilings or supplementary reserve requirements on the growth in loans or deposits in excess of a stipulated norm have been applied either continuously or intermittently in France, Italy, Sweden, the Netherlands, Switzerland and the United Kingdom. But the emphasis on the need to control monetary

> aggregates has continued and probably increased in more recent years.[27]

The last sentence of this quote has been especially true in the late 1970s and early 1980s in the U.S.A., when the Federal Reserve system had been maintaining a particularly tight monetary policy through control over the money supply. As a result, interest rates had been unusually high and credit demand slack. While the objective of this policy had been to control soaring inflation (and did succeed in large measure) stagflation, undoubtedly, set in, with unemployment soaring with increasing recession.

(b) Innovative Techniques of Liability Management: The most overwhelming development in commercial banking at the functional/operational level has possibly been the evolution of the use of liability,as opposed to traditional asset, techniques in management. The implications of this new preoccupation with liability management have been manifold.

The growth of the use of liability management techniques mainly by American banks in the early 1960s emerged as a result of falling market shares and declining domestic profitability in commercial banks. The concept centered around the aggressive purchase of liability funds, primarily through the acquisition of certificates of deposits, federal funds and subordinated debentures. The principal objective was to bolster sagging capital and funding capacities of commercial banks, at the same time enhancing their ability to expand their operations.

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[27] T. Hindle, P. Frazer and R. Brown, Banking Systems Abroad--The Role of Large Deposit Banks in the Financial Systems of Germany, France, Italy, the Netherlands, Switzerland, Sweden, Japan and the United States, p. 7.

While, for the most part, these objectives appear to have been met both for European and, especially, American commercial banks, the emergence of the intensive use of liability management techniques brought in its wake a number of financial system-wide problems not previously anticipated or experienced. This was especially the case in the U.S.A.

One of the major results in the U.S.A. of this development was increased regulation in banking, which through changes at domestic and international levels, has significantly changed the face of commercial banking. In particular, largely as a result of increased price competition for deposits in mid-1966, the Federal Reserve System's Regulation Q established in the 1930s, was enforced at a very low level of interest rates. The objective was to control the larger banks and to allow the smaller banks and non-banks to acquire a larger share of available funds. However, the 'disintermediation' that resulted involving the direct placement of the public's funds into money market instruments without channelling them first through banks or other financial intermediaries was particularly acute in 1966 and in 1969. Disintermediation again intensified during the 1973-1976 credit crunch, when tight money policies were being pursued in the U.S.A., as a result of which banks were forced to sell their portfolio investments at low prices and to

radically restrict lending.[28] A number of near-banks consequently failed, and there was a notable increase in banking mergers. Banks also tried to avoid the impact of Regulation Q by investing abroad, through the creation of one bank holding companies. Further, both of these developments, in their own specific ways, adversely affected the domestic U.S. economy. The effectiveness of monetary policy weapons by the Federal Reserve System was, for instance, reportedly severely affected.

In essence, commercial banking had sent ripples through the financial system, as a result of the marked shift to the innovative but destabilizing liability management techniques.[29]

(c) The Internationalization of Banking: "One of the most remarkable features of post-war economic history has been the progressive internationalization of banking."[30] This feature has taken many forms and shades, namely: (a) the growth of the Euro-currency market itself; (b) the increasing dominance of off-shore banking centres; (c) increased consortial banking; and (d) major changes in export credit financing.

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[28]Regulation Q then caused some serious problems when the failure of the Central Transportation Company in 1970 caused increased credit demands on commercial companies which previously sold large amounts of paper as a result of Regulation Q. Companies involved were then turning to commercial banks, at that time relatively illiquid. The federal authorities were later forced to ease the tight restriction on the Regulation Q.

[29]For a useful review of the impact of liability management in the U.S. economy, see Chapter 9 of P. S. Nadler's work, Commercial Banking in the Economy, 3d ed. (New York: Random House, 1979).

[30]H. Mayer, "Credit and Liquidity Creation in the International Banking Sector," Economic Papers, No. 1 (Basle: Bank for International Settlements, Monetary and Economics Dept. (November 1979): p. 5.

Underscoring all of these marked functional changes, has been an overall upsurge in the presence of multinational banking.

In this last respect, Maurice Odle[31] has noted that the preoccupation with Euro-currency market developments, fuelled largely by the search by American banks for cheaper sources of liabilities, is merely one facet of the increased level of internationalization of banking, particularly over the past twenty-five years. He has argued that the historical system of the evolution of capitalism with its symptomatic internationalization of productive capacity, has induced the rapid emergence of international banking over the years. The British were the pioneers, together with the French.[32] Orthodox literature has attributed the growth of international banking to the following factors: (a) the growth of international trade, whereby absence in domestic economies of banking facilities necessitated the presence of foreign banks; (b) the use of superior marketing, management and technology by industrialists in metropolitan countries and (c) the need for service banking facilities in host economies--supposedly a "defensive entry" technique. These general arguments in the orthodox literature have basically inferred that internationalization of banking has done more good than harm for host developing countries. Taking exception to this position, Odle has, in fact, demonstrated that while, historically,

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[31]See M. A. Odle, Multinational Banks and Underdevelopment (Georgetown: University of Guyana, 1979), for a very informative 'non-orthodox' representation of the problem.

[32]For an orthodox approach, see H. G. Grubel, "A Theory of Multinational Banking," Banco Nazionale del Lavora Quarterly Review, No. 123 (December 1977).

there were indeed benefits to domestic economies through internationalization of banking (mainly in the form of employment generation, exposure to new technology, incremental direct and indirect investment opportunities, marginal revenues, etc.), there have also been a number of significantly distortive and repressive features. These often include: (a) reduced national autonomy in the use by host economies of monetary policy for local purposes; (b) encouragement of policy stances not in the interests of the long run stability of the world economy as a whole and certainly almost always not in those of the specific domestic economies; (c) encouragement of destabilizing capital inflows to already fragile LDC economies; (d) the generally repressive impact on the development of domestic financial institution and (e) sustained dependence of host economies, usually developing ones, on the metropolis. In short, he implicitly suggests that international banking, with its domestic counterpart banking operations, is an integral dimension of the financial asphyxiation process adversely affecting optimal financial and economic development in host economies. This argument will be further explored in Chapter 7, when selected aspects of financial asphyxiation are elaborated in light of the empirical evidence in Jamaica, Korea, Trinidad and Tobago and the U.S.A.

4. Implications for Banking Structure

Given the often sweeping nature of their impact, several of the administrative and functional/operational developments in banking in MDCs have undoubtedly fundamentally reshaped the underlying structural features of MDC banking, and more likely those of LDCs, whose structures have in the past been chronically dependent on the metropole. The

evidence has indicated that some of the major structural changes likely to arise as a result of these post-war developments include: (a) increased complexity of national banking systems;[33] (b) greater tendency towards increased concentration;[34] (c) tendency towards more "congeneric" or multipurpose type of banking;[35] and (d) increased ownership and control by financial institutions, especially banks, of non-financial entities.[36] The result of the complex of structural changes in (a) to (d) above, is more than likely to be increased asphyxiation by the banking institutions of non-banking institutions at the national economic level. In real terms, the effect of such developments is further likely to be a systematic reduction of competition in the financial sectors of economies, with the related evolution of less than optimal banking structures. This will evidently have implications for the significant role of the banking system on financial and economic development.

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[33] "This has resulted both from the expansion of the domestic and international activities of most types of institutions and from the emergence of new institutions to meet the changing financial needs of the modern capitalist economies," in T. Hindle, P. Frazer and R. Brown, Banking Systems Abroad, p. 11.

[34] This has developed largely as a result of mergers, changes in operational efficiency and changes in consumer and institutional preferences.

[35] Of related significance see, for instance, D. R. Khatkhate and K. S. Riechel, "Multipurpose Banking: Its Nature, Scope and Relevance for Less Developed Countries," I.M.F. Staff Papers, Vol. 27 (Sept. 1980).

[36] For an excellent analysis of the factors underlying this phenomenon in the U.S.A., see D. M. Kotz, Bank Control of Large Corporations in the United States (Berkeley: Univ. of California Press, 1978).

This question will be the focus of the last section of this chapter. It will be hypothesized there that, largely as a result of distortions arising from financial asphyxiation induced in part by several of the structural changes in banking systems of post-war economies, the post-war evolution of the banking systems in the four research economies has not been consistent with theoretical and historical experiences. The analysis at this point must necessarily only be indicative, to be more scientifically empiricized in Chapters 6 and 7, once the model of financial asphyxiation has been fully formulated in Chapters 4 and 5.

C. The Banking/Development Symbiosis

In the context of this study, the question of development can be addressed at two levels: (a) economic development and (b) financial development. Both have their respective relevance and significance with respect to the influence the banking system can exert in a given situation.

1. Growth and Development

The question of development inevitably introduces the highly controversial area in the literature of "growth versus development" at the level of the macro-economy. The well-known controversy appears to arise from the definition, measurement and factors influencing each of these two phenomena and need not be regurgitated here. Economic growth implies sustained increases in per capita real incomes or output of an economy, usually without consideration of structural or distributional factors. The most well-known and generally accepted measure of growth is GNP or some form thereof.

Development, on the other hand, is accepted to be a much broader concept, necessarily implying growth, but also embracing "transformation" of the structural and income distributional aspects of the economy. It is further considered by Marxists, in particular, not only to embrace technical or economic considerations, but to include a strong social bias. There are a number of measures suggested in the literature, including changes in sectoral performance, social indicators, as measured by physical quality of life indices, level of living indices or basic needs indicators.[37]

Several factors and influences have historically been identified and ascribed to processes of growth and development. Classical economists, epitomised by Adam Smith, have contended that population growth is the cornerstone of economic progress. This was, however, vehemently challenged by other classical scholars such as Malthus and Ricardo, who argued that with a fixed supply of land and exponential population growth, diminishing returns would sooner or later set in. Virtually all schools have, however, accepted to varying degrees that some form of savings accumulation is a necessary catalyst for growth. Neo-classical schools rationalized the growth process on changes in

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[37] For a useful review of such indicators, see N. Hicks and P. Streeten, "Indicators of Development: The Search for a Basic Needs Yardstick," World Bank Reprint Series, No. 104 (1980).

technology and supplies of capital and labour, with relatively little significance being placed on savings as a central feature.[38] Schumpeter, in particular, argued that 'innovation' and 'entrepreneurial' skills were the key to changes in output over time. Neo-Keynesians, however, have placed strong stress on the accumulation process and have ascribed a strong financial dimension to the impact of such a process. Investment is influenced by interest rates, which in turn influence savings, which then levers the output/capital ratio, as in the Harrod-Domar formulation.[39] Marxists, at another level, have taken the view that the rate of capital accumulation, the key to growth, can only be sustained at the expense of exploitation of labour. They, however, downplay the finance or investment motive in the Keynesian framework, though the views of the schools are similar on the importance of capital accumulation. While Keynesians and neo-Keynesians, however, have agreed that growth can continue indefinitely as long as the savings or accumulation process is sustained, neo-classical scholars and Marxists refute this position, though for different reasons. Under the Marxist system, it is strongly believed that capitalism is doomed as a result of the historical dialectics of materialism, which is the very

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[38] Thus the typical neo-classical production function will be as follows, using the Cobb-Douglas production function:

$$Y = AK^{a} N^{1-a}$$

where A = technological change, Y = output, K = capital, N = labour, and 'a' represents the fraction of income accruing to capital, and the elasticit of output with respect to changes in the capital stock.

[39] In the neo-Keynesian Harrod-Domar formulation, the production function can be represented as Y = GK, where Y = output, K = capital, and G = the average savings ratio.

embodiment of the capitalist system. The inherent contradictions of the capitalist system are supposed to be highly determinate on the distinct finiteness of the production and growth frontiers. This Marxist view is well articulated by Clive Thomas, who has argued that neither growth, let alone transformation, of the structure of production, exchange, distribution and/consumption, can be positively affected in any sustained way unless the two "Iron Laws" of the convergence of "resource use and demand" and "of needs with demand" are fully observed.[40] Thus, the need for comprehensive planning in and an integrated approach to the development process of economies become highly necessary.

2. Financial Development

As has already been noted, virtually all schools of thought have confessed to a strong positive relationship between the behaviour of the financial sector and the economy as a whole. Specifically, a clear direct link is ascribed to financial development and general economic development. Khatkate and Riechel have suggested that "financial development is a generic term that embraces structural, functional, instrumental and process-related aspects of the financial system."[41] Goldsmith has been less comprehensive and defines it as a "change of financial structure,"[42] though financial structure is itself a complex phenomenon as was noted in Chapters I and II. Cameron has argued that

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[40]See C. Y. Thomas, Dependence and Transformation--The Economics of the Transition to Socialism (New York: Monthly Review Press, 1974).

[41]D. R. Khatkhate and K. Riechel, "Multipurpose Banking--Its Nature, Scope, and Relevance for Less Developed Countries," p. 478.

[42]R. W. Goldsmith, Financial Structure and Development, p. 37.

there are three broad indications of the influence of the financial system on general development: (a) inadequate finance, which generally restricts industrial and economic development; (b) whether the financial system itself is permissive and accommodates all "creditworthy" borrowers and (c) whether financial institutions themselves actively promote new opportunities or encourage the consumption of finance, through direct availability and support to entrepreneurs. "Metaphorically, finance is the lubricant of the process of economic growth and the banking system is the chief dispenser of finance."[43]

3. Banking in Financial and Economic Development

By analogy, the processes by which the banking system in a given economy influence financial and, ultimately, economic development are largely identical. Schumpeter was the first among modern orthodox economists to explicitly identify such relationships.[44] He ascribed positive significance to the ability of commercial banks to create purchasing power, which was the hub of the finance and investment process. Gurley and Shaw have lent more substantial support recently arguing that financial institutions in developed countries are automatons generating the demand for financial assets. Banks[45] are a leading agency in this respect.

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[43] R. Cameron, Banking in the Early Stages of Industrialization, with the collaboration of O. Crispo, H. T. Patrick and R. Tilly (New York: Oxford University Press, 1967), p. 2.

[44] See J. A. Schumpeter, The Theory of Economic Development (Cambridge, Mass., 1933), cited in R. Cameron, Banking in the Early Stages of Industrialization.

[45] Essentially, but not exclusively, commercial banks, since central banks do have a significant input in this respect.

In general, the literature has ascribed a number of clear causal relationships to banking and development at large. One of the leading authorities on this subject, Rondo Cameron, has noted the following on these relationships:[46]

(a) Banking has historically been influential, through the provision of "supply-leading" finance, in the investment, and hence, industrialization process (Germany, Japan, in particular, and in the case of the U.S.A., in agriculture);

(b) such investment-induced development has improved the quality of financial sector service delivery, and has produced a narrowing of dispersion of interest rates over time. Though this does not necessarily imply a lowering in such rates, it certainly does infer a more stable environment;

(c) with monetization of subsistence sectors, largely through the creation of banks, there were shifts historically to commercial production with increased specialization, increased work effort and, ultimately, changes in relative prices of different products;

(d) banks' ability to create means of payment confers power of transferring resources directly from less productive to more productive areas of the economy, directly influencing output; and

(e) banks have in the past been in a position to influence the quality of entrepreneurship and innovation in a system, though the literature is

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[46]Apart from Cameron's book on Banking in the Early Stages of Industrialization, see his book on Banking and Economic Development--Some Lessons of History (Clarendon: Oxford University Press, 1972).

generally divided on the contribution of commercial banks historically to the latter, conservative, as they have traditionally been known to be.

Most of the benefits identified above are, however, directly related to commercial banking. A number of potential and real benefits can also be linked with the central bank, including: (a) stability of the financial system; (b) influencing of investment decisions; (c) control of inflation and (d) even limited credit through sound monetary and fiscal policy, etc. "In short, wherever bank credit permitted a more efficient allocation of resources and increased productivity, it also promoted the progress of industrialization."[47] It is, in fact, its influence on industrialization as a whole that is believed to be banking's major contribution to economic development.

4. Some Empirical Relationships--Banking Structure and Development

Table 3-3 below sets out the experience for the banking systems of the four research economies between 1960 and 1980. Contrary to historical empirical relationship, the banking systems of all of the four countries indicated a sustained upward trend over the two decades as its share of the financial sector continuously rose. This is a critical and necessary 'prima facie' evidence of the presence of financial asphyxiation in these economies. It is, however, interesting to note that the size of the banking system of the mature economy in the

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[47] R. Cameron, Banking in the Early Stages of Industrial Development, p. 14.

sample, the U.S.A., has been consistently just over a half that of non-banks, for the sample of institutions constituting the financial sector in this case. (In practice, the size of the U.S. banking system is probably less than half, if all the non-banks including securities markets, from the broader definition of banking are taken). Such fundamentals change resulting from use of the broader view is, however, unlikely for the developing countries (with the possible exception of Korea), as the other non-banks included here are relatively insignificant in size.

An analysis of the evolution over the period of the component institutions of the banking system presents some interesting findings. There has been a massive increase in the size of the central bank in the banking system for both Trinidad and Tobago and Jamaica, both countries experiencing more than a doubling of its 1960 share by 1980, at the expense of the commercial banks. This contrasts significantly with Korea and less so with the U.S.A., in both of which cases the central bank's relative size diminished.

With respect to this Trinidad and Jamaica feature, there were two fundamentally different underlying reasons--basically "boom and bust"[48] situations, as Bourne noted. With the influx of 'petro-dollars' in the 1970s, Trinidad's central bank, as custodian of the nation's reserves and government's banker, benefitted remarkably, hence its

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[48] C. Bourne, "Banking in Boom and Bust Economies: Lessons from Trinidad and Tobago and Jamaica," Social and Economic Studies, Vol. 34, No. 4 (1985): pp. 139-164.

TABLE 3-3

POST-WAR EVOLUTION OF THE BANKING SYSTEMS OF JAMAICA, KOREA, TRINIDAD AND TOBAGO AND THE U.S.A.

Share of Banking in The Financial Sector (%)

	1960	1966	1972	1976	1980	Per Annum Avg. 1960-1980
JAMAICA	84.0 a/	71.9	76.4	76.2	81.0	76.8
KOREA	99.1 a/	66.7	70.4	71.2	75.9	73.5
TRINIDAD AND TOBAGO	84.0 a/	77.6	75.0	90.0	91.8	82.2
U.S.A.	54.0	54.6	56.7	56.4	56.9	55.9

Growth Performance of Banking System Relative to GNP and Inflation (% per annum)

	1960	1966	1972	1976	1980	Per Annum Avg. 1960-1980
JAMAICA						
Banking System	16.1	11.4	20.1	15.9	32.4	18.8
GNP	5.6	5.3	12.4	11.8	10.4	12.0
Inflation b/	4.7	2.4	4.6	13.4	28.0	11.3
KOREA						
Banking System	28.2	47.7	36.2	40.7	34.8	36.5
GNP	20.5	20.3	22.5	34.5	23.6	28.3
Inflation b/	7.1	12.5	12.5	20.1	23.4	15.1
TRINIDAD AND TOBAGO						
Banking System	3.0	7.8	23.5	51.5	24.0	22.5
GNP	6.9	8.4	13.6	28.2	4.9	13.3
Inflation b/	2.2	2.9	6.4	13.7	16.1	8.1
U.S.A.						
Banking System	7.2	7.3	11.4	7.5	10.8	9.3
GNP	5.6	8.9	9.3	9.4	10.3	8.6
Inflation b/	1.1	2.4	6.8	8.7	8.5	5.3

SOURCE: Research Calculations from base data in International Financial Statistics and Annual Reports of Central Banks.

a/Figure may be highly distorted due to large volume of missing data for non-banks.

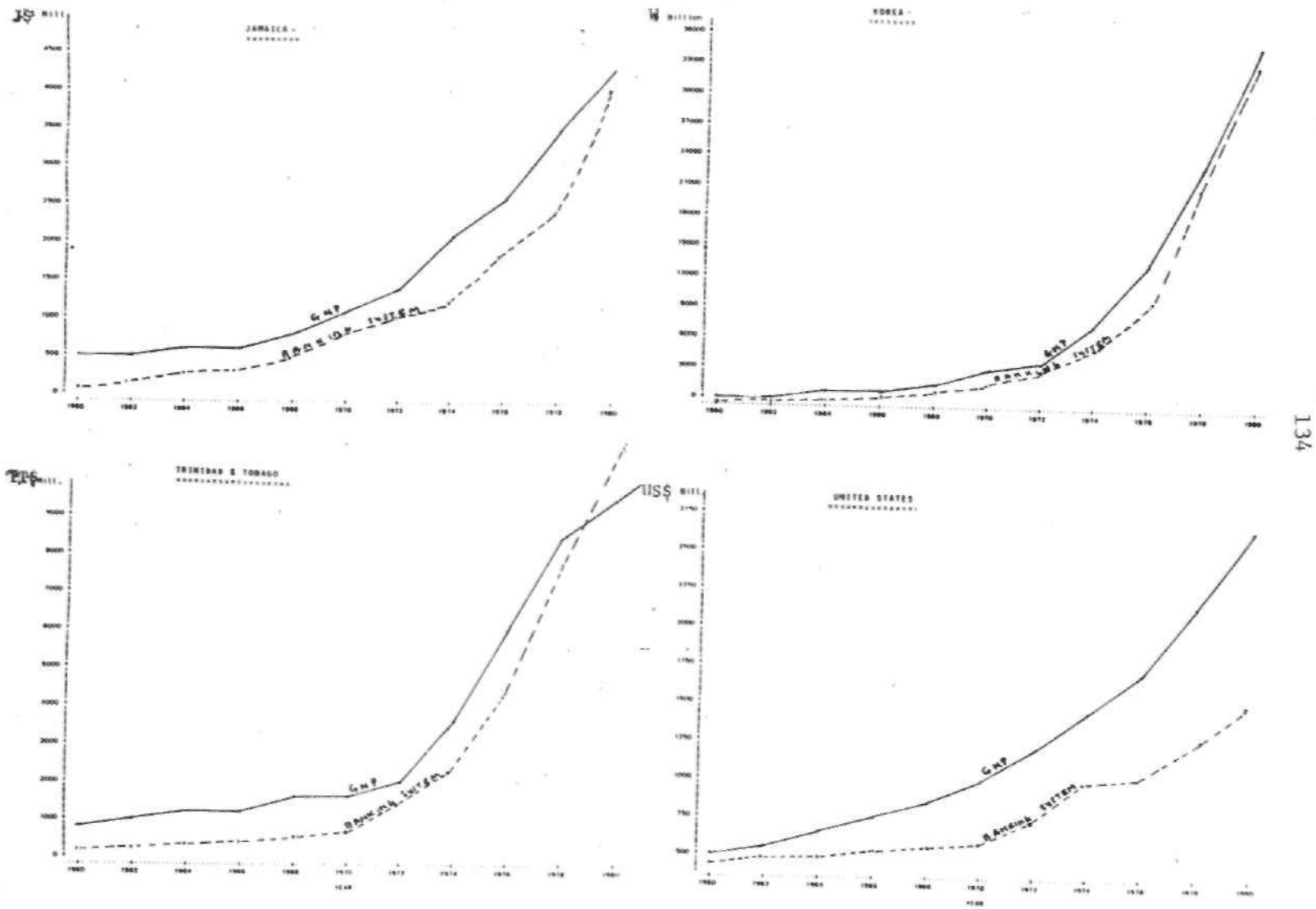
b/Change in Consumer Price Index.

significant increase over levels of the 1960s. Jamaica, however, was the victim of rapidly declining national economic circumstances, with marked fall offs in budgetary resources. As a result, deficit financing became significant, with the Government, in fact, substantially borrowing from the central bank. Hence, claims on the public sector (Government) increased from J$6 million in 1960 to J$1.5 billion by 1980--an incredible increase. This, thus, constitutes a clear example of the inherent advantage that accrues to the banking system of an economy, whereby it benefits both in times of boom and bust, undoubtedly a contributing factor to financial asphyxiation, in times of boom and bust.

The slight reduction of the central bank share in the U.S.A. is consistent with historical trends. The experience has been that, after an initial rise, their share of central banks in the total financial system begins to decline with financial development, as financial structures become more complex. There is, thus, a historical empirical explanation for the behaviour of Trinidad and Jamaica, being fairly undeveloped. The Korea situation, however, remains less clear, possibly except that as the financial system expanded very rapidly during the 1960s and 1970s, it also broadened and deepened, with the commercial banking system playing a rapidly important role. This, however, only partially explains the massive decline of the central bank's share of the financial system from 70 percent in 1960 to 21 percent by 1980.

Consistent with the theory of the growth of a country's financial superstructure relative to its real infrastructure, growth in the banking system outstripped that of both GNP and the rate of inflation in

FIGURE 3-1: RELATIONSHIPS BETWEEN THE BANKING SYSTEM AND GNP
FOR JAMAICA, KOREA, TRINIDAD AND TOBAGO AND THE U.S.A.



Source: Research calculations and International Financial Statistics.

all four of the survey countries (Table 3-3). Banking system growth in all countries was, therefore, real and positive. There were no major trends from year to year in growth, except for Trinidad and Tobago whose rate increased markedly from year to year right up to 1976.

In general, in all countries except Trinidad and Tobago in 1980, the annual average rate of inflation was less than the growth in GNP.

Finally, with respect to the relationship between the banking system and development, Figure 3-1 above clearly illustrates the distinct parallel evolution of the GNP and banking system curves for the three developing countries, in particular. 'Prima facie,' there is a clear positive relationship consistent with the literature, but the direction of the causal mechanism is unclear and must be more closely investigated before a conclusive position can be adopted.

In summary, while empirically the post-war evolution of the banking structure of Jamaica, Korea, Trinidad and Tobago and the U.S.A. in large measure supports conventional theory, there are still a number of phenomena that have emerged for which there are, as yet, no clear explanations. The major of these appears to be the sustained and rapid rise of the banking system relative to non-banks in the late 1960s and 1970s within the financial system, contrary to the theory of the evolution of the financial sector. This study takes the view that this is the clearest and earliest evidence of the emergence of the phenomenon of financial asphyxiation in an economy.

Chapter 4, thus, attempts to formulate a theory for this process of financial asphyxiation.

PART II. THE FINANCIAL ASPHYXIATION PROCESS

CHAPTER IV

TOWARDS A THEORY OF FINANCIAL ASPHYXIATION IN AN ECONOMY

The first three chapters have discussed in great detail the process of finance and the determinant elements of the financial structure and development of an economy. The previous chapter, in particular, defined the role and relationships of the banking system in the context of financial and economic structures. Of particular interest to this chapter and the remaining ones of this study was the finding in Chapter 3, for almost all of the research economies, that contrary to conventional theory, the size of post-war banking systems has apparently been enlarging at an unusual rate relative to their GNP (the exception to some extent being the U.S.A.). This phenomenon was suggested to be indicative of the emergence or actual presence of the process of financial asphyxiation in an economy, a theory for which, this chapter attempts to define.

This chapter is divided into six sections, A through F. Before the development of the theoretical framework of the concept, Section A briefly examines the major features of non-banks in an economy, against whose performance the banking system is measured throughout. Section B then formally introduces the concept of financial asphyxiation, which is graphically represented in Section C. Section D hypothesizes

the factors that are likely to induce financial asphyxiation in an economy. Section E then highlights some symptoms of the process, while Section F concludes with a discussion of the likely transmission channels for the effects of financial asphyxiation to the real sector of an economy.

A. The Significance of Non-Bank Financial Intermediation[1]

Conventional theory ascribes an increasingly significant role to non-bank financial intermediation, with the general development of an economy over time. The literature indicates an increasing share of NFIs in the total assets of financial institutions as an economy emerges, with a corresponding decline in the share of BFIs.[2] As a result, the behavior of NFIs in both LDCs and MDCs should be carefully monitored, if only because their evolution can conceivably have major implications for the effectiveness of banking intermediaries and, by extension, for monetary policy and general economic management.

Structurally, NFIs can be divided into four groups: (a) savings types (e.g postal savings banks, giros, credit unions, building societies, etc.); (b) insurance or contractual savings types (life, non-life insurance or pension funds, etc.); (c) unorganized money market types (pawn shops, money-lenders, etc.); and (d) sector-specific public and private finance corporate types (industrial, housing and agricul-

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[1]Since the general thrust of the thesis is to demonstrate asphyxiation by the banking subsector of the non-bank subsector, more stress is placed on the former (as in Chapter 3) than on the latter. This section, therefore, only presents an overview of NFIs.

[2]See, in particular, R. W. Goldsmith, Financial Structure and Development, especially Chapter 5.

tural development credit entities and finance companies). In terms of their asset/liability structures, there are distinct similarities in most of these institutions, though they are equally striking dissimilarities. Table 4-1 below demonstrates some of these common and disparate features by identifying the major sources and uses of funds by NFIs. Post-war growth of NFIs, like that of BFIs, has been quite strong in both LDCs and MDCs, as the entire process of financial intermediation has intensified world-wide. In the Caribbean, for instance, insurance companies have tended to lead the way in growth, followed by building societies, while postal savings have remained constant in some economies and have actually declined in others at the expense, mainly, of commercial banks.[3]

With respect to the Caribbean, Odle[4] has noted a number of compelling reasons underlying the strong post-war evolution of NFIs in LDCs. These include:

(a) Changing behavioral patterns of the household sector, in which savings in financial assets have increased tremendously and remained more stable;

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[3]See, for instance, Chapter 4 of M. A. Odle's study on The Significance of Non-Bank Financial Intermediaries in the Caribbean, (Mona: ISER, University of the West Indies, 1972).

[4]Ibid.

TABLE 4-1

MAJOR TYPES AND CHARACTERISTICS OF NON-BANK FINANCIAL INTERMEDIARIES

CATEGORY OF INSTITUTION	MAIN SOURCES OF FUNDS						MAIN USES OF FUNDS		
GROUP	M	NM	STNM LIAB.	LTML LIAB.	LTNM LIAB.	E	STMT CLAIMS	LT CLAIMS	CORP. STOCK
SAVINGS TYPE									
. Postal Savings Banks		X	X				X	X	
. Giros		X	X						
. Credit Unions		X	X				X	X	
. Savings and Loans		X	X				X	X	
. Building Societies, etc.		X	X				X	X	
. Credit Cooperatives		X	X				X	X	
INSURANCE TYPE									
. Life Insurance				X	X			X	
. Non-life Insurance				X	X	X		X	X
. Pension Funds				X	X			X	
. Social Security Funds, etc.				X	X			X	
. Retirement Funds				X	X			X	
. Holding Companies						X			X
UNORGANIZED MONEY MARKET TYPE									
. Pawnbrokers	X					X	X		
. Moneylenders	X					X	X		
. Informal Arrangements, such as `Suso´ and `Partner,´ etc.	X					X	X		
PUBLIC AND PRIVATE FINANCE CORPORATE TYPE									
. Agricultural Finance Cos., Banks		X		X					X
. Industrial Finance Cos.		X							X
. Housing Banks		X							X
. Investment Trust Banks, etc.						X		X	X

LEGEND:

M = Money
NM = "Near-Money"
STNM LIAB = Short-term Non-monetary Liabilities
LTM LIAB = Long-term Liabilities
LTNM LIAB = Long-term Non-Monetary Liabilities
STMT CLAIMS = Short/Medium Term Claims
LT CLAIMS = Long-term Claims
E = Equities (monetary and non-monetary)

SOURCE: Study formulation and R. W. Goldsmith, Financial Structure and Development, p. 15.

(b) provision of more varied types of service by NFIs, catering for the needs of almost every would-be saver;[5]

(c) vigorous price and non-price competition on the part of NFIs--mainly through more competitive rates of interest, expansion in branch networks, etc.;

(d) less subjection to asset/liability operational regulation and control than banking intermediaries, particularly in the face of increasing pressure on banks with the re-emergence of monetary policy as a leading tool of economic management in post-war years--government behavior being particularly influential here;

(e) increasing social security consciousness among people, as the quest for home ownership, insurance and pension coverage, retirement savings, etc., intensified;

(f) inherent advantages attached to tenure of NFI instruments, e.g. mortgages offerable to holders of insurance policies, and savings in building societies;

(g) demographic factors, such as increasing family sizes, declining marital ages and increasing life cycles which have had clear positive implications for shelter; and

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[5]E. P. Neufeld, in his Essays in Money and Banking, In Honour of R. J. Sayers, ed. by C. R. Whittlesey and J. S. G. Wilson (Oxford: Clarendon Press, 1968) has, for instance, argued that, in the case of the Canadian financial system in post-war years, "the banks failed to introduce competition of a kind that might have resulted in a relative decline of their 'near' competitors, and this largely because of their failure or inability to develop the debenture and to enter the mortgage loan business, and by their long delay in competing in the short-term market for funds and in entering the installment loan business." P. 147.

(h) improvement in the quality of services by NFIs, particularly in the 'quality' of their liabilities offered to the public: "non-bank intermediary liabilities are also substitutes for money whether money is defined traditionally or broadly. The demand for money is negatively related to changes in yields on non-bank intermediary liabilities and has, in fact, been reduced by quality changes in non-bank intermediary liabilities."[6]

It is generally agreed that the systematic and sustained growth of NFIs relative to BFIs can have significant consequences for the behavior of the financial system in both developed and developing economies. In the case of LDCs, in particular, it has usually been argued that a dominant NFI presence can have adverse implications for the effectiveness of monetary policy, already weakened by the openness of these economies. Efficiency of resource allocation and general economic stability and management can by extension be compromised. On the other hand, given the common tendency for NFIs to operate predominantly in the longer-term segment of the financial markets, it can be argued that their increasing strength during the process of economic development can be a positive growth reinforcing factor. On balance, the average effect can be ambiguous. Thus, speaking about a powerful segment of the NFI submarket in the U.K. (building societies), David Llewellyn has noted that "the ultimate effect upon the total volume of credit, the money supply and the supply of reserve assets to

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[6]Ibid., p. 147.

the banking system following our inflow of funds to the (building) societies is the balance of the net impact of the portfolio decisions of the personal sector (determining the initial monetary effect of the movement into building society deposits) and in portfolio choices of the societies as they dispose of the funds acquired."[7] While this is likely to hold true for NFIs as a whole in any given economy, it is important to note that there are a number of other considerations that affect the overall impact these non-bank institutions can have for an economy. One such factor is the relative strength of the banking system itself, which strength does not necessarily relate to its effective share in the total financial assets of the system (although this is a critical factor), but can be largely influenced by a myriad of 'asphyxiating' variables (including effective control), to be defined in Section D below. Such variables can be detrimental to both non-banks and the rest of the financial system as a whole, especially in lagging economies.

B. The Hypothesis of Financial Asphyxiation

The general concept of financial asphyxiation being hypothesized in this research represents a process in the financial sector of an economy in which there is evidence ideally over a sustained period, of stifling or "asphyxiation" of one segment or subsector by another segment or subsector therein. In this study the asphyxiating or dominant subsector is assumed to be the banking system of an economy (narrowly defined to constitute central and commercial banks only), while the subsector being asphyxiated or stifled is the non-banking. This

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[7] D. T. Llewellyn, "Do Building Societies take Deposits away from Banks?" Lloyds Bank Review, No. 130 (October 1978): p. 31.

phenomenon manifests itself most clearly in situations where the dominant banking subsector continues to assume an increasingly larger share of the financial sector, relative to non-banks, despite relatively more inefficient operational performance of the banks over the period.

While inherent banking features and market forces may in a limited way induce asphyxiation, it appears to be in large measure non-market determined. Financial asphyxiation is largely rooted in forces of regulation, but is also significantly induced by the general operations, structure and nature of the specific constituent institutions, together with the instruments and techniques for the financial sector as a whole. Such is the nature of the process being hypothesized, that if it is permitted to evolve unchecked over a protracted period of time, significant distortions can be introduced into the financial sector. These adverse effects can in turn be transmitted outside of this sector to the real sector, as is normally the case of major imperfections in financial markets in general.

Since financial asphyxiation is generally a reflection of inadequacies of the basic structure and development of a financial system, it will probably be a dominant feature of lagging economies, though it is being hypothesized that it can conceivably appear in succeeding or even already developed economies. The repercussions can be negative and can induce sizable private and social costs, ultimately directly affecting general economic welfare and transformation.

Specifically, if there are, by assumption, two submarkets "B" (representing 'asphyxiating' financial intermediaries) and "NB" (representing financial intermediaries being asphyxiated) in the financial sector of an economy, and "B" is traditionally dominant, market-wise,[8] in the short and medium term segments of both the input and output markets (as banks tend to be), while "NB" is traditionally dominant in the long-term segments of the input and/or output market (as non-banks tend to be), then there is a process of asphyxiation in the financial system if the following can be demonstrated to be evident:

(a) Over a given period, while there is a secular enlarging of subsector "B" relative to "NB" in terms of the outputs markets, there is a correspondingly less efficient[9] performance overall of subsector "B" relative to subsector "NB" for the same period; and

(b) in spite of relative inefficiency in the segment of the input market for which subsector "B" does not have traditional dominance (i.e. long term segment for banks in LDCs), subsector "B" still manages to command a relatively larger share over the same time period of that input market (i.e. long term) relative to subsector "NB."

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[8]That is "B" commands a larger share of the input or output market. Share may be related to deposits, or revenues, total assets or credit and investments. This study uses total assets for the output market and deposits for the input markets.

[9]In aggregate output markets.

In essence, there are two basic criteria for determining financial asphyxiation, both of which must be present: (a) an efficiency criterion and (b) a market-based criterion.

Financial asphyxiation may be 'pure' or 'full,' when the efficiency and both of the market-based behavioral criteria are met. It is 'partial' if the efficiency and only the input or output aspects of the market-based criteria are met. In this partial case, there is merely a 'tendency' to financial asphyxiation, as compared with 'actual' financial asphyxiation in the pure case.

Efficiency: A word about the efficiency criterion is necessary at this point. In pure economic terms, efficiency has a very wide connotation and is usually associated with optimization concepts, involving both private and social dimensions. In terms of factor markets, for instance, optimum efficiency is related to their mobilization and consumption at the least private and social cost, with owners/sellers deriving the largest possible 'pure rent' or 'returns' from their use. Generally this infers a perfectly competitive market environment, where there is perfect convergence of private and social benefits. In terms of the output/product markets, maximum efficiency relates to optimization of the production, distribution and exchange processes, again ideally in a perfectly competitive environment, and for both the private sector and society at large. Thus, the efficiency factor in th_ pure economics sense relates to maximization of private and social welfare functions, with the most efficient point of activity, in comparative statics Paretian terms, being the unique "point of bliss."

Because of the nature of their activities, however, financial institutions which constitute the backbone of the financial sector of economies, generally confine themselves to a financial or accounting treatment of their operations. Their main concern is the maximization/minimization decisions of financial returns and financial costs respectively for their shareholders, with often serious divergencies existing between private and social dimensions. The traditional forms of measurements of financial structures is largely financial/accounting in nature. Thus, this study assumes a private, financial definition of 'efficiency,' relating this to a series of operational (profit and loss) and structural (balance sheet) relationships, in an effort to redress some of the weaknesses described in Chapter 1 arising from the use of balance sheet aggregates alone. To the extent, however, that both the efficiency and market-based criteria are expressed in financial terms, there are potentially no major inherent contradictions, although it is likely that there can be more or less distortions in the relative relationships between banks and non-banks, if social, as opposed to private, measures are used. This is a recognized weakness in the theory now being developed and the framework to be constructed in the next chapter.

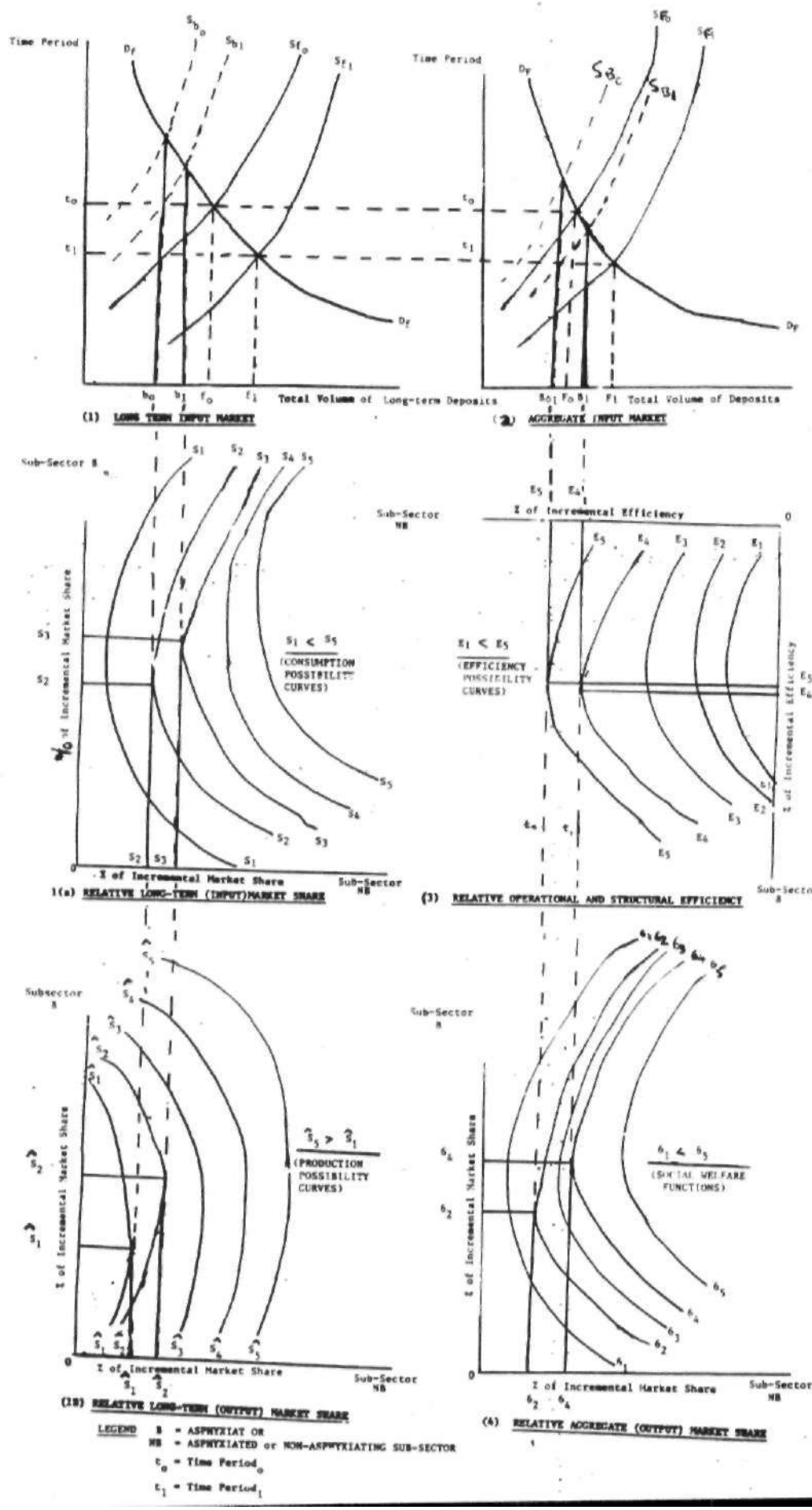
C. A Graphical Representation of the Financial Asphyxiation Process

Figure 4-1 below graphically illustrates the concept of financial asphyxiation in a given economy. Given an exogenous increase in total long term deposits in the financial market (supply curve for market (S_{fo}) shifting to (S_{F1}) in diagram [1]) between the time periods t_o and t_1, there is also necessarily an increase in the aggregate input

market (diagram [2]) supply curve S_{F_o} shifts to S_{F_1}). The share of the asphyxiating subsector (B) increases in both cases, in response to the changes in the financial markets as a whole ($SB_o < SB_1$), but to a larger degree than the non-asphyxiating subsector (NB); $b_1 - b_o$ and $B_1 - B_o$ in (1) and (2) respectively being greater than half of input and output market increases $f_1 - f_o$ and $F_1 - F_o$ respectively. These market changes in diagrams (1) and (2) will in turn have repercussions on the other market situations (diagram 1a) and (diagram 1b) (long-term input/output segments respectively) and on the efficiency and output market situations (diagrams 3 and 4) respectively. Diagram (1a) demonstrates, by assumption, that by moving to higher "consumption possibility" curve S_2 to S_3, subsector B has, by assumption, received a larger share of increment in input market ($S_3 - S_2$ for B > $S_3 - S_2$ for NB). Similarly, in the long-term output market (diagram 1B) movement by subsector B to "production possibility" curve $\hat{S}_2$ from $\hat{S}_1$, has induced a relatively larger share of increment in long-term output market for B than NB ($\hat{S}_2 - \hat{S}_1$ for B > $\hat{S}_2 - \hat{S}_1$ for NB). In diagram (3), despite a relatively smaller increase in efficiency (input/output) of subsector B relative to NB (movement by B to "lower" 'efficiency possibility' curve E_4 from E_5 and $E_4 - E_5$ for B < $E_4 - E_5$ for NB), the asphyxiating subsector B still manages to command a larger share of the change in the aggregate output market (movement from $\mathcal{G}_2$ 'social welfare function' to higher $\mathcal{G}_4$ over the period); $\mathcal{G}_4 - \mathcal{G}_2$ for B > $\mathcal{G}_4 - \mathcal{G}_2$ for NB. The net effect, therefore, is that despite increasing inefficiency, asphyxiating subsector B has managed to command an increasing share of both the long-term input and output markets, in which it is generally less dominant (by assumption),

FIGURE 4-1

A DIAGRAMMATIC REPRESENTATION OF 'PURE' FINANCIAL ASPHYXIATION BETWEEN TWO PERIODS



LEGEND A = ASPHYXIAT OR
NB = ASPHYXIATED or NON-ASPHYXIATING SUB-SECTOR
t_o = Time Period$_o$
t_1 = Time Period$_1$

and the aggregate output market--the "purest" case of financial asphyxiation.

D. Factors Inducing Financial Asphyxiation

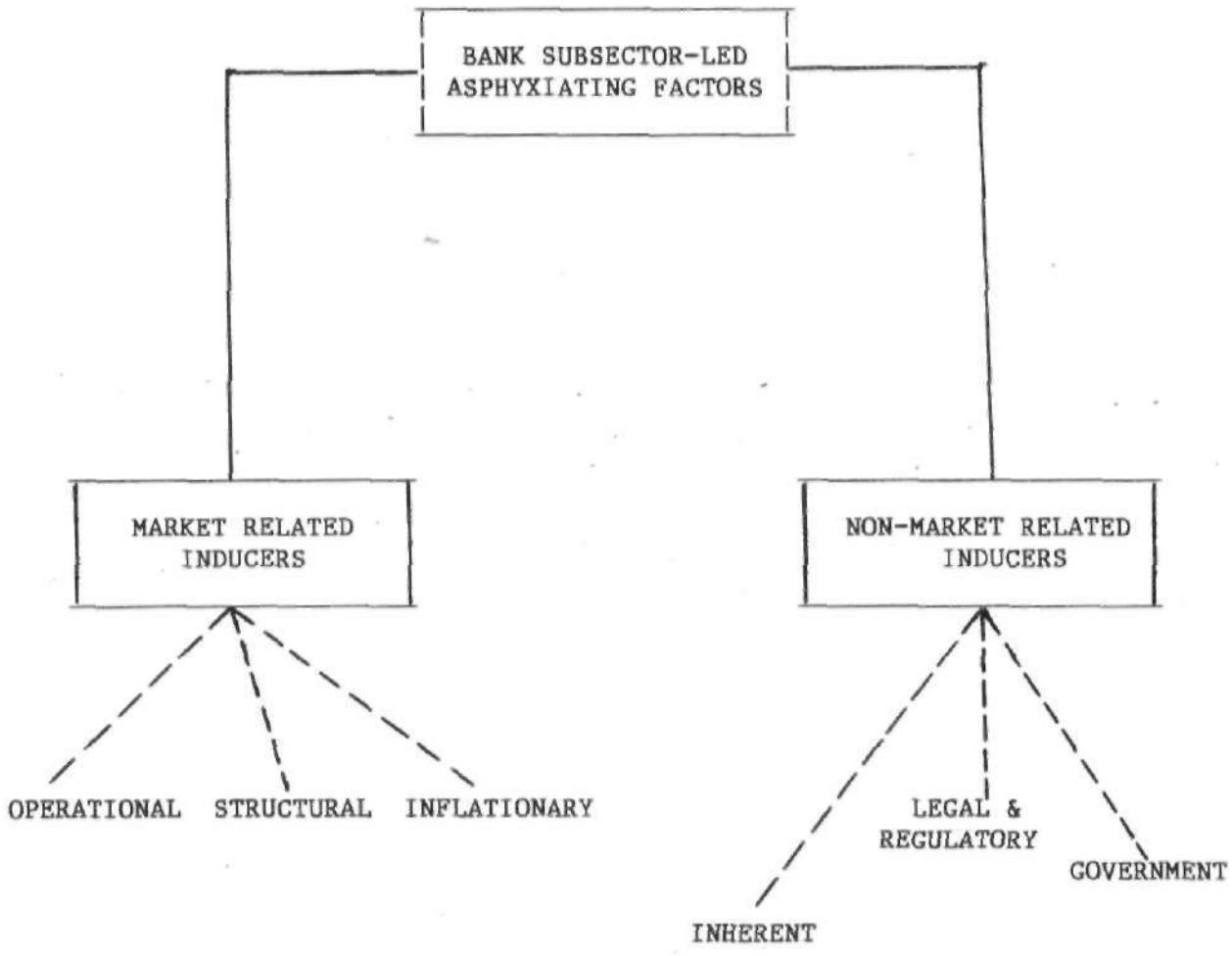
In general, any factor or variable that radically alters the structure of the banking industry in such a way as to enhance its influence and dominance over the non-banking system, can be considered a determinant of the financial asphyxiation process. In the context of post-war economies, it appears there are a number of such possible factors. These may be classified into two broad categories: (a) market-related inducers and (b) non-market-related inducers of the asphyxiation process. A sub-hypothesis of this study is that by the very nature of the financial asphyxiation process, it is likely that the non-market-related inducers will play a more significant role. It is further being suggested that the less developed an economy, the more likely are the non-market factors to play a stronger role in the phenomenon. What is fairly clear, however, is that in the final analysis, it is a combination of these two categories of factors that aggregate to give rise to the financial asphyxiation process or over a given time frame.

Figure 4-2 below illustrates the major theoretical determinants of the process being developed. The following subsections elaborate each of these possible determinants, taking the general view that any number of these factors is likely to be evident in a given economy, developed or developing.

1. Market-related Inducers

(a) Operational Aspects: Particularly in the context of LDCs, most post-war central and commercial banks are generally considered to have operated less than efficiently over time for a number of reasons.

FIGURE 4-2: LIKELY FACTORS INDUCING THE PROCESS OF FINANCIAL ASPHYXIATION



With respect to central banks in the Caribbean, for instance, Clive Thomas has argued that, having been created by expertise from the metropole for the most part, a number of these central banks were originally, in fact, mere modifications of traditional currency board

arrangements, with little relevance to the requirements of the economies in which they were rooted. He noted, for example, that the "central banks approach their responsibilities with the preoccupation of ensuring the financial system serves principally short-term ends,"[11] focusing mainly on maintaining internal and external monetary stability while simultaneously crucially neglecting the development of a sound and dynamic financial system, especially the capital markets. Commercial banking in most LDCs, for its part, is fraught with price and non-price collusion, as its usual oligopolistic and even monopolistic systems tend to discriminate in the allocation of credit and investment resources. Phillips' writing about the developed U. S. economy has noted, for instance, that tacit collusion is a more serious problem in banking than in most other industries. This is due not only to the small number of competing banks in most market areas, but also to the existence of a structure of public regulation that "has the express purpose...of producing essentially non-competitive results."[12] With structured 'creditworthiness' in credit/investment allocation decision making and their tendency to operate within a framework of 'global maximization' of profits (often inconsistent with the interests of developing host country) commercial banks in most post-war LDCs have generally not been different from those in a typical MDC to which Phillips is specifically alluding. Further, referring to developments in the U.K., the National

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[11] C. Y. Thomas, The Structure, Performance, and Prospects of Central Banking in the Caribbean (Mona: ISER, Univ. of the West Indies, 1972), p. 46.

[12] A. Phillips, "Competition, Confusion and Commercial Banking," Journal of Finance (March 1964): p. 39.

Board for Prices and Incomes reported in the late 1960s that "because the banks have been permitted to conceal their true profits and their true reserves, they have escaped the stimulus to efficiency and competitiveness that informed comparison of performances and profitability might have been expected to produce."[13] Such a situation is still very applicable today, particularly in LDCs where banks in general do not even disclose their operational performances, largely due to the endemic features of foreign ownership, on the one hand, and privileged practices in the case of newly created indigenous institutions, on the other.

Of distinct significance in this context of their operations, is the strong tendency by banks in post-war years for an increase in internationalization of their activities. As was noted in the last chapter, this was largely related to the continued emergence of Euro-currency banking. Mention was also made in that chapter of the increasing convergence towards universal or general purpose type of banking practices in most major economies today, probably with the exception of the U.S.A., in which a strong distinction still by and large subsists between various types of banking functions, especially as between commercial and investment institutions, as defined by the Glass-Steagal Act of 1934. The internationalization of banking and the increasing tendency towards "multipurpose" banking have in their respective ways further induced asphyxiation in LDC financial sectors in particular, for different reasons. In the case of the former, increasing internationalization, generally far more dominant for banking operations

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[13] National Board for Prices and Incomes, "Bank Charges," Report No. 34 (London: HMSO, May 1967).

than for non-banking operations, has meant less control over financial commitments to metropolitan countries by LDCs, given that the cost of capital and other terms of financing are basically set by these 'center' countries. In the latter case, multipurpose banking, while in itself a useful model for indigenous financial institutions in LDCs (as will be developed later in this thesis) has lost a lot of its effectiveness as a developmental financial alternative, since the basic structures of foreign ownership of commercial banking still subsists to a large degree in most economies. More importantly, however, non-bank institutions, partly because of their naturally specialized functions (insurance, mortgage lending, etc.), tend to remain more 'uni-purpose' and less conglomerative.

Thus, it is being hypothesized that these combined operational factors go a far way towards asphyxiating the financial sector of post-war emerging economies by rapidly conferring relatively greater capacity to banking institutions, much in excess of that which their normal operational strengths would have permitted.

(b) Structural Aspects: Structural characteristics are ultimately a product of operational behaviour. To the extent that central and commercial banks have generally not in their past operations optimized potential benefits to their economies, other symptoms tend to emerge in time in the very structures of the financial systems in which they are located. Banking concentration, for instance, is likely to intensify, while it is likely that non-bank structures will remain shallow and narrow. Banking size will also continue to enlarge and non-banking financial intermediaries are likely to reflect stunted

growth, thus denying the economies an appropriate flow of vital long-term finance, essential for healthy economic transformation. In time, skewed operational performance will also reinforce natural monopolistic and oligopolistic inclination of bank-type intermediaries, which in itself can compound existing imperfections in the financial system as a whole, often inducing increased complexity.

The growth of mergers in financial institutions is in turn likely to arise over time, given the inability of less 'strong' institutions to evolve at the hands of the structurally more developed banking intermediaries. As earlier noted, in view of the continued ownership patterns and, more importantly, control of most major financial institutions in LDCs, indigenization of the financial structure becomes more an illusion than a reality as a result. Increasing bank control has, therefore, re-emerged as a phenomenon of post-war economies, mainly as a result of these structural but, to some extent also, inherent and operational characteristics favouring bank-type financial intermediaries.

(c) Inflationary Aspects: Given its paramount control over the monetary system, the banking subsector is likely to be the principal architect (or at best agent) of inflationary spirals in any economy. This is notwithstanding the fact that, as net creditors, commercial banks are potentially very susceptible to inflation as a phenomenon. Preoccupation in LDCs, in particular, with management of the external sector, given the usually marked constraints of "openness" in these systems, has often limited the ability of monetary authorities to optimally manage inflation in their domestic economies. Poor investment and credit decisions, which are often not influenced by the market, or,

where planned, without a consistent system-wide approach, have also fuelled unprecedented expansions in the price systems of economies. Above all, LDC post-war governments, in particular, have continued to 'dominate' their 'fiscal agents,' the banking systems. Deficit spending has been the norm in most emerging economies particularly in the last decade, as the notion of a "world inflation"[14] became more of a reality, essentially as an upshot of the international oil crisis of the 1970s. The general result has been that deficit-financing induced already-creeping inflation, which itself increased government borrowing from the central bank, expanding the base and the money stock. This in turn intensified the rate of inflation, worsening the government's deficit. The tendency thus set in motion a process that then became very difficult to contain. Typically, as inflation rages, scarce resources in economies continue to be poorly allocated, with lop-sided development in the financial system perpetuating itself. An increasingly inefficient banking system thus tends to benefit from the 'money illusion' phenomenon, often asphyxiating the rest of the financial system. Over time, the aggregate effects of these factors are likely to induce a fair degree of permanency to the phenomenon of financial asphyxiation, especially in emerging economies with their endemic structural and institutional frailities.

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[14]For a simple and useful analysis of post-war "world-inflation" trends, see A. C. Harberger, "A Primer on Inflation," in Money and Monetary Policy in Less Developed Countries - A Survey of the Issues and Evidence, ed. by W. L. Coats and D. R. Khatkhate (Oxford: Pergamon Press, 1980), pp. 149-164.

2. Non-Market-Related Inducers

(a) Inherent Elements: Banks, both central and commercial, are extremely strategically well placed to facilitate the vital functions of mobilization and allocation of investible domestic funds. As the sole custodians of an economy's money stock and with almost exclusive power to expand the size of this stock over time,[15] banks are inherent net beneficiaries from the activities of the financial system. Further, because of their relatively low overheads, partially occasioned by the need for no substantive investment in fixed assets and costly inventory, banks are generally endowed with significant economies of scale in their operations. Their ability to administer the stock of money and their roles as guardians, in the case of central banks, and 'creators' in both cases, of money and credit in the economy, at a much larger capacity than NFIs and (at literally no cost), put them in a relatively superior position.

Moreover, to the extent that banking institutions tend to be bankers to the very NFIs themselves, they are directly and indirectly capable of influencing the effectiveness of these latter institutions, often to a large extent. In a related way, since, as Harry Johnson notes, "According to general equilibrium theory of a monetary economy, central bank control presupposes the power to determine one nominal monetary magnitude in the system and one interest rate,"[16] BFIs tend to

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[15]Although in practice in open economies such control and power are highly diluted.

[16]H. G. Johnson, "Problems of Efficiency in Monetary Management," Journal of Political Economy (September/October 1968): p. 977.

be in an innately superior position. Cagan and Brunner have[17] demonstrated, for instance, that over long periods of time the monetary base dominates overall expansion of the money supply, though the money multiplier is in itself also a significant factor in the expansion process. In the final analysis, it is banking intermediaries that are in control of these aggregates and, by implication, over spending and the real sector.

While it cannot be denied that the operations and several of these inherent factors benefitting banking are often significantly constrained by copious prudential and operational regulations, it can also hardly be denied that 'natural' advantages favoring the banking subsector do outstrip those of the non-banking system. Often these natural endowments are taken for granted, at the expense of operational efficiency, inducing and exacerbating the process of asphyxiation in the financial system. This, in turn, is usually not without its social costs. Economies of scale in operation itself, if not properly managed, can eventually lead to structural imbalances in the financial sector as strong institutions come to dominate weaker ones. Excessive seignorage, mainly in the case of central banks and 'supernormal' profits by

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[17]P. Cagan, Determinants and Effects of the Monetary Authorities and the Public on Monthly Changes in the Money Supply, (New York: NBER), 1975, and K. Brunner, "The Role of Money and Monetary Policy," Federal Reserve Bank of St. Louis Review (July 1968).

commercial banks, induced essentially by an 'endowment' factor,[18] represents a tax on the society as a whole from which government benefits, often for no justifiable reason.

(b) Legal and Regulatory Aspects: In most post-war economies, as a result of the legal process "banks...enjoy certain exemptions from the normal provisions of company law; they make hidden transfers to or from reserves before arriving at published accounts; are not obliged to show the market value of investments; do not have to disclose the methods of valuation and depreciation applied to fixed assets; need not show their tax charge; and do not have to distinguish between reserves, provisions and liabilities in their balance sheets."[19] While it is true that commercial banks, in particular, are subject to a number of restrictions in asset/liability management, reputedly in the interest of stability in the financial system, it is generally agreed that several of the benefits conferred to bank-type intermediaries often do not induce the types of positive responses and incentives for efficient management, as they are theoretically supposed to do. Very often efforts to circumvent regulations have given rise to 'questionable' practices in the system (such as the rapid evolution of bank-holding companies) and have often encouraged flight of capital from one system to another (as was the case in both examples in the U.S.A., in response to Regulation Q in the early

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[18] 'Endowment factor' is a feature arising from the fact that in most developed economies, commercial banking lending rates are tied to a major interest rate (discount, bank or federal funds). Rapid increases in this rate can create precipitous increases in bank profits, especially as a result of this factor only.

[19] Bank Charges, p. 56.

1960s and 1970s). As a result, there is still doubt about the effectiveness and value of the Euro-currency market, for instance, to the development efforts of LDCs.

Banks have, on balance, become stifling agents to the rest of the financial system (NFIs), which often do also have a number of prudential and other constraints placed on their operations, especially in LDCs.

(c) The Role of Government: The influence of Government and the public sector in general on the banking systems of most economies is very significant, if merely because the central bank is usually banker to the Government. In post-war developing economies, the role of the public sector in commercial banking has grown increasingly strong, both in the clear evolution of the process of indigenization of banking institutions and in terms of increased reliance on these institutions for funding. As was earlier noted in the discussion on inflation, with weakening budgetary positions in most economies after the oil-crisis of the 1970s, deficit financing via the banking system has become a critical norm world-wide. Not only is this development confined to developments in the domestic sector, but as balance of payments situations become chronic, so have the need for public sector intervention in the usually bank-controlled foreign exchange markets. Further, there is often clear evidence of usurpation by Government of the traditional banking functions of foreign exchange management and budgeting, usually arising from 'panic' situations of rapidly dwindling reserves. It is not uncommon to see public-sector agencies, other than central banks, attempting to effect this role.

The potential for further government involvement in the banking system becomes even greater in efforts at financial integration, spearheaded by regional development banking institutions, for instance. Management of the transition to various stages of financial integration can be very crucial to the largely politically-inspired process of financial integration, often giving rise to substantial government involvement, if only because most regional integration or development banks tend to be government-owned and promoted. Thus, if not merely for the fact that government's direct ownership or interest in a banking institution tends to induce financial subsidies to such institutions, it is for the fact that government's implicit support in times of stress, appears to confer real psychological advantages to most banking intermediaries. By far the bulk of post-war financial intermediaries created in LDCs, for instance, tend to be banking types (central and commercial banking), given the substantial historical presence of foreign institutions in these economies. Hence, both in terms of their possibly less efficient operations and of the sheer size and strength of their presence, bank-type intermediaries appear to be active instruments of financial asphyxiation, largely inspired by the role of government in the financial system.

E. Symptoms and Manifestations of Financial Asphyxiation

As is the case with most major imperfections in the financial system of any economy, financial asphyxiation-induced deficiencies are capable of manifesting themselves in a number of ways. These include 'ex definitio' features, such as rapidly declining operational and structural efficiency for BFIs and noticeable enlargening of the share

of these intermediaries in the output and input segments of the financial markets, at the expense of non-bank intermediaries. These are manifestations inherent in the model itself. More generally, however, the following financial and non-financial symptoms are likely to emerge over time in an economy that has become susceptible to financial asphyxiation:

(a) Sustained enlargening of the profit levels of both central and commercial banks, magnified by monopolistic or oligopolistic market operations, reporting strongly rising profits, with increasing rates of return on equity. In addition, it may be typical to find that:

> Bankers are congratulating themselves on their fine performance. ...The growth of bank earnings has exceeded that of most corporations. Nevertheless, the market prices the stocks of many large American banks at four to six times earnings, well below the average for industrials. Quite a few banks are selling at sharp discounts from book value. Does the market see something that the bankers and the regulators do not see?[20]

Although this situation relates to developed U. S. economy, the undercurrent being experienced here are in some measure sharply related to the phenomenon being hypothesized in this study. Inflation is certainly at the root of rising profits. However, in situations of financial asphyxiation, growth of bank profits are likely to exceed that of inflation, largely because of the impact of the 'inherent' factors and the usual ability of banks to collude and enforce cartel pricing decisions; (b) rapid rates of inflation, fuelled by increasingly unchecked access by the government

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[20] H. C. Wallich, "Banks, Profits and Inflation," Economic Review, Vol. 66, No. 3 (1981), p. 27.

bureaucracy to the 'banking bureau,'[21] often for consumptive borrowing;

(c) increasingly fragile financial systems, as both banking and especially non-banking financial institutions become highly leveraged in quest for increasing 'supernormal' profits;

(d) rapidly emerging informal financial markets as the high-cost monopolistic (or at least oligopolistic) banking systems continue to administer prices outside of market signals and continue to apply their well-known 'metropolitan' standards in credit allocation decisions in LDCs. Marginal borrowers would then have to resort to 'curb markets' for their investment and consumption financing;

(e) increasing bank-control of both financial and non-financial corporations, as bank-finance predominates among scarce finance in general, especially in LDC systems. Increasing bank-control tends over time to suggest rising concentration ratios. Increasing credit controls are also a reality in such situations, themselves compounding the underlying imperfections in the allocative process. Poor term transformation of liabilities is likely to result. There are also likely to be lower penetration ratios by banks in economies, since the presence of banking

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[21] To use a Gurley and Shaw terminology in their Money in a Theory of Finance study.

facilities are likely to be mainly confined to a disproportionate size of the population, generally those urban-based and

(f) a relatively ineffective system of financial indigenization, with newly created indigenous banking institutions, in particular, being unable to make an adequate development impact, in line with their original 'mission.'

In general, what emerges in the presence of financial asphyxiation is a less resilient financial system, which simultaneously tends to be in a repressed state. A repressed financial system is, however, not necessarily an asphyxiated one. The process of financial asphyxiation is much more all-embracing and transcends occasional or mildly sustained elements of repression in the sector. It is by implication a more devastating phenomenon.

F. A Likely Transmission Path for Financial Asphyxiation

It is suggested that financial asphyxiation is largely a financial process, though induced by both financial and non-financial factors, as was noted in the previous section. To the extent that this is so, transmission of its effects are likely to move from the financial sector itself to the real sector, intensifying second-round distortions in the financial structure itself.

Because the principal medium for the existence of the phenomenon is the banking system, it is then likely that the channels through which the transmission of its effects to the real sector take place, are likely to be those specifically involving the banking subsector itself. Secondarily, channels involving the non-banks may be a possibility,

although given the likely reduced influence of these latter types of intermediaries in LDC financial systems, in particular, this is unlikely to be real in practice.

In Chapter 1, it was argued that there were basically six clear channels of transmission for monetary/financial influences to the real sector of a typical economy. There were via (a) the cost-of-capital or interest rate; (b) wealth effects; (c) credit rationing; (d) portfolio changes; (e) financing constraint and (f) inflation/price expectations. Of these, it may be recalled that the credit rationing, financing constraint and inflation/price expectations were largely facilitated by the presence of financial intermediation, especially bank-type. It is, thus, likely that if bank subsectoral behaviour is imperfect and asphyxiating to the financial system, adverse effects from such behaviour are likely to reach the real sector all the more quickly via these most direct channels. The ready and likely impact of these transmitted effects on real spending will then probably feed-back in second-round repercussions on the financial sector, intensifying the process further.

In assessing the likely transmissionary channels of repercussions arising from financial asphyxiation to the real sector, it is important to recognize as far as possible which specific variables are likely to be largely influential in these dynamics. Given that the phenomenon being developed appears to be a largely financial one, it would seem that it would be highly correlated with financial parameters especially the monetization and 'financialization' ratios, as well as the rate of inflation. By contrast, a less strong current period cor-

relation will be likely between real sector variables and measures of asphyxiation, though one would expect this to be less so with future values, for say GNP or growth in GNP. This is because it is likely that the distortionary effects on the real sector arising from the process of financial asphyxiation will manifest themselves only after some period in the first round. As its adverse effects are internalized, however, it is likely that second round effects, especially on the real sector, will be more instantaneous and intense.

On balance, the longer and more protracted the process of financial asphyxiation, therefore, the more distortionary are the effects likely to be on financial structure and development, and in turn economic structure and development. An adequate basis for identifying and measuring its likely intensity and impact is, therefore, critically required. The next chapter attempts the formulation of such a measure.

CHAPTER V

A FRAMEWORK FOR MEASURING FINANCIAL ASPHYXIATION

The previous chapter set out aspects of a possible theory of financial asphyxiation in a typical economy. It emphasized that this process can be induced by market and non-market factors and apparently originates in the financial sector of the economy. Because of the traditionally strong relationship between the financial superstructure and real infrastructure in an economy, the effects of financial asphyxiation are quickly transmittable through the real sector, mainly via the credit markets and the process of inflation, itself often a causative factor. In turn, these transmitted distortions are often likely to induce significant economic and social costs, possibly impairing economic transformation.

This chapter presents a financial quantitative expression of the concept of financial asphyxiation, defining an approach to its identification and measurement. Section A sets out a simple representation of the major elements of the process of financial asphyxiation, including definitions of the efficiency and market-share criteria. Section B elaborates the techniques and methodology pursued in the research.

A. A Quantitative Formulation

1. The Basic Hypothesis

Null Hypothesis (H_o): In a typical post-war economy, there has been evidence of full or partial financial asphyxiation, induced by the banking subsector over the non-banking subsector.

Alternative Hypothesis (H_a): In a typical post-war economy, there has not been evidence of full or partial financial asphyxiation, induced by the banking subsector over the non-bank subsector.

Decision Rule: Accept H_o if (i) both market-shares and the one efficiency criteri*on*/ (all defined below) are satisfied, or (ii) one of the market-share and the efficiency criteri*on*/ are satisfied. Otherwise, reject H_o/accept H_a.

2. The Basic Elements

(a) The Financial Sector:

Given the financial sector in an economy in which:

$$F_d = F_s \quad \ldots\ldots (1)$$

$$\text{then } F_d = B_d + NB_d \quad \ldots\ldots (2)$$

$$F_s = B_s + NB_s \quad \ldots\ldots (3)$$

$$\text{and } F_{Lt} = B_{Lt} + NB_{Lt} \quad \ldots\ldots (4)$$

where F_d and F_s represent the total assets and total liabilities respectively of the financial sector;

B_d and NB_d are proxies for the assets of the banking and non-banking sectors respectively, represented by the demand for services of

these sub-sectors; B_s and NB_s represent the supply of services (liabilities) of these sub-sectors; and $B_{Lt} + NB_{Lt}$ represent the total supply of long-term deposits in the financial system (F_{Lt}) by the banking and non-banking sub-sectors.

(b) Market Share Parameters

For the identical financial sector in (a) above:

$$\frac{B_d}{F_d} = \delta_b \quad \ldots\ldots (5)$$

and $$\frac{NB_d}{F_d} = \delta_{nb} \quad \ldots\ldots (6)$$

$$\frac{B_{Lt}}{F_{Lt}} = S_b \quad \ldots\ldots (7)$$

$$\frac{NB_{Lt}}{F_{Lt}} = S_{nb} \quad \ldots\ldots (8)$$

where δ_b and δ_{nb} are the percentage shares of total assets respectively of the banking and non-banking subsectors of the total financial sector, and measures of the relative shares of these types of institution in the 'output' financial market; and where S_b and S_{nb} are the percentage shares of total long-term deposits of the banking and non-banking subsectors respectively of total long-term deposits of the financial system, and measures of the relative shares of these types of institutions in the long-term 'input' financial markets.

(c) Efficiency Parameters

Similarly, if x_1 ..... x_{12} individually represent a set of financial ratios, depicting varying measures of financial

efficiency in both the banking subsector and non-banking subsector (as in Table 5-1 below), such that $x_1 \ldots\ldots x_6$, represent measures of "structural efficiency" and $x_7 \ldots\ldots x_{12}$, represent measures of "operational efficiency," then a composite measure of efficiency (E) can be computed such that, for any given period,

$$E = \mathcal{E}(x_1 \ldots\ldots x_{12}) \quad \ldots\ldots (9)$$

$$\text{and } E = E_s + E_o \quad \ldots\ldots (10)$$

$$\text{where } E_s = \mathcal{E}(x_1 \ldots\ldots x_6) \quad \ldots\ldots (11)$$

$$\text{and } E_o = \mathcal{E}(x_7 \ldots\ldots x_{12}) \quad \ldots\ldots (12)$$

$$\text{with } E_b = E_{ob} + E_{sb} \quad \ldots\ldots (13)$$

$$\text{and } E_{nb} = E_{onb} + E_{snb} \quad \ldots\ldots (14)$$

E_b and E_{nb} representing respectively the banking subsector and non-banking subsector respectively, with the prefixes 'o' and 's' indicating 'operational' or 'structural' measures in either subsectors.

3. The Test for Financial Asphyxiation

From equations 1-14 above, a test for the presence of financial asphyxiation can be made. If over any given period of time:

(a) Market Share Criterion I

$$\frac{\Delta G_b}{\Delta G_{nb}} > 1 \quad \ldots\ldots (15)$$

where $\frac{\Delta G_b}{\Delta G_{nb}}$ can be considered a Relative Index of

Incremental[1] (output) Market-share (RIM) between banks and non-banks; and

(b) Market Share Criterion II

$$\frac{\Delta S_b}{\Delta S_{nb}} > 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (16)$$

where $\frac{\Delta S_b}{\Delta S_{nb}}$ can be considered a Relative Index of Incremental Long-term deposits Market-share (RILM) between banks and non-banks; and

(c) Efficiency Criterion

$$\Delta E_b < \Delta E_{nb} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (17)$$

and where $\frac{\Delta E_b}{\Delta E_{nb}}$ can be considered a Relative Index of Incremental Efficiency (RIE) between banks and non-banks; then a measure of financial asphyxiation can be computed.

(d) Degree of Financial Asphyxiation

This can be represented either as (i) an Index of Full Financial Asphyxiation, such that

$$A = \left[\frac{RIE}{\text{Mean } (RIM + RILM)}\right]^{\frac{1}{2}} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (18)$$

or (ii) an Index of Partial Financial Asphyxiation,

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[1] Percentage change.

$$A^{1} = \left[\frac{RIE}{RIM}\right]^{2} \quad \text{..... (19)}$$

$$\text{or } AA^{1} = \left[\frac{RIE}{RILM}\right]^{2} \quad \text{..... (20)}$$

(d) As was also noted in Section A, total assets are used for measures of the output market, while long-term deposits are used for the long-term (input market).

8. Constraints

(a) As cross-sectional data for a twenty-year period is used for the sample of four countries, methods of reporting and measurement of data are likely to be inconsistent over time and from economy to economy. Attempts will be made to adjust for these whenever evident.

(b) Because varying types of financial institutions tend to have different asset/liability structures, it can be argued that some measures of efficiency are not directly comparable as between institutions (e.g. banks versus insurance companies, say). This problem is partly addressed by the use of changes in relationships between years, and comparing these changes as between banks and non-banks rather than by comparing the absolute values from one institution to another.

(c) The usual statistical or econometric data problems of multicollinearity, autocorrelation and homo/heteroscedacity, given the cross-sectional and time series nature of data being used, are likely to arise. Adjustments are made (results excluded from the

TABLE 5-1

MEASURES OF EFFICIENCY

STRUCTURAL EFFICIENCY VARIABLES	Financial Relationship or Ratio	Abbreviation of Financial Relationship/ Ratio	Financial Relationship/ Ratio is a Measure of	Significance of Size of Relationship/Ratio
X_1	Total Capital ÷ Total Long-term Assets	TCAP / TLTA	Operational safety	Generally the higher the measure, the more "efficient" the performance.
X_2	Total Long Term Assets ÷ Total Long Term Liabilities	TLTA / TLTL	Term of maturity transformation and long-term financial cushion	-do-
X_3	Total Assets ÷ Total Claims on Government	TA / TCOG	Extent of absence of 'crowding out' by public sector	-do-
X_4	Total Long-term Assets ÷ Total Deposits	TLTA / TD	Partial solvency	-do-
X_5	Total Foreign Assets ÷ Total Short-term Credit	TFA / TSTCR	Degree of contribution of short-term credit to strength of external sector	-do-
X_6	Total Reserve Assets ÷ Total Long Term Liabilities	TRA / TLTL	Liquidity	-do-
OPERATIONAL EFFICIENCY VARIABLES				
X_7	Net Income ÷ Total Assets	NI / TA	Profitability on assets	-do-
X_8	Total Revenues ÷ Total Operating Expenses	TR / TOE	Gross operating expenditure coverage	-do-
X_9	Net Income ÷ Total Short Term Assets	NI / TSTA	Profitability on short-term assets	-do-
X_{10}	Net Income ÷ Total Long Term Liabilities	NI / TLTL	"Payback" on liabilities profitability	-do-
X_{11}	Total Long-term Assets ÷ Total Operating Expenses	TLTA / TOE	Partial economy of scale	-do-
X_{12}	Net Income ÷ Total Reserve Assets	NI / TRA	Financial cushion	-do-

SOURCE: Research formulations.

Indices of Efficiency

$E = \sum(x_1 \ldots\ldots x_{12})$ = Composite Index of Efficiency for any given period. The larger the Index, the more efficient the overall performance.

$E_s = \sum(x_1 \ldots\ldots x_6)$ = Composite Index of Structural Efficiency for any given period. The larger the Index, the more structurally efficient the overall performance.

$E_o = \sum(x_7 \ldots\ldots x_{12})$ = Composite Index of Operational Efficiency for any given period. The larger the Index, the more operationally efficient the overall performance.

analysis) once traditional measures, especially the Durbin-Watson, suggest strong evidence of any of these statistical discrepancies.

(d) There is a lack of data in several cases for various variables, especially for non-banks in the earlier years (1960s) for non-banks in most economies.

5. The Data

(a) The Sample: As already noted in several instances, four economies, of which three--Jamaica, Korea and Trinidad and Tobago--can be considered LDCs, and the fourth, the U.S.A., an MDC, constitute the research sample being tested.

(b) The Time-Frame: The study covers a twenty-year period--1960-1980. Merely for ease of analysis, specific data are randomly collected, however, for only the following 11 years: 1960, 1962, 1964, 1966,1968, 1970, 1972, 1974, 1976, 1978, 1980, alternate years in the time series.

(c) Data Input: For each of the 11 years over the twenty-year period, thirty-three variables are input for five financial institutions from each of the four economies. For each economy, two of these five institutions are banks, the remaining three non-banks. Thirteen of the variables are assets, six are liabilities, four are income/expenditure and ten are macro-economic in nature (Details of variables at Annex 5-1).

(d) Data Sources: The bulk of macro-economic and asset/liability data for the banking subsector are taken from the International Financial Statistics publication of the IMF, while most of the data for the non-banks and remaining banking data are extracted from the Annual

Reports and other Government statistical publications (Listing at Annex 5-2).

6. The Techniques and Methodology Utilized

For each of the five types of financial institutions and for each of the four economies, the following are performed:

(a) Calculation of structural and operational efficiency measures (x_1 ....x_{12}) and the resultant indices of efficiency (E_s , E_o respectively) for both banks and non-banks (E_b and E_{nb} respectively);[2] (Table 5-1 below)

(b) Calculation of the Relative Index of Incremental Efficiency (RIE) for the financial system, i.e. $\left(\frac{\Delta E_b}{\Delta E_{nb}}\right)$

(c) Calculation of the Relative Index of Incremental (Output) Market-share (RIM) for the financial system, i.e. $\left(\frac{\Delta 6_b}{\Delta 6_{nb}}\right)$

(d) Calculation of the Relative Index of Incremental Long-Term Deposit Market-Share (RILM) for the financial system $\left(\frac{\Delta S_b}{\Delta S_{nb}}\right)$

(e) Test for Financial Asphyxiation ('full' or 'partial') (A, A^1 or AA^1)

(f) Identification of major areas of intra-country and cross-country differences and similarities between banks and non-banks, using

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[2] In the calculation of the efficiency and two market-share indices (RIE, RIM, RILM), weighted average relationships were used as between types of institutions for each of banks and non-bank subsectors for a given economy. Where financial system-wide aggregates are used as between the banking and non-banking subsectors as a whole.

a system of canonical discriminant analysis.[3] Based on a division of each survey country into five groups or classifications (the two banking and three non-banking institutions each), the three efficiency variables E, E_s and E_o are tested over the twenty-year period, using this statistical technique, for (a) evidence of inter-country and cross-country differences between banking and non-banking structures; and (b) identification of the major intra-country and cross-country discriminatory variable(s) from the results in (a) above. The major objective of this analysis is the partial determination of the underlying distinguishing tenets of the financial asphyxiation phenomenon, through a detailed statistical examination of the critical efficiency variables.

(g) Regression, on a univariate and multivariate basis, of selected measures of (a) financial asphyxiation itself (RIE, RILM, RIM), (b) financial structure (the finance, monetization, capital formation and foreign finance ratios, as well as inflation), and (c) the real sector (GNP and growth in GNP) on measures of full or

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[3] Canonical discriminant analysis is a dimension-reaction technique related to principal component analysis and canonical correlation. Given a classification variable (banks or non-banks, for example), the statistical technique derives canonical variables in linear combinations of the quantitative variables that summarize between-class variation. For each canonical correlation, the routine tests the hypothesis that it and all smaller canonical correlations are 0 in the population; using an F approximation. For a more comprehensive description of the technique, see W. R. Klecka, Discriminant Analysis, No. 19, in Series, Quantitative Applications in the Social Sciences, ed. by J. L. Sullivan (Sage Publications, 1980). For an example of the application of multiple discriminant analysis to institutional financial analysis, see E. Altman, "Financial Ratios, Discriminant Analysis and Prediction of Corporate Bankruptcy," The Journal of Finance, Vol. 23 (September 1970): pp. 589-609.

partial asphyxiation as identified--to determine whether there are any consistently strong or weak correlative behaviour. In each case, these variables are alternately switched as between dependent and independent variables under the regression techniques used, with independent values lagged one and three years in each case.

(h) Running of a series of graphs to determine any trends over the twenty-year period for each country between specific variables of efficiency, market share, financial and real sector.

On the basis of the above framework and methodology, the next chapter now sets out the results of the quantitative analysis involving the identification, measurement and assessment of correlative and discriminatory characteristics of major elements of the financial asphyxiation hypothesis.

CHAPTER VI

FINANCIAL ASPHYXIATION--THE POST-WAR EVIDENCE

The last two chapters presented a theory of the phenomenon of financial asphyxiation and formulated a framework for identifying its existence and measuring its intensity. This chapter builds on those two by introducing an empirical dimension to the concept and testing its validity in the post-war economies of Jamaica, Korea, Trinidad and Tobago and the U.S.A. The chapter decomposes into four broad sections--A, B, C and D. Section A briefly examines general characteristics of the sample economies. Section B then summarizes the principal findings of the survey, identifying the evidence of financial asphyxiation in the economies. Section C undertakes a comparative static analysis, emphasizing the findings for the constituent elements of the financial asphyxiation formulation. The final Section D assesses the empirical findings on the dynamic aspects of the asphyxiation process, illustrating how they relate to the financial and real sector processes, and examining the experiences with indicators of general economic development. It is primarily these last interrelationships in Section D that will, in fact, principally affect social welfare, the degree and extent to which the analysis in Chapter VIII emphasizes.

TABLE B-1

SELECTED DETAILS OF FINANCIAL INTERMEDIARIES RESEARCHED
(By country and Sub-Sector)

	BANKING SUB-SECTOR				NON-BANKING SUB-SECTOR			
RY CA	NAME OF INTERMEDIARY	DATE ESTABLISHMENT	TOTAL ASSETS (US$ MILLION) 1960	1980	NAME OF INTERMEDIARY	DATE OF ESTABLISHMENT	TOTAL ASSETS (US$ MILLION) 1960	1980
	Bank of Jamaica	1960	51[B/]	1,247	Jamaica Building Societies	Various	1	174
	Commercial Banks	Various	155	1,028	Government Savings Bank	1870	15	-[E/]
					Jamaican Development Bank	1972	27[F/]	126
					Life Insurance Companies	Various	20	188[D/]
	Bank of Korea	1950	738	10,735	Korea Development Bank	1954	475[B/]	13,409
	Commercial Banks	Various	314	40,193	Korea Housing Bank	1968	53[C/]	1,267
					Life Insurance Companies	Various	17[B/]	1,502
DAD AND TOBAGO								
	Central Bank of Trinidad & Tobago	1965	27[A/]	2,752	National Agricultural Development Bank	1971	1	65
	Commercial Banks	Various	108	1,958	Cooperative Development Bank	1914	3[B/]	18
					Life Insurance Companies	Various	25	262
	Federal Reserve Bank	1934	87	166	Mutual Savings Bank	Various	41	172
	Commercial Banks	Various	501	1,463	Savings and Loans Associations	Various	82	631
					Life Insurance Companies	Various	115	432

SOURCE: International Financial Statistics, Annual Reports and research calculations.

a/ Monetary Authorities (Currency Board)
a/ 1962
[illegible]

Government Savings Bank was absorbed by the Workers Bank in 1970, at which time total assets were US$27 million approx.
2 and 1980 respectively

A. The Research Sample

Table 6-1 above sets out selected features of the four economies surveyed in the research, Jamaica, Korea, Trinidad and Tobago and the U.S.A. Major economic details of the economies themselves are presented at Annex 6-1. From the table, two things are worthy of note. One is the fact that the overwhelming majority of institutions, especially the non-banks, have been created during the 1960s and are, thus, fairly young institutions. The other is the extraordinary growth of the assets of these financial institutions between 1960 and 1980, especially the case of Korea's banks and non-banks.

As was noted in the Introduction to this study and supported at Annex 6-1, all of the sample countries, except the United States, can be considered developing, if one were to utilize the conventional method of the GNP. Although in terms of per capita GNP, Korea is the 'poorest,' it is probably not accurate to consider this economy the least developed of the lot, given its strong real growth over the past 20 years (over 13% per annum in real terms), its strong inter-sectoral linkages, sound and relatively balanced financial system and the generally rapidly emergent nature of its economy. In this respect, Jamaica might currently be considered the least well endowed, Trinidad and Tobago being a major oil-producer and having experienced uncharacteristically strong growth in the late 1970s as a result. While Trinidad's economy is evidently not as robust presently, as it was five years ago (on account of (a) falling oil prices and (b) failure to effectively diversify its economy and broaden its production structures over the years), it still

has a relatively strong external sector, compared with both Korea and Jamaica (Annex 6-1).

These factors being as they may, the study expects that there would be some marked differences in the findings of the empirical analysis as between the three developing economies and the one developed economy, the United States. This is likely to arise on account of the clear differences in complexion, complexity and robustness between the economic and financial systems of these countries. The next section now presents the main findings of the empirical study, while subsequent sections analyze these findings in greater detail.

B. Summary of the Empirical Findings

Table 6-2 below sets out the evidence on the presence of financial asphyxiation in the post-war economies of the four sample countries. The most striking feature is the fact that financial asphyxiation, as defined and measured in this study, while clearly existing in several instances in all economies, does not appear to have been as overwhelming a phenomenon in the twenty-year period surveyed, as the theory and symptoms tended to suggest in Chapter 4. This is all the more so, when one considers the absence of any real sustained trend of the phenomenon in any of the four economies.

Another striking feature is that, very much in contrast to the theory suggested in Chapter IV, the most severe and sustained case of financial asphyxiation is in fact evident in the United States, the most developed of the four sample economies. On the contrary, the least evidence of the presence of the financial process is in Jamaica, if measured by intensity, but in Trinidad and Tobago if by clustering of years.

TABLE 6-2

EMPIRICAL EVIDENCE OF FINANCIAL ASPHYXIATION

YEAR	JAMAICA	KOREA	TRINIDAD AND TOBAGO	U.S.A.
1960				
1962				
1964				
1966				A, A^1, AA^1
1968				
1970	AA^1			A, A^1, AA^1
1972	A,A^1,AA^1	A,A^1,AA^1		AA^1
1974			A,A^1,AA^1	A^1
1976		A^1		
1978				
1980			A,A^1,AA^1	
No. of instances of full asphyxiation	1	1	2	2
No. of instances of partial asphyxiation	3	3	4	6
Total No. of instances	4	4	6	8
% Breakdown of Instances by Period:				
1960 - 1968	-	-	-	38%
1970 - 1980	100%	100%	100%	62%

SOURCE: Research findings based on empirical observations.
Key: A = Full, financial asphyxiation (f.a.); A' or AA' = partial or quasi f.a.

which as earlier noted, can presently (as well as in the late 1970s) be considered the least developed of the sample economies.

Yet another unexpected feature of the empirical evidence, is the virtual absence of the phenomenon in the economies during the 1960s, except for one year, 1966, for the U.S.A. By contrast, the phenomenon rapidly emerged in the early 1970s, even before the precipitous increases in oil prices in the mid-1970s. In one case, Trinidad and Tobago, it was strongly evident as late as 1980. The year 1972 was undoubtedly the year in which it was most strongly evident for the sample as a whole.

In terms of the specific instances in which financial asphyxiation was experienced, there were more cases of full than partial asphyxiation, if consideration is taken of the fact that the presence of the former necessarily infers the existence of the latter, 'ex definitio.'

The following two sections further analyze these broad findings, attempting to relate these to the theory of financial asphyxiation as far as possible.

C. Empirical Evidence--Aspects of the Comparative Statics

1. Values of the Indices

Annex 6-2 sets out the specific values of the indices of financial asphyxiation (A, $A^{'}$, $AA^{'}$) in those instances in which it was evident in the four economies. Table 6-3 below summarizes the mean statistical characteristics of these indices for the research as a whole.

TABLE 6-3

STATISTICAL SUMMARY OF VALUES OF INDICES
OF FINANCIAL ASPHYXIATION

INDEX OF ASPHYXIATION		JAMAICA	KOREA	TRINIDAD AND TOBAGO	U.S.A.
A	MEAN	0.19(1)[b]	290.8(1)	9.40(2)	0.25(2)
	S.D[a]	-	-	0.18(2)	0.11(2)
A^1	MEAN	0.23(1)	468.4(2)	11.50(2)	2.80(3)
	S.D	-	666.2(2)	0.11(2)	4.30(3)
AA^1	MEAN	11.1(2)	139.7(1)	7.90(2)	0.40(3)
	S.D	13.0(2)	-	0.35(2)	0.30(3)

SOURCE: Research Calculations.

[a] S.D. = Standard Deviation.

[b] Figures in parentheses represent number of cases observed in empirical analysis.

While in terms of the values, there are wide inter-country variations in the indices of partial asphyxiation, there is generally clear support for the definitional and intuitive expectations that the more intense the asphyxiation phenomenon the smaller is the value of the index likely to be. By definition, however, this intuitive relationship can hold only for the relationship between A and A^1, given the presence of the RIM in the denominator of both. AA^1, on the other hand, is likely to vary, given that its denominator is the RILM. Disparities between banks and non-banks in the input-market are likely to be less pronounced (hence, a likely smaller RILM denominator in the AA^1 formula), given that non-banks traditionally tend to be better placed as mobilizers of longer-term liabilities. AA^1 values will, therefore, tend to be larger than A and A^1 values, if only out of mere arithmetic.

Values for A tend to be more uniform in general than those for A^1 and AA^1, as may be expected once the phenomenon has gained in its intensity and is fully evident. Of interest is the striking uniformity in all the asphyxiation indicators for Trinidad and Tobago (being 0.18, 0.11 and 0.35 for A, A^1 and AA^1 respectively). This, 'a priori,' suggests a stronger 'permanency' of the phenomenon in this economy and raises questions about the robustness of its financial system, a concern supported by Bourne in his recent study.[1] 'A' values for the U.S.A. were also close (0.36 and 0.15) for the two years (1966 and 1970), in which full asphyxiation was experienced.

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[1]C. Bourne, "Potentials and Pitfalls of Rapid Financial Innovation in Less Developed Countries: The Case of Trinidad and Tobago," Social and Economic Studies (Jamaica: ISER, University of the West Indies, May, 1975).

In general, the values of the indices of financial asphyxiation for the developing economies tend to be higher than those of the developed U. S. economy. This essentially infers that the efficiency/market-share criteria differential are more pronounced in developing economies, as is very likely to be the case. This intuitive position does by and large hold water when one analyses the respective relative indices of efficiency, market share and long-term deposits (RIE, RIM, RILM) values for the developing economies themselves. Except for the unusually high values for Korea in 1972, Trinidad tends to have the highest mean values for A and A^1, though less than Jamaica for AA^1. As is clearly emerging, this seems consistent with the structurally less balanced nature of Trinidad's financial and even economic systems. The major distortion in values in 1972 for Korea stems largely from the significant weight of banking efficiency change between 1970 and 1980, resulting mainly from a strong build up in the long-term deposits from 1972, possibly stemming from external capital inflows and marked inprovements in operating procedures and systems in banks.

2. Constituent Elements of the Asphyxiation Formulation

As is known, the basic constituents of the A, A^1 and AA^1 measures are the RIE, RILM and RIM. Details of the observed post-war year values for these components are provided in Table 6-4 below. In general, there is much variation in the values of the RIE as between countries, though intra-country experiences have been consistently stable (Figure 6-1 below). By contrast, RILM and RIM tend to be very stable in all cases, with strong similarities in some country instances between the behaviour of these two parameters.

TABLE 6-4

SELECTED VALUES OF THE BASIC COMPONENTS OF FINANCIAL ASPHYXIATION
(RIE, RILM, RIM)

	1962	1970	1980	Mean	S.D.[d]
RELATIVE INDEX OF INCREMENTAL EFFICIENCY (RIE)[a]					
Jamaica	6.03	-1.79	0.63	-1.15	5.30
Korea	-1.19	1.51	-0.91	-0.69	5.58
Trinidad and Tobago	-0.11	-0.93	-0.33	-0.41	7.5
U.S.A.	1.28	-0.34	1.00	1.37	14.4
RELATIVE INDEX OF INCREMENTAL LONG-TERM DEPOSITS MARKET-SHARE (RILM)[b]					
Jamaica	-0.22	-0.38	-0.37	-0.37	0.06
Korea	-0.09	-1.06	-1.29	-1.36	0.89
Trinidad and Tobago	-0.32	-0.38	-0.12	-0.30	0.10
U.S.A.	-1.43	-1.02	-1.10	-1.10	0.17
RELATIVE INDEX OF INCREMENTAL MARKET-SHARE (RIM)[c]					
Jamaica	-0.21	-0.31	-0.28	-0.31	0.05
Korea	-0.03	-0.43	-0.36	-0.38	0.14
Trinidad and Tobago	-0.20	-0.31	-0.10	-0.23	0.08
U.S.A.	-0.85	-0.77	-0.77	-0.79	0.04

SOURCE: Resource calculations based on empirical observations.

a/ $RIE = \frac{\Delta E_b}{\Delta E_{nb}}$

b/ $RILM = \frac{\Delta S_b}{\Delta S_{nb}}$

c/ $RIM = \frac{\Delta 6_b}{\Delta 6_{nb}}$

d/Standard Deviation.

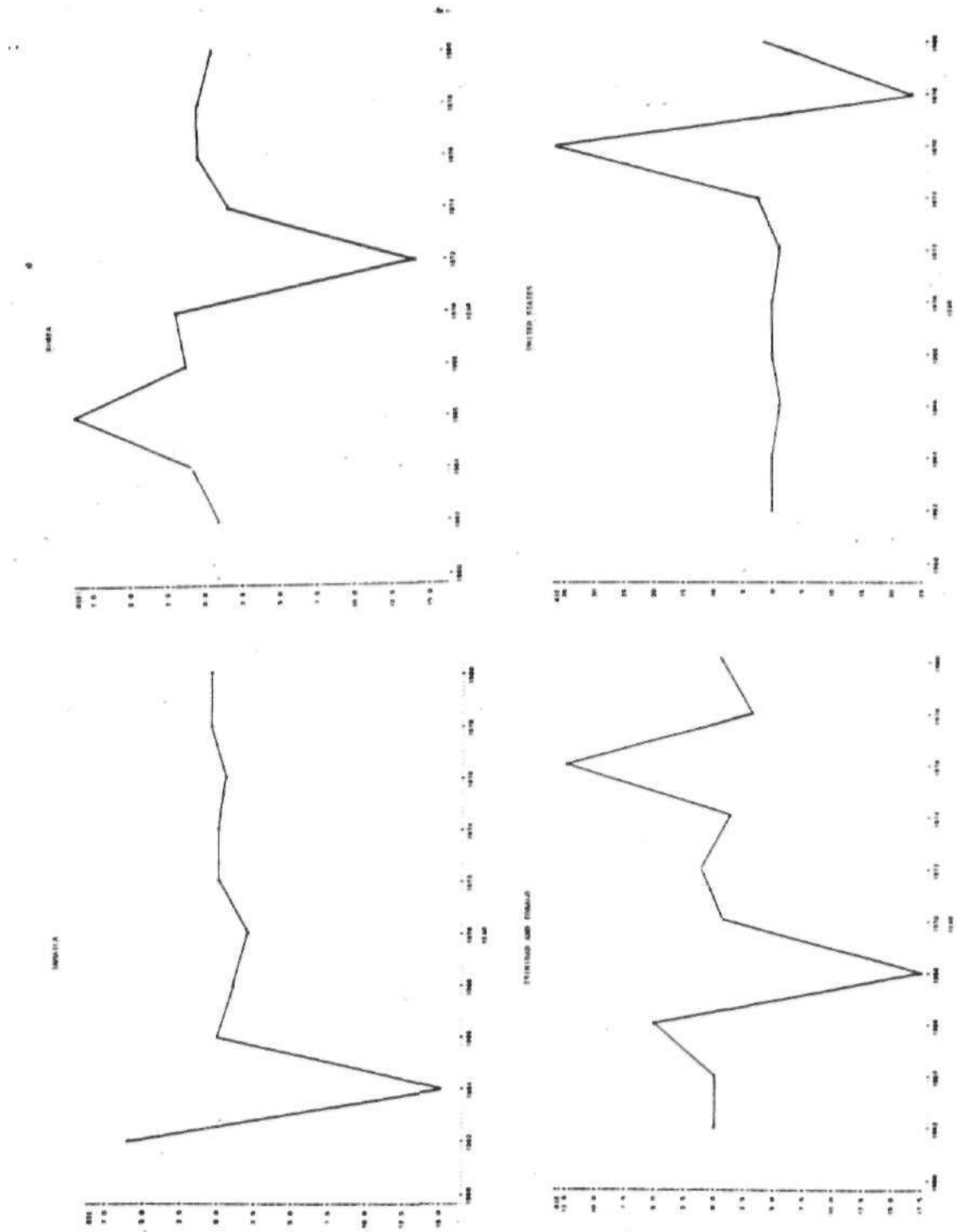


FIGURE 6-1: THE EVOLUTION OF THE RELATIVE INDEX OF INCREMENTAL EFFICIENCY (RIE) FOR JAMAICA, KOREA, TRINIDAD AND TOBAGO AND THE U.S.A. (1960-1980)

Relative Index of Incremental Efficiency (RIE). The most striking aspect of the RIE is the moderate uniformity in inter-country values, as summarized in their means. It appears that the less developed the financial system, the higher the absolute value of the RIE index, a theoretically consistent empirical observation, given the likely greater presence of financial repression and less financial liberalization in such economies. Of particular interest, however, is the fact that only the U.S.A. has had a positive mean RIE value, possibly underscoring the relative maturity of this economy. The likely explanation appears to be that, given the relatively more balanced nature of the economy, changes in efficiency are more likely to be in the same direction, though at varying rates as between banks and non-banks, especially when asphyxiation occurs. By contrast, there may be the tendency for changes in LDCs financial sub-markets to be inversely related, given the strong structural presence of financial dualism, and the usual heavy dominance of banks in these economies.

As far as inter-country experiences go, no clear RIE trends have emerged, except for the substantial variation, as measured by the fairly high standard deviations. As Figure 6-1 shows, however, these high values are often induced by distortions caused in a few years only, and are generally not typical.

Relative Indices of Incremental Long-Term Deposits Market-Share (RILM) and of Incremental (Output) Market-Share (RIM). Over the twenty-year period, values for these components have been consistently uniform, not only as between countries, but also from year to year in each case. Worthy of note again is the relatively low standard deviation in both

indices for Trinidad and Tobago, especially for the RILM. These again confirm uniformity in the behaviour of this market-share variable, the size of the mean values also, reflecting the relatively strong evolution of the financial system as a whole, despite the strength of the banking system itself. Standard deviations are largest for Korea in both cases, while the behaviour of its RILM provide the only instance of a marked upward trend over time. This possibly reflects the increasing role of the commercial banking system in that economy and, more importantly, the increased participation of these types of institutions in the mobilization of longer-term liabilities, a likely spin-off effect of the increased international surge to liability management in the 1970s. RILM and RIM values for the U.S.A. are generally downward in both cases for the U.S.A., a somewhat expected result for a mature economy, whose structure is likely to be fairly balanced.

3. Correlates of Asphyxiation and Its Constituent Elements

The question is quickly raised as to which of these three indices RIE, RILM and RIM has the strong/influence on the asphyxiation process. The theory, as initially formulated in Chapter IV, does not specifically address this in these terms, but confines itself to the broader 'inducers,' suggesting non-market related forces to be the major determinants. The empirical evidence unfortunately does not provide ample information, as the correlation analysis supplies clear results only for the United States. In the case of the U.S.A., the RIE has the strongest correlation with A, ($r = -0.93$, compared with -0.21 and 0.20 for RILM and RIM respectively). The negative sign is consistent with expectations, given the possibility (to be confirmed later) that the

higher the intensity of asphyxiation, the lower the value of the A measure and the likelihood that RIE is the strongest determinant of the three constituent elements.

In terms of correlations among themselves, the only consistent trend that emerges is that of RILM and RIM, 'r' values, ranging from 0.85 in the U.S.A. to 0.86 for Jamaica and Korea. In the case of Trinidad and Tobago, however, there is not a strong case of correlation between these two indices, but an unusually strong one between RIE and RILM ($r = 0.97$). These potentially suggest the likelihood of increasing intensity of financial asphyxiation over time, if not unchecked, as both components are likely to vary directly. This tendency should definitely not go unnoticed, as there is the strong implication that as financial development takes place, unless market share behaviour changes radically, banking inefficiency will commensurately increase, hence the continued emergence of asphyxiation.

4. The Underpinnings of the RIE

Because of its apparent influence on the financial asphyxiation process, the major elements of the RIE are more closely examined at this juncture. As was already mentioned, the principal elements of RIE are ΔE_b and ΔE_{nb}, which are in effect the interperiod percentage changes in the composite measures of efficiency for banks and non-banks.[2] As is known, these each, in fact, consist of 'structural' elements and 'operational' elements.

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[2] These measures are, in fact, weighted to reflect the varying sizes of constituent institutions.

FIGURE 6.2: RELATIVE BEHAVIOR OF THE COMPOSITE INDICES OF GROWTH IN TOTAL EFFICIENCY FOR BANKS(B) AND NON-BANKS(NB) (1960-1980)

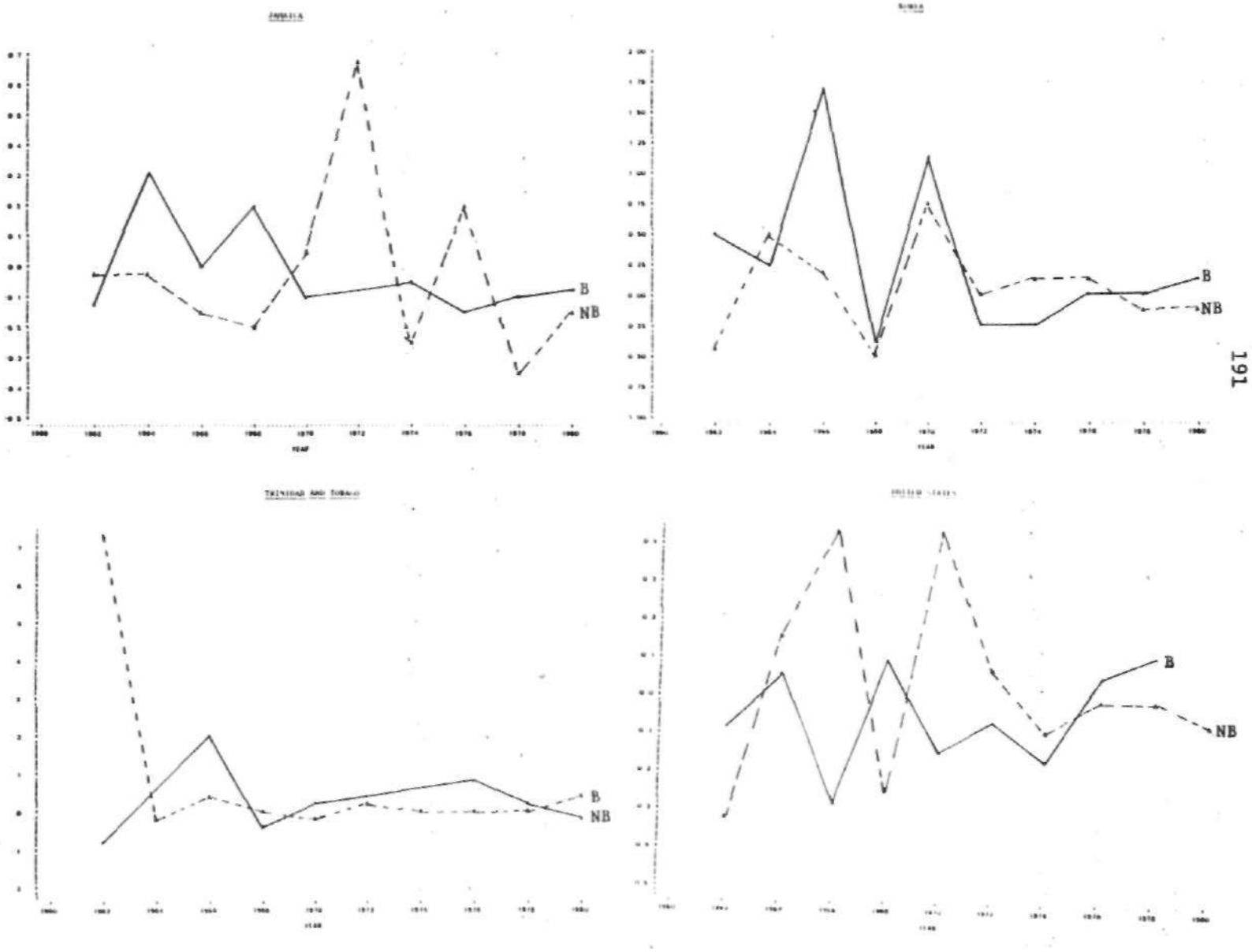


Figure 6-2 above shows the relationship of the growth in composite efficiency index for banks and non-banks for the four sample countries. Generally, growth levels for efficiency in the financial system as a whole tended to be higher in the 1960s than the 1970s. In most countries, also, the non-banks performed better in the early 1970s, but banking system efficiency growth appeared to be more on the upswing than non-banks in the late 1970s.

Tables 6-5, 6-6 and 6-7 below present analyses of various aspects of the efficiency variable for banks and non-banks. Table 6-5 analyses period averages for the growth in the structural, operational and composite measures of efficiency. This analysis indicates that in virtually all cases efficiency in non-banks grew at a faster rate than banks over the 1960-1980 period. Results with respect to structural and operational measures were mixed, with growth in operational efficiency for Jamaica and U.S.A. tending to be markedly better than for structural efficiency, while the situation was the reverse for Korea and Trinidad and Tobago. Overall structural efficiency growth in Trinidad was particularly strong, due to exceptional growth in non-bank efficiency.

Examination of levels of efficiency (Table 6-6), as distinct from growth in these levels (Table 6-5), over the 1960-1980 period reveals a significantly different position, however. The efficiency indices for banks have in all cases, but Jamaica, been higher than those for non-banks, suggesting 'prima facie' better performance. This contrasts strongly with the growth in these indices, at the center of which is the financial asphyxiation thesis. Banks are, therefore, losing ground to non-banks, at the margin, in efficiency, but are still

TABLE 6-5

MEAN MEASURES OF GROWTH IN EFFICIENCY[b/]

(Period % Averages, 1960-1980)

	ΔE_s	ΔE_o	ΔE	ΔE_w
JAMAICA				
Banks	12.0	66.9	0.8	-2.2
Non-Banks	-16.6	49.1	1.1	-1.8
Average[a/]	- 2.3	58.0	0.95	-2.0
KOREA				
Banks	86.3	23.4	2.1	28.0
Non-Banks	40.3	88.6	7.8	5.0
Average[a/]	63.3	56.0	5.0	17.0
TRINIDAD AND TOBAGO				
Banks	83.6	74.2	29.3	21.0
Non-Banks	308.4	4.0	13.1	80.0
Average[a/]	196.0	39.1	21.2	51.0
U.S.A.				
Banks	1.6	2.0	2.3	-5.0
Non-Banks	1.7	18.4	2.6	4.0
Average[a/]	1.7	10.2	0.2	-0.5

SOURCE: Research calculations based on empirical observations.

a/Unweighted average.

b/ ΔE_s, ΔE_o, ΔE, ΔE_w are average percentage growth in structural operational, total and weighted total efficiency for the 1960-1980 period as a whole.

commanding incrementally larger shares of the market. One further difference from Table 6-6 below is the clearer emergence of structural efficiency variables as more significant in the composite index of efficiency than operational variables (i.e. these have higher values than operational measures).

Discriminant Analysis of Efficiency Variables. Table 6-7 below sets out the results of a canonical discriminant analysis of the efficiency variables for each of the four survey economies. The analysis attempts to statistically determine any indications or trends of differences between banks and non-banks, both within individual economies, as well as between (cross-country) economies, as a basis for further defining and characterizing the financial asphyxiation process in these countries.

From a discriminant function such that:

$$D = \hat{\beta}_0 + \hat{\beta}_1 E + \hat{\beta}_2 E_S + \hat{\beta}_3 E_O,$$

where D is a discriminant score and $\hat{\beta}_0$ is the intercept constant, while $\hat{\beta}_1$, $\hat{\beta}_2$ and $\hat{\beta}_3$ are coefficients for the E, E_S and E_O variables, the results suggest marked differences between efficiency behaviour for banks and non-banks in general. Values of Wilks' lambda from Table 6-7 indicate that group centroids are noticeably separated between banks and non-banks as overall groups, suggesting a higher 'discrimination' by the former and likely less uniformity (lower lambda values) in all cases, except the U.S.A. However, the strongest evidence for all of the countries, for banks and non-banks as separate groups, is evident in the U.S.A. results. This corroborates the strongest case of financial

TABLE 6-6

MEAN MEASURES OF EFFICIENCY

(Period % Averages, 1960-1980)

	E_s b/	E_o c/	E d/	E_w e/	ΔE_w
JAMAICA					
Banks	16.3	3.5	19.5	8.8	-0.02
Non-Banks	9.8	22.8	31.0	7.0	-0.02
Average a/	13.2	13.2	25.3	7.9	-0.02
KOREA					
Banks	178.7	7.3	186.0	113.8	0.28
Non-Banks	33.4	12.4	45.8	21.0	0.05
Average a/	106.0	9.9	116.0	67.8	0.17
TRINIDAD AND TOBAGO					
Banks	28.7	71.6	76.1	36.2	0.21
Non-Banks	18.5	14.2	32.7	11.3	0.80
Average a/	23.6	42.9	54.4	23.8	0.51
U.S.A					
Banks	134.9	79.2	214.1	42.1	-0.05
Non-banks	20.9	37.1	52.1	18.7	0.04
Average a/	77.9	58.9	133.1	30.4	-0.005

SOURCE: Research calculations based on empirical observations.

a/Unweighted Average

b/E_s = Structural Efficiency

c/E_o = Operational Efficiency

d/E = Composite Unweighted Index of Efficiency

e/E_w = Composite Weighted Index of Efficiency

asphyxiation evident in the U.S. observed results. The greatest difference in banks and non-banks is evident in Trinidad and Tobago (lambda values of 0.482 and 0.0816), further underscoring the overall fragility of this financial system.

The total canonical structure results provide further evidence of both intra-country and cross-country differences between banks and non-bank efficiency. In general, banks have higher absolute values than non-banks for all three efficiency variables indicating closer correlations between discriminant function coefficients and original efficiency values. No conclusive results are, however, attained to permit ranking of the 'degree of' contribution to the discrimination between banks and non-banks for the three variables. This is due to the fact that the additive nature of E_S and E_O (totalling E), partially violates the effectiveness of the statistical technique and as a result values of E_O are not output--an overall weakness of the technique itself as applied to this research. Nevertheless, the relatively close absolute values of the structural efficiency variable (E_S) to the composite index (E), 'a priori' suggests a stronger discriminating role for structural efficiency than the operational efficiency variable, for most of the survey economies.

Underlying Variables: Finally, in terms of the underlying variables (x_1 ..... x_{12}), strongest and most consistent influences on efficiency were observed for (a) the total long-term assets to total operating expenses ratio (X_{11}, TLTA/TOE) (a partial measure of economies of scale in long-term resource mobilization) and (b) the total assets to total claims on government (X_3, TA/TCOG) (a measure of government

TABLE 6-7

DISCRIMINANT ANALYSIS OF FINANCIAL SECTOR EFFICIENCY

Wilks' Lambda Values [a]

	Banks	Non-Banks
Jamaica	0.138	0.208
Korea	0.571	0.586
Trinidad and Tobago	0.482	0.816
U.S.A.	0.123	0.027

Total Canonical Structure Coefficients [b]

	E	E_S	E_O
Jamaica			
Banks	0.272	0.502	-0.993
Non-Banks	0.209	0.991	-0.066
Korea			
Banks	0.991	0.995	-0.428
Non-Banks	-0.303	-0.016	-0.985
Trinidad and Tobago			
Banks	0.989	0.338	0.946
Non-Banks	0.973	0.928	0.534
U.S.A.			
Banks	0.884	0.767	0.998
Non-Banks	0.969	-0.182	0.999

Standardized Canonical Coefficients [c]

	E	E_S	E_O [d]
Jamaica			
Banks	-9.105	10.133	--
Non-Banks	0.074	0.148	--
Korea			
Banks	-4.389	5.671	--
Non-Banks	0.074	0.148	--
Trinidad and Tobago			
Banks	1.485	-0.238	--
Non-Banks	2.602	-1.600	--
U.S.A.			
Banks	8.540	-6.220	--
Non-Banks	5.730	-1.433	--

SOURCE: Research calculations.

a/Measure of separateness of group centroids--degree of inter-group discrimination--closer the value to zero, greater the degree of separateness and discrimination. Each type of bank and non-bank financial institution considered a separate group in each country case.

b/Measures of relatedness of discriminant function to original value of variable--the larger the value the closer the relationship.

c/Measures of relative contribution of each variable to total discriminant score. The larger the absolute value (signs ignored), the greater is a variable's contribution.

d/No values because of additive nature of $E_S + E_O$ (totalling E). Partial violation of one of assumptions of discriminant analysis.

"crowding out"). TLTA/TOE is particularly strong for the banking system in Trinidad and less so, though still the strongest variable, for its non-banks. By contrast, it is stronger for the non-banks in the U.S.A. and Jamaica than for banks, in both of which cases it is very influential for the financial system as a whole. While the variable with the strongest correlation with the efficiency parameters in the Korean context is TA/TCOG, TLTA/TOE also has much significance.

The presence of these two variables as the overwhelmingly strongest influences on the final measure of efficiency is crucial to this analysis. The enlarging of the value of the TLTA/TOE variable infers a tendency towards concentration over time, as increasing economies of scale are attained given that there appears to be a positive correlation between size (especially in banks) and ability to mobilize long-term deposits. This is largely a market (operational and structural) phenomenon. On the other hand, the TA/TCOG variable reflects the strength of the non-market mechanism on the process of financial asphyxiation, the major influence being government. A very strong influence of Government on the financial system of Korea is especially noted, a situation arising largely in the 1960's and early 1970's. This may have resulted from the need for frequent official interventions, in the face of internal/external sector conflicts arising from the massive capital inflows into the system, emerging from its aggressive financial/monetary policies of the late 1960s and early 1970s.

This question of the critical determinants of the financial asphyxiation process will again be addressed in the next chapter.

D. Empirical Results--Aspects of the Dynamics

1. Asphyxiation and the Financial Sector

In general there appears to be no overwhelming evidence of strong correlation between indices of financial asphyxiation and financial sector variables, possibly partly because of a paucity of observations.

From the results in Table 6-8, measures of financial asphyxiation appear consistently negatively correlated with the monetization ratio and mixed with respect to the rate of inflation. This is largely consistent with theoretical expectations in both cases. In the case of the monetization ratio, the larger this is, the greater is the likelihood of an enlarging of the financial superstructure, a 'prima facie' evidence of financial and/or economic development, but equally so of asphyxiation. As was already established, the more intense is asphyxiation, the lower generally is the value of its index. The case of inflation is amplified in the next chapter.

The multiple regression results (Table 6-9) do not yield any further information beyond that of the correlation analysis for financial sector variables. However, in the only case where relationships for lagged variables are available, the U.S.A., immediate prior period lags of the independent variables show somewhat stronger relationships than two periods earlier, tentatively indicating some influences of financial aggregates on the asphyxiation process or vice-versa.

Table 6-8

CORRELATION ANALYSIS OF FINANCIAL ASPHYXIATION INDEX (A)

AND REAL/FINANCIAL SECTOR VARIABLES

Jamaica

CORRELATIONS AMONG THE 'VAR' VARIABLES

	GNPR	DGNPR	FIR1	RLIR	KAPPR	AJIR	DICPR
GNPR	1.0000	0.2396	0.9181	0.8996	-.9666	-.1956	0.9329
DGNPR	0.2396	1.0000	0.3118	0.1721	0.3301	-.1967	0.5123
FIR1	0.9181	0.3118	1.0000	0.9174	-.9339	0.1316	0.8187
RLIR	0.8996	0.1721	0.9174	1.0000	-.9531	0.1043	0.8367
KAPPR	-.9666	0.3301	-.9339	-.9531	1.0000	0.4439	-.9081
AJIR	-.1956	-.1967	0.1316	0.1043	0.4439	1.0000	-.1298
DICPR	0.9329	0.5123	0.8187	0.8367	-.9081	-.1298	1.0000

CORRELATIONS AMONG THE 'WITH' VARIABLES

	A
A	1.0000

CORRELATIONS BETWEEN THE 'VAR' VARIABLES AND THE 'WITH' VARIABLES

	A
GNPR	-.4899
DGNPR	-.4884
FIR1	-.5048
RLIR	-.4953
KAPPR	-.1986
AJIR	0.0830
DICPR	-.4949

Korea

CORRELATIONS AMONG THE 'VAR' VARIABLES

	GNPR	DGNPR	FIR1	RLIR	KAPPR	AJIR	DICPR
GNPR	1.0000	0.0060	0.8198	0.2003	0.7950	0.7973	0.4804
DGNPR	0.0266	1.0000	0.0154	-.1564	-.1235	0.1608	0.5727
FIR1	0.6196	0.0154	1.0000	0.9940	0.9987	0.9817	0.3297
RLIR	0.2653	-.1564	0.9940	1.0000	0.9935	0.1378	-.4099
KAPPR	0.7903	-.1235	0.9987	0.9935	1.0000	0.4773	0.0431
AJIR	0.7973	0.1608	0.9817	0.1378	0.4773	1.0000	0.2770
DICPR	0.4804	0.5727	0.3297	-.4099	0.0431	0.2770	1.0000

CORRELATIONS AMONG THE 'WITH' VARIABLES

	A
A	1.0000

CORRELATIONS BETWEEN THE 'VAR' VARIABLES AND THE 'WITH' VARIABLES

	A
GNPR	-.3252
DGNPR	-.5235
FIR1	-.3673
RLIR	0.3414
KAPPR	-.4883
AJIR	-.1490
DICPR	-.5354

Trinidad and Tobago

CORRELATIONS AMONG THE 'VAR' VARIABLES

	GNPR	DGNPR	FIR1	RLIR	KAPPR	AJIR	DICPR
GNPR	1.0000	0.2996	0.9686	0.8301	0.9936	0.6489	0.7636
DGNPR	0.2996	1.0000	0.2709	-.4346	-.2396	0.0630	0.7083
FIR1	0.9686	0.3189	1.0000	0.7140	0.9081	0.6080	0.7796
RLIR	0.8301	-.4346	0.7140	1.0000	0.9353	0.6796	0.3466
KAPPR	0.9936	-.2396	0.9081	0.9353	1.0000	0.9896	0.4339
AJIR	0.6489	0.0630	0.6080	0.6796	0.9896	1.0000	0.4130
DICPR	0.7636	0.7083	0.7796	0.3466	0.4339	0.4130	1.0000

CORRELATIONS AMONG THE 'WITH' VARIABLES

	A
A	1.0000

CORRELATIONS BETWEEN THE 'VAR' VARIABLES AND THE 'WITH' VARIABLES

	A
GNPR	0.1098
DGNPR	0.3173
FIR1	0.0998
RLIR	-.3309
KAPPR	-.3881
AJIR	-.0510
DICPR	-.0788

U.S.A.

CORRELATIONS AMONG THE 'VAR' VARIABLES

	GNPR	DGNPR	FIR1	RLIR	KAPPR	AJIR	DICPR
GNPR	1.0000	0.0169	0.7278	-.9806	0.3987	-.7717	0.9909
DGNPR	0.0185	1.0000	0.6866	-.6823	0.6727	-.6267	0.6950
FIR1	0.7378	0.6865	1.0000	-.7241	0.3373	-.6353	0.7985
RLIR	-.9806	-.6823	-.7241	1.0000	-.3803	0.9000	-.9980
KAPPR	0.3987	0.6727	0.3373	-.3803	1.0000	-.4086	0.2987
AJIR	-.7717	-.6267	-.6353	0.9000	-.4086	1.0000	-.9243
DICPR	0.9909	0.6950	0.7985	-.9980	0.2987	-.9243	1.0000

CORRELATIONS AMONG THE 'WITH' VARIABLES

	A
A	1.0000

CORRELATIONS BETWEEN THE 'VAR' VARIABLES AND THE 'WITH' VARIABLES

	A
GNPR	0.4026
DGNPR	0.4130
FIR1	0.4224
RLIR	-.4766
KAPPR	-.3029
AJIR	-.3863
DICPR	0.5306

where

GNPR = Gross National Product

DGNPR = Growth in Gross National Product

FIR1 = Financial Intermediation Ratio

M2R = Monetization Ratio

KAPPR = Capital Formation Ratio

AJIR = Foreign Financing Ratio

DICPR = Change in Consumer Prices

VAR VARIABLES = Endogenous Variables

WITH VARIABLES = Independent Variables

SOURCE: Empirical observations.

TABLE 6 - 9

MULTIPLE REGRESSION ANALYSIS - PREDICTION OF

REAL/FINANCIAL SECTOR VARIABLES FROM ASPHYXIATION

INDEX (A) AND VICE-VERSA

Jamaica

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'WITH' VARIABLES FROM THE 'VAR' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
A	0.729873	-0.216102	999.000000	0.772	0.667067

AVERAGE R-SQUARED: UNWEIGHTED = 0.7299729 WEIGHTED BY VARIANCE = 0.7299726

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'VAR' VARIABLES FROM THE 'WITH' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
GNPR	0.103000	-0.981010	0.110211	1.000	0.210100
DGNPR	0.230000	0.143003	0.303420	2.000	0.152003
FIRI	0.375410	0.304030	0.340720	3.041	0.110307
MUR	0.164240	-0.000773	0.000003	1.070	0.445395
KAPPR	0.000295	-0.981874	-0.000003	0.310	0.807740
XRR	0.000030	-0.134410	-0.100000	0.004	0.980104
DICPR	0.100174	0.077000	0.112000	1.750	0.221400

AVERAGE R-SQUARED UNWEIGHTED = 0.1644496 WEIGHTED BY VARIANCE = 0.1630053

Korea

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'WITH' VARIABLES FROM THE 'VAR' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
A	0.984798	0.931867	999.000000	18.605	0.063331

AVERAGE R-SQUARED: UNWEIGHTED = 0.9847930 WEIGHTED BY VARIANCE = 0.9847930

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'VAR' VARIABLES FROM THE 'WITH' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
GNPR	0.103000	-0.981010	-0.110211	1.000	0.210100
DGNPR	0.230000	0.143003	0.303420	2.000	0.152003
FIRI	0.375410	0.304030	0.340720	3.041	0.110307
MUR	0.164240	-0.000773	0.000003	1.070	0.445395
KAPPR	0.000295	-0.981874	-0.000003	0.310	0.807740
XRR	0.000030	-0.134410	-0.100000	0.004	0.980104
DICPR	0.100174	0.077000	0.112000	1.750	0.221400

AVERAGE R-SQUARED UNWEIGHTED = 0.1644496 WEIGHTED BY VARIANCE = 0.1630053

Trinidad and Tobago

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'WITH' VARIABLES FROM THE 'VAR' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
A	0.730436	-0.172840	999.000000	0.811	0.602342

AVERAGE R-SQUARED: UNWEIGHTED = 0.7304366 WEIGHTED BY VARIANCE = 0.7304366

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'VAR' VARIABLES FROM THE 'WITH' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
GNPR	0.012000	-0.111430	-0.141300	0.060	0.703401
DGNPR	0.100000	-0.011230	-0.000004	0.890	0.371430
FIRI	0.001075	-0.123301	-0.199970	0.005	0.930231
MUR	0.940797	-0.870110	-0.000043	0.410	0.530731
KAPPR	0.100270	-0.000320	0.000475	0.903	0.357730
XRR	0.000001	-0.123070	-0.150000	0.001	0.966736
DICPR	0.004007	-0.007407	-0.130003	0.301	0.606000

AVERAGE R-SQUARED UNWEIGHTED = 0.0430000 WEIGHTED BY VARIANCE = 0.0130096

U.S.A.

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'WITH' VARIABLES FROM THE 'VAR' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
A	0.870490	-0.448841	999.000000	0.903	0.742736

AVERAGE R-SQUARED: UNWEIGHTED = 0.8704798 WEIGHTED BY VARIANCE = 0.8704798

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'VAR' VARIABLES FROM THE 'WITH' VARIABLES

SQUARED MULTIPLE CORRELATIONS AND F TESTS
7 NUMERATOR DF 3 DENOMINATOR DF

	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
GNPR	0.162000	0.060157	0.060999	1.506	0.247967
DGNPR	0.160713	0.060830	0.090317	1.635	0.336027
FIRI	0.187002	0.085370	0.122488	1.840	0.211873
MUR	0.330211	0.133863	0.190031	2.970	0.101591
KAPPR	0.041364	-0.070001	-0.094101	0.543	0.674009
XRR	0.160113	0.043703	0.060033	1.402	0.270381
DICPR	0.291304	0.202906	0.261062	3.307	0.107406

AVERAGE R-SQUARED UNWEIGHTED = 0.170715 WEIGHTED BY VARIANCE = 0.1630061

LEGEND

GNPR = Gross National Product

DGNPR = Growth in Gross National Product

FIRI = Financial Interrelation Ratio

MUR = Monetization Ratio

KAPPR = Capital Formation Ratio

XRR = Foreign Financing Ratio

DICPR = Change in Consumer Prices (Inflation Rate)

'VAR' VARIABLES = Dependent Variables

'WITH' VARIABLES = Independent Variables

SOURCE: Empirical observations.

On balance, however, the relationships between financial sector variables and asphyxiation, while clearly indicative, are by no means conclusive. There are also no clear indications of predictive power between financial and asphyxiation variables, given the scarcity of reliable estimates.

2. Asphyxiation and the Real Sector

Correlation and regression results for the real sector/asphyxiation relationships are more substantial and appear more meaningful than those of the financial sector. As in the case of the financial sector, the results for the real sector are however by no means conclusive in any one direction. Two of the countries have reasonable correlations between measures of asphyxiation and GNP, though with different signs (Jamaica -0.43, U.S.A. +0.40) (Table 6-8 above). There is also a reasonably strong association between the foreign financing ratio and the asphyxiation index in the case of the U.S.A. In the one case where there are estimates, the U.S.A., there is a stronger correlation with the asphyxiation index when GNP is lagged three periods rather than by one period, inferring a relatively large lag by real sector variables (five to six years) behind the actual asphyxiation process. This is, however, not substantiated in the multiple regression estimates where there are fairly consistent r^2 values from lags of one period in the dependent real sector variables and those involving a three-period lag (Table 6-10 below).

As was the case for the financial sector, no clear predictive influences are established between asphyxiation and real sector

variables, once again possibly on account of limitations in the number of observations.

3. Asphyxiation and Economic Development

Table 6-8 above suggests that for real sector variables, the strongest correlative relationships with measures of financial asphyxiation appear to be with ΔGNP or growth in GNP. Both Korea and Jamaica show a fairly strong negative relationship for values of A with ΔGNP, while the U.S.A. and Trinidad and Tobago have a fairly strong and weak positive relationship respectively (Table 6-10 below). The indications are therefore mixed. Although intuitively it would seem that there would be an inverse relationship between the process of financial asphyxiation and development or growth, there actually ought to be a positive relationship between the values of the indices of asphyxiation and growth (since the lower the growth in GNP, the smaller will the asphyxiation index tend to be). This stems largely from the fact that the efficiency criterion appears to exert a strong influence on the asphyxiation process, especially in LDC's. It, thus, follows that increasing inefficiency by the dominant banking system as asphyxiation intensifies, should over time induce weakening financial structures and ultimately declining real sector performance, especially if a supply-side, finance-leading approach is taken to development. This notwithstanding, it is not difficult to explain why the U.S.A., despite the frequency with which the phenomenon is evident, would experience a positive relationship between the values of the measures of asphyxiation and growth. The likely explanation hinges around the fact that, although there may be relatively less efficient operations by banks than non-banks, both types of institutions would grow on balance in such a mature system, unlike the tendency in an emergent

TABLE 6 - 10

MULTIPLE REGRESSION ANALYSIS OF U.S.A. DATA - WITH LAGGED
DEPENDENT AND INDEPENDENT
VARIABLES

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'VAR' VARIABLES FROM THE 'WITH' VARIABLES

	SQUARED MULTIPLE CORRELATIONS AND F TESTS (NUMERATOR DF		(DENOMINATOR DF		
	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
LGNP1R	0.790869	0.686977	999.000000	3.799	0.302927
LGNP2R	0.853082	0.706109	999.000000	5.808	0.290490
LGIR1R	0.615823	0.276640	999.000000	1.563	0.437991
LGIR2R	0.623831	0.269882	999.000000	1.661	0.420896
LGAPP1R	0.980890	0.961720	999.000000	51.147	0.068318
LGAPP2R	0.[illegible]	-0.152796	999.000000	0.119	0.952363

AVERAGE R-SQUARED: UNWEIGHTED = 0.713949 WEIGHTED BY VARIANCE = 0.8099789

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'WITH' VARIABLES FROM THE 'VAR' VARIABLES

	SQUARED MULTIPLE CORRELATIONS AND F TESTS # NUMERATOR DF		-# DENOMINATOR DF		
	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
A	1.000000	999.000000	999.000000	0.000	0.000000

AVERAGE R-SQUARED: UNWEIGHTED = # WEIGHTED BY VARIANCE = 1

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'VAR' VARIABLES FROM THE 'WITH' VARIABLES

	SQUARED MULTIPLE CORRELATIONS AND F TESTS (NUMERATOR DF		(DENOMINATOR DF		
	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
LICP1R	0.890834	0.781647	999.000000	8.156	0.214290
LICP2R	0.914882	0.829128	999.000000	10.704	0.188028
LMIR	0.779088	0.599938	999.000000	3.845	0.310836
LMA1R	0.881481	0.722902	999.000000	1.963	0.395378
LMA2R	0.[illegible]728	0.369486	999.000000	1.354	0.374044

AVERAGE R-SQUARED: UNWEIGHTED = 0.7870988 WEIGHTED BY VARIANCE = 0.7834899

UNIVARIATE MULTIPLE REGRESSION STATISTICS FOR PREDICTING THE 'WITH' VARIABLES FROM THE 'VAR' VARIABLES

	SQUARED MULTIPLE CORRELATIONS AND F TESTS # NUMERATOR DF		-# DENOMINATOR DF		
	R-SQUARED	ADJUSTED R-SQUARED	UNBIASED R-SQUARED	F STATISTIC	PROB > F
A	1.000000	999.000000	999.000000	0.000	0.000000

AVERAGE R-SQUARED: UNWEIGHTED = 1 WEIGHTED BY VARIANCE = 1

[illegible]

'L' = Variable - 1 or 2 = Variable lagged by 1 or 2 periods
respectively (i.e. GY_2 or G_GNP_1)

GNP = Gross National Product

BF = Foreign Financing Ratio

CAPP = Capital Formation Ratio

CPI = Index of Consumer Price

M1 = Narrow Money Supply

UR = Unemployment Rate

'VAR' VARIABLES = Endogenous Variables

'WITH' VARIABLES = Exogenous Variables

SOURCE: Empirical observations.

one in which one subsector may experience a fall off and the other an increase. Differences in efficiency in the U.S.A. may therefore not be radical, and it is likely that the asphyxiation indices may increase with development. The question of the specific findings for the U.S.A. will, however, be more closely discussed in the next chapter, when some qualitative factors are considered.

These, in effect, are the main findings of the empirical study of the financial asphyxiation process in post-war economies of Jamaica, Korea, Trinidad and Tobago and the U.S.A. While there is by and large some corroboration by the empirical evidence of the broad theory outlined in Chapter IV of the study, there are also some marked deviations from the intuitive situation. The more important of these are now discussed in the next chapter, before the real welfare effects of the financial asphyxiation process are evaluated in Chapter VIII.

CHAPTER VII

ASPECTS OF THE FINANCIAL ASPHYXIATION THEORY REVISITED

The previous chapter examined the empirical experience of the process of financial asphyxiation in the post-war (1960-1980) economies of Jamaica, Korea, Trinidad and Tobago and the United States. While the phenomenon was evident on a few occasions in each of these economies, there was generally no evidence of an unusually sustained presence, embracing a significant time frame. In Chapter IV, a number of hypotheses were advanced to constitute a possible theory of financial asphyxiation. Foremost among these hypotheses were the determinate factors of the financial asphyxiation syndrome, and their likely impact on both the financial sector itself and the real sector. Methods of possible transmission were also hypothesized, as well as likely patterns of behaviour between financial asphyxiation and development in general.

This relatively brief chapter revisits aspects of the theoretical framework of Chapter IV, in the specific light of the empirical experience set out in the previous chapter. The chapter, in reality, attempts to provide qualitative explanations for and answers to two fundamental questions. These are (a) what really determines the process of financial asphyxiation and its impact on the real sector and (b) what accounts for the apparently unusual behaviour of the U.S.A. and Trinidad

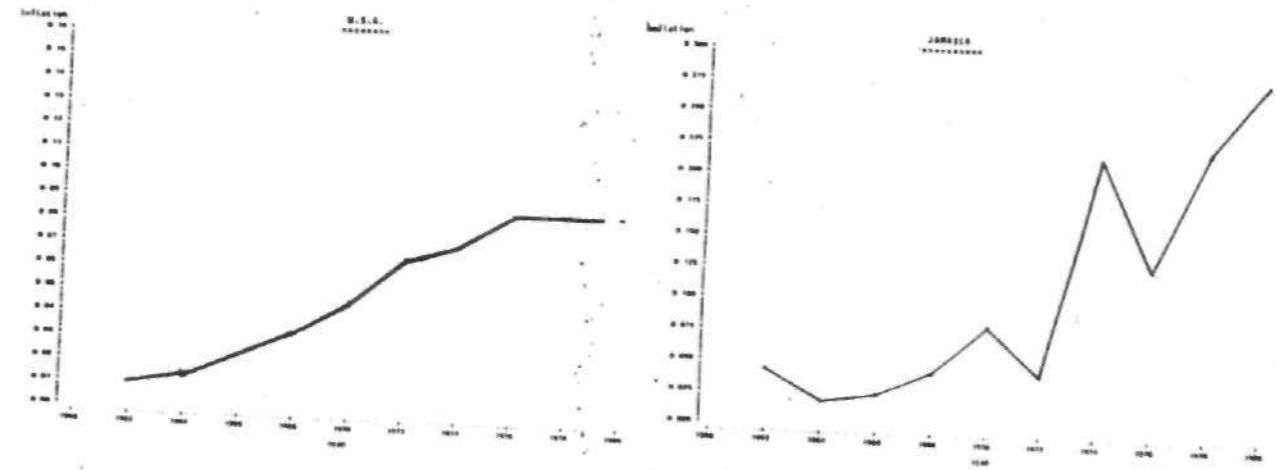
and Tobago over the survey period. The chapter is divided into three sections, A to C. Section A addresses the question of the factors behind the asphyxiation problem focusing specifically on the role of government and that of inflation. Section B relates these factors to a possible transmission mechanism, while Section C examines two specific aspects of the empirical experience, the unexpected behaviour of the U.S.A. and Trinidad and Tobago.

A. The Determinants Reassessed

The theory of financial asphyxiation set out in Chapter IV ascribed the phenomenon of financial asphyxiation to two broad categories of factors, one market-related and the other non-market related. The theory suggested at that point that, given the nature of the phenomenon, non-market related factors (government, inherent and legal regulatory aspects) were primarily responsible, although market-factors did play an important part.

The empirical evidence from the survey appears to corroborate the general view that non-market related factors tend to have the strongest influence on financial asphyxiation as a process. In this respect, it also appears that the role of government may well be the single largest determinant, given its direct role in the financial system, as well as its less direct influences on other non-market based factors such as the legal/regulatory environment and some of the very inherent factors of banking 'per se.' The pervasiveness of government influence generally appears increasingly strong in the financial systems of both developed and developing economies and as a critical determinant of the financial asphyxiation process.

FIGURE 7-1: INFLATION EXPERIENCE (CHANGE IN CONSUMER PRICE INDEX) FOR JAMAICA, KOREA, TRINIDAD AND TOBAGO AND THE U.S.A.



The second major determinant in the process appears, from the empirical evidence, to be that of inflation. It is quite likely that the role of government in this process is also significant. Figure 7-1 above illustrates the behaviour of a measure of inflation (change in consumer prices) for the four economies between 1960 and 1980. From the graphs, two distinct periods of inflation clearly emerge in most of the economies. These are 1966-68 and 1972-1975 periods. By and large the evidence of asphyxiation in the four economies also tends to cluster around these very periods, especially in the case of the U.S.A. and Trinidad and Tobago. This is, however, less so for Korea and Jamaica. The presence of inflation appears to precede the first appearance of the asphyxiation phenomenon in all cases, while thereafter the inflation tends to be sustained in most cases thereafter. This, thus, raises unanswerable questions as to cause and effect relationships. Given the strong role of government, it is likely that inflation in these economies are largely deficit-fuelled and are, thus, more cost-push than demand-pull in nature.

In view of the obviously overwhelming role of government and inflation in the financial systems of these economies, it is, therefore, not surprising that banking operations become increasingly inefficient, relative to non-banks, thus actively inducing financial asphyxiation itself. This most likely explains the strong influence of the RIE in the determination of the degree of asphyxiation at any point. On the other hand, it is also likely, as in the Jamaica and possibly Korea cases, that the expansion of the financial system resulting from inflation can outstrip that of efficiency increases. This will most likely

give rise to a different sign in correlation analysis, as the empirical evidence did indicate.

B. The Transmission Process Reconsidered

The theory in Chapter IV suggested that financial asphyxiation appears to be a largely financial process transmitting its effects to the real sector through either the credit markets, 'financial constraint' mechanisms or price level expectations. Given the government-inflation-banking inefficiency paradigm just established above for the financial asphyxiation process, it appears that the strongest transmission mechanism for repercussions from the financial sector may well be actual inflation itself and, less of the three channels identified above, including future price level expectations.

Based on the empirical evidence it now appears that financial asphyxiation, a largely financial phenomenon induced by historical, non-market factors principally, gains strength with inflation, which further contributes to its emergence as a process. Rapid inflation distorts banking efficiency, which then intensifies asphyxiation, further fuelling inflation. This in turn, through the credit/investment processes and the direct redistributionary effects of inflation, then affect real spending and real sector activity. Inflation-induced distortionary effects then influence resource mobilization possibilities, feeding back to distort financial savings allocation and intermediation in later rounds. This then leads to further distortions in the financial sector, once again, unless arrested by corrective actions (Chapter IX). The role of actual price level changes, rather than price

level expectations, rational or otherwise, thus appears to be key in the transmissionary process.

C. The Case of Two Illusions

Because of its perceived links to distortions in the financial system and its deep roots in historical, institutional and political experiences, it is logical to impute the financial asphyxiation phenomenon largely to lagging or less developed economies. Asphyxiation is, in fact, an imperfection in the financial process of an economy. Since more mature economies tend to be less dualistic and more balanced structurally and financially, they would, therefore, seem to be less susceptible to its presence and effects.

The United States: The evidence that the U.S.A. experienced the most intense incidence (i.e. frequency) of financial asphyxiation was, therefore, quite unexpected and appears, on the surface, contradictory to the theory earlier outlined. When, however, account is taken of the fact that non-market factors, especially government (whose excessive presence in market-oriented economies typically induces sizable deficit financing and significant rates of inflation), are critically behind the process, the U.S.A. experience is less surprising. Being virtually the most during 1960-1980 period in particular, regulated financial system in the world, the influence of government and quasi-government authorities and agencies on the system is clear and very strong. In view of the special roles played by government in the banking system, the basis is readily set for asphyxiation. The role of inflation, directly or indirectly fuelled by government, was thus probably key in both initiating and reinforcing financial asphyxiation in the economy, especially in the 1970-1974 period.

Trinidad and Tobago: The other striking country experience is that of Trinidad and Tobago, undoubtedly the fastest growing economy of the four, especially in the last half of the 1970s. With very high per capita incomes, Trinidad is clearly a 'middle income' country, at least on the face of it. On closer examination, however, Trinidad's financial system is not as robust as it ought to be for an economy of its real infrastructural base and overall potential. Dualism appears significant, and there appears to be too rapid an emergence of certain financial institutions in general (finance companies, for instance). Thus, while the country's superstructure is relatively formidable and appears to be emerging consistent with theory, financial asphyxiation is apparently undermining its very fabric and robustness. The growing feature of increased fragility in the economy and the strong money illusion of 'petro' dollars have to quickly disappear, if real financial sector development and balanced structural evolution are to ensue.

On balance, however, it appears that the theory of financial asphyxiation, as outlined in Chapter IV, by and large, holds good, although the principal causative factors of its existence are likely to be more akin to those emerging from the empirical review, those of government influence and inflation. These are, in turn, largely responsible for the adverse repercussions of this largely financial process on the real sector.

The next chapter measures the intensity and impact of such repercussions on the welfare of the four sample economies.

CHAPTER VIII

THE COSTS OF FINANCIAL ASPHYXIATION

As previously noted, particularly in Chapters 6 and 7, where quantitative and qualitative dimensions of the process were discussed, financial asphyxiation will have far-reaching effects on any financial system and economy in which it is evident. The phenomenon itself is a manifestation of distortions and imperfections in financial and economic systems and thus has its direct and indirect costs to any economy in which it is present. These costs can be 'financial' or 'economic' in nature or, as is more likely, both.

This chapter recognizes both types of costs resulting from the phenomenon of financial asphyxiation, but attempts to quantify in detail only the economic (welfare) costs affecting the four economies under review, during those years in which the process is evident. The chapter first briefly discusses the nature of the financial costs likely to arise in any economy from this distortion (Section A). It then implicitly attempts to estimate the related economic costs therein, using both a 'macro,' holistic approach (Section B) and a 'micro,' additive approach (Section C).

A. Aspects of Financial Costs

Financial costs arising from the process of asphyxiation in any given economy or, more appropriately financial system, can derive from many sources. The major form of financial cost appears to be the likely impact on the financial sector resulting from increasing dominance by the banking institutions--that is increased sectoral concentration. While the monopolistic or, at best oligopolistic, financial structures resulting from intense asphyxiation over time are best known to engender social and economic costs, as will be quantified in the next section, they also do adversely affect the operational and financial viability of intermediaries constituting the backbone of any financial sector.

The core of the financial costs issue under a scenario of asphyxiation is that increasing concentration in the financial sector induces diseconomies of scale in financial institutions, resulting in turn in sub-optimal profitability. This process is, however, in fact not consistent with normal expectations. Although it is clearly established, for instance, that the most efficient form of economic system is one that is perfectly competitive, the tendency in reality has been for distinctly positive financial correlations between concentrated or monopolistic forms of economic organization and levels of profitability. It is, however, unlikely that this will hold under scenarios of financial asphyxiation. One of the major causes of a likely deviation from the 'second best' norm in the case of asphyxiation, may well be the strong sensitivity of the banking industry

to Leibenstein's X-inefficiency phenomenon.[1] This will be discussed in more detail later in this section.

Significant work has been done on the inter-relationships between increasing concentration, economies of scale and financial costs, hence profitability in the financial sector, as well as on these topics individually (see, for example, Stigler[2] and Benston et. al[3]). Most of the studies with respect to economies of scale, for instance, indicate "that scale economies exist, are statistically significant, and are constant across different sizes of banks."[4] This is also related to similar findings of strong economies of scope or joint production in banking. (See, for instance, Longbrake and Haslem on efficiency in commercial banking.)[5]

With respect to the inter-relationships of concentration, scale economies and financial performance, however, the findings have been mixed. A number of studies appear to suggest positive correlations between concentration, economies of scale and financial profitability

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[1]See H. Leibenstein, "Allocative Efficiency versus 'X-Efficiency,'" American Economic Review (June 1966): pp. 392-416.

[2]G. J. Stigler, "A Theory of Oligopoly," Journal of Political Economy, Vol. 72, No. 1 (February 1964): pp. 44-61.

[3]G. J. Benston, G. A. Hanweck, D. B. Humphrey, "Scale Economies in Banking--A Restructuring and Reassessment," pp. 435-456.

[4]Ibid., p. 436.

[5]W. A. Longbrake and J. A. Haslem, "Productive Efficiency in Commercial Banking," Journal of Money, Credit and Banking, Vol. 8, No. 3 (August 1975): pp. 317-330.

(e.g. Stigler[6]). Baumol, however, raises a question in one of his studies about these relationships, especially in so far as the presence or not of economies of scale is determinate on or by a monopolistic or oligopolistic form of organization. He finds that scale economies are "neither necessary nor sufficient for monopoly to be the least costly form of productive organization."[7] There is, therefore, the clear suggestion of a possible negative correlation between profitability and scale economies in institutions. In this context he notes that "the critical concept is (by definition) strict subadditivity of the cost function, meaning that the cost of the sum, of any 'm' output vectors is less than the sum of the costs of producing them separately."[8] He further suggests that economies of scale are always sufficient but not necessary to prove subadditivity. In specific situations, therefore, appropriate subadditivity of cost functions could lead to adequate profitability even in the absence of scale economies. Again, this is likely to arise both on account of financial asphyxiation and through the presence of X-efficiency/inefficiency factors. X-inefficiency is likely to be an important element in the asphyxiation process facing the banking system. It is an inherent and predominantly non-market-related factor.

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[6]See G.J. Stigler, "A Theory of Oligopoly." "

[7]W. J. Baumol, "On the Proper Cost Tests for Natural Monopoly in a Multiproduct Industry," American Economic Review, Vol. 67, No. 5 (December 1977): p. 809.

[8]Ibid.

Table 8-1 below sets out for the four countries under study, comparative estimates of measures of concentration, scale economies and profitability in the financial sectors. The evidence from the table is substantially in support of the intuitive feeling that there will be a deviation from the 'norm' in the inter-relationships between concentration, economies of scale and profitability when there is strong evidence of financial asphyxiation. All four of the economies indicate increasing concentration (higher 'Herfindahl' values) during most of the 1970s (compared with the 1960s), when the asphyxiation by the banking sector was strongest in all of these economies. In several cases, also, there was a tendency for declining economies or increasing diseconomies of scale, coupled with falling levels of profitability, especially in the post-1974 periods. Among the LDCs, these trends are most pronounced in Jamaica, probably structurally the weakest of the four sample economies, while they are correspondingly increasingly less pronounced in Trinidad and Korea respectively, as are the intensities of financial asphyxiation observed in these economies.

Contrary to expectations for a developed economic system, however, the observed relationships for the U.S.A. are possibly the most consistent and the most strongly deviant from the norm, where monopolies tend to emerge as a result of economies of scale (or less frequently, the converse) and where profitability to the typical firm then appears to increase with growing concentration and stronger monopolistic/oligopolistic structures. While concentration in the U.S.A. financial sector varies upwards (albeit only slightly) over the twenty-year period, there is increasing evidence of declining economies

TABLE S-1

RELATIONSHIPS BETWEEN FINANCIAL SECTOR
CONCENTRATION, ECONOMIES OF SCALE AND PROFITABILITY

Country And Year	Herfindahl Index a/	Average Operating Costs Divided by Total Assets b/	Average Net Income Divided By Total Assets c/
JAMAICA			
1960 d/	0.731	-	0.080
1966	0.596	0.098	0.042
1970 *	0.637	0.106	0.030
1972 *	0.640	0.114	0.040
1974	0.648	0.139	0.041
1976	0.638	0.101	0.021
1978	0.643	0.099	0.024
1980	0.692	-	0.042
KOREA			
1960 d/	0.983	0.237	0.085
1966	0.555	0.044	0.021
1970	0.561	0.028	0.006
1972 *	0.584	0.034	0.005
1974	0.581	0.028	0.004
1976 *	0.590	0.023	0.008
1978	0.604	0.030	0.011
1980	0.634	0.047	0.014
TRINIDAD AND TOBAGO			
1960 d/	0.731	0.098	-
1966	0.653	0.062	0.079
1970	0.634	0.059	0.047
1972	0.625	0.047	0.034
1974 *	0.721	0.059	0.044
1976	0.813	0.045	0.055
1978	0.832	0.051	0.067
1980 *	0.850	0.062	0.066
U.S.A.			
1960 d/	0.503	0.039	0.009
1966 *	0.504	0.023	0.007
1970 *	0.509	0.044	0.053
1972 *	0.509	0.047	0.031
1974 *	0.514	0.057	0.028
1976	0.508	0.057	0.037
1978	0.507	0.059	0.036
1980	0.510	0.078	0.038

SOURCE: Calculations based on several documents.

a/Herfindahl Index (H) = $\Sigma G_i^2 = G_b^2 + G_{nb}^2$, where G_b, G_{nb} and the respective shares of total assets by banks and non-banks and where $G_i = G_b + G_{nb}$.

b/Approximate measure of economies of scale.

c/Approximate measure of profitability.

d/Values may not be authentic on account of large number of missing data.

'*'Denotes years when partial or full asphyxiation is evident.

of scale, matched by reducing profitability, especially during the period when financial asphyxiation was most manifest, 1966-1974.

The general implication from the sample is that financial institutions, especially banking ones, affected by financial asphyxiation are unlikely to be anywhere near profit optimization levels in their operations, and are thus not maximizing net returns to their shareholders and creditors. One of the major reasons for this may be the strong sensitivity of the financial industry to Leibenstein's X-inefficiency concept,[9] as a result of the strong labor component in its production functions and its significant tendency to concentration. "Leibenstein hypothesized that managers trade the disutility of greater effort to keep costs down for the utility of less pressure and worker harmony. The ability of managers to make this trade-off depends on the extent of competitive pressure in the market. The term "X-inefficiency" describes the upward shift of the average cost curve which results from a reduction in competition.[10]

This is, therefore, the principal context in which financial costs induced by asphyxiation processes are likely to manifest themselves in an economy. As noted earlier, the actual extent and quantum of financial costs ascribable to asphyxiation will, however, not be measured in this study, since a larger focus on the inherent and more

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[9] See J. L. Stevens, "Bank Market Concentration and Costs: Is There X-Inefficiency in Banking?" Business Economics, Vol. 18, No. 3 (May 1983): pp. 36-44; for an application of this concept to the banking industry.

[10] Ibid., p. 36.

pervasive social and economic costs resulting from the phenomenon is more appropriate and certainly more desirable.

In assessing the likely economic costs of the process, two approaches are used in each of the four economies under study: (a) a 'macro' or holistic approach and (b) a 'micro' or additive approach. Both approaches manifest a number of theoretical and practical constraints. On the other hand, they should also present some indication of the adverse consequences that the phenomenon is likely to have, especially on the financial systems of less developed economies, and overtime, on their economic development in general.

B. Social and Economic Costs--A 'Macro' Approach

1. Graphical Illustration

Figure 8-1 below graphically depicts the magnitude of the impact at any point in time of financial asphyxiation in a given economy. As was outlined in the theory of financial asphyxiation in Chapter IV, the process has its impact, usually both in the input and output segments of the financial system. In the input segment the relative inter-period gain in share of long-term liabilities by banks is observed to outstrip gains in the identical period in relative efficiency of the banking system, which is generally short-term oriented in its operations. Thus in Graph (a), $\Delta TLTL_b$[11] tends to be at a higher level in the figure, in any given period, than is ΔE_b, which measures the inter-period increase

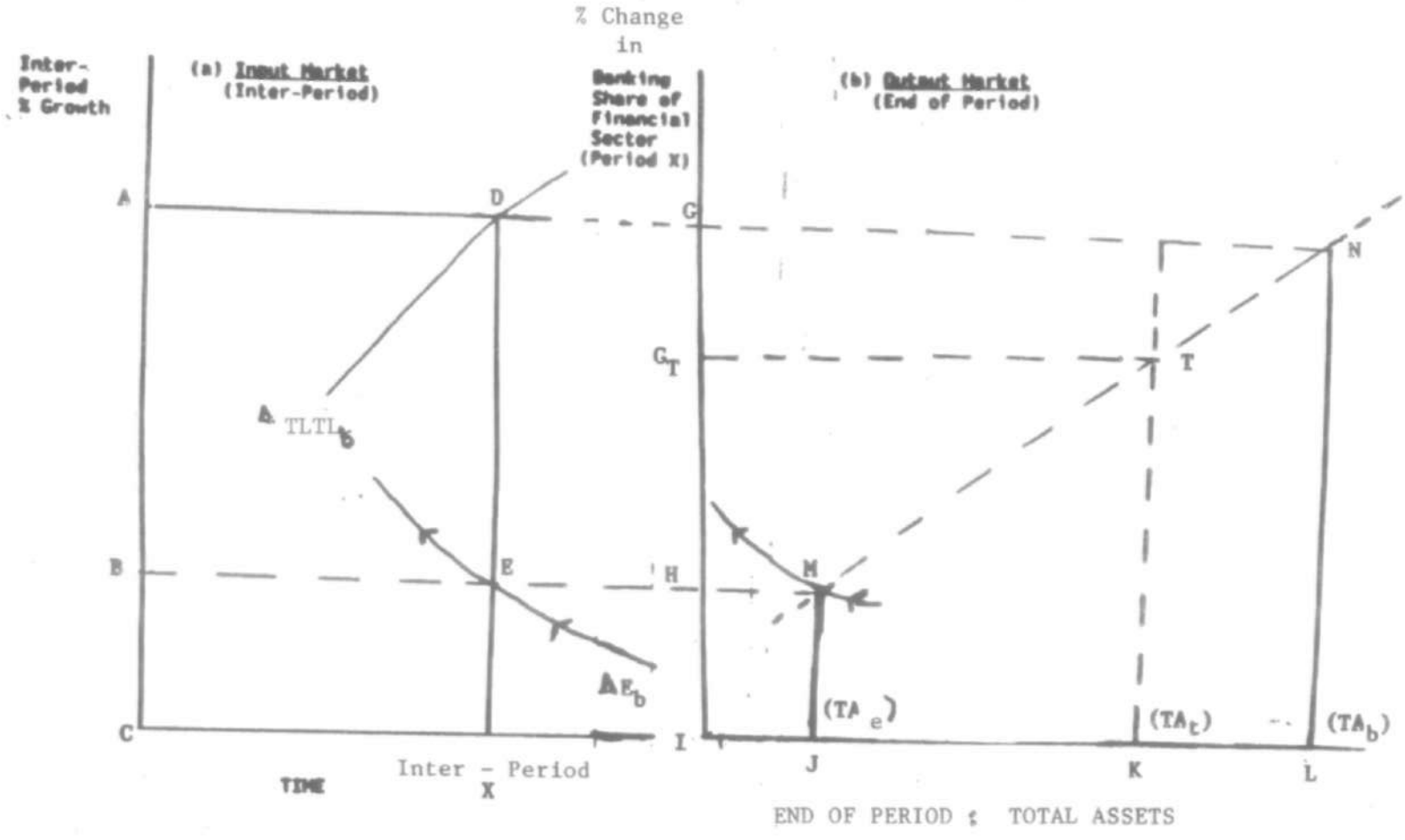
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[11] TLTL measures the total long-term liabilities of banking institutions in the financial sector and is used in this analysis as one of the indicators of the asphyxiating process for the short-term oriented banks.

in efficiency for the banking system. This type of financial asphyxiation in the input market alone is usually 'partial' in nature, as noted earlier.

In the output segment in Graph (b) for the asphyxiating banking subsector, total asphyxiation is possible should the inter-period increment in both the long-term (liability) input market and more importantly, total output market (as measured by the share of assets in the financial sector), exceed the increment in efficiency in the banking subsector. Thus in Graph (b), if between two periods X_{-1} and X, the change in MTN at point N (MTN representing the positions at period X in this diagram, of efficiency-adjusted, theoretical and actual banking assets [TA_e, TA_t TA_b]), i.e. the slope at point N is greater than that at point M (the growth in efficiency over the same period, i.e. the extension of ΔE_b from the input diagram), then total financial asphyxiation exists. Point N represents the actual share in the financial sector and the size of the banking system at period X (TA_b) under an asphyxiated system. Point T measures what the 'theoretical' or notional size (TA_t) of the banking subsector in any given economy should be. This point indicates what the size of the banking system should notionally have been, based on the performance of the efficiency index for the banking subsector over the period, relative to that for non-banks ($\Delta E_b \div$ sum [ΔE_b, ΔE_{nb}]). Point M represents what the actual size of the banking subsector should have been based on, prior-period efficiency performances (TA_e). TA_e is, therefore, the actual prior-period banking share deflated (or inflated) by the present period decrease (or increase) in banking system efficiency, relative to the increase in the

FIGURE 8-1 : ESTIMATION OF THE COST OF FINANCIAL ASPHYXIATION
(A 'Macro' approach)



(WELFARE COST OF FINANCIAL ASPHYXIATION, W_T = JK.r, WHERE 'r' IS A MEASURE OF THE PER UNIT INTEREST COST OF ASSETS DEMANDED BY BANKING SUB-SECTOR CLIENTS).

financial sector as a whole. Thus, JL represents total imperfection in the financial markets, caused by the asphyxiating banking subsector, being the difference between the actual situation with asphyxiation (TA_e) and the efficiency-adjusted situation without asphyxiation (TA_e). JK represents the 'true measure' of asphyxiation, being the difference between the efficiency adjusted size of the banking system (TA_t) and the normative or theoretical value of the subsector (TA_e). KL, thus, represents total financial sector imperfections arising from other sources. The actual cost of financial asphyxiation would be JK times an average measure of interest cost for assets demanded (r) by holders of banking assets (credit cost can be used as a proxy). This loss of "social income" can be represented as a percentage of GNP, thus presenting a yardstick of the real impact of the economic cost of the asphyxiation process.

2. Estimates of Costs under the 'Macro' Approach

Table 8-2 below sets out the estimates of the economic costs of financial asphyxiation using this aggregate approach for each year in which the process was observed in Chapter VI.

Actual values were used in the analysis for the estimates in the input-market ($\Delta TLTL_b$ and ΔE_b) for a given period of asphyxiation. In the output market actual banking assets (TA_b) for banks, the actual increment in the asset size of the banking system is deflated (or inflated as appropriate) by the change in the inter-period banking efficiency index, relative to that for non-banks ($\Delta E_b \div$ sum (ΔE_b, ΔE_{nb}). A notional 'new' asset size for the banking subsector is, thus, derived.

For the theoretical optimal banking system, the average share of a typical banking system in post-war years (1949-1963), where the process of asphyxiation was not intense, is used as a proxy. Goldsmith's estimates of the size of the typical LDC and MDC banking sector for that time period was about 70% and 50% respectively of the total financial sector.[12] These values are, therefore, used. The minimum lending rate for commercial bank credit (the prime rate) is used as a threshold measure for determining the loss in "social income" arising from the presence of asphyxiation, although in fact the real opportunity cost can be represented by the highest charge for credit anywhere in the financial system (usually in non-banks, whose risk profiles tend to be greatest).

While as an indicative measure of the likely cost to an economy of the asphyxiation process, this 'macro' approach is useful, it nevertheless suffers from a number of mainly conceptual weaknesses. These include: (a) the use of average empirical measures of relative banking size as a 'proxy' for the 'optimal' banking size; (b) the implicit assumption of a production function homogeneous of degree one, where $TLTL_b$ is the input and total assets of the banking sector is the output (TA_b), is generally unrealistic, given the strong sensitivity of the banking industry to economies of scale;[13] (c) the assumption that the costs of asphyxiation arising from the banking subsector analysis in

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[12] R. W. Goldsmith, Financial Structure and Development, p. 264.

[13] In fact, production functions for the banking industry are generally thought to be more akin to Cobb-Douglas functions than to any other form.

Figure 8-1 represents the total cost, without direct and independent reference to the behavior of the non-bank sector, i.e. in a sense only a partial analysis is presented, despite the generally aggregate nature of some of the assumptions; (d) the assumption of inherent adequacy of a largely financial measure of efficiency as the basis for adjustments to actually observed values and (e) the implicit assumption that no other factors influence the aggregate behavior and size of the financial sector, over and beyond the asphyxiating behavior of the banking subsector.

Yet, although these weaknesses will undoubtedly affect the efficiency and reliability of the estimates in Table 8-2 below, they do not destroy the theoretical underpinnings of the analysis and should still provide 'ball park' measures of the economic impact of the phenomenon.

Table 8-2 indicates that the welfare costs of financial asphyxiation to an economy using an aggregate approach, range from a minimum of about 1/5 of 1% of annual GNP to a maximum of over 5% for the four sample countries, in the 10 yearly cases, when the phenomenon was observed. The average cost is 2.5% of annual GNP, with the median being 2.3%. The highest costs are recorded by Korea, while the lowest are in the U.S.A. The U.S. result is not unexpected, partly because of its relatively larger denominator (GNP) compared with the other sample countries, but mainly because of the level of sophistication of its financial system (although it experienced the asphyxiation phenomenon more times (four) than any of the other economies). The major reason

TABLE 8-2

ESTIMATES OF THE WELFARE COST OF FINANCIAL ASPHYXIATION--A "MACRO" APPROACH

Year of Financial Asphyxiation	Degree of Asphyxiation Experienced	1 Dr. Prior Period[a] % Change in Banking Efficiency (Δ_b)	2 Dr. Prior Period % Change in Non-Banking Efficiency (Δ_{nb})	3 Relative % Change in Banking Efficiency to Total Financial Sector Efficiency ($\frac{\Delta b}{\Delta n}$)	4 Total Amount[b] of Financial Sector ($^{TA}_{FS}$)	5 Total Assets of Banking System - Beginning of Period ($^{TA}_{bb}$)	6 Prior Period Change in Financial Sector Amount ($^{\Delta TA}_{FS}$)	7 Total Assets of Banking System - End of Period ($^{TA}_{be}$)	8 Adjusted Prior Period Change in Total Assets of Banking System ($^{\Delta TA}_{FS}$) (Col3)	9 Total End of Period Amount of Banking System, Adjusted for Changes in Relative Efficiency ($^{TA}_{eB}$) (Col8)
JAMAICA [c]										
1970	Partial ($\Delta a'$)	- 9.3	3.3	(336.3)	764.3	411.8	236.9	582.3	(512.8)	2 285.9
1972	Full	- 49.3	46.3	(17.6)	1008.6	382.1	112.4	830.4	(46.5)	523.5
KOREA										
1972	Full	- 75.0	1.0	(140.5)	1769.2	1439.1	1615.1	3460.4	(1179.2)	(199.9)
1976	Partial (Δ')	1.9	14.8	11.9	13021.6	5982.0	6780.9	9986.7	887.6	5889.6
TRINIDAD										
1974	Full	- 9.1	9.8	(1108)	1171.3	851.1	1138.1	1982.2	(1008.6)	(171.9)
1988	Full	- 13.2	29.9	(30.9)	13688.3	7158.1	5388.5	11386.1	(1580.3)	5267.0
USA										
1966	Full	- 21.2	43.1	(197.8)	779.1	369.5	94.5	475.6	(183.3)	880.7
1970	Full	- 35.8	62.8	(51.8)	1834.5	548.5	111.8	662.8	(88.1)	458.3
1972	Partial ($\Delta a'$)	- 6.8	7.3	(862.5)	1305.5	581.8	258.6	839.8	(1161.6)	(1573.6)
1974	Partial (Δ')	- 45.1	- 7.3	38.3	1557.3	[illegible] 739.8	271.8	918.7	81.8	868.9

Year of Financial Asphyxiation	Degree of Asphyxiation Experienced	10 Amount of Theoretical [c] Optimal Banking System ($^{TA}_{th}$)	11 Total Financial Imperfection - Amount (IMF) (7-9)	12 Financial Asphyxiation-Induced Disservice-Amount (GFA) (10-9)	13 (Col8/IMF (5)) (13 x 11)	14 GNP [illegible] of Period	15 Prime Interest Rate (PIR) (%)	16 Minimum Income Foregone Over Period (1 year) (13x15)	17 Minimum Annual Income Foregone (16 / 2)	18 Minimum Amount Cost of Financial Asphyxiation as % of GNP (GFA/GNP) (17 x 7)
JAMAICA [c]										
1970	Partial ($\Delta a'$)	720.1	866.8	821.8	96.4	4[illegible] 7	6.0	85.7	42.9	1.8
1972	Full	847.0	518.9	244.3	70.0	1418.1	5.0	35.5	9.0	0.64
KOREA										
1972	Full	9852.4	5888.3	7991.3	95.1	4825 0	15.0	4[illegible]0.0	224.5	3.4
1976	Partial (Δ')	8963.3	4867.1	3851.3	58.1	13271.8	28.0	787.1	393.6	3.0
TRINIDAD										
1974	Full	1391.3	2861.2	1762.2	85.1	2861.2	7.5	167.4	83.7	1.3
1988	Full	8868.9	8858.3	1366.7	33.0 -	9868.0	11.0	1[illegible]6.6	183.3	3.0
USA										
1966	Full	788.6	319.4	185.1	48.8	754.0	5.0	5.0	2.5	0.4
1970	Full	917.3	139.4	50.2	43.0	9[illegible].1	7.0	9.6	2.3	0.3
1972	Partial ($\Delta a'$)	862.8	2482.2	2216.4	86.7	1[illegible].0	2.0	119.3	59.8	1.0
1974	Partial (Δ')	738.2	81.9	(38.1)	-	1136.2	10.2	-	-	-

SOURCE: Research calculations.

a/Period -- 2 years.

b/Figures are in millions of local currency for Jamaica and Trinidad and billions for Korea and U.S.A.

c/70% of actual end of period financial sector size (assets) used as proxy for size of banking system for Jamaica, Korea and Trinidad and 50% for U.S.A., using Goldsmith's findings between 1940 and 1960 as an estimate.

for the large Korea values is essentially the fact that relative to the other sample countries, Korean interest rates have in the 1970s, in particular, been significantly higher (about twice those for Jamaica and almost thrice for the U.S.A. in 1972, for instance).

For the three LDCs, the general tendency is for the distortion induced by financial asphyxiation to account for 90% of total identifiable financial sector distortion (imperfection), a significantly adverse influence being ascribed to the phenomenon in these economies. Again, as might be expected, other asphyxiation-induced distortions for the U.S.A. consistently accounted for just under half of total financial sector distortion, reflecting the more balanced financial system than that of the LDCs. By and large, except for Jamaica, welfare costs to the economies are greatest in those years in which there is full, as opposed to partial, financial asphyxiation.

On balance, the economic costs observed under this 'macro' scenario are comparatively large. There is little doubt that the absolute magnitude of these values is largely influenced by the approximate and aggregative nature of the model and also to a number of other weaknesses earlier identified.

C. Social and Economic Costs--A 'Micro' Approach

1. The Concept and Graphical Illustration

In the above discussion on the economic costs of financial asphyxiation using a 'macro' approach, it was explained that this scenario did present a number of drawbacks, despite its usefulness as a 'ballpark' measure. To the extent, therefore, that the "micro" approach

now being developed addresses some of the constraints of the 'macro' approach outlined in the section above, this alternative scenario represents a superior estimation of the economic costs of financial asphyxiation. One of the main reasons for this is the fact that the 'micro' approach is less aggregative, and is based more on a synthesis of the main elements of the asphyxiation analysis, thus more closely reflecting the underlying fundamentals of the concept. The following is the essence of the 'micro' approach.

Given a typical economy in a 'pre-asphyxiation' state, the emergence of the asphyxiation phenomenon induces distortions and imperfections in the financial system, as already noted. Removal of such distortions over time, should have two major effects: (a) a redistributive effect and (b) an expansionary effect. This is likely to be the case both in the liability, as well as the asset sub-markets, both sides of which (by definition of the asphyxiation process [Chapter 5]) have serious implications. On the liability side, the main impact is likely to be on the behavior of the total long-term liability (TLTL) variable, while on the asset-side on total assets or credit (TA) variable. In both cases the relative incremental efficiency of banks to non-banks can be (and is) used as an adjustment factor for redistributing as between banks and non-banks, the respective actual increments in shares for the financial sector as a whole, of long-term liability input and asset output over a given period. Thus, in a given financial sector where $TLTL_f$ and TA_f represent total long-term liabilities and total assets for the financial sector as a whole respectively, then

$$\Delta TLTL_f = TLTL_o - TLTL_{o-1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

and $\Delta TA_f = TA_o - TA_{o-1}$ ..... (2)

where the subscripts (o) and (0-1) represent the end and beginning of a given period respectively for the financial sector (subscript 'f'). Similarly,

$$\Delta TLTL_f = \Delta TLTL_b + \Delta TLTL_{nb} \quad \text{.....} \quad (3)$$

and $\Delta TA_f = \Delta TA_b + \Delta TA_{nb}$ ..... (4)

with 'b' and 'nb' representing the relative shares of both variables for the bank and non-banking sector. Based on the assumption that total inter-period financial sector long-term liabilities and assets increments ($\Delta TLTL_f$, ΔTA_f) should be redistributed in relation to the relative changes in efficiency between banks and non-banks, then for any given period:

$$\Delta TLTL_f = \Delta TLTL_b \frac{(\Delta E_b)}{(\Delta E_b + \Delta E_{nb})} + \Delta TLTL_{nb} \frac{(\Delta E_{nb})}{(\Delta E_b + \Delta E_{nb})} \quad \text{.....} \quad (5)$$

Similar relationships hold for ΔTA, such that:

$$\Delta TA_f = \Delta TA_b \frac{(\Delta E_b)}{(\Delta E_b + \Delta E_{nb})} + \Delta TA_{nb} \frac{(\Delta E_{nb})}{(\Delta E_b + \Delta E_{nb})} \quad \text{.....} \quad (6)$$

The basic premise here is that distribution/allocation of incremental liabilities and assets in the financial system should in some large measure be based on some concept of relative changes in efficiency of performance in previous periods, as would be the tendency in a perfectly competitive situation.

In addition to these redistributionary effects, however, expansionary effects resulting from the removal of asphyxiation can arise from the impact of the financial credit multiplier[14] on increments in volumes as well as from improved operations, giving rise to lower operating costs and, thus, declining opportunity costs and interest rate charges. Expansionary effects can also arise from increases in volumes demanded. For practical purposes, however, aggregate financial sector expansionary effects are ignored in this analysis, it only being necessary to demonstrate the minimum economic costs, arising mainly from resource redistribution between banks and non-banks, as a result of the above adjustments for relative inter-period incremental efficiency.

Figure 8-2 below graphically illustrates the measurement of the cost of financial asphyxiation to an economy's financial sector, using a 'micro' approach. From diagram (a) the cost of partial asphyxiation is the shaded area. This represents the welfare gain arising from an expansion in long-term liabilities held by the non-banking sector from point L_o to point L_a resulting from removal of asphyxiation and the likely reduction in interest rates arising from redistribution based on relative efficiencies. This represents a minimum expansion in the non-banking sector, as it is likely that increased efficiency will give rise to sector-wide expansion in total long-term liabilities. Assuming an economy where there are only two types of long-term liability instruments, issues of the banking and non-banking sectors respectively,

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[14]For a solid treatment of financial credit multipliers, see D. K. Sheppard and C. R. Barrett, "Financial Credit Multipliers and the Availability of Funds," Economica (May 1965): pp. 198-214.

then in Graph (a), L_o and i_o are respectively the actual initially observed levels of increased long-term liabilities and the existing opportunity cost of capital to non-bank holders of these deposits. i_o represents the difference between the maximum interest paid by non-banks and banks for longest-term deposits, which in a more competitive environment would have meant a larger share of the increment of these deposits accruing to the non-bank sector of at least point L_o L_p. In this scenario, i_p would then represent the opportunity cost in a totally competitive environment, where $i_p = 0$, that is bank and non-bank interest rates would be identical. Thus, triangle AL_oL_p represents the total welfare cost of monopoly/oligopoly imperfection for the typically concentrated financial sector as a whole. The introduction of perfect competition would, by the reduction of the opportunity cost of alternative assets to zero, redistribute deposits held by the non-banking sector from L_o to L_p. L_o L_a represents the increase in incremental TLTL held by non-banks that would result from removal of financial asphyxiation, one segment of the total imperfection (L_oL_p) facing the financial system. Thus, the removal of the imperfection caused by asphyxiation would result essentially in a decline in the opportunity cost of capital from i_o to i_a, arising from increased competition. The area ABC represents the total welfare gains to be had by non-bank holders of long-term liabilities, should financial asphyxiation by the banking system over the non-banking system be removed. This cost is only one portion of total sector-wide imperfection.

Thus, W_L = 1/2 (BC. AB) ..... (7)

or the welfare cost (loss in consumer surplus) of asphyxiation arising on the liability side. Alternatively,

$$W_L = 1/2\ L_o\ L_a \frac{(L_o L_a \cdot i_o)}{L_o \cdot \eta_L} \qquad \ldots\ldots\ldots\ldots (8)$$

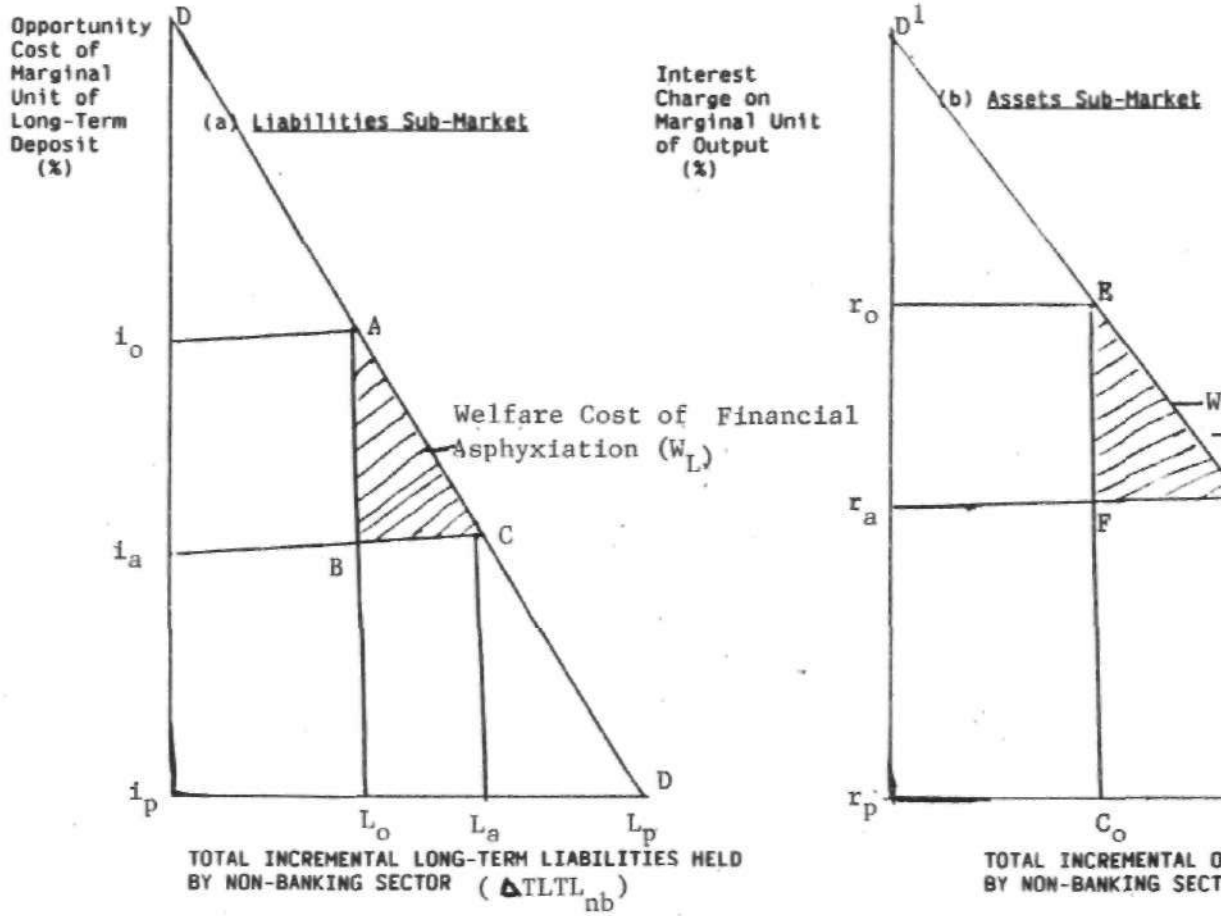
where η_L = interest elasticity of demand for long-term non-bank deposits.

From Graph (b), area EFG represents the cost of partial financial asphyxiation on the asset side. This represents the gain in consumer surplus arising from an expansion in incremental output from F to G resulting from removal of asphyxiation and the likely reduction in the interest rate of credit (using this as a proxy for assets) from this minimum increase in quantities of assets demanded and from improved operating efficiency. C_o and r_o represent the actual initially observed values for the quantity of incremental assets demanded at a given interest cost for that period, without the asphyxiation adjustment. C_a and r_a are the identical variables following the redistributive adjustment for asphyxiation. C_p and r_p are respectively the likely incremental volume demanded and cost of incremental lending under a perfectly competitive situation, where the interest cost will be the pure rate of return and an adjustment over the real cost of input resource (capital).

C_oC_p would, therefore, represent the total welfare cost of imperfection in the new asset submarket, with C_oC_a being that part induced by the presence of financial asphyxiation. Thus,

$$W_c = 1/2\ (EF.FG) = 1/2\ C_oC_a \frac{(C_oC_a \cdot r_o)}{C_o \cdot \eta_o} \qquad \ldots\ldots\ldots\ldots (9)$$

FIGURE 8-2: COST OF FINANCIAL ASPHYXIATION
(A 'micro' approach)



TOTAL WELFARE COST OF FINANCIAL ASPHYXIATION (W_T) = $W_L + W_C$

where η_o = the interest elasticity of demand for incremental output by the non-banking sector.

The total cost of financial asphyxiation is, therefore:

$$W_T = W_L + W_C \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (10)$$

the sum of the welfare costs arising on both the liability and asset sides of the financial sector, arising from the presence of the phenomenon. W_T , in fact, represents a minimum cost, given the exclusion from the analysis of the estimates of the actual further increments in long-term liabilities and output demanded for the financial sector as a whole, arising from pure sector-wide efficiency increases. This, thus, only accentuates the redistributive effects of the phenomenon.

2. Estimates of Costs under the 'Micro' Approach

Tables 8-3 to 8-5 below set out the results of the 'micro' approach to estimating the cost of financial asphyxiation. There are, however, as in the 'macro' approach earlier, a number of constraints in this approach which should be noted up front. These include: (a) the assumption that there are only two types of instruments, both issued by the financial sector in the economy, with no alternative real sector competing instruments. This may not be so in practice, but should be acceptable in determining the relative interaction between the two important segments of the financial sector. If we assume that the financial sector leads the growth of the economy as this study inherently does, then the importance of financial instruments cannot be overstressed; (b) the "arbitrariness" of using a largely financial index of efficiency as a basis for redistributing inter-period increments in

liabilities and assets as between banks and non-banks in the financial sector. There is hardly likely to be a more realistic proxy, however, given the difficulties of quantifying real economic measures of efficiency in the financial sector in general and the significance of "financialization" to this sector. The fact also that adjustments are made on a base that is essentially already affected by distortions cannot really be avoided. In practice, the very effort to adjust is designed to reduce some of this real distortion; (c) the analysis implicitly assumes constant elasticities throughout the range of the demand curves DD and D_1D_1 in the two sub-markets. This is theoretically a wrong assumption, especially when one considers the presence of varying measures and degrees of concentration as the financial sector grows. In the reality of LDC economies in particular, however, elasticities of demand/supply for both long-term liabilities and credit are so small (see, for instance, Worrell's work on the Caribbean[15] (supply side) and Von Wijnbergen's 1982 work on stagflationary effects in South Korea of monetary stabilization policies (demand-side))[16] that this is hardly likely to be a major problem in this case; (d) the banking system is throughout this analysis treated as a homogeneous whole, while in practice the operations of commercial and central banks are fundamentally different in several aspects. The credit multiplier process, for instance, may not be wholly accurate to the extent that part of the

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[15] D. Worrell, "Monetary Mechanisms in Open Economies: A Model for the Caribbean," in M. Connolly and J. M. Dermott, eds., The Economics of the Caribbean Basin (Praeger, 1985), pp. 119-134.

[16] S. Von Wijnbergen, "Stagflationary Effects of Monetary Stabilization Policies," Journal of Development Economics, No. 10 (April 1982): pp. 133-169.

estimated credit proportion of total assets is central bank credit, not subject to identical operational regulations and requirements as commercial banks and (e) the relevance and appropriateness of the use of the technique of consumer surplus as an adequate measure of welfare costs is cause for concern, despite its widely accepted application.[17] However, to the extent that there are other compensating factors and that alternatives are few, this can be ignored as a serious drawback.

These constraints notwithstanding, the following are the empirical results of the analysis, using the 'micro' approach. Tables 8-3 to 8-5 below indicate that the costs of financial asphyxiation generally range somewhere between one and one-half of a percent of annual GNP. Six of the ten years reflected a value of this magnitude, with exception of Korea in 1976 and an unacceptable value in 1980 for Trinidad of 42.2% of its annual GNP. (This was caused by an unusually large value for the relative percentage change in non-banking efficiency to total financial sector change (9000%!), resulting from a -9.1% and + 900% value for banking and non-banking efficiency charges respectively over the identical period).

As was the case under the 'macro' approach, the most consistent result was obtained for the U.S.A., whose estimates varied between .007 and .093 of one percent, with striking consistency also demonstrated for Jamaica in the two years (1970, 1972) in which the phenomenon is experienced. As was also the case under the 'macro' analysis, there is

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[17] See, for instance, E. J. Mishan, "The Plain Truth about Consumer Surplus," National Okonomie Journal of Economics, Vol. 37, No. 1-2 (Spring 1979): pp. 1-24.

a distinct relationship between the magnitude of the cost estimates for those years of 'full' asphyxiation and those of 'partial' asphyxiation, the former tending to have higher values, as expected.

The costs of partial financial asphyxiation are consistently greater in the asset market than in the liability market, underscoring the likely impact of misallocation of investment resources in any financial system. Combined multiplier and accelerator effects of such misallocation can conceivably present major 'macroeconomic' distortions. Estimates of costs were, however, more uniform in the liabilities sub-market than in the asset sub-market.

The real significance of the economic costs of financial asphyxiation can only be grasped if there is a meaningful comparator against which cost estimates are measurable. In his book on commercial banking in Eastern Africa, for instance, Ali Abdi posits that direct contributions of financial institutions are normally "minute." He points out that at best such contributions have been estimated in other studies to be between 0.5 and 1.0 percent of gross national product for financially mature market economies. In the case of developing economies, where the services offered by financial institutions are often fewer and less sophisticated, the contribution of financial institutions is estimated to be less than 0.1 percent.[18] He stresses that more of the contributions of these institutions has to be in indirect forms.

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[18] A. I. Abdi, Commercial Banking and Economic Development: The Experience of Eastern Africa (London: Praeger, 1977), p. 24.

TABLE 8-3

ESTIMATES OF THE COST OF FINANCIAL ASPHYXIATION

- A "MICRO" APPROACH (INPUT-RELATED)

Country & Year of Asphyxiation	Degree of Asphyxiation Experienced	1 Prior Period % Change in Banking Efficiency a/ (ΔE_0)	2 Prior Period % Change in Non-Banking Efficiency (ΔE_{n0})	3 Relative % Change in Non-banking Efficiency to Total Financial Sector Change $\left(\frac{\Delta E_{n0}}{\Delta E_0}\right)$	4 End of Period Total Long Term Liabilities -Financial sector ($TLTL_{f0}$)	5 Beginning of Period TLTL -Non-banks (L_0)	6 Prior Period % Change in TLTL - Financial Sector ($\Delta TLTL_{f0}$)	7 Adjusted Prior Period Change in TLTL - Non-banks ($L_0 i_a$) (6x3)	8 Adjusted End of Period TLTL-Nonbanks (L_a) (5+7)	9 Interest Elasticity of Demand for TLTL b/ (η_L)	10 Prime Interest Rate - Comm. Banks c/ (PIR_0)	11 Yield Long-term Government Bonds d/ (GB_0)	12 Initial Opportunity Cost of Holding TLTL in Non-banks $\left(\frac{i_0}{10^2}\right)$ (11)	13 Change in Opportunity Cost of Holding TLTL in Non-banks after Adjustment for Efficiency ($L_0 i_a$)	14 Estimated Opportunity Cost of Holding TLTL in Non-banks after Adj. for Efficiency e/ (i_a) (12'+13)	15 Estimated Min. Gain in Consumer Surplus to Non-bank Clientele w/out Asphyx. f/ $\frac{1}{2}(L_0 i_a)\Delta i_0$ ($L_0 i_a$)	16 Per Annum Estimated Min.Gain in Consumer Surplus $\left(\frac{-}{15 \times 1/2}\right)$	17 Estimated Gain in Consumer Surplus to Non-bank Clientele under Perfect Competition $\frac{1}{2}(L_0 i_a)\Delta i_0$	18 Per Annum Estimated Gain in Consumer Surplus Under perfect Competition $\left(\frac{-}{17 \times 1/2}\right)$	19 Gross National Product (GNP)	20 Annual Asphyxiation-Induced Welfare Cost as % of Gain under Perfect Competition $\left(\frac{-}{16 \div 18}\right)$	21 Annual ASPHYXIATION INDUCED WELFARE COST AS % OF GNP $\left(\frac{20}{19}\right)$
JAMAICA (J $ Mill)																							
1970	Partial (AA')	-9.3	3.2	34.4	481.2	87.2	162.2	205.2	292.9	0.3	0.08	0.078	0.002	-10.016	-0.016	1.64	0.82	0.052	0.026	1119.3	144.0*	0.07
1972	Full	-10.3	68.5	117.9	697.8	131.2	216.6	254.9	386.1	0.3	0.08	0.086	-0.004	-510.0	-510.004	-84999.5	-32488.8	0.157	0.079	1414.3	--	--
KOREA (Won Billion)																							
1972	Full	-25.8	1.8	7.5	1683.8	336.6	726.3	56.3	590.9	0.63	0.15	0.126	0.024	3.006	0.020	2.91	1.46	4.057	2.029	4029.0	72.0	0.04
1976	Partial (A')	1.9	14.0	88.1	5681.0	1692.3	2588.5	2280.5	3972.8	0.63	0.20	0.15	0.050	0.107	-0.057	122.01	61.01	26.654	13.327	13273.0	880.0	0.006
TRINIDAD AND TOBAGO (TT $ Mill)																							
1974	Full	-9.1	9.0	9000.0	1385.4	226.6	611.7	55053.0	55277.6	0.3	0.095	0.083	0.012	9.804	-9.792	---	---	0.600	0.200	3673.7	---	---
1980	Full	-13.2	39.6	150.0	9029.0	551.9	3965.8	5948.7	6500.6	0.5	0.11	0.086	0.024	0.862	-0.838	2563.9	1282.0	1.880	0.995	9349.0	100.04	13.7
U.S.A. (US $ Bill)																							
1966	Full	-27.3	43.1	272.8	286.5	162.6	35.3	96.4	239.0	1.0	0.056	0.048	0.008	0.005	0.007	0.24	0.12	0.570	0.285	756.0	42.1	0.038
1970	Full	-14.9	43.8	151.6	380.0	168.5	46.2	70.0	238.5	1.0	0.079	0.069	0.010	0.006	0.006	0.14	0.07	0.843	0.422	994.7	16.6	0.0167
1972	Partial (AA')	-6.9	7.7	962.5	481.5	190.5	101.5	976.9	1167.4	1.0	0.056	0.060	-0.006	-0.031	0.037	-15.14	-7.57	-0.572	-0.286	1185.9	---	---
1974	Partial (A')	-15.1	-7.2	32.3	567.3	232.8	85.8	27.5	260.3	1.0	0.102	0.081	0.021	0.002	0.019	0.028	0.014	2.44	1.22	1434.2	1.1	0.001

SOURCE: Research calculations from sundry documents and empirical observations.

a/Period = 2 years.

b/For Korea, elasticity estimates based on Von Wijnbergen's study on the stagflationary effects of monetary stabilization policies (footnote 16 in this chapter). For Jamaica and Trinidad, Worrel's estimates for the Caribbean (footnote 15 in this chapter) are utilized. For the U.S.A., assumption in Rhoades' 1982 study on monopoly welfare losses in U.S. banks of 1 (unity) is used for elasticity estimates (footnote [illegible] of this chapter).

c/Represents maximum likely to be paid by commercial banks for deposits and minimum by non-banks for loans to their clients.

d/Represents possible minimum payable by non-banks for their long-term deposits.

e/Based on formula that $i_0 i_a = \frac{L_0 i_a \cdot i_0}{\eta_L \cdot i_0}$

f/Welfare loss under financial asphyxiation scenario. '___' signifies unrealistically large values.

TABLE 8-4

ESTIMATES OF THE COST OF FINANCIAL

ASPHYXIATION - A "MICRO" APPROACH (OUTPUT-RELATED)

Country & Year of Asphyxiation	Degree of Asphyxiation Experienced	1 Prior Period % Change in Banking Efficiency (ΔE_b)	2 Prior Period % Change in Non-Banking Efficiency (ΔE_{nb})	3 Relative % Change in Non-banking Efficiency to Total Financial Sector Change $\left(\frac{\Delta E_{nb}}{\Delta E_b + \Delta E_{nb}}\right)$	4 End of Period Total Assets (TA) -Financial Sector (TA_{fs})	5 Beginning of Period TA - -Non-banks (C_D)	6 Prior Period % Change in TA - Financial Sector (ΔTA_{fs})	Adjusted Prior Period Change in TA - Non-banks $(C_D C_a)$ (6x3)	8 Adjusted end of period TA - Nonbanks (C_a) (5+7)	9 Interest Elasticity of Demand for total Non-bank Assets b/ (η_D)	10 Prime Interest Rate - Comm. Banks c/ (PIR)	11 Discount/ Bank Rate d/ (D/BR)	12 Initial Opportunity Cost of Non-bank Credit (TA)to Non-bank Clientele $(r_o / (10 - 11))$	13 Change in Opportunity Cost of Non-bank Credit (TA) after Adjusting for Relative Efficiency $(r_o r_a)$ e/	14 Estimated Opportunity Cost of Non-bank Credit (TA) after Adjusting for Relative Efficiency r_a (12 x 13)	15 Estimated Min. Gain in Consumer Surplus to Non-bank Clientele w/out Asphyx $1/2(C_D C_a) \times (r_o r_a)$	16 Per Annum Estimated Min.Gain in Consumer Surplus f/ $\left(\overline{15 \times 1/2}\right)$	17 Estimated Gain in Consumer Surplus to Non-bank Clientele under Perfect Competition $1/2\ (C_1 C_p) \times (r_o r_a)$	18 Per Annum Estimated Gain in Consumer Surplus under Perfect Competition $\left(\overline{17 \times 1/2}\right)$	19 Gross National Product (GNP)	20 Annual Asphyxiation Induced Welfare Cost as % of Gain under Perfect Competition $\left(\overline{16 \div 18}\right)$	21 Annual Asphyxiation Induced Welfare Cost as % of GNP $\left(\overline{16 \div 19}\right)$
JAMAICA (J $ Million)																						
1970	Partial (AA')	-9.5	3.3	126.2	764.4	126.3	226.9	286.3	412.8	0.25	0.08	0.06	0.02	0.18	-0.16	25.80	12.9	0.32	0.16	1119.3	100.0+	1.16
1972	Full	-10.5	68.5	117.9	1096.8	182.3	332.4	391.2	573.5	0.25	0.08	0.06	0.02	0.17	-0.15	33.30	16.6	0.46	0.23	1414.7	100.0+	1.12
KOREA (WON Billion)																						
1972	Full	-25.8	1.8	7.5	3798.2	696.8	1655.1	124.1	818.9	0.49	0.15	0.11	0.06	0.015	0.025	0.93	0.47	4.09	2.05	6659.0	22.9	0.03
1976	Partial (A')	1.9	14.0	88.1	13921.6	2132.8	6786.8	5979.2	8112.0	0.49	0.20	0.14	0.06	0.34	-0.28	1016.50	508.2	26.13	13.07	13273.0	100.0+	1.80
Trinidad and Tobago (TT $ Mill.)																						
1976	Full	-9.1	9.0	9000.0	2273.1	285.6	1130.1	----	----	0.25	0.095	0.06	0.035	---	---	---	---	0.41	0.22	863.7	---	---
1980	Full	-13.2	39.6	150.0	12309.3	748.6	4208.6	6312.9	7061.5	0.25	0.11	0.06	0.05	1.69	-1.84	5339.70	2669.9	2.25	1.13	9369.0	100.0+	28.60
U.S.A. (US $Bill)																						
1966	Full	-27.3	43.1	277.8	779.1	315.1	96.5	257.8	572.9	1.0	0.056	0.045	0.011	0.009	0.002	1.16	0.58	1.26	0.63	756.0	92.1	0.08
1970	Full	-14.9	43.8	151.6	1034.9	399.6	116.8	177.1	576.7	1.0	0.079	0.05	0.029	0.013	0.016	1.15	0.58	2.0	1.00	992.7	58.0	0.06
1972	Partial (AA')	-6.9	7.7	962.5	1285.5	447.1	250.6	2412.0	2859.1	1.0	0.054	0.045	0.009	0.049	-0.04	59.10	29.5	-1.34	0.67	1185.9	--	2.50
1974	Partial (A')	-15.1	-7.2	32.3	1557.3	556.5	271.8	87.0	643.5	1.0	0.102	0.078	0.024	0.004	0.02	0.17	0.09	5.8	2.92	1434.2	3.1	0.006

SOURCE: Research calculations from sundry documents.

a/Period = 2 years.

b/For Korea, elasticity estimates based on Von Wijnbergen's study on the stagflationary effects of monetary stabilization policies (footnote 16 of this chapter). Average of estimates for curb-market loans and for currency as alternative assets used. Given less liberalization in financial sectors Jamaica and Trinidad relative to Korea, half of the value of the estimates used for Korea was used for these two countries, as proxies. For U.S.A., assumption in Rhoades' 1982 study on monopoly welfare losses in U.S. banks of 1 (unity) is used (footnote 17 of this chapter).

c/Represents maximum likely to be paid by commercial banks for deposits and minimum by non-banks for loans to their clients.

d/Represents possible minimum chargeable by commercial banks for their loans (used as proxy here for assets).

e/Based on formula that $r_o r_a = \frac{C_o C_a \cdot r_o}{\eta_D C_o}$. '-' signifies unrealistically large values.

f/Welfare loss under financial asphyxiation scenario.

TABLE 8-5

SUMMARY ESTIMATES OF THE COST OF FINANCIAL ASPHYXIATION - A 'MICRO' APPROACH

Country and Year of Asphyxiation	Degree of Asphyxiation	(1) GNP End of Period	(2) Min. Annual Estimate of Asphyxiation-Induced Welfare Cost (Liabilities Market) /a	(3) W_L ÷ GNP (%)	(4) Min. Annual Estimate of Asphyxiation Induced Welfare Cost (Asset Market)/a	(5) (W_C ÷ GNP) (%)	(6) Total Annual Min. Estimated Asphyxiation - Induced Welfare Cost /a	(7) Total Annual Estimate Welfare Cost as % of GNP
			(W_L)		(W_C)		($W_T = W_L + W_C$)	(W_T)
JAMAICA								
1970	Partial (AA^1)	1119.3	0.82	0.07	12.9	1.16	13.72	1.23
1972	Full	1414.7	-	-	16.6	1.12	-	-
KOREA								
1972	Full	4029.0	1.46	0.04	0.47	0.01	1.93	0.05
1976	Partial (A^1)	13273.0	61.01	0.46	508.2	3.80	569.21	4.29
TRINIDAD								
1974	Full	3673.7	-	-	-	-	-	-
1980	Full	9349.0	1282.0	13.7	2669.9	28.60	3951.9	42.2
USA								
1966	Full	756.0	0.12	0.016	0.58	0.08	0.70	0.093
1970	Full	992.7	0.07	0.007	0.58	0.06	0.65	0.065
1972	Partial (AA^1)	1185.9	(7.57)	-	29.5	2.49	(21.93)	-
1974	Partial (A^1)	1434.2	0.014	0.001	0.09	0.006	0.104	0.007

SOURCE: Research Calculations.

a/Millions of local currency for Jamaica and Trinidad and Tobago and billions for Korea and the U.S.A.

If Abdi's observations are true, then the implication is that the mere presence of financial asphyxiation is enough to significantly wipe out any contribution financial institutions can make to the economy as a whole. There would then be the real possibility of financial institutions being, in fact, a liability to economic performance than a real engine of growth, which this study argues is normally the case.

A further and perhaps even more relevant measure of the significance of the economic cost of financial asphyxiation can be seen from two studies on the welfare cost of monopoly/oligopoly situations in banking for the U.K. and the U.S.A., undertaken by Brian Griffiths and Stephen Rhoades respectively.[19] In his study, Griffiths estimated that the total welfare loss from a non-competitive clearing banking system ranged from .0002 to .006 percent of 1967 GNP or between £80 and £90 million at that time. Rhoades, in his study of 6,500 unit banks in the U.S.A., estimated a somewhat similar deadweight loss to consumers in 1978 of 0.0006 percent of GNP for his sample, which would translate to about 0.002 percent of GNP for the U.S.A. as a whole for that year. While the U.K. was not included in our survey, it is noticed that in 1974 the total welfare cost of financial asphyxiation for the U.S.A. in this study was about 0.007 percent of GNP, about three times the size of Rhoades' findings for 1978. Although this indicates a larger size for the welfare cost of financial asphyxiation itself than for the cost from the

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[19]See B. Griffiths, "The Welfare Cost of the U.K. Clearing Banks' Cartel," Journal of Money, Credit and Banking, Vol. 4, No. 2 (1972) and S.A. Rhoades, "Welfare Loss, Redistribution Effect, and Restriction of Output Due to Monopoly in Banking," Journal of Monetary Economics, Vol. 9, No. 3 (May 1982).

total banking system imperfection, and possibly so for even the financial system as a whole, it definitely underscores the likely weight of the financial asphyxiation imperfection in a given system. Such relative weight and welfare loss are likely to be even greater in developing countries because of their overall greater fragility.

On balance, and based on the use of both the 'macro' and 'micro' approaches, it is clearly established that the presence of financial asphyxiation has distinct implications for any economy in which it is present. The distortion, therefore, should be addressed forthrightly as soon as it becomes evident. Chapter 9, the last of this study, sets out some possible policy prescriptions for improved management of the LDC financial sector specifically, given the presence of the financial asphyxiation imperfection.

CHAPTER IX

SOME LDC FINANCIAL POLICY RESPONSES--
INNOVATION, INDIGENIZATION AND INTEGRATION

Previous chapters have discussed the phenomenon of financial asphyxiation--its definition, identification, measurement, causes and economic costs--and have determined that quick corrective action is required once there is evidence of its presence in a given financial system. This concluding chapter offers some policy options and approaches for addressing identified distortions resulting from asphyxiation by the banking subsector of the non-banking subsector in any financial sector. Although the research established the occasional presence of financial asphyxiation in both developed and developing economies, emphasis will be placed in this chapter on the corrective approaches for developing economies only. This is consistent with the basic thrust of the research, that the impact of the distortions arising from the phenomenon on the financial structures of LDCs, are likely to be significantly greater than on those of MDCs, given the relatively more fragile nature and structure of LDC economies. Essentially, for this reason, special reference will be made for the most part in the

chapter to experiences in Africa, the Caribbean and Asia, with suggested reform measures being largely focused on the Caribbean.[1]

This concluding chapter makes one fundamental and significant point, namely that, given the presence of financial asphyxiation in any LDC, only a well integrated and comprehensive program for deepening existing indigenization and integration processes in the financial sector of an economy, can ensure sustained financial development and subsequent economic transformation. A well thought-out and adequately coordinated system of financial innovations must be the main instruments for achieving these two major and interdependent financial policy objectives. Given complex historical, institutional and economic (national and international) features that aggregate to induce financial asphyxiation in LDCs,[2] in particular, as well as time-tested experiences now in these policies in virtually all LDCs, it is argued that nothing short of a more refined and more adequately formulated program of financial indigenization and integration than presently exists, could redress the stark financial imbalances and related economic costs that result from this phenomenon. Central to these reforms must be a critical and larger role for the private sector in the economies, with corresponding reductions in the roles of the public sector.

Consistent with the rest of the study, for the most part this chapter takes an orthodox economic view of the related issues. One

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[1]Especially given the fact that two of the four research countries (Jamaica and Trinidad and Tobago) are Caribbean.

[2]As detailed in Chapters 4 and 7.

significant variation is, however, introduced at this juncture. In recognition of the fact that a number of LDCs have consciously opted for a more centrally planned system of economic management since independence, an attempt is made, as each of the major areas raised in the chapter is discussed, to recognize the appropriate conceptual parallels and distinctions between this type and the more traditional market-oriented type of economic system. The thrust of the analysis is, however, directed towards market-oriented economies, with the basic conclusions clearly directed to such economies.

This chapter is divided into five sections, A-E. Section A first examines the role of financial policy in LDCs before taking up the issue of financial innovation as a tool for complementing such policies in dynamic emerging economies in Section B. The question of financial indigenization is then discussed in Section C, including summary reference to some empirical evidence from an informal survey conducted among 28 indigenous financial institutions in LDCs. Section D then discusses financial integration within the context of the asphyxiation problem, with Section E suggesting a possible medium and long-term program of financial reforms for the Caribbean area, using the deepening of the indigenization/integration processes as its pillar.

A. Financial Policy in LDCs

By way of definition, financial policy is not synonymous with monetary policy and in fact embraces "fiscal policy and other regulatory devices...which should also be considered in order to determine the extent to which they reinforce traditional monetary policy or are inconsistent and offset one another. Therefore, reference...[must] also be

made to banking policy and fiscal and other measures; that is, total public policy...[must] be considered."[3] Financial policy is, therefore, significantly related to production policy. This all the more so, as this research argues, when finance leads real activity.

It follows, therefore, that because of this strong inter-relationship between financial and real economic policy and their respectively distinct relevance to public policy in general, that strategies (and for sure, tactics) of financial policy will necessarily vary as between market-oriented and command type economies. For a start, "Western financial structure is very complex, consisting of a large number of different financial institutions, using a variety of different financial instruments and methods; Soviet-type financial structure is by comparison more simple."[4] Over and beyond this general distinction, in centrally planned economies "the banking system virtually monopolizes the financial structure, if one excludes the budget and the institutions such as national insurance from the financial structure. The budget is in its own right the overall beacon of the course the economy will chart over a period of time, and the banking system has the principal role of ensuring the overall plan (Gosplan) of

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[3] M. A. Odle, The Significance of Non-Bank Financial Intermediaries in the Caribbean, p. 154.

[4] T. M. Podolski, "Socialist International Banking under the Microscope," Banker, Vol. 123, No. 574 (December, 1973): p. 1465.

the budget is instituted and adequately monitored."[5] Although by argument of this research, the banking system in market economies does also play a frighteningly dominant role especially in LDCs, it is without exception the nervous system of the financial sector. There is often a fairly strong non-bank subsector with increasingly important roles to play, given the latter's propensity and responsibility for delivery of specialized investment financing. On a day-to-day basis, the impact on the financial planning process seems far more diluted in such economies than in command economies, since in market-economies output is generally not planned. While there is a national budget in most market-oriented LDCs, for instance, such budgets are often quite long on fiscal measures and very short on aspects of financial management. More strikingly, most national development plans emphasize the stringing together of a series of projects over a given time frame, with hardly any systematic consideration for the process of domestic resource mobilization for example--so vital for economic transformation.

Odle, in the early 1970s, ascribes the fact that in the Caribbean there was hardly any financial planning by the governments, even though there were national plans,[6] to the still highly valid and

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[5] L. C. Clarke, "Asset Management Practices and Strategies of Commercial Banks in Socialist and Capitalist Systems: A Comparative Study of the U.S.S.R., Yugoslavia and Canada," Unpublished MBA Major Paper (Ontario, Canada: University of Windsor, April 1976), p. 7.

[6] See M. A. Odle, The Significance of Non-Bank Financial Intermediaries in the Caribbean, pp. 154-155.

relevant feature in most LDCs today of "structural dependence"[7] of both their real and financial structures. In this connection, experience has shown that, whether the system of economic organization is centralized or liberal, two things appear fundamentally consistent in either case: (i) some form of financial planning is critical and necessary and (ii) such planning and actual implementation cannot be divorced from the rest of economic policy in general.[8]

In traditional market economies, responsibility for financial development, hence planning, has characteristically fallen on the Ministry of Finance (Planning Unit) or, most commonly, on the Central Bank. Herein, however, lies the one principal aspect of the LDC problem. There is often no clear-cut definition of "turf," with the vital planning function falling "between two stools," generally resulting in diluted impact and relative ineffectiveness. While much can be said for financial policy formulation to be centered in an agency at the Ministerial level (Finance or State Planning), primary responsibility for financial planning in LDCs must rest with the Central Bank or Monetary Authority. This is because for any form of planning to be meaningful and effective, it should have a "bottom-up" orientation, representing an amalgam of "micro-level" plans. In the context of the financial sector, this requires some element of resource planning by

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[7]See C. Y. Thomas, The Structure, Performance and Prospects of Central Banking in the Caribbean, Chapter 4.

[8]In support of this point, for instance, see: J. Mathieson, "Financial Reforms in Developing Countries," IMF Staff Papers, Vol. 26, No. 3 (September 1979), where he discusses the experience with special reference to South Korea.

specific institutions, including assessments of likely instruments and activities over a given time-frame. The Central Bank should collate such information, which should mainly originate from the financial institutions, in the discharge of their statutory reporting requirements to the supervisory authorities of the financial system. In this respect, it would appear, for instance, that several bits of vital data are still not systematically submitted by both bank-type and non-bank type intermediaries (e.g. income/expenditure performance) in a number of LDCs. As a result, comprehensive assessments of the robustness or not of financial systems appear highly compromised.

The ability of the Central Bank to adequately fulfill this critical role of either actively shaping financial policy itself (or at least, effecting comprehensive financial planning) in LDCs is, however, a function of the very structure of such an institution and the role it actually plays within such economies. There is a clear inter-relationship between these two, to the extent that an inappropriate organization will almost certainly result in sub-optimal implementational effectiveness. Thus, Collyns points out, in his study on alternative forms of central bank institutions (where he identifies six distinct types), that "the balance of power between government and monetary authority does not only depend on personality and outside support, but will also be influenced by the institutional framework in which their interaction is established,"[9] and that there is a constant need for "care and attention to the legislative and organizational form

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[9] C. Collyns, "Alternatives to the Central Bank in the Developing World," p. 22.

of central banking institutions,[10] in particular. The actual form the final structure will take at a given point in time will depend on the specific role to be played by this entity, the nature of the existing system and expectations about the likely financial and economic path to be pursued in the long run.

Thus, as was earlier noted, the key role of the Central Bank in the financial system cannot be overemphasized, despite its tendency to be an active instrument of financial asphyxiation, if not adequately managed. Supporting the assumption made by Thomas that "the most flexible instrument of mobilizing and allocating investible funds"[11] in LDCs is in fact the financial system, Demas argues that apart from promoting internal generation of incremental financial resources, central banking institutions must "influence the use of those financial resources in ways that would contribute to the strengthening of the national economy by changing its production structures and its patterns of consumption" (our emphasis).[12] In other words, central banking institutions in LDCs must reduce their emphasis on external sector management (important though this is in the economic climate of most LDCs), in preference for a larger role in financial development. This latter role has to ensure not only the traditional form of regulation and supervision, relatively active roles, but must also include the

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[10] C. Collyns, Ibid., p. 22.

[11] C. Y. Thomas, The Structure, Performance and Prospects of Central Banking in the Caribbean, pp. 45-46.

[12] W. Demas, "Central Banking and Economic Transformation," in Essays in Caribbean Integration and Development (Jamaica: ISER, University of the West Indies, 1976), p. 8.

active promotion of balanced (and not asphyxiated) development of the banking and non-banking sub-systems. Central banks will, therefore, have to resist their almost inherent tendency in most LDCs today to become themselves agents of the financial asphyxiating phenomenon. In fulfilling this critical role of promoting a healthy financial system, central banks as the main instrument of financial planning ultimately responsible for shaping financial policy will have to utilize and promote the use of financial intermediaries system-wide themselves through relevant and structured innovative techniques and approaches. One clear example of this has been the Reserve Bank of India, which has been central to the rapid emergence of India's financial system over the past three decades.[13]

B. Financial Innovation

In the financial services industry, as in the real sector, the process of innovation has had historical significance for development and progress. This trend is likely to be sustained in the future, although not necessarily for the same reasons, given the dynamics of relationships between real and financial sectors in the course of economic development.

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[13]See, for instance, M. K. Thingalaya, "Innovations in Banking: The Syndicate's Experience," Domestic Finance Studies, No. 46 (Wash., D. C.: World Bank, January 1978), V. G. Patel, "Innovations in Banking: The Gujarat Experiments," Domestic Finance Studies, No. 51 (Wash., D. C.: World Bank, August 1978) and V. V. Bhatt, "Interest Rate, Transaction Costs and Financial Innovations," Domestic Finance Studies, No. 47 (Wash., D. C.: World Bank, January 1978), for a number of innovations in the financial sector, several of which were actively supported by the Reserve Bank of India.

Financial innovation is about breaking new ground, about expanding frontiers and is usually, though not always necessarily about progress and development in the financial sector. As a complex of environmental factors induce or inhibit financial innovations, it is generally unlikely that the capacity for innovative change in command-type economies will be as great as in their market-type counterparts. The scope for initiative in the latter type of economic system is greater and more pronounced and is, therefore, likely to be more evident in these more liberal economic systems. Yet, on the other hand, to the extent that regulatory and supervisory responsibilities do rest on public agencies in both types of economic systems, it may be arguable that in the centrally planned economies state-induced financial innovations are equally, if not more likely, to emerge. It may, therefore, be necessary for a distinction to be made between "privately" and "publicly" induced financial or other types of innovation. This distinction may, in fact, be critical to an asphyxiated financial sector, where some central regulatory entity--usually the Government--may have to intervene in a less than perfect market situation to redress systemic imbalances or distortions.

Writing for a predominantly market-oriented system and in relation to the real sector, Schumpeter considered innovations as those activities involving new processes capable of altering production possibilities.[14] He argued that there should be some stimulant to innovation, with larger firms being most likely to innovate, given their

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[14]J. A. Schumpeter, Business Cycles (New York: McGraw-Hill, 1939).

superior capacity for absorbing incremental costs. Generally supporting the Schumpeteran position, Mansfield[15] and Schmookler[16] later suggested that real sector innovations were likely to be "major," "minor" or "routine," where "routine" innovation was somewhat akin to typical product differentiation within a market oligopoly or monopolistically competitive situation. Some behavioral scientists like Becker and Stafford[17] also related the innovation process to psychological features suggesting that some may be "success-slack," while others may be "failure-distress" in origin.

Be this as it may, it is clear that the environment is a key variable in an innovative process and that there could be direct transferability and applicability of these environmental factors to the financial sector as well. As is also true for the process of general economic behavior at large, real sector conditions will often be highly determinate on innovative responses in the financial sector. This study, however, contends that financial sector conditions themselves are likely to be equally determinate in the emergence of financial innovation. One such example is the very process of financial asphyxiation, which as was earlier established in the study, has a largely financial bias and which, it will later be suggested, could itself induce financial innovation.

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[15]E. Mansfield, The Economics of Technological Change (New York: W. W. Norton & Co., 1968).

[16]J. Schmookler, Innovation and Economic Growth (Cambridge: Harvard University Press, 1966).

[17]S. W. Becker and F. Stafford, "Some Determinants of Organizational Success," Journal of Business (October, 1967).

In discussing a possible theory of financial innovation, Silber[18] argued that while traditional belief that financial innovations (as opposed to normal general reforms, which do not seek to break any real new ground) emerge largely as a result of regulatory behavior, such a narrow approach cannot explain the myriad of innovations that have taken place in North American financial markets, in particular, over the past four decades.[19] On the contrary, his basic thesis is that "innovation of financial instruments and practices occurs in an effort to remove or lessen the financial constraints imposed on firms. Government regulation does, indeed, impose constraints and, thereby, induces innovation. But the behaviour of the financial firm is constrained by other factors as well, including self-imposed constraints and market-imposed constraints."[20] He, thus, subscribes to a "constraint-induced innovation hypothesis," where there is likely to be a lag between the initial stimulus to innovate and actual innovation. Silber's view, thus, largely explains the rapid pace of financial innovation in the 1960s and 1970s in North America, for instance, which were ascribed to a complex of pure financial and "constraint-induced"

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[18]See, for instance, W. Silber, "Towards a Theory of Financial Innovation," Chapter 2 of Financial Innovation (Lexington: D. C. Heath & Co., 1975).

[19]See, for instance, "Financial Innovation in Canada," Quarterly Review--Federal Reserve Bank of New York, Vol. 5, No. 3 (Autumn, 1980).

[20]W. Silber, Financial Innovation, pp. 64-65.

factors.[21] These include (a) the serious inflation suffered since 1965 and, especially, since 1973; (b) the rapid development of computer and communications technology and (c) a change in the regulatory environment dating from the early 1960s. At the micro-level (for a typical firm), however, other related factors would include exogenous decreases in growth rates, exogenously determined variability in its balance sheet and income statements (e.g. increased risk exposure) and a general erosion of its competitive profile resulting from an admixture of any of these factors. This latter set of factors are most closely related to the financial asphyxiation phenomenon, where non-banks are finding it increasingly difficult to compete with banks, despite the latter's relatively declining efficiency in several LDCs.

The question, however, arises as to whether it was this very process of financial innovation that induced financial asphyxiation in the first place, given the superior ability of banks to more quickly respond to environmental stimulants and to absorb the negative implications of any related failures in the process (e.g. the increasing internationalization in the 1970s, the emergence of the Eurocurrency market and liability management resulting from Regulation Q in the U.S.A.). Alternatively, does the fact of financial asphyxiation further stimulate the emergence of financial innovations, as non-banks seek to recover lost ground, and banks seek to sustain their "utility increasing"

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[21]For an interesting review of major financial innovations affecting OECD countries in the 1960s and 1970s and an assessment of their likely impact on monetary policy, see: M. A. Akhtar, "Financial Innovations and their Implications for Monetary Policy: An International Perspective," Bank for International Settlements Economic Papers, No. 9 (Basle: December, 1983).

opportunities? Is the asphyxiation process a signal for public sector-induced financial innovation, in which the regulatory authorities intervene to take corrective actions in the interest of the financial sector as a whole?

In this connection, the basic hypothesis of this study is that, *while financial asphyxiation in LDCs may have been induced by some of* the very factors that stimulate innovation, the real thrust to innovative activity by LDC financial sectors in the late 1980s and 1990s will arise more in response to the presence of the asphyxiation phenomenon itself. For such LDC financial innovation to reduce financial sector dualism and introduce increased competition in distorted financial systems, it will need to be led by the financial authorities, especially central banks. This is not to preclude private sector innovative initiatives in the financial sector, especially by non-banks. These will, however, have to be within a structured framework, sponsored and encouraged by the financial authorities.

It is necessary, however, to specify a sub-set of types of financial innovations. Innovations can involve (a) instruments (such as the certificates of deposits, repurchase agreements, etc. of the 1960s and 1970s in the U.S.A., or equity-based instruments, as in Brazil);[22] (b) institutions (such as the development finance companies, banks of

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[22] See, for instance, W. L. Ness, "Financial Markets Innovation as a Development Strategy: Initial Results from the Brazilian Experience," International Finance Corporation, Capital Markets Department, Unpublished paper (1972).

post-independence LDCs)[23] or (c) systems (technologically-based sub-systems in financial management). All of these will in the aggregate support innovative financial policy, which will be the key function of LDC central banks in reversing distortions induced by financial asphyxiation. The research argues that two such key financial policy innovations have to be a renewed assessment of approaches to financial indigenization and financial integration in LDCs.

Before these two cornerstone concepts of financial policy are developed, it must be recognized that, to the extent that financial innovation implies breaking new ground, it "has the potential for being either beneficial or harmful. When there is rapid financial innovation, there is the strong possibility of considerable risk to the financial system in the absence of an effective supervisory and regulatory framework."[24] Bourne went on to point out that in one of the most striking instances of financial institutional innovation in the Caribbean, the emergence of finance companies in Trinidad and Tobago in the 1960s and 1970s resulted from: (a) the profit opportunity associated with unfulfilled demands for consumer loans and long-term credit; and (b) the "captive finance subsidiary" scenario, whereby subsidiary institutions emerge to satisfy financing or distributive needs of parent producer companies, either financial or non-financial.

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[23]For a detailed review of the experience of Development Finance Companies to date, see: D. L. Gordon, "Development Finance Companies, State and Privately Owned: A Review," World Bank Staff Working Papers, No. 578 (1983).

[24]C. Bourne, "Potentials and Pitfalls of Rapid Financial Innovation in Less Developed Countries: The Case of Trinidad and Tobago," p. 2.

The significance of the risk factor, however, is that partially as a result of inadequate Central Bank control and partially as a result of inexperienced and certainly imprudent management, a number of finance companies in Trinidad are presently poorly undercapitalized, with fragile financial structures. In fact, one of these companies (International Trust Ltd.) failed in the early 1980s, while another (Southern Finance) had its operations suspended in 1983. An identical situation occurred in Kenya in the case of finance companies, where over the past five years dozens of new ones have mushroomed. In 1984 one of the largest companies, Rural Urban Finance Ltd., collapsed after overextending its lending to risky ventures, sending ripples through the otherwise traditionally robust Kenyan financial system. The fringe banking crisis in the U.K. in the early 1960s was also another manifestation of innovative activities in the financial sector (in this case by hire purchase and finance companies also), which did not pay off, forcing intervention by the Bank of England.

Thus, financial innovation, though naturally likely to be market driven and led, must be adequately supervised and monitored by financial authorities, especially in LDCs with already fragile structures. Public-sector led innovations, in particular, must be structured and both private and public sector driven activities must be done within a coordinated and comprehensive system of financial policy. This will be crucial in the future efforts of LDCs to redress financial sector distortions by indigenous-based and integration-centered innovative activities.

C. Financial Indigenization

1. Concepts and Approaches

Indigenization is the process by which local entities seek to own and control their resources. Financial indigenization, therefore, refers to the move towards transformation of the ownership of financial institutions in favor of their nationals, especially following attainment of political independence by most LDCs in the 1960s. The process of financial indigenization assumed increasing intensity as countries moved to reconcile attainment of their political independence with often chronic economic and financial external dependence. The upshot was an unparalleled emergence in the late 1960s and early 1970s of new and reformed indigenous financial institutions, usually involving significant public-sector sponsorship and participation. Writing in 1974 about the Guyana National Cooperative Bank (GNCB), one of the first indigenous commercial banking institutions in the Caribbean, Bourne in fact noted that "first generation" indigenous institutions such as the GNCB were by no means "spontaneous outgrowth of a competitive economy seeking to remedy some perceived deficiency of the system"[25] (although this was often later the case, particularly in the creation of specialized development finance institutions), but rather "a manifestation of a particular political decision about the future organization of economic life in Guyana and about the specific strategy for effecting desired changes."[26] The rationale, therefore, for most of the earlier

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[25]C. Bourne, "The Political Economy of Indigenous Commercial Banking in Guyana," Social and Economic Studies, Vol. 23, No. 1 (Jamaica: University of the West Indies, March 1974): p. 99.

[26]Ibid., p. 99.

indigenous institutions (such as GNCB), in particular, was inherently more politico-economic than purely economic or financial.

The process and method of indigenization of the financial system of LDCs has been the subject of tremendous academic and political debate. Indeed the very approaches themselves tend to underscore the ideological sympathy of a particular proponent, the most radical or extreme form of indigenization, expropriation, tending to be largely the approach adopted by die-hard communists. This was the course pursued by Chile under Salvador Allende. A less radical course of indigenization is that of nationalization, often by Act of Parliament or decree, compensation usually being offered to the erstwhile owners of the financial institutions. This course was chosen by India for its financial system in the late 1950s and early 1960s, as was the case in the 1960s for a number of African countries including Tanzania and Somalia. The call for Governments to nationalize their financial systems was also quite strong in several areas of the Caribbean, especially Jamaica and Guyana, who were rapidly pursuing a professed course of socialist development, following independence. Thus, rejecting the limited approach inherent in a third form of indigenization, localization attempted by some countries--such as Jamaica in the early 1970s--Kirton[27] strongly argued that nationalization was the only solution for a real and effective process of indigenization in Jamaica's financial system at that time. He argued that the process of localization, which either entailed

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[27]C. Kirton, "Bank Lending and Economic Underdevelopment in Jamaica: Can an Indigenous Bank Solve the Problem?" Social and Economic Studies, Vol. 26, No. 3, (Jamaica: University of the West Indies, September 1977): pp. 308-324.

(a) a partial ownership by indigenes of a surrendered block of shares of previously externally controlled financial institutions, or (b) "beefing up" the management of the foreign intermediaries with local staff, or (c) as was the case in Jamaica, alternative (b), together with a change in legal character through local incorporation, was fraught with loopholes. The main weakness was that often real and effective control still remained with the external owners, although the complexion of ownership may have altered somewhat. Nationalization of foreign-owned institutions would at least minimize "the transfers of surplus overseas (e.g. profits, wages, etc.), and (it) retains these funds for local use. Secondly, it allows the commercial banks to play a much more dynamic role without the constraints of office directives....Thirdly, this can facilitate greater functional specialization with effective liaison between the banks and other financial institutions, especially those allocating finance to specialized areas like agriculture and industry. Fourthly, numerous possibilities in the sphere of financial planning now become evident,"[28] among other benefits.

Nationalization, however, clearly represented major political decisions with undoubtedly far reaching implications. As a result, Governments tended to find less drastic solutions, including "miniaturization" of foreign institutions by aggressive and often lavishly subsidized sponsorship of indigenous institutions by the public sector. Such was the active policy of the Government of Guyana in the early 1970s with respect to a series of indigenous institutions created,

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[28] Ibid., p. 324.

ostensibly as the cornerstones of its economic transformation program. This approach contrasted somewhat with the Nigerian Government's approach, for instance, which was more of a "locally incorporated" one. Under this approach, all foreign financial institutions were to be re-incorporated locally, with 60% of the new shareholding being local (Government originally holding this in trust for Nigerians) and the foreign partners holding 40%. The Nigerian Indigenization Decrees of 1972 and 1977, which legislated this approach, were probably two of the most effective and pragmatic approaches to the question of indigenization in LDCs, recognizing as they did, the crucial role of an external partner, with its access to the international capital markets and existing technical "know-how." However, the obvious cost was often an effective loss of some control, although Nigerians quickly emerged to take control of the management of their financial institutions, now over 95% localized. An additional benefit of this approach was that Government's directive to foreign institutions to offer the shares locally by public offerings, as far as possible, was a clear attempt to broaden Nigeria's undeveloped capital markets by providing a filip to its then emerging Stock Exchange.

However, as Demas noted, the issue of localization versus indigenization per se (although it appears that the former is really a method of attaining the latter) is quite complex and has "to be squarely faced. It appears that a logically superior course to the policy of 'localization' is either to have complete nationalization of all banks or to work towards a situation where indigenous commercial banks do all domestic business, while leaving the foreign commercial banks in foreign

hands, but confined entirely to foreign business...."[29] Indeed, the experience of the indigenization process to date lends support to this observation, made almost two decades ago. The problems of indigenization are several and real, often representing a struggle between innovative nationalist ideas and significantly entrenched foreign or local 'bourgeois' interests. Indigenization becomes all the more complex when conducted in a framework of active promotion of regional integration, the interdependence between which processes is very strong. Indeed it is generally agreed that the integration process is unlikely to be effective in the absence of a serious program of indigenization. Indigenization of an existing system requires hard choices, if it is to be effectively attained, as shortcomings tend to become quickly apparent. In an analysis of indigenous socialist banking in LDCs, Clarke[30] noted that often radical infrastructural changes in techniques, operating environment (e.g. working hours), operating policies (credit appraisal, resource mobilization and allocation) and managerial styles became crucial to success for countries in the transition to centrally planned economic systems.

A practical survey of a limited experience of indigenous financial institutions would underscore a number of issues arising in the process of financial indigenization in LDCs over the past two decades.

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[29] W. Demas, "Central Banking and Economic Transformation," in Essays on Caribbean Integration and Development, p. 111.

[30] L. C. Clarke, "Socialism and Indigenous Banking in Guyana," Guyana Sunday Chronicle (February 5, 12, 19, 1978); and L. C. Clarke, "Perspectives, Problems and Prospects in Indigenous Commercial Banking in the Caribbean Area," Unpublished paper (September, 1977).

It will also highlight stark realities of the asphyxiation distortion in financial sectors and further corroborate the existence of the phenomenon, although it equally begs the question as to whether indigenization itself induces asphyxiation or is one of the reasons for its intensification.

2. A Survey of the Experience in LDCs

Table 9-1 below sets out selected details of a survey of LDC indigenous financial institutions undertaken by this study. The objective of the survey was to assess in a general, indicative way, aspects of the experience of LDC indigenization during the 1970s and to determine how these relate to the financial asphyxiation thesis of this study. The survey covered banking (11) and non-banking (17) institutions in 12 developing countries between 1970 and 1980. The survey was undertaken by questionnaire (Annex 9-1), which focused on selected national and managerial issues. Financial reports of these intermediaries were separately submitted by 20 of these respondents. No attempt was made within the context of this study, to do a vigorous analysis of the sample data. The objective was to identify initial trends, assessing the impact on and implications of these trends for the financial asphyxiation process, as noted earlier. The main indications from the survey are detailed in a separate paper,[31] while an attempt is only made here to highlight those aspects of the findings directly related to the central financial asphyxiation theme of this study.

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[31] An informally written up paper detailing the results of the survey of the indigenous institutions.

TABLE 9-1

SELECTED DETAILS OF INDIGENOUS FINANCIAL INSTITUTIONS SURVEYED

REGIONAL/COUNTRY	NAME OF INSTITUTION/TYPE	YEAR OPERATIONS COMMENCED	YEARS FOR WHICH FINANCIAL ANALYSIS COMPUTED [a]
CARIBBEAN-BANKS			
1. BARBADOS	Barbados National Bank	1978	1978, 1979
2. DOMINICA	National Commercial & Dev. Bank	1978	1979, 1980
3. GUYANA	Guyana National Cooperative Bank (GNCB)	1970	1970, 1980 (no questionnaire returned)
4. ST. KITT'S	St. Kitt's National Bank of Dominica	1971	1972, 1980
5. ST. LUCIA	St. Lucia Cooperative Bank	1938	1976, 1980
6. ST. VINCENT	National Comm. Bank of St. Vincent	1977	----[c]
7. TRINIDAD and TOBAGO	Worker's Bank of Trinidad and Tobago	1971	1972, 1980
8. " "	National Commercial Bank of Trinidad and Tobago	1970	1970/71, 1978/79
CARIBBEAN-NON-BANKS			
1. BARBADOS	Barbados Mutual Life Insurance Co.	1944	----[c]
2. GUYANA	Guyana Cooperative Insurance Services (GCIS)	1976	1976, 1980 (no questionnaire returned)
3. GUYANA	Guyana Cooperative Mortgage Finance Bank (GCMFB)	1973	1973, 1980 (no questionnaire returned)
4. GUYANA	Guyana Cooperative Agricultural Development Bank (GCADB)[b]	1973	1973, 1979
5. GUYANA	New Building Society (NBS)	1940	1975, 1980
6. GUYANA	Guyana & Trinidad Mutual Life Insurance Company	1925	----[c]
7. JAMAICA	Jamaica Development Bank	1969	1969, 1979
8. TRINIDAD and TOBAGO	United Security Life Insurance Company	1963	1977, 1980
9. TRINIDAD and TOBAGO	MAT Securities	1977	----[c]
NON-CARIBBEAN BANKS			
1. GHANA	Social Security Bank	1977	1978, 1980
2. SRI LANKA	National Savings Bank	1972	1976, 1979
NON-CARIBBEAN-NON-BANKS			
1. GHANA	Bank for Housing and Construction	1975	1975, 1981
2. KENYA	National Industrial Credit Co.	1978	1974, 1980 (no questionnaire returned)
3. KENYA	Continental Credit Finance Co.	1978	1978, 1980
4. KOREA	Korea Development Bank	1954	1975, 1980
5. MALAWI	Mercantile Credit Limited	1967	----[c]
6. NIGERIA	International Merchant Bank	1974	1974, 1980 (no questionnaire returned)
7. SRI LANKA	National Development Bank	1979	----[c]
8. SRI LANKA	State Mortgage Investment Bank	1979	----[c]
9. TANZANIA	Rural Development Bank	1971	----[c]

SOURCE: Sundry Annual Reports of the institutions.
a/Beginning and ending years
b/Changed in 1978 to Guyana Agricultural & Industrial Cooperative Development Bank.
c/Questionnaire completed but insufficient data available for financial analysis.

Among some of the more relevant findings of the study are:

(a) By far, the bulk of these indigenous institutions were set up during the 1960s and 1970s and were, unlike those of the 1950s, public-sector sponsored. Thus, most of the sample indicated strong Government support in at least their initial years of operations. Banks, in particular, enjoyed strong public-sector support, partly because the most visible forms of foreign control in pre-independence financial sectors were, in fact, commercial banks. This characteristic of significant public sector ownership was common to the first phase of indigenization among LDC financial institutions. Movement beyond this stage to that of a larger role for the private sector in the ownership and management of these institutions is one of the crucial tenets of the strategy now being proposed for the future.

(b) Both banks and non-banks showed a marked decline in operating efficiency over time (the ratio doubling by the late 1970s), if the number of staff employed per branch is used as a measure. Non-banks, however, had a consistently better performance in this respect, a real indicator of the asphyxiation argument, though in itself not sufficient to overwhelmingly demonstrate the phenomenon among indigenous institutions or more critically to relate its intensity in this context to that of non-indigenous systems.

(c) In terms of financial performance (summary at Annex 9-2), non-banks grew slightly faster in assets during the 1970s than banks. By contrast revenues of commercial banks grew almost twice as fast as those of non-banks. This could be a result of larger lending capacity of

banks, reinforced by greater penetration and resource mobilization capabilities than non-banks. The more varied portfolio of banks, in terms of services provided, also insulate them from major cyclical swings in revenues relative to non-banks.[32]

(d) Although commercial banks have tended to be marginally more profitable in net income terms than non-banks, they were clearly less efficient in terms of returns on equity. With lower equity/loans ratios, their operations also appeared less robust than those of the non-banks surveyed. This may be on account of the central banks' ability to utilize the "last resort safety net" of the monetary authorities, an accommodation generally not available to non-banks.

Thus, of crucial importance from above is the fact that, despite generally satisfactory performances overall, there is nevertheless a strong tendency to financial asphyxiation by indigenous banks of indigenous non-banks. Be this as it may, a conclusive position can still not be taken, without a more detailed assessment of the real development impact of such institutions. Such real developmental activities of traditional indigenous institutions can take three basic forms: (a) resource mobilization, (b) resource deployment and (c) financial sector deepening and broadening. Because of time and data constraints, however, the study only assessed the resource

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[32]Although Bourne noted from a study of Jamaica and Trinidad that "the commercial banking industry does not react optimally to either booms or slumps and that financial asset portfolios deteriorate in both types of situations." See C. Bourne, "Banking in Boom and Bust Economies: Lessons from Trinidad and Tobago, and Jamaica."

deployment/allocation facet of these institutions and this, only in the context of a sub-set of five institutions from Guyana.

In this connection, Annex 9-3 sets out a number of indicators designed to assess the impact of five indigenous financial institutions recently created in Guyana. Four of these institutions (the New Building Society [NBS] excepted) are public-sector owned, and were set up by the Government of Guyana between 1970 and 1976, allegedly as integral elements of its program for economic transformation of the Guyanese society.[33]

Some of the major trends that emerged from the analysis of the development impact of these five Guyanese institutions include the fact that:

(a) In all four cases (except the Agriculture Bank [GCADB]), the indigenous institutions deepened the finance in the specialized subsector of its concentration.[34]

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[33]The presence of the word "cooperative" in each of the four names--Guyana National Cooperative Bank (GNCB), Guyana Cooperative Agricultural Development Bank (GCADB) (changed in 1978 to Guyana Agricultural and Industrial Cooperative Development Bank), Guyana Cooperative Mortgage Finance Bank (GCMFB) and the Guyana Cooperative Insurance Services (GCIS)--underlines Government's basic strategy, in the inception, of utilizing cooperatives as the basis of the "transition to socialist development" in the Guyanese economy.

[34]This was particularly true for the Coop. Bank (GNCB) and the Mortgage Finance Bank (GCMFB), where average growth in credit extended grew respectively 10 and 40 odd times more than for that of the total system as a whole. Market shares had also increased drastically by 1980 in both cases. The case of the Agriculture Bank, however, is particularly interesting. Although market share of the bank to total agriculture lending in Guyana (the rest being that of commercial banks) increased one-and-a-half times between 1976 and 1979, average growth by the Agriculture Bank over the period was less than for the system as a whole.

(b) The real development impact of these institutions is still significantly questionable. This is particularly so when one considers that one of the prime "raison d'etre," for existence of these institutions, namely funding of cooperative development, was far from adequately achieved. In those cases where data were obtained, none of the banks had by 1980 devoted more than 3% of their portfolio to funding of cooperative activity, for instance, with equally limited funding to small-medium scale enterprises.

(c) In general, it appears that the operating efficiency of the institutions increased with experience. Administrative costs per unit of credit granted, for instance, fell between the initial and closing period in all cases, although it is likely that the quality of the credit portfolios worsened in all cases. By contrast, resource mobilization was lukewarm especially for the largest of these banks, the GNCB. It is noticed that from no real borrowing in 1971, it had by 1980 monopolized central bank borrowing for the entire commercial banking sector, by which time 15% of GNCB's total credit was funded in this way. This was largely due to the massive public-sector borrowing that has typically characterized indigenous financial institutions in LDCs.

(d) Most importantly, a comparison between the performance of the four public and one private (NBS) indigenous institutions underscores the traditionally more efficient operations of the latter. While it was true that having been set up in the 1940s, NBS was a much more mature operation in a much "less risky" housing sector (from a credit risk standpoint), the fact is that the NBS cost of credit delivery was as much as three to four times less than any of the public-sector banks.

NBS also had virtually no bad debts by 1980 and had a much better liquidity risk exposure profile (i.e. total long-term credit outstanding was less than total long-term liabilities), both in the 1975 and 1980 periods surveyed. The implication, therefore, for a greater role by the private sector in deepening of the indigenization process cannot be over stressed. While at independence the process of financial indigenization for LDCs centered on restructuring ownership in favor of nationals, experience since then partly corroborated by the presence of financial asphyxiation in these economies, now shows the need for advancement to the next stage of the indigenization process, <u>increased privatization</u>. Thus in most LDCs today, at the very least for a start, Government should actively reduce its participation in most indigenous institutions, thereby enhancing the latter's operational efficiency. This is especially necessary, if government does not want to pursue the optimal strategy of rationalizing and generally nudging the financial system more toward universal financial institutions than specialist uni-purpose ones.

Thus, from this limited survey, several of the real issues of financial indigenization facing LDCs have emerged. It is in the resolution of these issues that the need for structured financial innovations will have to emerge. Of particular reference to this study, though, are some issues that have contributed to or have resulted from the financial asphyxiation process in purely indigenous institutions. The principal of these issues and the likely major parties to initiate

innovative/corrective actions are summarily identified here with possible innovative actions set out in the last section of this chapter. These are:

Asphyxiation-induced/ Asphyxiating Deficiencies	Primary Party Responsible for Innovative/Corrective Actions
(1) Increased privatization/less public sector dependence	Central Bank/Government
(2) Increased institutional efficiency	Banks; Central Bank
(3) Increased assistance to lagging, backward capital deficit segments	Central Bank; non-banks and banks
(4) Increased recapitalization	Central Bank/Government; non-banks, banks
(5) Increased resource mobilization	Non-banks; banks
(6) Broadening of financial system	Central Bank; non-banks; banks
(7) Improved financial reporting	Central Banks; non-banks; banks
(8) Increased technical and managerial capacity	Non-banks; banks

D. Financial Integration

1. Concepts and Approaches

In a general sense financial integration is about "the extent to which financial markets are connected. It relates to (i) the degree to which transactions in any one market seek to maximize their portfolio objectives through diversification; (ii) the extent to which they are free to do so and (iii) the efficiency of information transfers."[35] By

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[35] D. T. Llewellyn, International Financial Integration--The Limits of Sovereignty (New York: Wiley & Sons, 1980), p. 1.

inference, this refers to a rationalization and harmonization of financial markets, instruments, institutions, systems and technology. Given the well established relationship between financial superstructures and real infrastructure in economies, it is reasonable to assume that financial integration is in a significant way a financial expression of economic integration. While this may be accurate at a "prima facie" level, insofar as it suggests the need for economic integration before, or at least simultaneously with, financial integration, there is a school of thought that takes the opposite position on the relationships between financial and economic integration. Matters become even more complex when the concept of monetary integration is included, this generally ranging in degree from simple consultation among monetary authorities to the extreme of a single currency area or union, including Payments Union or External Reserve Centers. These relationships and their implications will be elaborated later in this section.

Like the concept of economic integration itself--be it trade, factor, policy, or total,[36] financial integration as a process and phenomenon--has direct reference and applicability to both market and centrally planned economic systems. The fairly mixed experiences of a number of integration movements in the capitalist world and the major experience of the Community for Mutual Economic Assistance (CMEA) in the Socialist Bloc are well known and documented.

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[36]For a good summary of types of economic integration arrangements, see Bela Balassa, "Types of Economic Integration," World Bank Reprint Series (1976): p. 69.

It appears, however, that the basis for these integrative processes (economic, political or financial) are different from one system to the other, reflecting the underlying ideological philosophies in large measure. Traditional western-economic argument for integration has its basis in neo-classical Vinerian theory of trade "creation" and "diversion" under the customs union theory and, to a lesser extent, in traditional Ricardian theory of comparative advantage and specialization of production. This assumes, "inter alia," initial dissimilarity of production structures and markets between members of an integration union, thus facilitating increased trade over time. In the context of pure financial integration, this infers diversification in financial instruments, systems, institutions and markets as between member states of the union, features that are philosophically and practically alien to command economies.

Thus, it appears that while there is a basis for economic and financial integration in market-economies based on dissimilarities in structures initially, in the case of centrally planned economies, it may be "easier to achieve bilateral and multilateral production, trade and investment (as well as financial) relations....if the member countries' internal planning and management systems are essentially similar."[37] This, however, may not be a conclusively accurate assessment of the basis for integration in socialist systems, and it appears even less so for economies in transition to socialism. Thus, Clive Thomas notes that:

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[37] P. T. Knight, "Economic Reform in Socialist Countries: The Experience of China, Hungary, Romania, and Yugoslavia," p. 112.

> In the process of socialist transformation, integration (of any sort) can only play a meaningful role if it is based on simultaneous changes in the relations of production and the development of productive forces over contiguous areas. The prospect of this recurring seems very unlikely. Thus, the case remains strongly in favor of a strategy designed to maximize reliance on national resources and national political capacities. Present integration arrangements cannot, by the very nature of the social processes at work, be considered a real alternative to the socialist transformation of production relations in each country, as the necessary condition for developing the level of productive forces and transforming the structure of production.[38]

While this raises real questions for a strategy of multilateral integration "per se," it partially underscores an integral point with respect to the integration process itself. This is that, in any economic system, the very basis of any type of integration--economic, political, social or financial--must be strong nationalist or domestic commitment and development. Thus, writing about the experience of the Caribbean Common Market (CARICOM) as a prelude to an assessment of its potential role in the 1980s, a group of Caribbean experts noted that "in some important respects [CARICOM's failure] to have a bigger development impact on the region [was] more attributable to weaknesses at the national level than to deficiencies in the economic integration instruments themselves"[39] and that "regional integration cannot substitute for the national effort in development. It is merely one element in that

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[38] C. Thomas, Dependence and Transformation, p. 284.

[39] The Caribbean Community in the 1980s: Report by a Group of Caribbean Experts (Guyana: CARICOM Secretariat, 1981), p. 2.

effort."[40] This in effect underscores the essentially unique relationship between integration and nationalism/indigenization as economic processes.

In the specific context of this study, financial indigenization cannot be separated from financial integration. Given the likely asphyxiated nature of the financial sectors of most LDCs, any serious efforts at financial liberalization will necessarily entail a deepening of the financial indigenization and financial integration processes. This will require a series of innovations in the already partially existing integration process in the financial sectors of several LDCs, as argued earlier for the case of the indigenization process.

2. Benefits and Costs

The case for real financial integration in LDCs hinges on several well known potential benefits. In large measure, these are related to the benefits captured from monetary integration, though, as Demas notes, they should and can be distinguished from each other. For instance, "it is not absolutely necessary to have full monetary integration in the sense of a common currency and common monetary (and fiscal and economic) policies as a condition for a fairly advanced degree of financial integration. What is essential in this context is the existence of exchange rate stability (and/or the reasonable expectation of such stability) between member countries and the absence (or significant reduction) of exchange controls among member countries with respect to capital movements and invisibles. Also necessary in this context is the

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[40] Ibid., p. 20.

existence of common foreign exchange control policies or practices between each member country of the integration grouping and third countries.[41] Thus, the evolution of financial integration is likely to confer among member nations of a movement (a) greater capital and current financial flows, (b) enhanced inter-regional resource mobilization and trading opportunities, (c) increased investment options and reduced risk possibilities and (d) stronger financial positions vis-a-vis the rest of the world, by virtue of both increased currency stability and possible reduced variability of interest rates among member states. This, of course, ultimately facilitates increased trade and investment opportunities with extra-regional parties.

However, as Nsouli[42] notes in writing about the monetary integration experiences of LDCs, financial integration also does have its costs. These include the impact of coordinated exchange control policies on the external positions of individual member countries, often at varying stages of development initially; the likelihood of "polarization" to stronger countries of the integration movement; weakening of domestic monetary and fiscal policies of individual countries and the costs of balancing individual credit/investment needs against inflationary pressures. These notwithstanding, the case remains strong for deepening the financial integration process among country groupings of most LDCs today.

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[41] W. Demas, Essays in Caribbean Integration and Development, p. 81.

[42] S. M. Nsouli, "Monetary Integration in Developing Countries," Finance and Development (December, 1981): pp. 41-44.

3. Issues in LDCs

The relationship of a strategy of intensification of financial integration in financial structures distorted by asphyxiation can be more fully appreciated from a review of the main issues emerging from previous experiences at financial or monetary integration. While virtually in every effort at economic integration in LDCs so far there has been actually a latent or active effort/understanding at eventual or initial financial/monetary integration, the experience of the latter has been very limited, even by the simplest measures of financial/monetary integration. (Such measures of financial integration could include the "extent to which markets are connected," the "unresponsiveness of an asset price to selling in one and buying in another region," or the "degree of substitutability between securities between two or more markets," or even "covariance between asset prices," especially interest rates, as the protagonists of portfolio theory argue.)[43]

The most common issues that have affected the limited success of financial integration to date relate to:

(a) The "incompatible trinities" as Llewelyn[44] calls it--the often irreconcilable relationship between capital flows, exchange rates/control mechanisms and domestic money supply--for example, in cases of substantial international capital mobility, a fundamental

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[43]For a comprehensive survey of the literature on measures of financial integration, see: B. Kenen, "Capital Mobility and Financial Integration: A Survey," Princeton Studies in International Finance, No. 39 (Princeton University, 1976).

[44]D. T. Llewellyn: International Financial Integration.

conflict may well emerge between official monetary and exchange rate targets, both within a country and between countries themselves;

(b) the degree of geographical coverage for optimal integration, i.e. the "optimal currency area" in monetary integration terms--whether this should be determined by factor mobility, degree of openness of the economy, degree of product diversification, financial or real variables, inflation rates or simple "policy integration;"[45]

(c) the question of "polarization" of financial development towards "stronger" countries in the union--the need for special arrangements, as in the case of the less developed countries in the CARICOM arrangement;

(d) the independence of monetary and fiscal policies with and without fixed and flexible rates of exchange--whether national monetary policy, in particular, loses its effectiveness under fixed exchange rates, except in cases of sterilization, insulation or offsetting capital flows, or, as is generally thought, whether this is more effective under flexible rates;[46]

(e) the question of convertibility of currencies or other instruments in the integration area--whether convertibility in any or all of

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[45] For a comprehensive survey of the literature on "The Optimal Currency Area," see Y. Ishiyama, "The Theory of Optimum Currency Areas, A Survey," IMF Staff Papers (Wash., D.C.: July 1975).

[46] For an analysis of the recent experience in fixed and flexible exchange rates in industrialized countries, see: "The Exchange Rate System: Lessons of the Past and Options for the Future," IMF Occasional Papers, No. 30 (Wash., D.C.: July 1984).

its four major forms should precede active moves to, or can be simultaneous with or lag, financial integration;[47]

(f) a settlement mechanism for intra-regional payments transactions--its structure, operations and relationship to bilateral agreements among member countries, roles of financial intermediaries therein; the need, or not, for a common currency, such as the West African Unit of Account in the West Africa Monetary Unit, with the resulting implication for exchange rate relationship/s between assets of member countries.[48] That is, the ability of each member to settle its net debit balances, having attained its maximum credit limit (as, for example, Guyana, in the case of the CARICOM Multilateral Clearing Facility) and the ability of the facility to adequately address this issue of non-payment once it arises;

(g) the relationship to and relevance of financial integration to economic and political integration, in general; and crucially

(h) the role of indigenization in the process of integration.

These are the main issues involved in the LDC process of financial integration. Of these issues, three appear to have particular bearing on the question of financial asphyxiation in LDCs. These are

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[47]For an adequate review of the types of and issues related to convertibility, with special reference to West Africa, see: J. M. McLenaghan, S. M. Nsouli, and K. Riechel, "Currency Convertibility in the Economic Community of West African States," IMF Occasional Papers, No. 13 (Wash., D.C.: August 1982).

[48]See: R. J. Bhatia: "The Experience of the West Africa Monetary Union," IMF Unpublished Paper (December 16, 1980).

(1) the relationship of integration to indigenization itself; (2) the relationship of financial integration to economic integration; and (3) the effectiveness of monetary policy in the context of financial integration. Both directly and indirectly these also have implications for the question of exchange rate management and exchange control mechanisms, fundamental to the financial integration process.

While in the deepening of the financial indigenization process, however, innovative corrective measures appear to rest mainly in the hands of the national monetary authorities or central bank, it would appear that responsibility for deepening the financial integration process must rest largely on regional financial institutions and mechanisms, with strong support from national monetary authorities and to a limited extent the very banks and non-banks themselves in individual countries. Additionally, a consistently primary and significant role must be played by the private sector, with all its underpinnings for sustained efficiency.

Against this background, therefore, a program for reshaping the course of national and regional financial development in LDCs, with direct reference to Caribbean countries, can be structured. As noted earlier, this program rests on the bases of enhanced financial indigenization and integration. It is argued in the formulation of this program of financial policy and actions that these approaches can be pursued in the context of the Caribbean region of today, with a high degree of simultaneity and coordination.

E. Towards an Innovative Financial Policy and Development Program for the Caribbean (1987-2002)

Table 9-2 below sets out details of a proposed program for deepening the current status of financial indigenization and integration in the CARICOM region over the next fifteen years. Such a program, it is hoped, will largely address distortions to the region's and individual country's financial sectors, several of which may be induced by the presence of financial asphyxiation. It is highly likely, however, that successful implementation of these financial policy objectives will simultaneously redress a number of other existing and related distortions, thus actively promoting comprehensive and structural financial development in the region.

The proposed program is structured into four phases:

(a) Preliminary -- immediate, preparatory actions (1986, 1987);

(b) Short-term -- over the next five years (1988-1992);

(c) Medium-term -- (1993-1997);and

(d) Long-term -- (1998-2002).

A fundamental assumption of the program is that the CARICOM economic integration process will deepen over the forthcoming years, including a major thrust towards exchange rate stability and intra-regional exchange control harmonization. This harmonization of exchange management arrangements is critical not only to financial integration itself, but to the deepening and effectiveness of the economic integration process and is, thus, central to any financial program. On the assumption that this is systematically attained over the next fifteen years, the program appears

TABLE 9-2

SUGGESTED FINANCIAL PROGRAM FOR "DE-ASPHYXIATING" AND DEVELOPING FINANCIAL SECTORS OF CARICOM COUNTRIES 1987-2002

LIKELY TIME FRAME/STAGE	ASPHYXIATION - RELATED PROBLEM	DEEPENING OF NATIONAL INDIGENIZATION PROCESS		DEEPENING OF REGIONAL INTEGRATION PROCESS	
		Possible Innovative Actions	Specific National Sponsor(s) or Responsible Agency(ies)	Possible Innovative Actions	Specific Regional Sponsor(s) or Responsible Agency(ies)
FUNDAMENTAL ONGOING ACTIVITY PRELIMINARY STAGE (1985-1987)	EXCHANGE RATE/CONTROL INSTABILITY (i) ASSESSMENT AND RATIONALIZATION OF STATUS QUO.	EXCHANGE RATE STABILIZATION/ CONTROL PROGRAMS (a) Establishment of strong national task force with representation from each type of financial institution to do review (TOR's to include all items under "problems" column)	CENTRAL BANKS/GOVERNMENT (a) Central Bank to coordinate - coopting representatives from professional bodies, banks and non-banks, with strong experience and technical skills.	EXCHANGE RATE STABILIZATION/ CONTROL COORDINATION PROGRAMS (a) Establishment of strong region-wide task force similar to that for local situations with representatives from regional professional/ financial and academic bodies.	CARICOM/CENTRAL BANKS (a) CARICOM-to upgrade organizational capacity for financial cooperation and coordination; Caribbean Development Bank (CDB); Regional Professional Bodies; Central Banks and Universities.
	(ii) FORMULATION OF A PLAN/ PROGRAM.	(a) Committee to complete preparation of program covering 15 years.	(a) "	(a) Promotion of regional professional/financial bodies where not in existence or now non-functional.	(a) "
SHORT-TERM STRATEGY (1988-1992) PRIVATIZATION	(i) INITIATING PRIVITIZATION OF AND REDUCTION OF PUBLIC SECTOR INVOLVEMENT IN INSTITUTIONS.	(a) Phased divestment of Government shares to private sector, through public sales.	(a) Central Bank/Ministry of Finance holding shares in trust until sale to private sector, through Development Banks and Call/ Stock Exchange.	(a) Acquisition of proportion of national shares being divested, for creation of CARICOM Investment Trust - special allocations for LDCs	(a) CDB/Caribbean Financial Services Corporation (CFSC)
				(b) Limited privatization of CDB itself - shares to be sold to National Central Banks for onward sales to nationals, with special fiscal incentives.	(b) CDB/Central Banks/ Caribbean Multilateral Clearing Facility (CMCF)
				(c) CFSC and regional professional bodies to acquire some CDB shares.	(c) CFSC/Regional Professional Bodies
	(ii) REVITALIZATION OF CAPITAL STRUCTURES OF INSTITUTIONS.	(a) Apart from divestments above, encouraging special share issues, legislating these actions where possible.	(a) Non-Banks; Banks and Central Bank	(a) Increased equity and quasi-equity investments by regional institutions in national intermediaries - special attention to regional LDCs.	(a) CDB/CFSC/Central Banks
		(b) Reviewing levels of capitalizations for various types of intermediaries.	(b) Non-Banks; Banks and Central Bank		

TABLE 9-2 (continued)

SUGGESTED FINANCIAL PROGRAM FOR "DE-ASPHYXIATING" AND DEVELOPING FINANCIAL SECTORS OF CARICOM COUNTRIES (1987-2002

LIKELY TIME FRAME/STAGE	ASPHYXIATION - RELATED PROBLEM	DEEPENING OF NATIONAL INDIGENIZATION PROCESS		DEEPENING OF REGIONAL INTEGRATION PROCESS	
		Possible Innovative Actions	Specific National Sponsor(s) or Responsible Agency(ies)	Possible Innovative Actions	Specific Regional Sponsor(s) or Responsible Agency(ies)
FUNDAMENTAL ONGOING ACTIVITY	EXCHANGE RATE/CONTROL INSTABILITY	EXCHANGE RATE STABILIZATION/ CONTROL PROGRAMS	CENTRAL BANKS/GOVERNMENT	EXCHANGE RATE STABILIZATION/ CONTROL COORDINATION PROGRAMS	CARICOM/CENTRAL BANKS
	(iii) ENHANCING RESOURCE MOBILIZATION EFFORTS.	(a) Development of Special Savings Schemes, adopting indigenous techniques wherever possible	(a) Non-Banks	(a) Special issues of CARICOM savings instruments, with special exchange control/ fiscal concessions.	(a) CDB and Central Banks
		(b) With increased capital bases, intensifying external borrowing.	(b) Banks	(b) Coordination of activities of National Call/ Stock Exchange	(b) Caricom Governments and Central Banks
		(c) Using fiscal incentives to enhance savings.	(c) Govt./Central Bank		
	(iv) STRENGTHENING TECHNICAL/ FINANCIAL DELIVERY CAPACITY.	(a) Rationalization and strengthening of national professional, academic and technical training capacities.	(a) Professional Bodies, Universities and Ministries of Education	(a) Rationalization and strengthening of regional professional, academic and technical capacities	(a) Universities and Caricom Education Division
				(b) "Twinning" with developed training institutions outside of region.	(b) CDB - Special Human Resources Development Fund to be developed.
MEDIUM-TERM STRATEGY (1993-1997)	(i) RATIONALIZATION AND BROADENING OF FINANCIAL INSTITUTIONAL SCOPE.	(a) Functional merging of institutions towards more multipurpose private sector institutions.	(a) Central Bank	(a) Development of special and additional regional financial institutions e.g. an Export Credit Guarantee Scheme and creation of Infrastructure for regional Stock Exchange.	(a-c) CFSC, CDB and Central Banks - Special actions by ECCB to reflect lower levels of development in LDCs.
		(b) Increased institutional innovations - leasing, venture banks/capital funds.	(b) Indigenous Institutions	(b) Broadening of Regional Investment Funds.	
		(c) Equity-based innovations, designed to stimulate equity financing.	(c) Indigenous Institutions	(c) Increased regional debt, and equity issues.	
	(ii) INCREASING OPERATING EFFICIENCY OF INSTITUTIONS.	(a) Increased role and incentives for national professional bodies.	(a) Professional Bodies	(a) Creation of regional incentives schemes linked to funding of local intermediaries.	(a) CARICOM
		(b) More consistent and clearer central bank guidelines and supervision.	(b) Central Banks	(b) Establishment of Regional Finance Standards Committee.	(b) CDB
		(c) Strengthening of Boards and management.	(c) Non-Banks and Banks	(c) Organization of Regional Financial Workshops/Seminars.	(c) Regional Professional Bodies
		(d) Development of monitoring and operating norms and criteria for each type of financial institution.	(d) Central Bank/Institutions		

TABLE 9-2 (continued)

SUGGESTED FINANCIAL PROGRAM FOR "DE-ASPHYXIATING" AND DEVELOPING FINANCIAL SECTORS OF CARICOM COUNTRIES (1987-2002)

LIKELY TIME FRAME/STAGE	ASPHYXIATION - RELATED PROBLEM	DEEPENING OF NATIONAL INDIGENIZATION PROCESS		DEEPENING OF REGIONAL INTEGRATION PROCESS	
		Possible Innovative Actions	Specific National Sponsor(s) or Responsible Agency(ies)	Possible Innovative Actions	Specific Regional Sponsor(s) or Responsible Agency(ies)
FUNDAMENTAL ONGOING ACTIVITY	EXCHANGE RATE/CONTROL INSTABILITY	EXCHANGE RATE STABILIZATION/ CONTROL PROGRAMS	CENTRAL BANKS/GOVERNMENT	EXCHANGE RATE STABILIZATION/ CONTROL COORDINATION PROGRAMS	CARICOM/CENTRAL BANKS
MEDIUM-TERM STRATEGY (cont'd)	(iii) REDIRECTING INVESTMENT FLOWS TO PRIORITY AREAS.	(a) Creation of National Guarantee Schemes.	(a) Central Bank	(a) Review of development finance flows from regional and international organizations	(a) CDB
		(b) Development of Specialized Secondary national institutional mechanisms for refinancing retail activities.	(b) Private Sector Institutional/Central Bank	(b) More reform/innovations and performance-based funding from regional institutions to local financial intermediaries.	(b) CFSC/CDB
		(c) Fiscal incentives for priority sectors to channel investments.	(c) Govt./Min. of Finance		
		(d) Penalties for violation of specialized credit flow requirements.	(d) Central Bank/Professional Bodies	(c) Development of regional financial consultancy capacity.	(c) CARICOM/Universities
		(e) Development of national financial consultancy capacity	(e) Professional Bodies/ Central Bank.		
	(iv) RESTRUCTURING AND REDEFINING INFORMATION AND REPORTING REQUIREMENTS.	(a) Survey of existing reporting basis.	(a) Central Bank	(a) Creation of Regional Financial Data Center - final step to Regional Stock Exchange launching.	(a) CARICOM/CDB
		(b) Improved and more consistent reporting requirements for banks and non-banks.	(b) Institutions	(b) Standardization of regional financial reporting.	(b) CARICOM/CDB Universities
		(c) Reformulation, with more emphasis on operational reporting and flow of funds reporting.	(c) Professional Bodies	(c) Review and harmonization of national financial legislations.	(c) CARICOM/CDB/ Professional Bodies
		(d) Review of and innovative/ corrective action on national financial legislation.	(d) Professional Bodies/ Central Bank		
LONG-TERM STRATEGY (1998-2002)	(i) HARMONISATION OF MONETARY AND FISCAL POLICIES	(a) Reassessment of monetary and fiscal policies as they affect national financial institutions	(a) Central Bank/Government	(a) Movement towards monetary union and unitary currency. (b) Complete harmonisation of fiscal incentives affecting financial institutions.	(a) & (b) CARICOM/CDB/CFSC; Central Banks; CMFC; IMF; and Regional Universities.
		(b) Rationalization of need for differing and consistent inter-institutional treatments.	(b) Central Bank/Government		

quite plausible. Special roles will be required of the Regional Central Banking institutions, CARICOM itself, the Caribbean Development Bank (CDB), the recently created Caribbean Financial Services Corporation (CFSC)--a private sector regional financial corporation based in Barbados, national and technical/professional bodies, the Universities of the West Indies and Guyana (hopefully merged by 1990) and, of course, national non-bank and banking indigenous institutions themselves. At the center of the regional innovation processes will be CARICOM and CDB, the former, in particular, requiring significant upgrading of its capacity for promoting financial integration, through the possible establishment of a special division/department for this purpose. CDB may also need to partially privatize its operations, as will most of the now publicly-owned indigenous financial institutions, to enhance their overall efficiency and national regional impact.

As has already been noted, the broad thrust of the program is a balanced liberalization of national and regional financial sectors, strengthening the roles of non-banks vis-a-vis banks, in particular, and as noted, rapidly reducing the role of the public sector in the financial system. This should provide the basis for sustained non-asphyxiated financial sector development and facilitate the emergence of more deep-rooted economic transformation of the CARICOM region over the next decade-and-a-half.

LIST OF FINANCIAL VARIABLES UTILIZED IN RESEARCH

	Assets	Liabilities	Income Statement	Macro Economic
1.	Total Assets	Total Deposits	Net Income	Money Supply (m_1)
2.	Total Foreign Assets	Total Claims by Government	Total Operating Expenses	Money Supply (m_2)
3.	Total Reserve Assets	Total Capital Foreign	Total Revenues	Index of Consumer Prices
4.	Total Claims	Total Foreign Liabilities	Average Market Interest	Gross National Product
5.	Total Long-term Assets	Total Long-term Liabilities	Total Costs	Total Government New Issues
6.	Total Long-term Credit	Reserve Money	Total Consumer Expenditure	Gross Fixed Capital Formation
7.	Total Short term Credit			Change in Inventories
8.	Total Short term Assets			Total Capital Formation
9.	Total Net Foreign Assets		Prime Interest Rates	
10.	Total Claims on Financial Institutions		Total Consumer Credit	
11.	Total Claims on Commercial Banks			
12.	Total Claims on Government			

PRINCIPAL SOURCES OF STATISTICAL DATA/MATERIAL
UTILIZED IN RESEARCH

JAMAICA

1.	Monetary Statistics	-- Bank of Jamaica
2.	Statistical Digest	-- Bank of Jamaica
3.	Monthly Review	-- Bank of Jamaica
4.	Annual Reports	-- Bank of Jamaica and other financial institutions
5.	International Financial Statistics	-- IMF

KOREA

1.	Korea Statistics Yearbook	-- Economic Planning Board
2.	Monthly Statistics of Korea	-- Economic Planning Board
3.	Annual Reports	-- Bank of Korea and other financial institutions
4.	Monthly Statistical Bulletin	-- Bank of Korea
5.	International Financial Statistics	-- IMF

TRINIDAD AND TOBAGO

1.	Financial Statistics	-- Central Statistical Office
2.	Annual Statistical Digest	-- Central Statistical Office
3.	Monthly Statistical Digest	-- Central Bank of Trinidad and Tobago
4.	Annual Reports	-- Central Bank and other financial institutions
5.	International Financial Statistics	-- IMF

U.S.A.

1.	Annual Reports of the Federal Reserve System: Federal Reserve Bulletins	-- Federal Reserve System
2.	Bank and Finance Manual	-- Moody's
3.	Basic Statistics -- Banking and Finance	-- Standard and Poor's Statistical Service
4.	Life Insurance Fact Book	-- American Council of Life Insurance
5.	International Financial Statistics	-- IMF

SELECTED ECONOMIC AND FINANCIAL INDICATORS OF THE SURVEY COUNTRIES (1960-1980)

	(1) GNP (Nominal Local Currency)			GNP per Capita Millions of Nominal US$			Average Per Annum Growth (%) Nominal	Real
	1960	1970	1980	1960	1970	1980	1960-1980	
Jamaica [a]	457	1119	4275	458	718	2400	12.0	0.7
Korea [b]	245	2684	35031	152	263	1393	28.3	13.2
Trinidad and Tobago [a]	829	1604	9349	586	776	3893	13.3	5.2
U.S.A. [b]	507	993	2632	2800	4841	11558	8.6	5.3

	(2) Net Foreign Assets			(3) Balance of Payments: Current Account		
	1960	1970	1980	1960	1970	1980
Jamaica [a]	46	94	(970)	(27)	(153)	(166)
Korea [b]	7	113	(570)	13	(627)	(5321)
Trinidad and Tobago [a]	126	81	6627	(59)	(109)	357
U.S.A. [b]	13	(6)	64	3	2	1

	(4) Assets of the Financial System [c] (Nominal Local Currency)			(5) Financial System Growth Per Annum (%) (1960-1980)
	1960	1970	1980	Nominal
Jamaica	156	1097	5001	47.2
Korea	70	2134	44289	125.3
Trinidad and Tobago	276	740	12309	86.6
U.S.A.	516	1035	2864	13.8

SOURCE: International Financial Statistics and Annual Reports.

a/Millions of local currency.

b/Billions of local currency.

c/Using the Central Bank, commercial banks and major non-banks used in study.

VALUES OF THE INDICES OF FINANCIAL ASPHYXIATION

	Full Asphyx. (A)		Partial Asphyx. (A^1)		Partial Asphyx. (AA^1)	
Country	Value	Year Evident	Value	Year Evident	Value	Year Evident
Jamaica	0.19	1972	0.23	1972	22.7	1970
					0.19	1972
Korea	290.8	1974	936.6	1972	139.7	1972
			0.10	1976		
Trinidad and Tobago	9.2	1974	11.5	1974	7.6	1974
	9.6	1980	11.4	1980	8.2	1980
USA	0.36	1966	0.56	1966	0.25	1966
	0.15	1970	0.20	1970	0.11	1970
			7.76	1974	0.84	1972

SOURCE: Research estimates based on empirical observation.

SUMMARY VALUES OF THE RIE, RILM AND RIM VARIABLES (1960-1980)

Jamaica

YEAR	RIE	RILM	RIM
1960			
1962	6.026	-0.22083	-0.21635
1964	-15.035	-0.35688	-0.32467
1966	-0.027	-0.41069	-0.38128
1968	-0.969	-0.41843	-0.36908
1970	-1.792	-0.37585	-0.30913
1972	-0.150	-0.37026	-0.31193
1974	0.210	-0.36676	-0.30483
1976	-0.680	-0.39866	-0.29904
1978	0.309	-0.38363	-0.30964
1980	0.626	-0.36788	-0.28492

Korea

YEAR	RIE	RILM	RIM
1960			
1962	-1.189	-0.0922	-0.02789
1964	0.428	-0.7567	-0.32769
1966	8.545	-3.5453	-0.50275
1968	0.766	-1.7244	-0.47881
1970	1.510	-1.0584	-0.43427
1972	-14.267	-1.2070	-0.46619
1974	-1.754	-1.1201	-0.42121
1976	0.135	-1.4165	-0.42102
1978	-0.126	-1.4089	-0.39712
1980	-0.909	-1.2898	-0.35882

Trinidad and Tobago

YEAR	RIE	RILM	RIM
1960			
1962	-0.107	-0.31732	-0.30338
1964	-0.135	-0.34885	-0.24999
1966	5.215	-0.34594	-0.26895
1968	-17.859	-0.36868	-0.29188
1970	-0.927	-0.38460	-0.30672
1972	1.162	-0.36999	-0.32115
1974	-1.001	-0.36384	-0.29506
1976	12.462	-0.23336	-0.17672
1978	-2.818	-0.16621	-0.11256
1980	-0.332	-0.11600	-0.09848

U.S.A.

YEAR	RIE	RILM	RIM
1960			
1962	0.279	-1.4286	-0.84592
1964	0.401	-1.2920	-0.83662
1966	-0.634	-1.2709	-0.84718
1968	-0.398	-1.1177	-0.81521
1970	-0.340	-1.0158	-0.78816
1972	-0.903	-0.9875	-0.76132
1974	2.088	-0.9723	-0.74969
1976	36.089	-1.0337	-0.72546
1978	-23.833	-0.9059	-0.77534
1980	1.000	-1.0094	-0.77430

SOURCE: Computer results from raw data.

RESEARCH ON INDIGENOUS FINANCIAL INSTITUTIONS

Questionnaire and Data Sheet

[illegible] BY TICKING THE MOST APPLICABLE ANSWER AND BY PLACING A (X) IF PRESENT SITUATION IS BETTER AND A [illegible] IF [illegible] IS WORSE

During the [illegible] three to five years of your institution's operations:

A Operational areas

	1 Very True	2 Fairly True	3 Untrue	4 Present situation better?	5 Situation worse?
(1) There was considerable public sensitivity about insurance*/banking/[illegible] in a local institution.					
(2) There were adverse criticisms and attacks from existing non-indigenous insurance companies/banks*.					
(3) There was too little government support of the institution.					
(4) There was too excessive government support of the institution.					
(5) There was too little private sector support of the institution.					
(6) There was too weak operational level staffing in general.					
(7) There was too weak supervisory level staffing in general.					
(8) There were too poor physical facilities.					
(9) There was too rapid physical expansion.					
(10) There was too slow physical expansion.					
(11) There was too rapid a staff build up.					
(12) There was too slow a staff build up.					
(13) There were too many similar competing indigenous institutions.					
(14) There were too few similar competing foreign institutions.					
(15) International correspondent relationships were expanded too slowly.					
(16) The majority of the operational staff were between 18 and 25 years.					
(17) The Central Bank/Monetary authority was very supportive and understanding.					

	1 Very True	2 Fairly True	3 Untrue	4 Present situation better or worse?
(18) Special favorable tax and other fiscal considerations were given the institution.				
(19) There were adequate off-the-job professional training for operation staff.				
(20) The main branch was ideally located, commercially.				
(21) Operational staff turnover was too frequent and high.				
(22) The bulk of your credit/investment went to the public sector.				
(23) " " " " " " " to private sector companies or individuals.				
(24) There were adequate on-the-job professional training for operational staff.				

B Management areas

	1 Very True	2 Fairly True	3 Untrue	4 Present situation better or worse?	5 Situation worse?
(1) The management staff was generally too weak.					
(2) There were more management people with commercial experience than without.					
(3) The majority of the management staff had previously insurance*/banking/[illegible] experience.					
(4) The majority of the management staff were previous public servants.					
(5) The majority of the management staff were over forty years old.					
(6) There was adequate off-the-job professional training available for management staff.					
(7) The majority of the management staff were university graduates.					
(8) The majority of the management staff held professional commercial qualifications.					
(9) None of the management staff held professional insurance*/banking/[illegible] qualifications.					
(10) There was too much political interference in the day-to-day operations of this institution.					
(11) The Board of Directors was too technically or professionally weak.					
(12) The Board of Directors had too many public servants.					

	1 Very True	2 Fairly True	3 Untrue	4 Present situation better or worse?	5 Situation worse?
(1) The Chairman of the Board was a public servant.					
(2) The Chairman of the Board was a businessman.					
(3) The Chairman of the Board had previous insurance*/banking/experience.					
(4) Three or more members of other development commercial indigenous [illegible] insurance companies sat on the Board.					
(5) The majority of the management staff were in the Credit/Investment Dept.					
(6) There were more staff with accounting qualifications than management type qualifications.					
(7) The Chairman of the Board was earning a higher salary in his substantive job than most of the management staff.					
(8) The Board of Directors changed too frequently.					
(9) Senior staff were too often 'jockeying' among themselves for more senior positions with institution's growth.					
(10) There was too much confrontation on the basis of technical ability.					
(11) There were too much senior/junior staff confrontations on the basis of differences in compensation.					

C Please indicate the following:

	1st year	2nd year	3rd year	4th year	5th year	10th year	15th year	20th year	1st year	2nd year
Actual Year ??	____	____	____	____	____	____	____	____	____	____
(a) Number of staff	____	____	____	____	____	____	____	____	____	____
(b) No. of Sub-Offices (excluding Head Office) operating	____	____	____	____	____	____	____	____	____	____

[illegible] comments, given the benefit of hindsight and experience only, about the institution's evolution [illegible]

SELECTED INDICATORS OF FINANCIAL EVOLUTION OF INDIGENOUS FINANCIAL INSTITUTIONS DURING 1970's
(Nominal Terms)

	AVERAGE PER ANNUM FOR CARIBBEAN COUNTRIES SAMPLED		AVERAGE PER ANNUM FOR NON-CARIBBEAN COUNTRIES SAMPLED		CRUDE AVERAGE PER ANNUM FOR TOTAL SAMPLE		AVERAGE GROWTH OF MACRO-ECONOMIC COMPARATORS
	(7) Comm. Banks	(6) Non-Banks	(2) Comm. Banks	(5) Non-banks	(9) Comm. Banks	(11) Non-Banks	(12) Countries in Total
A. GROWTH INDICATORS							
Asset Growth (%)	165	139	60	99 d/	112	119	43 (Combined Banking d/ Systems)
Revenue Growth (%)	190	77	44	36 d/	117	57	29 (Combined GNP) d/
Net Income Growth (%)	58	54	70 c/	64 d/	64	59	29 (Combined GNP) d/
B. RATIO INDICATORS							
Return on Asset (%) a/							
Beginning Period e/	(0.80)	2.34	0.25	1.7	(0.28)	1.23	
Ending Period f/	0.75	1.51	2.73	3.03	2.53	2.27	
Total Equity as % of Loans b/ Portfolio o/s (%)							
Beginning Period e/	33.2	155.9	26.0	101.2	29.6	128.6	
Ending Period f/	14.9	72.0	15.0	140.4	15.0	106.2	

SOURCE: Compilations from Annual Reports of individual institutions.

a/Year's net income/year end net assets.

b/Year end equity/year end loans portfolio.

c/Adjusted to exclude extraordinary growth of 800% for one intermediary.

d/Average of average of each of 12 countries sampled.

e/Varying dates between 1969 and 1979 used for each country in sample,

f/Varying dates between 1979 and 1980 used for each country in sample.

MEASURES OF DEVELOPMENT IMPACT OF SELECTED
GUYANESE INDIGENOUS FINANCIAL INSTITUTIONS

(a) Measures of Credit Portfolio Growth

NAME OF INSTITUTION	YEAR OF ESTABLISHMENT	AVERAGE PER ANNUM GROWTH (%)	AVERAGE PER ANNUM GROWTH OF MACRO-ECONOMIC COMPARATORS (%)	YEARS COVERED
GNCB	1970	392	37 (Total Comm. Bk. Credit)	1971-1980
GCADB	1973	20	35 (Total Agric. Credit)	1974-1979
GCMFB	1973	54	19 (Total Housing Credit)	1974-1978
GCIS	1976	225	5 (Total Insurance Credit)	1976-1980
NBS	1940	32	10 (Total Housing Credit)	1975-1980

(b) Share of Total Sectoral Credit Made in System

	Beginning Year (%)	Ending Year (%)
GNCB	1971 - 7	1980 - 35
GCADB	1974 - 47	1979 - 72
GCMFB	1974 - 10	1978 - 19
GCIS	1976 - 1	1980 - 3
NBS	1975 - 31	1980 - 47

(c) Efficiency of Credit Delivery
(Admin. Costs/Total Credit o/s)

	Beginning Year (%)[a/]		Ending Year (%)[a/]
GNCB	8.6		5.4
GCADB	5.9		5.9
GCMFB	4.3		3.6
GCIS	100.0	(Part year's operations only)	11.0
NBS	1.4		1.5

(d) Liquidity Risk Exposure
(Total Long-Term Credit (o/s)/Total Long-Term Liabilities)

	Beginning Year (%)[a/]	Ending Year (%)[a/]
GNCB	10.0	58.4
GCADB	300.0	143.0
GCMFB	-	143.0
GCIS	43.0	115.0
NBS	84.0	82.0

SOURCE: Compilations from Annual Reports of Individual Institutions and Bank of Guyana Annual Report.

a/Similar years as in Section (b) above.

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