

**THE LINK BETWEEN FINANCIAL AND
ECONOMIC DEVELOPMENT:**

THE ROLE OF CAPITAL MARKETS

by

Rima M. Bhatia



**THE LINK BETWEEN FINANCIAL AND
ECONOMIC DEVELOPMENT:**

THE ROLE OF CAPITAL MARKETS

by

Rima M. Bhatia

M.B.A. Thesis

College of Business Administration

University of Bahrain

February 16, 1991

ABSTRACT

The financial sector is a complex of markets for financial assets and financial services, which can assist in steering an economy away from plodding, repetitive performance to accelerated growth and development.

Since the latter part of the 70s, there has been growing interest towards the influence capital markets can have on the process of economic development, with a plethora of studies having been conducted on this issue. This paper attempts to examine the link between economic development and capital markets, particularly stock markets, through extensive empirical analysis using regression methods. Based on these analysis, some concluding observations and remarks are also presented. The ultimate aim is to ascertain whether a link does indeed exist or not.

The paper explores the following areas:

- (1) An examination of the various literature works that have surfaced in recent years concerning the role of the financial sector in economic development, with a particular focus on the contribution of capital markets.
- (2) An in-depth analysis of the relationship under study using empirical data. Numerous forms of analysis are conducted including extensive correlation studies.
- (3) Final assessment on the link between economic development and stock markets based on the empirical results.

Among the concluding observations and remarks derived from this study, the following points stand out as the most significant:

- a - The proliferation of publicly-listed companies on organized stock exchanges.
- b - The phenomenal growth in stock market capitalization and value of shares traded in both developed and emerging markets.
- c - The inter-related nature of economic growth, saving and investment, income and financial deepening.
- d - Financial liberalization, alongside the points mentioned in (c) have induced rampant growth in capital market services.
- e - Statistical verification of the link between stock markets and economic development.

There are, however, some caveats to this issue that can be summarized as follows:

- o Stock markets are not an absolute panacea for solving the problems of financial resources allocation.
- o Stock markets can help promote the economic well-being of a country but only gradually, and in some cases, after a considerable gestation period
- o Supportive social, political and legal, as well as economic environment are important determining factors to the economic success of stock markets.

ACKNOWLEDGMENTS

I am grateful to a number of people whose invaluable help made this study possible. Special thanks should go to my brother, Mr. J. M. Bhatia, for helping me to obtain the necessary research materials, without which this study would not have been possible.

I would also like to thank the research staff at the Federation Internationale Des Bourses De Valeurs (Paris), for providing me with numerous statistical reports at a very short notice.

A special thank-you is also due to my colleagues at Gulf International Bank (GIB) for their critical suggestions in helping me to improve this paper.

Finally, I would like to thank my advisor, Dr. Tuncer Gursoy, for his guidance and patience during the preparation of this study.

RIMA M. BHATIA

TABLE OF CONTENTS

3. EMPIRICAL ANALYSIS	.....	18
✓ 3.1 Organized Stock Markets of Selected Countries	.....	18
3.1.1 Domestic and Foreign Companies	.....	18
3.1.2 Value Traded and Market Capitalization	.....	19
3.2 Saving, Growth and Financial Deepening	.....	20
Summary	.....	21
3.3 The Link between Stock Market Development and Economic Growth	.....	22
3.3.1 A Note on Correlation Analysis	.....	22
INDONESIA: A Case Example	.....	23
3.3.3 Cross-Sectional Correlation Analysis	.....	25
a) Correlation between Stock Market Value of Shares Traded and all Independent Variables	.....	25
b) Correlation analysis between Stock Market Capitalization and all Independent Variables	.....	25
✓ 4. CONCLUSION	.....	26
Observations and Remarks	.....	28

ENDNOTES

APPENDIX A: STATISTICAL ANNEX

APPENDIX B: A NOTE ON SOURCES

BIBLIOGRAPHICAL NOTES

LIST OF TABLES

CHAPTER 2

Table 2.1 Growth Rates and Economic Indicators for Country Groups with Positive, Moderately Negative and Negative Real Interest Rates

Table 2.2 The Institutional Structure of Selected Financial Systems

CHAPTER 3

Table 3.1 Number of Listed Domestic Companies, 1980-1989

Table 3.2 Number of Companies with Equity Shares Listed on FIBV Exchanges

a) 1975-1979

b) 1983-1988

Table 3.3 Value Traded, 1980-1989

Table 3.4 Market Capitalization, 1980-1989

Table 3.5 Market Concentration

Table 3.6 Saving and Growth in Developing Countries, 1965-1987

Table 3.7 Saving and Growth Trends, (1987)

Table 3.8 Liquid Liabilities (M3) as Percentage of GNP (1987)

Table 3.9 M2 as Percentage of GDP (1987)

Table 3.10 Correlation Analysis: Indonesia, a) & b)

Table 3.11 Summarized Results of Correlation Analysis: Market Value of Shares Traded and Independent Variables

Table 3.12 Summarized Results of Correlation Analysis: Market Capitalization and Independent Variables

Table 3.13 Cross-Sectional Analysis, a), b) & c)

LIST OF FIGURES

CHAPTER 3

Figure 3.1 M3/GNP: The Linear Relationship

Figure 3.2 M2/GDP: The Linear Relationship

Figure 3.3 Growth, Saving and Investment, Income and Financial Deepening

PROJECT NOTES

FINANCIAL TERMS

Capital Market:

The market in which long-term financial instruments, such as equities and bonds, are raised and traded.

Liquid Liabilities (M3):

M3 is the sum of M1, time and savings deposits, and other deposits at financial institutions.

M1:

Currency outside banks plus demand deposits, excluding those held by government and banking institutions.

M2:

M1 plus quasi-money (time and savings deposits other than large certificates of deposits, at commercial banks).

ACRONYMS AND INITIALS

EC:

The European Community (Belgium, Denmark, Germany, France, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and United Kingdom).

GDP:

Gross Domestic Product.

GNP:

Gross National Product.

IBRD:

International Bank of Reconstruction and Development (The World Bank).

ICOR:

Incremental Capital - Output Ratio.

IFS:

International Financial Statistics published by the International Monetary Fund.

IMF:

International Monetary Fund.

DATA NOTES

BILLION:

1,000 Million

TRILLION:

1,000 Billion

DOLLARS:

Current US dollars unless otherwise specified.

SYMBOLS

.. means not available.

- means not applicable.

0 means zero or less than half the unit shown and not known more precisely.

1. INTRODUCTION

1. INTRODUCTION

The dramatic changes that have occurred in the world's economic, political and structural arena since the 1970s and the 1980s have led many countries to reconsider their approach to development. Although countries vary in the scale of government intervention and process of stabilization and restructuring pursued in their economies, most of them concur that efficient allocation of resources in today's realities are best achieved through the private sector and market signals. Tantamount to this objective of achieving greater reliance on voluntary market-based decision-making is the need to develop efficient financial systems.

Historically, we have witnessed governments increasingly converging their efforts towards controlling interest rates, directing credit policy to priority sectors, and securing inexpensive funding for their own activities in order to promote economic development. While, this strategy has not been wholly abandoned by some countries in recent times, there is no doubt that this form of control has both undermined financial development and induced financial stress. On the other hand, the modern economy mandates the existence of a liberalized financial sector that is able to provide the wide array of services essential to growth and development.

*"The financial sector has its own industries, the monetary system among them, utilizing inputs of productive factors according to relevant technologies. There is a superstructure of regulatory authority with its pattern of policies and array of control instruments. Linkages with foreign financial sectors are inescapable. The sector is unique in the degree to which its markets, prices, institutions, and policies impinge upon all others. Money is the only good that trades against all other goods. Interest rates are the relative prices that have most pervasive relevance to economic decisions."*¹⁾

However the mere establishment of a financial system is not a guarantee for a stable economic development - a financial system's contribution to the economy depends upon the quantity and quality of its services and the efficiency with which it provides them. Overall, efficiency of such systems requires a balance among internally generated resources, centrally organized saving and investment, and market-based financial arrangements, with government retaining a key role as prudential regulators, because experience has shown that financial markets can be easily prone to instability and vulnerable to fraud.

Countries with stable economies and fairly well - developed and competitive financial markets benefit considerably from giving market forces more influence over interest rates, however, where these conditions are not satisfied, governments may choose to control interest rates. If this control is not flexible enough to take account of inflation and market pressures, it will impede financial development.

Proper alignment of interest rates is particularly important for economies that have open capital markets.²⁾ However, liberating financial institutions from interest rate or credit controls cannot, by itself, ensure that financial systems will develop as intended. The legal and accounting systems of most developing countries are antiquated and cannot adequately support modern financial processes, hence, further hindering stable development of the financial system.

A number of countries have taken steps toward financial liberalization during the past decade, involving across-the-board interest rate liberalization and elimination of credit programs. Meanwhile, competition among financial institutions has been promoted by opening the domestic market to foreign institutions and non-bank financial intermediaries. Nevertheless, experience suggests that financial liberalization needs to be undertaken alongside macroeconomic reform. Countries that attempted financial liberalization and development before undertaking other reforms suffered destabilizing capital flows, high interest rates, and overall financial distress.

For the most part, the most significant financial changes occurring in the world since the mid-1970s have been in the capital markets of both industrialized and developing countries. The new emphasis has been to raise the rate of private domestic voluntary saving and to allocate that saving more efficiently through the development and effective use of capital markets, in the hope that this in turn will manifest itself toward sound economic development and growth.³⁾

1.1 PURPOSE OF PROJECT

This paper is an attempt to address how financial markets have evolved to become an essential facet of the economic development process. However, due to the wide spectrum of institutions and markets that fall under the term "financial markets" it is necessary to limit this study to examining the contribution of capital markets, particularly the stock markets.

1.2 METHODOLOGY OF PROJECT

In my study of the role capital markets play in the development and growth of economies, I was guided by the following three analytical aspects:

- (1) The way in which capital markets, particularly stock markets, increase the saving rate by making savings more attractive and allocate investors and investment activities.
- (2) The way in which the above condition will encourage advancement of economies by having a positive impact on the development process.
- (3) The necessary economic climate which must prevail if the above two conditions are to have a positive impact.

Using these three levels of analysis, I intend to establish the theoretical and factual relationship between economic development and the critical role capital markets play in the process.

Data presented to support this concept is secondary in nature and has been sourced from numerous statistical publications. The computation of the data prepared as empirical evidence, has taken various forms:

- o Time-series correlation analysis
- o Cross-sectional correlation analysis
- o Ratio analysis
- o Trend/pictorial analysis
- o Tabular presentations

Statistics have generally been compiled for the period, 1980-1989, however, where possible, they have been dated back as far as 1975.

Numerous countries are included in the data presentation enabling examination of evidence for economies still in the development stages to those classified as "industrialized" or "economically advanced". For operational and analytical purposes these countries have been classified according to their per capita GNP.

While every attempt has been made to ensure data reliability, the variations in the reporting methods of the sources utilized did lead to some discrepancies when data was cross-checked. In such cases, data from the most reputable source has been selected.

1.3 THE SCOPE OF THIS PROJECT

The study begins with Chapter II, entitled "The Theory Base", which is in two parts. The first part briefly reviews the characteristics of capital markets in order to understand what such markets involve. The second part is a more detailed overview of the recent theoretical literature relevant to the purpose of this project; the role capital markets, particularly stock markets, play in the economic development process.

Chapter III then extends the study and examines the empirical evidence in light of the presented theory. The aim here is to analyze the data and assess whether a link between capital markets and economic development can be verified statistically. However, although the theory base includes literature on capital markets in general, this chapter specifically concentrates on empirical evidence for stock markets only. Empirical data and analysis involving the bond markets has also been excluded. There are two reasons for doing this:

- (1) Governments seldom try to control the price or yield of shares directly. However, they are likely to control (peg) government bond prices and yields directly and, through legislation or administrative suasion, to request certain categories of financial institution to purchase and hold government debt, as secondary reserves. Within the context of this paper, it would be more meaningful to see how the "non-government influenced" component of capital markets contributes to the economic development.
- (2) The inclusion of some data on bond markets, particularly for industrialized countries would have been useful in this study. Nevertheless, sufficient data was unavailable to meet the requirements of this paper.

Finally, chapter IV summarizes the analysis and provides some concluding observations and remarks.

2. THE THEORY BASE

2. THE THEORY BASE

2.1 CAPITAL MARKET CHARACTERISTICS

2.1.1 Definition of Capital Markets

The expression "capital market" is used in ambiguous and multiple ways. In the broadest connotation, capital markets refer to the entire organized financial system, including commercial banks and all other financial intermediaries, and to short-term as well as long-term primary and indirect non-monetary financial claims. ⁴⁾ However, this is too broad a definition and does not provide a focus for the term.

Probably, the most commonly used definition of a capital market is, the network of borrowers and lenders for medium-term and long-term funds (medium-term: 1-5 years; long-term: any period longer than the medium-term), each having a different set of preferences as regards to interest rates, maturity, liquidity and risk. Hence, a diversity of financial instruments exist to satisfy the requirements of both borrowers and lenders. ⁵⁾ A capital market is the locus of the organized market where stocks (common and preferred claims of equity ownership) and bonds (including debentures and convertible bonds) are bought and sold using the services of brokers, dealers and underwriters. ⁶⁾

2.1.2 The Role of Capital Markets ⁷⁾

The capital market plays a significant role in the financial system. Given the fact that savings and investment are vital for the growth of the economy and also that, in an advanced economy, the economic units which save are different from the economic units which invests, the capital market provides a bridge by which the saving of surplus units may be transformed into the investment of deficit units. In this process, the capital market contributes to both economic stability by matching savings and investment, and economic growth by expanding the total amount of savings and investment.

Since the capital market is principally a mechanism by which ultimate surplus units with excess funds are able to invest for long-periods of time, this market is essentially a primary one, that is, a market for newly issued securities. The rate of interest (yield) is the primary factor which motivates savers to part with their funds in the capital market alongside, the safety and liquidity of the financial instrument.

Capital market instruments include both debt and equity. Equity issues represent claims on the earnings and assets of an individual firm which are inferior to those of debt instruments; necessarily, these equity issues carry more risk than debt instruments of the same firm. Moreover, debt quality ranges from U.S. government securities and highly rated corporate issues with limited default risk to unrated bonds of small and new business ventures and other securities with more substantial default risk.

No single financial institution dominates the capital market in the way that commercial banks and Federal Reserve influence the money market. Consequently, the level of yield and pattern of yields among different financial instruments is much more complex. Monetary policy influences are certainly transmitted to the capital market, as are

changes in inflationary expectations, corporate profits and liquidity, business spending for inventories and plant and equipment, and the relative inflows of funds into the major financial institutions.

2.1.3 Capital Market Instruments

In the vital role the capital market plays in transferring savings from surplus sectors to deficit sectors in the economy, both direct and indirect securities are created.

The types of instruments that exist within a capital market are: ⁸⁾

a) Debt Securities:

These include bonds, notes, debentures etc., and are classified as loan issues. They may have a specified maturity or may be redeemed on a series of dates; some have no fixed redemption dates and some may be redeemed by a prearranged sinking fund or drawings by lottery. Most are issued publicly, but some bonds are privately placed, while the rates of interest may be fixed, variable or floating.

b) Equity Securities

The greatest diversification in the nature of a given financial instrument probably occurs for equity. While all common stock represent a residual ownership interest in the earnings and assets of a business, the characteristics of individual common stock obviously vary tremendously. However, one common trait is that the equity market is entirely a secondary market in "used" stock. Very little new stock is created as firms choose to increase their equity base through the retention of earnings rather than the sale of new common stock, and as almost all external financing is done with debt.

c) Other

Recent developments in capital market instruments include financial futures, options, swaps etc.

2.2 OVERVIEW OF THE THEORETICAL LITERATURE

In his book, "Essay on the Principle of Population" (1798) Thomas Robert Malthus predicted that growing populations and fixed amounts of land and other natural resources would ultimately stifle economic growth. ⁹⁾ However, natural resource endowments have declined in importance in most high-income countries. In Great Britain, for example, the value of land and minerals was sixty percent of the value of all tangible assets in 1688 but only 15 percent in 1977. In fact, natural resources have not determined wealth. In 1870, Australia, a country rich in natural resources, had twice the per capita income of Switzerland, which has few; today Switzerland's per capita income exceeds Australia's by more than half. During the past three decades Hong Kong, Japan, the Republic of Korea, and Singapore have had among the world's highest per capita income growth rates despite their relatively poor resource endowments, while resource-rich Argentina has hardly grown at all.

"The biggest difference between rich and poor countries is the efficiency with which they have used their resources. The financial system's contribution to the growth lies precisely in its ability to increase this efficiency." ¹⁰⁾

2.2.1 Finance and Growth ¹¹⁾

The financial system's most significant contribution to growth of an economy is by providing a medium exchange. Historically, economies have moved first from basic self-sufficiency to barter trade and then to trade against commonly accepted commodities such as gold. However, with the realization of the cost involved in the maintenance of commodity money inventories, safekeepers of gold and other commodity monies soon learned the advantages of allowing the direct exchange of deposit certificates. Such economizing gave birth to deposit money and banking and other innovations such as paper money, credit cards, and electronic transfers. Most developing countries have a widely accepted medium of exchange, although as their economies expand and become more complex, this necessitates the need for more advanced payment systems.

A natural consequence of the expansion in monetary development has been the need to save. Saving determines the rate at which productive capacity, and hence, income can grow. On average, the more rapidly growing countries have had higher saving rates than the slower growing ones.

As financial saving became popular, this gave rise to a proliferation of financial institutions and services over the years, creating a system whose task has been to move excess savings from economic units in surplus to those in deficit by providing various banking and investment services. However, in the financial system intermediates only part of a country's total investment as firms and households finance much of their investment directly out of their own savings.

The Role of Interest Rates:

Liquidity and ease of access may make financial instruments a more attractive home for savings, while financial services may encourage saving if they lead to higher net returns. Higher interest rates raise the return, but simultaneously, they can also enable savers to achieve a target stock of financial wealth with a lower savings rate. The effect of interest rates is therefore, ambiguous as empirical estimates range from a large positive effect to no effect at all.

Although interest rates have an uncertain effect on the level of saving, their effect on the form in which people choose to save is clear. High interest rates favor financial over non-financial forms of saving as indicated in a recent study. Using 1975 data for eighty one developing countries it was found that the ratio of liquid liabilities to GNP (a measure of financial depth) rose by 0.75 percentage points in response to a 1.0 percentage point increase in the nominal interest rate paid on deposits. However, the ratio fell by 1.70 percentage points in response to a 1.0 percentage point increase in the rate of inflation (this asymmetry may reflect the fact that some liquid liabilities like currency for example, pay no interest and hence, cannot fully compensate savers for inflation; it may also reflect a risk premium that arises with the inflation rate).

Overall, higher interest rates are likely to lead to real financial deepening as savers switch some of their savings from real to financial assets and from foreign to domestic assets. Conversely, the negative real interest rates that many countries witnessed in the 70s discouraged the holding of financial assets.

2.2.2 Financial Deepening

Numerous decentralized economies with low levels of per capita income and wealth have been attracted at times to a development strategy that results in "shallow" finance. By distortions of financial prices including interest rates and foreign-exchange rates and by other means, this has reduced the real rate of growth and the real size of the financial system relative to non-financial magnitudes in these economies. In all cases this strategy has stopped or gravely retarded the economic development process. A new strategy that has the effect, among others, of "deepening" finance and renewing development, is financial liberalization. Liberalization matters in economic development, although it is not the sole measure; indeed financial liberalization is appropriately linked with complementary measures that reach beyond the financial sector.¹²⁾

As more saving moves through the financial systems, financial depth increases. The financial systems of higher income countries are usually deeper than those in poorer ones (as measured by the ratio of liquid liabilities to GNP). Similarly, financial deepening is also more prevalent in the rapidly growing countries than in the slowest growing ones (as measured by the ratio of M2 to GNP).

Faster growth of economies alongside more investment and greater financial deepening, all are partly attributable to higher saving, however, in its own right, greater financial depth also contributes to growth by improving the productivity, as measured by the ratio of the change in GDP to investment (also the inverse of the incremental output ratio - ICOR). This ratio is significantly higher in the faster-growing countries, which also have deeper financial systems.

Theoretically, a link between financial development and growth can now be understood. It was noted earlier that positive real interest rates favor financial saving over other forms of saving and therefore, promote financial deepening, and provided that intermediaries are good at selecting viable projects, greater intermediation will ensure that the better investments are financed, thereby increasing the average productivity of investment.

Table 2.1 groups unspecified countries according to their real interest rates, positive, moderately negative (0 to -5 percent) and strongly negative and lists their corresponding economic and financial indicators. The first group, countries with positive real interest rates, had lower inflation, deeper financial sectors, moderately high investment rates, and significantly more productive investments than others. More importantly, growth rates of countries with positive real interest rates were considerably higher on average than those of others.

Most developing countries have periodically held their interest rates below market-clearing levels for purposes of economic policy. However, such artificially low interest rates have resulted in undue repression of their financial systems, shrinking financial assets in real terms especially during periods of high inflation. If on the one hand, financial depth promotes economic growth, then on the other, artificially low real interest rates will be an obstacle to it.¹³⁾

Measures and Indicators of Financial Deepening:¹⁴⁾

While there are numerous indicators or measures to register financial deepening, only a few will be mentioned. One class pertains to financial stocks. When financial policy has been liberalized and distortions in financial prices have been removed or reduced, reserves of liquidity increase. Stocks of financial assets aggregatively

TABLE 2.1

GROWTH RATES AND OTHER ECONOMIC INDICATORS FOR COUNTRY GROUPS WITH POSITIVE, MODERATELY NEGATIVE, AND STRONGLY NEGATIVE REAL INTEREST RATES (1965 - 1973 & 1974 - 1985)

Indicator (Average Percent)	1965 - 73			1974 - 85		
	Negative					
	Positive	Moderately	Strongly	Positive	Moderately	Strongly
Real interest rate	3.7	-1.7	-13.7	3.0	-2.4	-13.0
GDP growth rate	7.3	5.5	4.6	5.6	3.8	1.9
M3 / GDP	28.9	27.0	29.1	40.3	34.0	30.5
Investment / GDP	21.4	19.7	21.4	26.9	23.2	23.0
Change in GDP / Investment	36.7	31.1	21.7	22.7	17.3	6.2
Change in real M3 / real saving	18.7	12.7	6.4	16.6	8.2	-0.9
Inflation rate	22.2	7.1	40.2	20.8	23.9	50.3
Volatility of inflation rate	17.1	5.3	27.2	12.2	9.1	23.5

NOTE: Real interest rates were calculated from nominal rates according to the following formula: $[(1 + r)/(1 + p) - 1] * 100$, where r is the deposit rate and p is the inflation rate. Inflation is the percentage change in the consumer price index (CPI). M3 is currency plus the sum of nonbank deposits of the public at all identified deposit-taking institutions. Real saving is gross domestic savings deflated by the average annual CPI rate. Volatility of inflation is the absolute deviation of the inflation rate from its level the year before.

SOURCE:

The World Bank, "World Development Report 1989".

grow relative to income or in proportion to tangible wealth, and their range of qualities widens. There is also a lengthening of maturities, and hence, a wider variety of debtors gain access to the financial markets. The menu of financial assets is diversified so that borrowers may adjust their debt structures and lenders their portfolios by relatively small degrees at the margin.

Financial flows can be read easily for evidence whether finance is deepening; for example, when it is shallow, an economy depends relatively heavily on its government's fiscal budget and on its international capital accounts for the flow of savings that finance capital growth. Deepening eases the strain on taxation and moderates demand for foreign savings. Flight of savings abroad by one device of smuggling or another and demand for construction of dubious social productivity are common evidence of an aversion to finance. Deepening stops and reverses capital flight and diverts savings from those skeletons of partially complete office and apartment buildings. The velocity of money diminishes.

In the context of shallow finance, organized finance is dominated by the banking system and often finance flows through the foreign exchanges or through the curb market of money lenders and cooperative societies. The banking system behaves as a high-cost, high-profit oligopoly, while finance through the foreign exchanges is dominated by external grants of aid, high-cost suppliers' credits, and direct investment from abroad. On the other hand, the curb is limited to short-term transactions at some high risk from borrower default and governmental repression. However, deepening of finance increases the real size of the monetary system and generates opportunities for the profitable operation of other institutions as well; from bill dealers to industrial banks and insurance companies. Deepening also involves specialization in financial functions and institutions, and organized domestic institutions and markets gain in relation to foreign and curb markets.

Financial prices are perhaps the least ambiguous evidence. 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, with even the curb market being subject to usury laws and regulations. The financial markets are required to trade at interest rates that overvalue the future in terms of the present. Deepening implies that interest rates must report more accurately the opportunities that exist for substitution of investment for current consumption and the disinclination of consumers to wait. Real rates of interest are high where finance is deepening, while differentials between rates tend to diminish - for example, between loan and deposits rates and deposit rates and between rates on the organized markets and rates on the curb.

Shallow finance, on the other hand, is commonly associated with over valuation of domestic money on the official markets for spot foreign exchange. Regulatory policy demands a premium on domestic balances in terms of foreign balances as well as a premium in present balances or future balances. It discourages exploiting and saving but encourages importing and consumption. When financial deepening ensues, these relative price biases are removed.

2.2.3 Financial Reform

Despite the tendency of developing economies to create formidable conditions that repress financial development, hence, retarding sustainable economic growth, financial reform and other reform complementary to it are occurring. Indeed, the necessary prerequisite to initiate financial deepening is the reform and liberalization of a repressed financial sector.

From Mexico and Taiwan on to Korea, Indonesia, Yugoslavia, Brazil, Iran, Malaysia, and others, traditions of repression have been challenged, and policies for financial deepening have increased real stocks of financial assets relative to wealth and income. No country has liberalized its financial system to efficient limits, and some measures invoked in the cause of liberalization simply add new distortions to the old, but the grip of repressive policy is being loosened.¹⁵⁾

Organization of the Monetary System

Dormant and shrinking monetary systems are not revived by faster expansion of nominal money; the public can reject it, in real terms, by bidding higher the rate of inflation. They are not revived by multiplication of bank branches, which can raise real unit costs and widen the spread between loan and deposit rates. Grants of charters to foreign banks is not the remedy nor is nationalization of banks; banks of any ownership languish under repressive monetary policy. Compulsory savings in blocked bank deposits are a clear warning that financial assets can be perilous to hold. It is the goals and instruments of the monetary authority, concerned with stimulating demand for money that count most in monetary reform, which is also the first step towards financial liberalization.¹⁶⁾

Monetary systems have numerous feasible designs. While, there are broad criteria for organizing such systems, i.e. a society with a socialist bent desires nationalization of its banks, there are some considerations which can optimize the monetary system and the financial sector as a whole.¹⁷⁾

- 1/ Unambiguous designation of the monetary authority, the one agency with money illusion.
- 2/ Sensitivity of the system to the authority's control instruments.
- 3/ Competitiveness of the system, or stimulated competitive behavior, to narrow spreads between loan and deposit rates.
- 4/ Operating efficiency to economize on factor inputs.
- 5/ Responsiveness to technological changes that can increase the real money demanded.
- 6/ Allocative efficiency in both a static sense of capacity to rank alternative uses of money holders' savings and a dynamic sense of capacity to find and induce an increasing flow of loan opportunities.
- 7/ Solvency: money lenders must be protected against default in the monetary system.
- 8/ Design of the monetary system should not have undesirable effects on the distribution of income and wealth.

2.2.4 Capital Markets and Economic Development

The focus of this section so far, has been on the importance of a financial system in the development of an economy. However, the term "financial system" encompasses many institutions, instruments and markets, while the purpose of the paper is to examine the role of capital markets, in particular stock markets. The rest of the theoretical section will concentrate on literature in this regard only.

a) The Financial Sector Structure

Financial systems differ from country to country, yet there are many similarities; in addition to the central bank, most countries have five main classes of financial institutions:

- 1/ Deposit and Credit Institutions
- 2/ Contractual Savings Institutions
- 3/ Collective Investment Institutions
- 4/ Securities Markets
- 5/ Informal Financial Enterprises

(N.B. Casualty insurance companies are also generally considered part of the financial sector but they are not included).

The comparison between the structure of the financial sector in high-income countries with its structure in some of the advanced developing countries for 1985 is shown in Table 2.2. ¹⁸⁾

Banks in developing countries hold a bigger share of all financial assets (48 percent) than they do in industrial countries (37 percent). However, the table understates this dominance because the developing countries included are those with the most sophisticated financial systems; when central banks are included, the predominance of the banking sectors of most developing countries is even greater. Central banks in the sample hold 20 percent of the financial assets in developing countries compared with only 3 percent in developed markets, which implies that in addition to issuing currency and overseeing the operation of the payment system, the central bank acts as banker to the government and to other banks. In contrast, non-bank intermediaries and contractual savings institutions hold a much larger share of financial assets in high-income countries than they do in developing ones.

b) Capital Markets: Some Conceptual Issues

Financial development accelerated with the advent of large-scale industrialization in the second half of the nineteenth century, however, the development and effective use of capital markets by today's industrialized economies did not gain momentum until after the Second World War. In the case of the developing economies, this did not occur until the 1970s.

Table 2.2
The Institutional Structure of Selected Financial Systems, 1985

Country	Assets as a Percentage of Total Gross Assets of the Financial System						As a % of GNP	
	Central Banks	Deposit Banks	Specialized Lending Institutions	Contractual Savings Institutions	Collective Investment Institutions	Long-term debt Securities and Equities*	Net Financial Assets	Total External Debt
Developed Markets								
Australia	5	31	14	17	1	33	..	0
Canada	1	33	2	26	8	30	165	0
France	6	56	10	7	5	16	109	0
Germany	4	41	14	9	2	30	158	0
Japan	2	45	9	6	7	30	300	0
Sweden	4	27	18	16	1	35	..	0
United Kingdom	1	35	1	26	3	34	183	0
United States	2	28	7	19	4	40	210	0
Average	3	37	9	16	4	31	183	0
Emerging Markets								
Argentina	32	43	11	5	0	10	..	80
Brazil	27	32	12	2	4	23	59	50
Chile	14	44	1	11	1	28	75	145
India	10	47	6	12	1	24	65	19
Korea	9	53	14	4	10	10	66	57
Malaysia	7	34	12	13	3	32	247	52
Nigeria	23	46	2	3	7	19	49	26
Pakistan	21	65	1	2	1	11	45	39
Philippines	30	38	14	3	3	14	38	82
Portugal	20	72	1	2	1	4	124	85
Thailand	16	55	12	1	0	17	89	47
Turkey	33	54	4	6	0	3	27	50
Venezuela	20	46	25	1	0	8	65	74
Average	20	48	9	5	2	16	79	62

Note:

Total financial system assets are the assets of all the institutions shown in this table plus the stock of outstanding securities and equities. To eliminate double-counting caused by the assets of one institution being the liabilities of another, net financial assets have been approximated by the sum of total liquid liabilities (IFS, line 55) plus securities and equities. To deflate these stocks by the flow of GNP, five-quarter arithmetic averages are constructed from year-end data for 1984 and 1985, assuming constant exponential growth during the year.

*The sum of government bonds, corporate bonds, and corporate equity.

Source: IMF, International Financial Statistics, and World Bank data.

Theoretically, issues of stocks and bonds, like other forms of finance, increase the savings rate by making savings more attractive and allocates them to the most efficient investor and investment activities. However, this is generally the case with economically advanced countries (EAC's); less developed economies have high degrees of market imperfections which may often not lead to efficient allocation of savings. Developing countries have two important goals in building their economies, and these are increasing the rate of growth of output and improving the distribution of income, wealth, and economic power. Given this, how do issues of stocks and bonds and capital markets affect achievement of these goals? ¹⁹⁾ The main and most direct impact of stocks and bonds on real economic variables comes from their issue by spending units (governments and corporations), whereby funds are made available to them for expenditure (presumably investment) purposes. The holding or exchanging (trading) of previously issued securities has less direct effects, although there are probably some indirect effects on consumption and savings (via changes in wealth and portfolio - depending on how sellers use their acquired funds and how buyers might otherwise have used them).

However, developing economies have greater market imperfections than do EAC's, which in turn may lead to less efficient allocation of capital markets. These are several problems that exist in this respect: ²⁰⁾

- (1) Do differences in profit rates - presumably adjusted for risk - reflect efficiency reasonably well, or are they due primarily to market distortions: monopoly positions, import quotas, credit rationing, etc.? To the extent that capital market development helps firms whose profits are high owing to market imperfections (as is the case with many developing economies) rather than to efficiency in resource allocation and use, its effect is harmful rather than beneficial.
- (2) In developing countries allocation of savings through the capital market discriminates in favor of large firms. Typically, only the largest, best known firms (frequently foreign controlled) in these economies are able to issue stocks and/or bonds publicly, mainly because of the lack of information for potential buyers. Smaller firms are able to issue securities through capital markets only when large numbers of investors are willing to take risks and reliable information is available, and then at a higher cost for large firms.

While, the allocative effect is much more complex than this, since it involves possibilities of substitutability and/or complementarity on the part of both corporate issues and purchasing individuals, it is suffice to say that the existence of capital markets in developing countries may raise the savings ratio and allocate savings efficiently for growth of output and employment. However, simultaneously due to the existence of market imperfections, capital markets may also have unfavorable side effects on distribution of income, wealth, and economic power. On the other hand, if a country had a vigorous program of wealth redistribution by capital, estate, or inheritance taxes, a capital market in a developing country would not have such adverse effects.

c) Capital Markets in Developing Countries

A brief examination of capital markets in economies other than those of the EAC's is necessary to better understand the issues surrounding the link between economic development and the role of capital markets.

With the exception of countries like Brazil, India, Malaysia and Singapore, research suggests that capital markets in developing economies are thin, with little or no trading and with relatively few and insignificant amounts of new public issues by private corporations.²¹⁾ With a somewhat larger amount of issue, the market for government debt may appear to be more developed, but its sales are mainly to capture buyers. On the other hand, the occasional speculative splurges that do occur in the private issues, generally end in a crash that eliminates the nascent public investors, and the market reverts to its lethargic state.

Fundamentally, the limited supply of private securities in underdeveloped countries is related to the small size and limited investment horizon of many local businesses. There are a number of a priori reasons which limit capital markets development in such economies:²²⁾

- (1) Individual savings accrue in the main to unsophisticated people, who are financially inexperienced and have conservative attitudes towards money.
- (2) Share ownership by individuals tends to be confined to those with high incomes who may spread their risks through diverse portfolios (this spreading is not possible for those with limited funds to invest and for whom transaction costs are high); there is not a sufficiently large class of well-to-do persons to sustain a corporate securities market in an underdeveloped country.
- (3) The generally underdeveloped financial system means that there is little or no institutional demand for securities.
- (4) Price uncertainty reinforces the traditional preference for money over financial assets which fluctuate in value.
- (5) Accurate information is scarce and the costs of obtaining it are inordinately high, while market regulation is limited.

The inherent obstacles to capital market development for developing countries, however, have been overplayed, and the prospects for beneficial economic consequences correspondingly understated. It is important to highlight the fact that the environment surrounding the development era of EAC's capital markets is quite different from that surrounding the developing countries - but there is no question as to the important role capital markets play during the economic development processes of either country grouping.²³⁾

2.2.5 Liberalization and Long-Term Finance²⁴⁾

The repressed, lagging economies have nothing to gain by adding the paraphernalia that is entailed with capital markets to their existing financial systems. In such countries, the demand in real terms for long-term assets does not exist and cannot develop in adequate volume, given the context of financial repression and associated policies in trade, public finance, and other areas. Equities are not a defense against relatively high and unstable inflation nor indexing of bonds and mortgages. Such inflation alternately accelerating and slowing down to a stabilization crisis, compromises the real earnings of capital and of claims on it. Monetary reform, with deepening of the financial sector, is an indispensable first step. Until it occurs, along with allied reforms, the path of returns to any item of capital stock is a perilous random walk: recurrent overvaluation of the foreign-exchange rate depresses export enterprise; any

enterprise is vulnerable to unpredictable changes in credit ratios tax concessions, allowances of foreign exchange, import licenses; specific price controls have arbitrary effects on savings. Savers' horizons are necessarily short in the repressed economy.

Moreover, the costs of adding instrumentalities of long-term finance to the shallow financial system are not low. Almost inevitable is a handsome and expensive stock exchange, with its thin flow of transactions, congenial to speculative fiascoes, even in the equities of the stock exchange corporation. The concentration of economic power will increase because only the securities of firms with reliable access to wealth and favor can command saver's attention. Intervention by the equity or debenture market would be one more source of endogeneity in the supply of nominal money. Deposit rates in short-term markets would be held low or reduced to generate demand for long-term issues. This pattern suggests that premature measures to stimulate finance at long-term via capital markets, can hinder financial growth substantially.

Generally, when a less-developed economy becomes disillusioned with repressive policies, there is a temptation to install the apparatus of long-term finance and capital markets quickly. The reasoning being that if finance finally is deepening at short-term or if reform is progressing in the fiscal and international sectors, enough foreign technical assistance or subsidy to underwriting and sufficient tax concessions to "open" companies and to security buyers will lead to accelerating deepening at a long-term.

Expensive, dramatic action to promote long-term finance is not feasible for developing economies, instead measures to promote gradualism in extending the financial horizon is a more effective path to follow.

2.2.6 Developmental Benefits of Capital Markets

Although the benefits derived from the existence of capital markets vary among industrialized and developing countries, in general, financial development (of which capital markets are an important component) proceeds concomitantly with economic development, with finance playing an increasingly important role.

The existence of capital markets can result in the following economic benefits: ²⁵⁾

- (1) The capital market provides a first-rate breeding ground for the skills and judgment needed for entrepreneurship, risk-bearing, portfolio selection and management. These capacities may develop in the proprietors and managers of firms 'going public'; in those who conduct stockbroking, underwriting and new issue activities; and in the managers of financial institutions and individuals who trade in stocks and bonds. All such individuals perforce must improve their knowledge of finance and their ability to evaluate risk and seize opportunities.
- (2) Active capital markets serve as an 'engine' of general financial development and may, in particular, accelerate the integration of informal or traditional financial systems with the institutional financial sector. Shares and bonds may directly displace traditional assets such as gold and stocks of produce or, indirectly, may provide portfolio assets for unit trusts, pension funds and similar financial institutions that raise savings from traditional sector.
- (3) The existence of a capital market enhances the scope, and provides institutional mechanisms, for the operation of monetary and financial policy. During the early 1980s, volatility of capital internationally, flexibility of exchange rates and new theoretical ideas (about the nature and purpose of monetary policy)

have called discretionary monetary policies into question if not disrepute (especially for open underdeveloped economies). Nevertheless, it remains true that national central banks require influence over composition of the assets of an economy's financial institutions. A flourishing capital market is invaluable for the implementation of general official financial policy, which is less damaging to resource allocation than are selective controls.

2.2.7 The Contribution of Stock Markets

The spread of stock markets in both industrialized and developing countries has been quite rapid following the Second World War, and scope for new markets may now be limited. However, on the basis of the few systematic studies which have been done, it is unlikely that stock markets are going to be a panacea for solving the problem of savings mobilization, investment, and growth, which the developing countries face in particular. In fact, their contribution in some countries has been negligible, while in others, stock markets could have harmful effects on the distribution of income and wealth, although no firm evidence of such an occurrence has yet come to light. Nevertheless, it does seem that the existence of stock markets may have a very favorable impact on the liberalization of capital markets, in that they present alternative choices for institutions, savers, and firms faced with repressed interest rates or banking cartels, although such an effect, of course, is difficult to measure. However, in most countries, any addition to the supply of scarce, long-term capital, especially equity is willingly received.²⁶⁾

*"A market for [stocks] provides potential liquidity to the owners of otherwise illiquid financial assets, without inconveniencing the enterprises that originally issued the shares - - - in order to raise funds. Hence, a [stock market] encourages financial development through fostering intermediation, and the liquidity that the market confers may enhance the rate of savings and investment."*²⁷⁾

The Supply and Demand of Stocks:²⁸⁾

Investors need a reasonable choice of both government securities and company stock in order to set up the type of portfolio they desire, which implies that there must be a reasonable number of fairly large companies willing to make their shares available to the public. Many of the smaller and poorer countries, however, do not have a sufficient number of suitable companies as their enterprises are mainly unincorporated firms and government-owned utilities and industries with few suitable private sector manufacturing and service enterprises. In such cases, the stock market is open to numerous imperfections: Some companies enjoy a protected monopoly due to the limited number of participants; of the companies which are suitable, some may be subsidiaries of foreign firms which do not need to raise capital on the local market, and will only go public for reasons of goodwill or in response to government pressure; family-owned firms may also be reluctant to dilute their ownership and control, particularly when the number of participants in the stock market are limited.

A well-functioning market also requires a mix of long-term investors (such as insurance companies, pension funds, investment trusts, and unit trusts), and short-term investors (often individuals) which keep the market fluid. There must therefore be a substantial number of institutions which hold the savings of individuals, and individual investors. This in turn implies a reasonably widespread distribution of wealth and income within a country, and a sizable middle-class. Countries which have highly skewed income and wealth distributions are unlikely to have the

right mix of investors to keep the market fluid and active. In addition, the country, must possess individuals willing to buy shares, who in turn need to be made aware of the functioning of the stock exchange, and of possible risks and returns. Financial institutions also need to be willing and able to buy shares. While empirical evidence has refuted conventional view that institutions are scarce and small in developing countries, nonetheless, in some cases institutions may need to be persuaded of the desirability of equity investments; they may also need to be freed from requirements to invest very heavily (or even entirely) in government stocks.

Undoubtedly, the most important factor determining the willingness to buy and hold securities is the elusive "investor confidence". Investors need to have confidence in the macroeconomic performance of the economy, as doubtful growth prospects and fears of inflation are destabilizing for stock markets as investors perform badly under either worry. In addition, investors also need to have confidence in the firm whose shares they buy through trust in the firm's products and markets, its management, and in its integrity in disclosing information. Finally, investors also need to have confidence in the integrity of operation of the stock market, and its members.

2.2.8 Measures to Encourage Stock Market Development

Stock markets enlarge the financial sector, promoting additional and more sophisticated financing, while increasing the opportunities for specialization, division of labor and reduction of costs in financial activities.²⁹⁾ If such results are to be achieved, governments must implement necessary measures to encourage development of the stock market along these lines.

Measures to develop stock markets should aim at 1) encouraging an appropriate general economic and political environment and 2) specific measures that make it more attractive for suppliers (investors) to issue new securities through the market and for demanders (savers) to purchase them.³⁰⁾

A general environment supportive of stock markets has various dimensions, including the level of development of both the economy and the financial system. It does not make much sense to rely on capital markets for resource mobilization and allocation in an economy with a low per capita income and a weak institutional structure.

Many of the problems of capital market development emanate from uncertainty about the general future environment. After all, prices of stocks and bonds represent a present evaluation of their future prospects, determined not only, by the behavior of the issuer but also by the environment within which it operates, including political stability, prospects for economic growth, and government economic policy.³¹⁾

One danger in establishing stock markets is that of regulatory overkill, plus exorbitant expenses of a highly sophisticated regulatory system, which may actually inhibit capital market development. The regulating authorities must try to minimize speculative excesses without interfering unduly with normal market activities. Similarly they must not enforce unnecessary regulations, but instead ensure that the general interest of investors and the market as a whole are safeguarded. Most developing countries have yet to apply appropriate measures to encourage local stock market development and hence, still have major deficiencies of one form or another. The day is some way off when they will become like Singapore or Hong Kong, or even Malaysia, let alone Tokyo, London, or New York. However, it should be borne in mind that significant share dealing has been taking place in London, for example, for over 250

years, and that for most of time the market has slowly developed and improved. Developing country markets too will take time to develop, and many are still in their infancy.³²⁾

2.2.9 Advantages and Disadvantages of Stock Markets³³⁾

In the final part of this section it will be useful to examine the advantages and disadvantages to an economy having a stock market.

The following appear to be the principal advantages. They are not listed in any particular order as the ranking will depend on the reader's view point, whether that of an investor, a government official or a firm.

- 1/ A stock market enables companies to raise fresh capital both initially, by going public (primary issues), and subsequently through secondary issues (right issues or placements of stock). Hence, a stock exchange can provide additional capital for industrial, service and utility companies, which might otherwise find it difficult to raise fresh equity. This will enable companies to expand more readily. It is a well known fact that the ratio of debt to shareholders funds tends to be high in developing countries, but with an ability to raise new equity capital, a company will be able to overcome a gearing constraint when it wishes to expand. Moreover, a "sound" gearing ratio is in itself desirable. A company can stand a high proportion of debt when the profit position is favorable, however, if this is not the case a highly geared company can be forced into liquidation.
- 2/ A stock market provides governments with an alternative means of selling bonds and raising capital. The virtue of this depends on the ability of the government to use the funds efficiently for the benefit of the national economy. A drawback is that the government may be able to "crowd out" the private sector and starve it of fresh capital, either by offering more competitive terms or by rigging the new issues queue in its own favor. Governments can usually service high-yielding paper by printing money or by issuing more high-yielding paper. Of course this may be inflationary, but the private sector is constrained by its ability to pay interest and dividends, and to repay debt, out of its profits.
- 3/ A stock market provides savers and financial institutions with a further outlet for their funds. Investment in equities (and government stock, unless held to maturity) is, of course, investment in risky instruments. However, investors have different risk-taking capacities, and like to be offered a range of risks, and a corresponding range of expected returns. A stock market enables investors to select the portfolio which gives the risk-return combination which is to their liking. Moreover, it enables them to diversify their investments and reduce risk. A stock market, by offering various returns, may be particularly important to investors whose only alternative is to place deposits and receive low, repressed, rates of interest. It can therefore encourage saving, and the mobilization of funds. If the secondary market is reasonably active, investors have a market which may be much more liquid than some alternatives, such as gold or real estate.
- 4/ A stock market provides a hierarchy of rates of return (and therefore of the cost of capital) between equities, corporate bonds, and government stock. Hence, firms and governments raising new capital have to pay a rates of returns which reflects both the rate of return on alternative investments and the risk associated with the undertaking, resulting in improved allocation of capital ex ante, at least. This is im-

portant in a capital market which is otherwise repressed, and where the cost of borrowing is not related either to the demand for capital or to the riskiness of the investment it will be used for.

- 5/ In some countries, for example Nigeria, a stock market has provided an important mechanism for the indigenization of the ownership of foreign firms. A firm required by law to be say, 60 percent Nigerian-owned was able, through an offer for sale, to offer 60 percent of its shares to the public. This ensured a reasonably wide ownership which otherwise would have been rather difficult to secure. In much the same way, stock markets can provide a vehicle for government corporations to go public.
- 6/ A stock market can bring foreign capital into a country from foreign portfolio investors wishing to diversify internationally.

The criticisms of stock markets are generally four. The first one is essentially political, while, the other three have considerable economic and financial bearing.

- 1/ Stock markets have been criticized to encourage unequal distribution of wealth, by enabling those who are sufficiently wealthy to invest with a view to increasing their wealth without ostensibly working for it. Such "speculators" and "capitalists" are, of course, the bane of the left, and governments which are concerned to demonstrate a commitment to a more egalitarian distribution of wealth and income may well find the existence of a stock market an anathema. Of course, as most investors know very well, it is possible to lose as well as to make money on stock markets. Other governments may regard stock markets as a form of gambling, and ban them as they ban casinos or horse racing.
- 2/ Stock markets can encourage rash speculation both by individuals and institutions which, followed by collapse, can lead to the ruin of both, with consequent destabilizing effects on the national economy. Striking examples of such phenomena include Wall Street in the late 1920s, Hong Kong in 1973, and the unofficial market in Kuwait (Souq Al-Manaqh) in 1982.
- 3/ Although stock markets may allocate funds to the activities which are expected to show the greatest financial profit, these may well not be the most profitable from a national point of view, because markets and prices are seriously distorted in many developing countries. Therefore, the development of stock markets may lead to a deterioration in the allocation of resources, not an improvement.

3. EMPIRICAL ANALYSIS

3. EMPIRICAL ANALYSIS

Perhaps the most fruitful approach to examining the role of capital markets in economic development, after having surveyed the theoretical literature, is through the analysis of empirical data.

This section will present such an analysis based on relevant data of selected countries which has been compiled in various forms to support this study. In addition to this, a detailed discussion aimed at comparing the theory base with the empirical findings will also be included. The purpose I seek to fulfill is two-fold:

- 1) establishing the relationship between economic development and capital markets, particularly stock markets through empirical findings and supported by the theoretical literature,
- 2) examining what is the best condition under which such a relationship flourishes to benefit the economic well-being of a country.

3.1 ORGANIZED STOCK MARKETS OF SELECTED COUNTRIES

Before initiating any type of empirical analysis, it will be useful to examine the structure of stock markets in selected economically advanced and developing countries.

Like capital itself, organized stock markets are scarce in developing countries, however, even the early stock markets of lower Manhattan or old London town started from the curb to fancy buildings. These markets acquired rules of behavior and disclosure when it served the interests of the traders, when the number of traders and the volume of transactions made organization convenient, if not essential. Until there is a similar need, sophisticated capital markets are not likely to be very useful in Lusaka or Luanda.³³⁾ Nevertheless, many developing countries have organized stock markets, some of which have a tremendous economic bearing, both locally and internationally, i.e. Hong Kong's stock market.

3.1.1 Domestic and Foreign Companies

The number of listed domestic companies on organized stock exchanges in both developed and emerging (developing) markets have exhibited substantial growth during the decade of the 1980s, a period when most world economies expanded faster than in earlier decades. In the case of developed markets, the enlistment of domestic companies grew by 19 percent, during 1980-1989, but this was considerably overshadowed by the 91 percent increase recorded in emerging markets (Table 3.1). Latin America and Africa witnessed economic decline and regression rather than growth and development during the 1980s, consequently, domestic companies that went public in these countries reduced in number rather than increase, in most cases. Much of the contribution for the 91 percent growth witnessed in the emerging markets was by East and South Asian nations, such as India that witnessed rapid economic growth and a 1.6 fold increase in the number of domestic companies listed on the official stock exchange(s) between 1980 and 1989. Even in countries like Bangladesh, the growth was over four-fold.

In his paper "Money, Finance and Development",³⁴⁾ Drake argues that consideration should be given to the policy of requiring foreign corporations to issue some local equity in order to promote the development of securities markets in under-developed countries, the rationale being that such companies have more capability (financially) of going public than their domestic counterparts. Evidence in Malaysia and Singapore indicates that there is likely to be a very strong local demand for securities issued by

TABLE 3.1

NUMBER OF LISTED DOMESTIC COMPANIES 1980 - 1989

MARKET	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
<i>DEVELOPED MARKETS</i>										
Australia	1,007	982	931	930	1,009	1,028	1,162	1,528	1,303	1,335
Austria	66	63	62	62	63	64	74	69	74	81
Belgium	225	218	212	204	197	192	191	192	186	184
Canada	731	771	759	808	943	912	1,034	1,147	1,145	1,146
Denmark	218	219	206	211	231	243	274	277	291	257
Finland	...	...	...	48	52	50	49	49	66	78
France	586	568	535	518	504	489	482	650	646	668
Germany	459	456	450	442	449	472	492	507	609	628
Hong Kong	137	158	...	...	...	260	248	276	282	284
Israel	117	136	212	258	269	267	255	283	265	262
Italy	134	132	138	138	143	147	184	204	211	217
Japan	1,402	1,412	1,427	1,441	1,444	1,829	1,866	1,912	1,967	2,019
Luxembourg	74	80	88	102	134	175	253	364	422	493
Netherlands	214	202	216	215	263	232	219	248	232	313
New Zealand	...	...	...	...	237	317	339	361	297	242
Norway	117	109	112	113	140	156	149	146	130	122
South Africa	481	475	470	464	470	462	536	838	754	748
Singapore	103	103	112	118	121	122	122	127	132	136
Spain	496	490	448	394	375	334	312	327	368	423
Sweden	103	130	138	145	159	164	154	157	142	135
Switzerland	118	121	119	120	121	131	145	166	161	177
United Kingdom	2,655	2,403	2,279	2,217	2,171	2,116	2,106	2,135	2,054	2,015
United States	6,251	6,866	6,834	7,722	7,977	8,022	8,403	7,181	6,680	6,727
Developed Markets	15,694	16,094	15,748	16,670	17,472	18,184	19,049	19,144	18,417	18,690

EMERGING MARKETS

Argentina	278	263	248	238	236	227	217	206	186	178
Bangladesh	22	25	28	43	56	69	78	85	101	116
Brazil (Sao Paulo)	426	477	493	505	522	541	592	590	589	592
Chile	265	242	212	214	208	228	231	209	205	213
Cote d'Ivoire	...	...	193	196	180	102	99	96	86	82
Colombia	13	19	24	32	41	51	61	71	76	78
Costa Rica	22	23	25	25	25	25	25	25	24	...
Egypt (Cairo)	62	64	112	154	258	317	387	430	483	...
Greece	116	111	113	113	114	114	114	116	119	...
India (Bombay)	2,265	2,114	3,358	3,118	3,882	4,344	4,744	5,560	5,841	119
Indonesia	6	8	14	19	24	24	24	24	24	6,000
Jamaica	38	36	35	36	36	38	40	43	44	61
Jordan	71	72	86	95	103	104	103	101	106	45
Kenya	54	55	54	54	54	54	53	53	55	106
Korea	352	343	334	328	336	342	355	389	502	57
Kuwait	...	...	...	...	...	55	70	64	65	626
Malaysia	182	187	194	204	217	222	223	232	238	52
Mexico	259	229	206	163	160	157	155	190	203	251
Morocco	78	75	78	76	77	76	76	76	71	203
Nigeria	90	93	93	93	93	96	99	100	102	71
Pakistan	314	311	326	327	347	362	361	379	404	111
Peru	103	133	144	150	157	159	177	197	236	440
Philippines	195	190	200	208	149	138	130	138	265	265
Portugal	25	23	26	25	23	24	63	143	141	144
Sri Lanka	...	...	...	...	...	171	171	168	171	182
Taiwan, China	102	107	113	119	123	127	130	141	163	...
Thailand	77	80	81	88	96	100	98	125	141	181
Trinidad and Tobago	...	29	34	34	36	36	33	33	175	175
Turkey	...	...	314	...	373	...	40	50	33	31
Uruguay	54	50	49	47	43	43	41	41	50	50
Venezuela	...	...	98	...	116	108	108	110	40	39
Zimbabwe	62	62	62	60	56	55	53	53	60	60
Emerging Markets	5,531	5,421	7,347	6,764	8,141	8,509	9,151	10,238	10,788	10,582
WORLD TOTAL	21,225	21,515	23,095	23,434	25,613	26,693	28,200	29,382	29,205	29,272

SOURCE:
INTERNATIONAL FINANCE CORPORATION (IFC). EMERGING STOCK MARKETS FACTBOOK. 1990.

first-class international firms. Table 3.2 is a compilation of data on the number of companies (both domestic and foreign) with equity shares listed on FIBV exchanges (see appendix for further details on Federation Internationale Des Bourses De Valeurs [FIBV]). The data is divided in two parts: one for the period 1975-1979 (a) and the other for the period 1983-1988 (b). In the case of the 70s period, the stock exchanges of Basle, Brussels, Geneva, Zurich, Luxembourg and Association of German (Hamburg Bourse) all recorded growth in the number of foreign companies with equity shares listed on their respective exchanges. On the other hand, emerging stock exchanges of Buenos Aires, Korea, Mexico, Rio de Janeiro, Sao Paulo and the like either had only one foreign company listed or none for the whole of the period. One reason behind this is the fact is that possibly, in the case of developing countries, most foreign companies either willfully or forcefully have a local identity, i.e. joint ventures between foreign and local companies. Hence, even these companies were registered as local. Overall, the number of foreign companies on FIBV exchanges of the developing countries increased only 7 percent in between 1975 and 1979. Within the context of the difficult economic environment and rigid financial systems that were prevailing at the time the limited growth is not at all surprising.

In the 1980s period, particularly after 1982, world economic growth picked up, alongside deregulation and technological improvement in global finance. This lowered many barriers and consequently, the number of foreign companies between 1983 and 1988 grew nearly 40 percent. Again, it was primarily the stock exchanges in developed countries that recorded most of the growth: Amsterdam, Basle, Association of German, London, New York, Tokyo and Zurich among others.

3.1.2 Value Traded and Market Capitalization

The value of stock traded and stock market capitalization are both considered significant barometers of stock market health, although they are usually used in conjunction with other economic indicators such as gross national product (GNP) or money supply (M1). Such an analysis will be conducted later in the report; for now, value traded and market capitalization will be examined in terms of their growth and concentration in developed and emerging markets.

The value of shares traded in both the developed and emerging markets (as listed in Table 3.3) between 1980 and 1989 grew a phenomenal nine fold, with much of the increase occurring after 1982. There is no doubt that the extensive financial deregulation that took place around the world is largely attributed for this growth, primarily in the developed markets. In 1989, the developed markets accounted for more than 84 percent of the total value of traded shares, while the growth rate in value traded between 1980 and 1989 was nearly seven-fold. Meanwhile, the emerging markets share in the total value traded grew from 3.2 percent in 1980 to over 15 percent in 1989. However, the growth in the value traded during this period was astounding, almost forty-eight fold.

The growth in stock market capitalization in comparison has not been as explosive in either developed or emerging markets, but nevertheless, expansion has been considerable. Market capitalization for both developed and emerging markets grew by over three fold between 1980 and 1989, with developed markets accounting for nearly 95 percent of world market capitalization (Table 3.4). Meanwhile, market capitalization grew six fold in the emerging markets between 1980 and 1989, primarily due to the rapid development of stock markets in the Asian economies.

TABLE 3.2

(a)

(1)

NUMBER OF COMPANIES WITH EQUITY SHARES LISTED ON FIBV EXCHANGES: [1975 - 1979]

Exchange	AS OF DECEMBER 31, 1975			AS OF DECEMBER 31, 1976			AS OF DECEMBER 31, 1977			AS OF DECEMBER 31, 1978			AS OF DECEMBER 31, 1979		
	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign
American	1,215	1,147	68	1,161	1,141	20	1,105	1,043	62	1,004	944	60	931	872	59
Amsterdam	565	242	323	552	234	318	549	231	318	541	229	312	516	216	300
Assoc. of Australian (2)	1,343	1,319	24	1,252	1,229	23	1,216	1,185	31	1,143	1,116	27	1,037	1,011	26
Barcelona	465	465	0	489	489	0				510	510	0	464	464	0
Basle (3)	217	96	121	228	93	135	222	81	141	231	83	148	254	102	152
Brussels	439	290	149	427	277	150	403	253	150	391	239	152	385	231	154
Buenos Aires	322	321	1	309	308	1	296	295	1	296	295	1	296	295	1
Copenhagen	252	248	4	251	247	4	249	245	4	235	231	4	228	224	4
Assoc. of German	600	471	129	604	469	135	610	465	145	628	459	169	627	458	169
Geneva	226	87	139	232	88	144	0			254	99	155	269	98	171
Hong Kong	155	136	19	153	134	19	149	130	19	147	130	17	151	133	18
Johannesburg	605	577	28	574	545	29	575	547	28	535	507	28	518	491	27
Korea	...	...	...	...	...	...	...	...	...	...	...	...	355	355	0
London	3,190	2,820	370	2,938	2,568	370	3,232	2,853	379	3,169	2,795	374	3,098	2,722	376
Luxembourg	142	76	66	142	73	69	141	73	68	154	68	86	158	69	89
Madrid	479	476	3	533	530	3	522	519	3	527	524	3	518	515	3
Mexico	369	369	0	410	410	0	0			349	349	0	364	364	0
Milan	153	152	1	155	154	1	155	154	1	143	142	1	139	138	1
Montreal	656	623	33	574	548	26	517	491	26	463	438	25	431	407	24
New York	1,557	1,523	34	1,576	1,539	37	1,575	1,539	36	1,581	1,545	36	1,565	1,529	36
Osaka	988	988	0	988	988	0	993	993	0	987	987	0	997	997	0
Paris	884	724	160	845	685	160	834	674	160	792	630	162	756	595	161
Rio de Janeiro (4)	202	202	0	202	202	0	200	200	0	201	201	0	80	80	0
Rome	87	87	0	86	86	0	87	87	0	76	76	0	...	...	...
Sao Paulo	...	...	...	...	...	...	...	...	...	...	...	...	404	404	0
Stockholm	101	101	0	98	98	0	96	96	0	94	94	0	96	96	0
Tehran	54	54	0	60	60	0	85	85	0	106	106	0	...	...	...
Tel Aviv	...	...	...	...	...	...	...	...	...	...	...	...	108	107	1
Tokyo	1,414	1,398	16	1,418	1,401	17	1,422	1,407	15	1,404	1,389	15	1,413	1,398	15
Toronto	941	865	76	905	833	72	885	813	72	821	750	71	799	727	72
Vienna	103	76	27	103	74	29	100	71	29	101	68	33	101	67	34
Zurich	228	104	124	233	106	127	258	116	142	266	116	150	271	117	154

(1)

Dually listed stocks may appear on more than one exchange.

(2)

For months ending June 30.

(3)

Does not include investment trusts.

(4)

According to the rules of the Rio De Janeiro Stock Exchange, all companies listed in the "Nat'l Register" of the National Commission of Stock Exchanges are automatically accepted for trading. The number of Registered companies is 603.

Source:

Federation Internationale Des Bourses De Valeurs, FIBV Statistical reports 1975 - 1979.

(b)

NUMBER OF COMPANIES WITH EQUITY SHARES LISTED ON FBV EXCHANGES: 1983 – 1988

Exchange	1983			1984			1985			1986			1987			1988		
	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign
American	822	774	48	792	743	49	783	737	46	796	747	49	866	815	51	895	840	55
Amsterdam	471	215	256	563	474	300	471	232	242	509	267	242	453	226	227	460	232	228
Assoc. Australian (1)	948	930	18	1,027	1,009	18	1,054	1,028	26	1,193	1,162	31	1,467	1,427	40	1,429	1,393	36
Basle	262	100	162	277	103	174	291	109	182	294	102	192	456	240	216	474	249	225
Barcelona	374	374	...	375	375	...	353	353	...	324	324	...	314	314	...	322	322	...
Brussels	342	204	138	337	197	140	336	192	144	331	191	140	337	192	145	337	186	151
Buenos Aires	238	237	1	236	235	1	227	226	1	217	216	1	206	205	1	194	183	1
Copenhagen	215	211	4	236	231	5	249	243	6	281	274	7	277	269	8	267	260	7
Assoc. of German	615	442	173	623	449	174	649	472	177	673	492	181	983	574	409	1,083	609	474
Geneva (2)	286	105	181	301	110	191	310	113	197	329	122	207	360	135	225	372	142	230
Helsinki	48	48	...	52	52	...	51	50	1	52	49	3	52	49	3	69	66	3
Hong Kong	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Johannesburg	489	464	25	495	470	25	488	462	26	562	536	26	761	734	27	783	754	29
Korea	328	328	...	336	336	...	342	342	...	355	355	...	389	389	...	502	502	...
Kuala Lumpur	271	204	67	282	218	64	283	222	61	287	226	61	291	232	59	295	238	57
London (3)	2,732	2,217	515	2,753	2,171	582	2,688	2,116	572	2,685	2,101	584	2,658	2,061	597	2,580	1,993	587
Luxembourg (4)	253	102	151	291	134	157	327	175	152	421	253	168	518	347	171	594	422	172
Madrid	394	394	...	375	375	...	334	334	...	312	312	...	328	328	...	369	369	...
Mexico	174	174	...	178	178	...	188	188	...	184	184	...	204	204	...	211	211	...
Milan (5)	139	139	...	143	143	...	147	147	...	184	184	...	204	204	...	211	211	...
Montreal	417	400	17	443	425	18	490	471	19	642	622	20	738	714	24	735	709	26
New York	1,550	1,500	50	1,543	1,490	53	1,541	1,487	54	1,536	1,516	20	1,647	1,580	67	1,681	1,604	77
New Zealand	...	...	...	298	237	61	398	317	82	489	339	130	467	289	178	391	235	156
Osaka	1,013	1,013	...	1,023	1,023	...	1,036	1,036	...	1,050	1,050	...	1,070	1,070	...	1,091	1,091	...
Oslo	119	113	6	146	140	6	163	156	7	155	149	6	146	139	7	134	128	6
Paris	697	518	179	683	504	179	678	489	189	677	482	195	683	481	202	676	459	217
Rio De Janeiro	593	593	...	601	601	...	616	616	...	658	658	...	648	648	...	630	630	...
Sao Paulo	506	506	...	522	522	...	541	541	...	592	592	...	590	590	...	589	589	...
Singapore	301	118	183	308	121	187	316	122	194	317	122	195	321	127	194	326	132	194
Stockholm	150	145	5	165	159	6	171	164	7	181	154	7	157	150	7	151	142	9
Tel Aviv	260	259	1	270	269	1	268	267	1	256	255	1	269	268	1	266	265	1
Tokyo	1,452	1,441	11	1,455	1,444	11	1,497	1,476	21	1,551	1,499	52	1,620	1,532	88	1,683	1,571	112
Toronto	872	808	64	933	878	55	966	912	54	1,085	1,034	51	1,208	1,147	61	1,214	1,147	67
Vienna (6)	98	62	36	100	63	37	102	64	38	113	74	39	118	75	43	124	80	44
Zurich	284	120	164	296	121	175	315	131	184	339	145	194	363	153	210	380	161	219

(1) Australian Associated Stock Exchanges; From 1985 onwards statistics exclude companies of government and semi-government authorities that have equity shares listed on the Exchange, which are included in past statistics.

(2)	1983	1984	1985	1986	1987	1988
Total stocks:	352	387	392	417	476	482
Domestic	161	165	181	199	242	240
Foreign	191	202	211	218	234	242

(3) Data include some companies that have only fixed interest securities listed. Irish companies are included in foreign category.

(4)

Data include investment funds as follows:

	Total	Domestic Funds	Foreign Funds
1983	109	70	39
1984	140	99	41
1985	168	137	31
1986	238	206	32
1987	326	298	30
1988	397	370	27

(5)

Excludes shares of 10 suspended companies (1983 & 1984); 21 in 1985, 18 in 1986; 20 in 1987.

(6)

Data include investment funds.

Source:

Federation Internationale Des Bourses De Valeurs, FIBV Statistical reports: 1983, 1983-1984, 1986 & 1988.

TABLE 3.3

VALUE TRADED 1980 - 1989

(millions of U.S. dollars)

MARKET	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
DEVELOPED MARKETS										
Australia	9,556	7,935	5,123	9,320	10,654	15,736	26,871	58,860	37,412	44,786
Austria	105	84	73	133	114	686	1,393	9,754	2,026	11,706
Belgium	838	643	1,062	1,432	1,575	1,876	4,343	7,148	8,369	7,708
Canada	28,211	23,430	16,411	28,444	25,822	39,905	56,810	75,189	66,654	70,173
Denmark	58	59	56	181	173	1,274	1,866	1,913	5,106	14,463
Finland	...	...	138	249	417	502	1,869	6,047	7,076	7,363
France	10,118	8,403	7,328	8,345	7,690	14,672	51,548	88,085	65,505	107,286
Germany	15,248	13,670	14,490	32,949	29,764	71,572	135,700	373,428	350,274	628,630
Hong Kong	19,226	18,959	7,615	5,116	6,243	9,732	15,299	47,627	23,405	34,584
Israel	2,447	5,210	6,650	10,284	735	748	1,455	4,828	2,447	3,909
Italy	8,574	10,850	2,787	3,872	4,065	13,782	44,715	32,379	31,721	38,926
Japan	160,931	223,835	146,844	230,906	286,182	329,970	1,145,615	2,047,224	2,597,637	2,800,695
Luxembourg	...	...	17	17	22	36	109	111	259	186
Netherlands	5,099	3,978	4,837	10,182	12,274	16,864	31,122	39,542	34,555	89,848
New Zealand	...	...	...	...	653	935	2,526	2,643	259	3,027
Norway	84	101	96	962	1,350	1,877	1,702	8,935	34,555	12,489
South Africa	5,129	2,837	2,575	3,752	2,528	2,836	4,990	9,568	1,124	7,095
Singapore	3,654	6,377	2,419	5,588	3,849	1,383	2,679	6,854	4,849	13,711
Spain	981	1,622	1,380	1,300	2,465	3,382	14,944	36,070	4,947	38,389
Sweden	1,796	3,669	4,614	9,847	8,496	9,644	19,830	19,588	25,608	17,420
Switzerland	35,791	32,542	32,676	42,544	48,857	68,417	132,912	389,829	18,752	320,268
United Kingdom	409,816	415,760	508,144	797,123	786,204	997,189	1,795,998	2,423,066	1,719,731	2,015,544
United States										
Developed Markets	717,662	779,964	765,335	1,202,546	1,240,132	1,603,018	3,494,296	5,688,688	5,042,271	6,288,206

EMERGING MARKETS

Argentina	1,089	454	231	389	277	631	309	251	593	1,961
Bangladesh	...	...	...	...	0.40	1	2	6	4	5
Brazil (Sao Paulo)	5,313	6,230	5,961	4,887	9,962	21,484	28,912	9,608	17,979	16,762
Chile	548	375	163	65	51	57	298	503	610	866
Cote d'Ivoire	187	332	93	65	47	30	49	80	63	74
Columbia	...	...	...	...	0.20	0.30	0	1	1	4
Costa Rica	6	7	48	2	1	1	3	14	9	...
Egypt (Cairo)	16	13	12	32	132	97	180	167	115	...
Greece	86	55	37	17	12	17	32	441	313	549
India (Bombay)	2,670	7,386	5,030	2,377	3,916	4,959	10,781	6,743	12,241	17,362
Indonesia	9	12	19	11	2	3	1	3	4	541
Jamaica	3	2	6	5	7	21	68	73	25	90
Jordan	139	227	318	329	138	163	185,185	420	337	652
Kenya	...	...	...	...	...	...	...	...	...	...
Korea	1,867	3,721	2,700	2,260	3,869	4,162	10,889	24,919	79,180	121,264
Kuwait	...	...	...	...	...	387	1,412	3,023	2,543	1,709
Malaysia	2,572	3,498	1,392	3,398	2,226	2,335	1,180	3,829	2,623	6,888
Mexico	3,262	4,181	781	1,112	2,160	2,360	3,841	15,554	5,732	6,232
Morocco	...	...	10	17	16	13	9	8	33	...
Nigeria	14	10	12	18	16	15	16	7	5	4
Pakistan	...	...	...	...	180	236	155	162	177	193
Peru	134	79	41	26	28	38	239	301	57	90
Philippines	619	163	142	483	125	111	563	1,524	875	2,410
Portugal	2	2	1	1	3	5	60	1,518	1,136	1,912
Sri Lanka	...	...	...	...	...	3	5	11	12	...
Taiwan, China	4,503	5,677	3,422	9,081	8,194	4,899	18,931	84,112	275,624	965,840
Thailand	308	108	238	381	434	568	1,131	4,633	5,598	13,452
Trinidad and Tobago	...	19	232	151	76	61	52	25	22	69
Turkey	...	...	...	10	7	...	13	115	101	798
Uruguay	21	11	3	1	0.40	0.40	2	4	...	1
Venezuela	60	47	82	59	27	31	52	148	221	93
Zimbabwe	154	136	75	38	6	9	12	23	39	36
Emerging Markets	23,582	32,745	21,049	25,215	31,913	42,698	264,382	158,226	406,272	1,159,857
WORLD TOTAL	741,244	812,709	786,384	1,227,761	1,272,045	1,645,716	3,758,678	5,846,914	5,448,543	7,448,063

SOURCE:
INTERNATIONAL FINANCE CORPORATION (IFC), EMERGING STOCK MARKETS FACTBOOK, 1990.

TABLE 3.4

MARKET CAPITALIZATION 1980 - 1989

(millions of U.S. dollars)

MARKET	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
<i>DEVELOPED MARKETS</i>										
Australia	59,700	54,400	41,500	59,600	49,900	59,877	94,035	171,783	183,483	136,626
Austria	2,000	1,600	1,500	1,500	1,500	4,602	6,656	7,411	8,862	22,261
Belgium	10,000	8,400	8,500	10,800	12,200	20,871	37,337	41,377	58,920	74,596
Canada	118,300	105,500	103,500	140,600	134,700	147,000	166,300	218,817	241,880	291,328
Denmark	5,400	6,200	5,500	10,600	7,600	15,096	16,284	20,181	30,178	40,152
Finland	...	...	2,759	4,134	4,167	5,855	11,692	19,698	30,179	30,652
France	54,600	38,100	28,000	38,100	41,100	79,000	149,500	172,048	244,833	364,841
Germany	71,700	62,600	68,900	82,600	78,400	183,765	257,677	213,166	251,777	365,176
Hong Kong	39,104	38,912	18,784	17,095	23,602	34,504	53,789	54,088	74,377	77,496
Israel	4,828	6,972	15,894	5,083	6,120	7,626	9,884	12,001	5,458	8,227
Italy	25,300	24,000	19,900	20,900	25,700	58,502	140,249	119,559	135,428	169,417
Japan	379,679	417,943	417,405	545,848	644,412	948,263	1,842,916	2,802,956	3,906,681	4,392,597
Luxembourg	4,017	4,457	4,686	5,799	6,648	12,658	26,163	38,277	44,808	79,979
Netherlands	29,300	23,000	25,700	33,700	31,100	59,363	83,714	86,240	113,565	157,789
New Zealand	...	...	...	...	6,161	8,761	22,215	15,713	13,163	13,487
Norway	3,190	3,334	2,396	4,597	5,793	10,063	10,122	11,818	14,332	25,285
South Africa	100,000	74,900	77,800	82,800	53,400	55,439	102,652	128,663	126,094	131,059
Singapore	24,418	34,808	31,235	15,525	12,247	11,069	16,620	17,931	24,049	35,925
Spain	16,600	16,700	11,100	10,900	13,200	19,000	48,922	71,188	174,869	122,652
Sweden	12,900	17,200	18,600	30,200	25,700	37,296	63,345	70,564	100,083	119,285
Switzerland	37,600	35,200	36,800	42,500	38,700	90,000	132,400	128,527	140,527	104,239
United Kingdom	205,200	180,600	196,200	225,800	242,700	328,000	439,500	680,721	771,206	826,598
United States	1,448,120	1,333,385	1,520,167	1,898,063	862,945	2,324,646	2,636,598	2,588,890	2,793,816	3,505,686
Developed Markets	2,651,956	2,488,211	2,656,826	3,286,744	2,327,995	4,521,256	6,368,570	7,691,617	9,488,568	11,095,353

EMERGING MARKETS

Argentina	3,864	2,056	974	1,386	1,171	2,037	1,591	1,519	2,025	4,225
Bangladesh	27	30	34	48	87	113	186	405	430	476
Brazil (Sao Paulo)	9,160	12,598	10,249	15,102	28,995	42,768	42,096	16,900	32,149	44,368
Chile	9,400	7,050	4,395	2,599	2,106	2,012	4,062	5,341	6,849	9,587
Cote d'Ivoire	344	274	321	248	237	302	332	458	437	...
Columbia	1,605	1,399	1,322	875	762	416	822	1,255	1,145	1,136
Costa Rica	...	...	...	118	156	195	246	...	...	...
Egypt (Cairo)	246	216	654	1,106	1,691	1,382	1,716	1,826	1,760	...
Greece	3,016	2,266	1,923	984	766	765	1,129	4,464	4,285	6,376
India (Bombay)	7,585	11,802	11,497	8,510	8,018	14,364	13,588	14,480	23,845	27,316
Indonesia	63	74	144	101	85	117	81	68	253	2,514
Jamaica	54	127	177	113	142	266	536	631	796	957
Jordan	1,605	2,457	2,845	2,713	2,188	2,454	2,839	2,643	2,233	2,162
Kenya	...	...	...	...	...	...	...	...	474	...
Korea	3,829	4,224	4,408	4,387	6,223	7,381	13,924	32,905	94,238	140,946
Kuwait	...	...	...	...	...	...	10,108	14,196	11,836	9,932
Malaysia	12,395	15,300	13,903	22,798	19,401	16,229	15,065	18,531	23,318	39,842
Mexico	12,994	10,100	1,719	3,004	2,197	3,185	5,952	8,371	446	22,550
Morocco	441	377	292	253	236	255	279	357	960	621
Nigeria	3,118	3,010	1,458	2,970	3,191	2,743	1,112	974	2,460	1,005
Pakistan	643	864	877	1,162	1,226	1,370	1,710	1,960	...	2,457
Peru	...	1,371	685	546	397	760	2,322	831	4,280	...
Philippines	3,478	1,738	1,981	1,389	834	669	2,008	2,948	7,172	11,965
Portugal	191	156	92	84	73	192	1,530	8,857	471	10,618
Sri Lanka	...	...	...	...	...	365	421	608	120,017	...
Taiwan, China	6,082	5,312	5,086	7,599	9,889	10,423	15,367	48,634	8,811	237,012
Thailand	1,206	1,003	1,260	1,488	1,720	1,856	2,878	5,485	268	25,648
Trinidad and Tobago	...	1,175	1,357	1,011	843	463	347	388	1,135	411
Turkey	477	511	952	968	956	...	935	3,221	24	6,783
Uruguay	189	60	24	9	9	15	35	40	1,816	...
Venezuela	2,657	2,441	2,415	2,792	...	1,128	1,510	2,278	774	1,156
Zimbabwe	1,456	...	355	265	176	360	410	718	...	1,067
Emerging Markets	86,125	87,991	71,399	84,608	93,775	114,585	145,137	201,292	354,707	611,130
WORLD TOTAL	2,738,081	2,576,202	2,728,225	3,371,352	2,421,770	4,635,841	6,513,707	7,892,909	9,843,275	11,706,483

SOURCE:
INTERNATIONAL FINANCE CORPORATION (IFC). EMERGING STOCK MARKETS FACTBOOK. 1990.

Why did most of the emerging markets record such extra ordinary growth rates in their respective stock market capitalization and value of traded stock between 1980 and 1989? Since the mid-1970s, most less-developed nations began to implement economic policies to raise the rate of private domestic voluntary saving more efficiently through the development and effective use of capital markets, particularly stock markets. However, it was not until after 1982 that this development process took off. In the economically advanced countries, on the other hand, capital markets had begun to rapidly develop soon after the Second World War, and consequently, over time, the stock markets of these countries are well diversified, within an overall complex and sophisticated financial system.

Many of the developing countries are still at the infancy stage of their stock market development process and this is clearly evidenced when comparing the market concentration of the share of market capitalization held by the ten largest stocks and the share of value traded held by the ten most active stocks in selected developed and emerging markets (Table 3.5). In Latin America, the share of market capitalization held by the ten largest stocks in Argentina's stock market was over 67 percent at the end of 1989, while the share of value traded held by the ten most active stocks was over 83 percent. Similarly, concentrations are apparent in the case of Chile, Columbia and Venezuela. In the Europe/ Mideast/ Africa regions, market concentration of market capitalization and value traded are also high for the selected countries, particularly in Turkey. Stock markets where such high concentration's of either stock market capitalization or value traded exist, are generally dominated by a limited number of companies. This is typical of developing countries where most of the local firms lack the necessary resources to go public, hence, only a handful manage to have their equity shares listed.

In comparison the share of stock market capitalization held by the ten largest stocks at the end of 1989 in the developed markets does not exceed 25 percent, with the exception of Germany and Switzerland. This suggests that these stock markets are well diversified in terms of the number of participants and thereby are much more active, although no data is available on the market concentration of the value traded.

3.2 SAVING, GROWTH AND FINANCIAL DEEPENING

Having discussed the concept of financial deepening at some length in the theory base, it can be reasonably concluded that this is an important variable to consider when analyzing the link between financial development and economic growth. A suitable starting point would then be to examine financial depth indicators of selected countries within the context of the prevailing saving and growth trends.

Savings determine the rate at which productive capacity, hence income, can grow and as was mentioned earlier, on average, the rapidly growing developing countries have had higher saving rates than slower growing countries. Table 3.6 shows the saving and growth trends in developing countries between 1965 and 1987. High growth countries with over a 7 percent increase in their gross domestic product (GDP) recorded higher savings (as measured by the gross national savings (GNS) to GDP ratio) than their lower growth counterparts (GDP increases of less than 3 percent). Consequently, we witness greater expansion in productive capacity (gross investment/GDP) which will then boost income in the higher growth countries. A relationship can then be derived between savings, growth and financial deepening; if the savings rates is faster in high growth countries, and this in turn leads to greater productive capacity and income, one would then expect these combined factors to provide a considerable impetus for the financial system's development. And if this is the case, then financial deepening should be a natural consequence, *ceteris paribus*.

TABLE 3.5

MARKET CONCENTRATION (a)

(Percentage of Total)

MARKET	Share of market capital- lization held by ten largest stocks, end 1989	Share of value traded held by ten most active stocks, 1989
LATIN AMERICA		
Argentina	67.7	83.5
Brazil	22.5	31
Chile	47.2	67.1
Columbia	71.7	61.5
Mexico	36.3	44.6
Venezuela	65.4	71.5
EAST ASIA		
Korea		
Philippines	19.2	22.7
Taiwan, China	32.1	32.7
	38	16.6
SOUTH ASIA		
India	20.8	47.3
Malaysia	37.7	16.2
Pakistan	19.3	18.2
Thailand	35.4	35.8
EUROPE / MIDEAST / AFRICA		
Greece	53.1	65.9
Jordan	61.3	50.9
Nigeria	51.6	31.5
Portugal	43.4	37.3
Turkey	60.1	74.8
Zimbabwe	45.9	64.3
DEVELOPED MARKETS		
Canada	24.2	...
France	24.5	...
Germany	41.9	...
Japan	19.5	...
Switzerland	48.9	...
U. K.	21.9	...
U. S. A.	13.7	...

(a)

Stocks in the IFC Composite Index (see appendix), relative to the total stock market.

For the developed markets, the data is from Morgan Stanley-Capital International.

SOURCE:

INTERNATIONAL FINANCE CORPORATION (IFC), EMERGING STOCK MARKETS FACTBOOK, 1990.

To test this relationship, data was compiled on selected countries to examine their respective saving, growth and financial depth indicators for 1987 (Table 3.6 and 3.7). Countries selected are divided into low-, middle- and high-income economies based on their respective GNP per capita. In Table 3.7 we can see that low-income countries such as Malawi, which also recorded the lowest growth rate within its group, had equally low savings and investment rates, while middle-income countries like Malaysia, had not only an 8 percent real GDP growth, but also among the highest savings and investment rates. There are some discrepancies, however, in cases like Brazil where the real growth rate was -0.3 percent, but the saving rate was still considerably high. In the high income economies, Japan's high savings rate also has a tremendous social bearing as the average Japanese has conservative spending habits.

Table 3.8 lists the ratio of liquid liabilities (M3) to GNP (a measure of financial depth) for the same countries for 1987. Generally, the higher the income of a country, the greater the ratio of M3/GNP, which in turn indicates that the financial system is deepening. Among the middle- low-income economies listed, Malaysia has the highest GNP per capita and the highest M3/GNP ratio. Similarly, among the high-income countries, Japan has the highest GNP per capita and a relatively high M3/GNP ratio.

Of course, the relationship between high income and financial deepening is not wholly consistent when examining all the countries. In Kuwait, for example, the financial deepening ratio is unusually high compared to the country's GNP per capita. This is largely attributable to the phenomenal growth recorded in the country's petrodollars reserves which occurred during the oil price shocks. Similar, inconsistencies are also evident in some of the other countries.

The relationship between financial deepening and income only becomes clearer when the data in Table 3.8 is plotted graphically, (Figure 3.1). By drawing a line of best fit through the points shown in the graph, a positive relationship between GNP per capita and the M3/GNP ratio becomes apparent.

Another useful indicator which can be used in the empirical analysis and which will supplement the results achieved so far, is the ratio of M2/gross domestic produce. Generally, the faster growing countries have a higher M2/GDP ratio than slower growing ones, which again indicates financial deepening. Using the same countries as in the previous two tables the ratio of M2/GDP was calculated (Table 3.9). In all except the high-income economies, countries with high real growth rates have correspondingly high M2/GDP ratios. Again this relationship becomes clearer when the data is plotted graphically, (Figure 3.2).

TABLE 3.6

SAVING AND GROWTH IN DEVELOPING COUNTRIES, 1965 TO 1987

Country Group by GDP Growth Rate	Gross Nat'l Saving / GDP	Investment / GDP	Gross M 2 / GDP
High Growth (Over 7 Percent)			
Seven Countries	28.0%	28.6%	*
Excluding China	23.2%	26.7%	43.0%
			n.d.
Medium Growth (3-7 Percent)			
Fifty-one Countries	18.5%	22.6%	31.2%
Low Growth (Less than 3 Percent)			
Twenty-two Countries	19.0%	19.0%	23.8%

NOTE:

DATA ARE WEIGHTED AVERAGES TIMES 100 AND ARE BASED ON A SAMPLE OF EIGHTY DEVELOPING COUNTRIES.

*

BECAUSE OF THE LACK OF DATA, AVERAGE IS FOR 1977-87 ONLY.

SOURCE:

IMF, INTERNATIONAL FINANCIAL STATISTICS, AND WORLD BANK DATA: THE WORLD BANK, WORLD DEVELOPMENT REPORT, 1989.

TABLE 3.7

SAVING AND GROWTH TRENDS (1987)

(%)	Gross Domestic Saving / GDP	Gross Investment / GDP	GNP Per Capita (US \$)	Real GDP Growth Rate
Low Income Economies				
Malawi	12.0%	13.9%	171	3.0%
India	22.0%	25.6%	327	4.4%
Sri Lanka	n.a.	23.3%	389	4.3%
Indonesia	29.0%	26.3%	408	3.6%
Middle - Income Economies				
A. Lower-Middle-Income Economies :				
Thailand	26.0%	23.8%	892	7.1%
Mexico	17.0%	18.6%	1,024	n.a.
Malaysia	37.0%	24.0%	1,828	8.1%
B. Upper-Middle-Income Economies:				
Brazil	23.0%	15.3% *	2,020	-0.3%
Venezuela	25.0%	24.3%	2,642	3.0%
Republic of Korea	38.0%	29.1%	2,961	3.6%
High - Income Economies				
Australia	22.0%	23.8%	11,936	4.7%
Kuwait (1)	n.a.	19.1%	14,610	n.a.
United States	13.0%	17.9% **	18,557	3.2%
Japan	34.0%	28.0%	22,900	3.9%

*
1984 FIGURE.

**
1986 FIGURE.

(1)
CLASSIFIED AS DEVELOPING COUNTRY ACCORDING TO THE IMF & THE WORLD BANK.

SOURCE:
IMF, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989; THE WORLD BANK, WORLD DEVELOPMENT REPORT, 1989.

TABLE 3.8

LIQUID LIABILITIES (M3) AS A %AGE OF GNP

	Gross Nat'l Product (US \$ bn)	GNP Per Capita (US \$)	Liquid Liabilities M 3 (US \$ bn)	M 3 / GNP (%)
<u>Low Income Economies</u>				
Malawi	1.28	171	0.38	29.7%
India	255.23	327	122.34	47.9%
Sri Lanka	6.37	389	2.51	39.5%
Indonesia	65.75	408	20.72	31.5%
<u>Middle - Income Economies</u>				
A. Lower-Middle-Income Economies :				
Thailand	47.83	892	34.72	72.6%
Mexico	83.10	1,024	26.50	31.9%
Malaysia	30.22	1,828	39.80	131.7%
B. Upper-Middle-Income Economies:				
Brazil (1)	28.54	2,020	44.60	156.3%
Venezuela	48.27	2,642	25.25	52.3%
Republic of Korea	123.10	2,961	62.10	50.4%
<u>High - Income Economies</u>				
Australia	193.96	11,936	n.a.	n.a.
Kuwait (2)	28.78	14,610	18.36	63.8%
United States	4,526.70	18,557	3,121.50	69.0%
Japan	2,795.89	22,900	4,938.11	176.6%

(1)

1985 FIGURE

(2)

CLASSIFIED AS DEVELOPING COUNTRY BY IMF AND WORLD BANK.

SOURCE:

IMF, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989.

FIG. 3.1
M 3 / GNP
The Linear Relationship

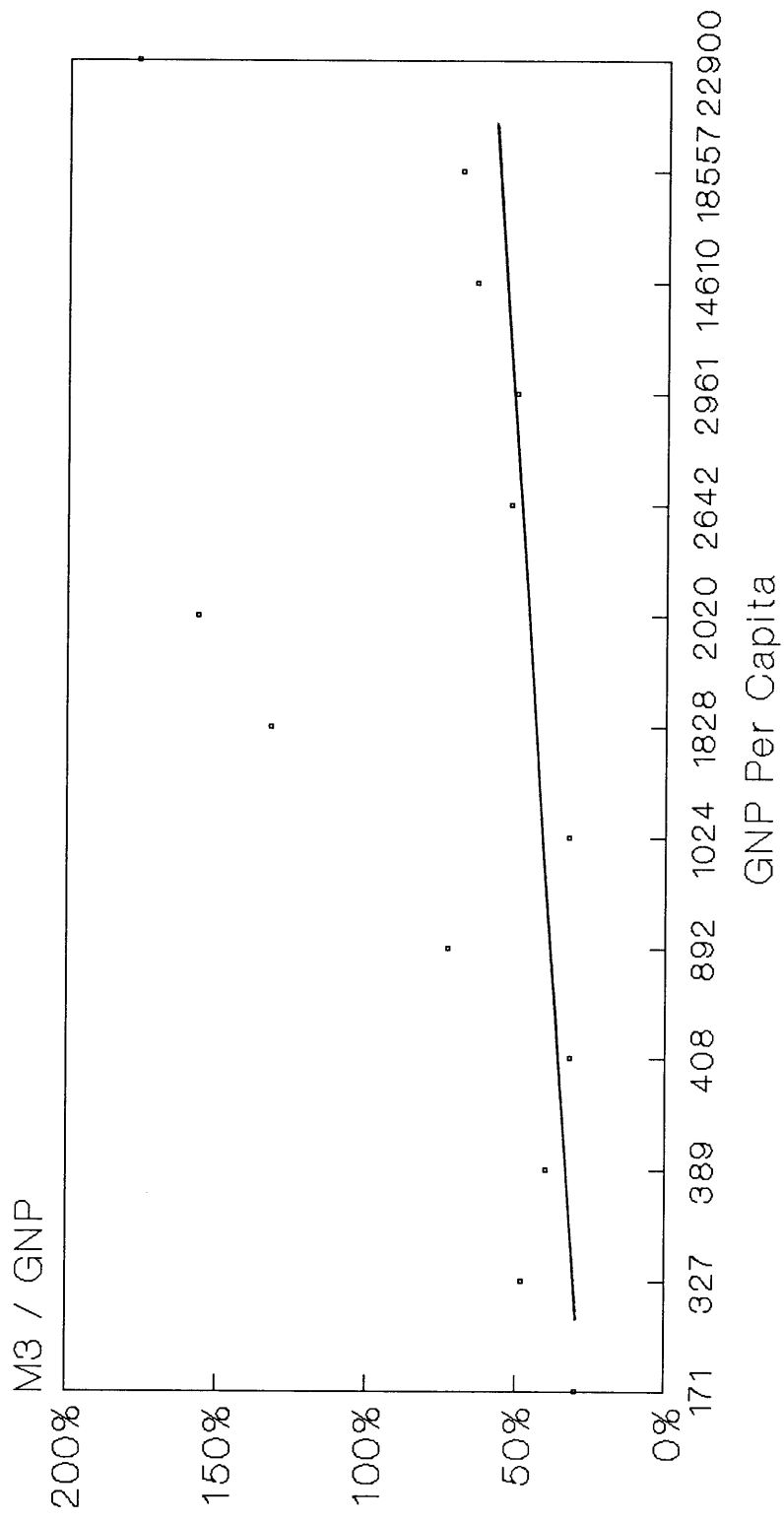


TABLE 3.9

M 2 AS A %AGE OF GDP (1987)

	Gross Domestic Product (US \$ bn)	M 2 (US \$ bn)	M 2 / GDP (%)	Real GDP Growth Rate (%)
<u>Low - Income Economies</u>				
Malawi	1.34	0.33	24.2%	3.0%
Sri Lanka	6.40	1.98	31.0%	4.3%
Indonesia	69.40	21.00	30.3%	3.6%
India	257.00	120.00	46.7%	4.4%
<u>Middle - Income Economies</u>				
A. Lower-Middle-Income Economies :				
Thailand	48.80	32.00	65.6%	7.1%
Mexico	87.30	23.80	27.3%	n.a.
Malaysia	32.30	22.61	70.0%	8.1%
B. Upper-Middle-Income Economies:				
Brazil (1)	164.49	19.37	11.8%	-0.3%
Venezuela	49.60	19.87	40.1%	3.0%
Republic of Korea	125.90	50.80	40.3%	3.6%
<u>High - Income Economies</u>				
Australia	200.80	90.70	45.2%	4.7%
Kuwait (1)	20.20	17.64	87.3%	16.0%
United States	4,497.20	2,810.90	62.5%	3.2%
Japan	2,779.00	3,018.00	108.6%	3.9%

(1)

CLASSIFIED AS DEVELOPING COUNTRY ACCORDING TO THE IMF & THE WORLD BANK.

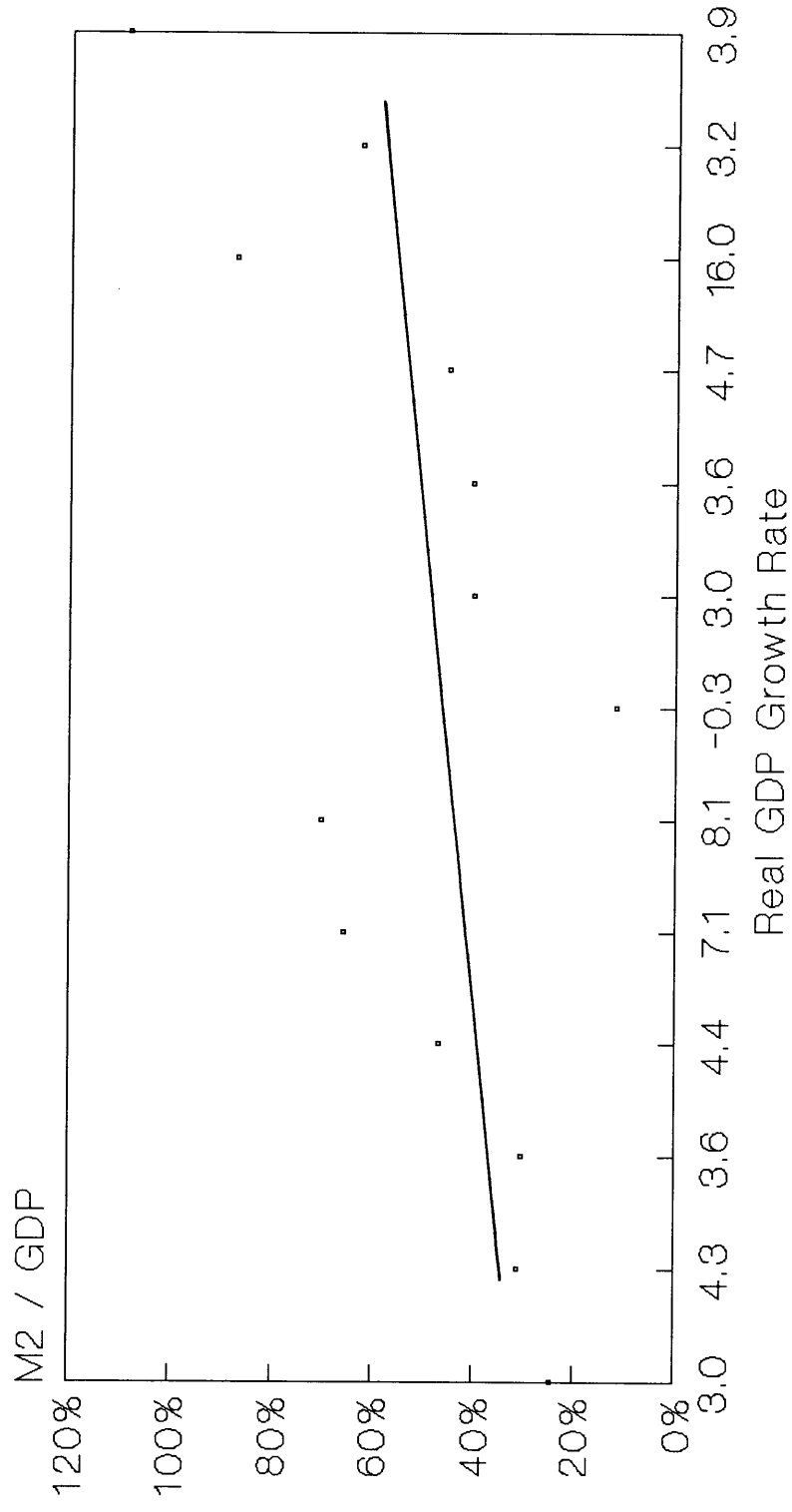
SOURCE:

IMF, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989.

FIG. 3.2

M 2 / GDP

The Linear Relationship



Summary

The relationship that I attempted to establish in 3.2 is straightforward.

Using empirical data of two sample countries from Tables 3.7, 3.8 and 3.9, the positive relationship between growth, saving and investment, income, and financial deepening as shown in the flowchart is obvious.

	Venezuela	Korea
Real GDP Growth	3.0%	3.6%
GDS / GDP (Savings)	25.0%	38.0%
GI / GDP (Investment)	24.3%	29.1%
GNP Per Capita (Income)	\$2,642m	\$2,961m
M3 / GNP	52.3%	50.4%
M2 / GDP	40.1%	40.3%

Apart from the M3/GNP ratio, a positive relationship does exist as shown in Figure 3.3.

3.3 THE LINK BETWEEN STOCK MARKET DEVELOPMENT AND ECONOMIC GROWTH

In the final part of the empirical analysis, cross-sectional and time-series correlation will be conducted for selected countries to examine if there is a statistical link between stock market development and economic growth.

In the theory base, it was quite clearly established that financial development proceeds concomitantly with economic development, with finance playing an increasingly important role. Although the benefits derived from financial sector sophistication vary in degree among the EAC's and the developing countries, there is no doubt that in any case there is some economic improvement.

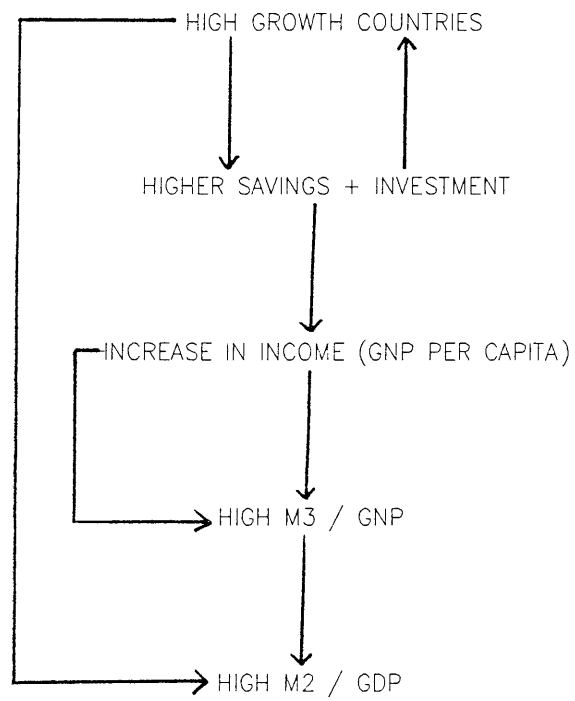
"A strategy of financial liberalization and development deepens the financial system and can be appropriately linked with complementary measures that reach beyond the system itself."

3.3.1 A Note on Correlation

Before beginning the analysis, a few words on the format of the tables are in order to help the reader. Through the aid of a computer, coefficient values and constants are computed for either the simple or multiple regression that ties one or more ranges of independent variables to a range of dependent variables. The statistical accuracy of these values is also computed. The regression analysis allows us to predict a value for a dependent variable based on other values for one or more independent variables. The Y-range corresponds to the dependent variable(s); in all cases more than one dependent variable is used. The X-range corresponds to the independent variables.

FIG. 3.3

GROWTH, SAVING & INVESTMENT, INCOME, AND FINANCIAL DEEPENING



The regression output terms are defined below:

Constant: This is the Y axis intercept and it appears as a constant in the results.

Standard Error of Y Estimate: This is the square root of the mean square error in the analysis of variance. R

Squared: This is the percentage of total variation in the dependent variable which is explained by the independent variable, otherwise called the coefficient of determination.

Degrees of Freedom: The general expression for this is $n-k$, where n is the number of observations and k is the number of constants that must be calculated from the sample data to estimate the variance of the sampling distribution.

X Coefficient(s): This represents the slope of the regression coefficients; the average change in the dependent variable for each unit change in the independent variables one at a time.

Standard Error of Coefficient(s): This represents the standard error of the regression slope. Generally, if the X coefficients (representing the mean) are more than double the standard error of the coefficient(s), we can state with 95 percent confidence that they represent a true population (or sample) figure.

3.3.2 Time-Series Correlation

In the time-series analysis a sample of eight countries (United States, Japan, India, Indonesia, Thailand, Mexico, Malaysia and Korea) from all income groups are used to conduct the correlation. Where possible, data has been compiled for the years 1975-1989 (a 15-year period), however, in most cases this was not possible and data has been used for years 1980-1989 (a nine-year period).

The analysis will be conducted in depth for one country only (Indonesia) and for the remaining, only the results will be stated. The interpretation process of these correlations can become quite repetitive, hence, it is more appropriate to limit the analysis. Apart for Indonesia, the remaining seven correlation tables will be included in the appendix and not in the main body of the paper. Finally, the correlation results of all the eight countries will be summarized and presented in tabular form.

Indonesia - A Case Example

The correlation procedure for all the tables is identical. Each dependent variable is first tested against each independent variable (simple regression) and then tested against all the independent variables together (multiple regression). One point to note is the treatment of M2 as an independent variable; the data for M2 is presented according to its components (M1 + quasi-money), hence, the regression is multiple. I think it is important to do it this way in order to assess the true behavior of each component.

1) Correlation Between The Stock Market Value Of Shares Traded And The Independent Variables (Table 10a)

In examining the correlation results for market value of shares traded against the other independent variables, the following observations can be made:

TABLE 3.10

CORRELATION ANALYSIS : INDONESIA

	Y-RANGE		X-RANGE					
	Y1	Y2	X1	X2	X3	X4	X5	
	Market Value of Shares Traded (US\$ bn)	Market Capitalization (US\$ mn)	Money (M1) (US\$ bn)	Quasi Money (US\$ bn)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn)	Gross Nat'l Product (GNP) (US\$ bn)	Population (billion)
1980	9.00	63.00	8.00	4.30	473.50	21.80	69.30	0.146
1981	12.00	74.00	10.05	5.02	582.92	23.35	87.26	0.150
1982	19.00	144.00	10.28	5.71	570.82	19.75	87.36	0.153
1983	11.00	101.00	7.62	7.14	452.30	18.69	70.76	0.156
1984	2.00	85.00	7.99	8.71	482.68	20.75	77.18	0.160
1985	3.00	117.00	9.00	11.60	493.92	18.53	80.70	0.163
1986	1.00	81.00	7.09	9.74	334.99	14.40	55.92	0.167
1987	3.00	68.00	7.70	12.85	382.20	17.21	65.75	0.172
1988	4.00	253.00	8.31	15.99	436.65	19.38	76.67	0.176
1989	541.00	2,514.00	11.44	21.13	491.15	22.97	87.98	0.179

TABLE 3.10A

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-665.1441
Std Err of Y Est		97.103571
R Squared		0.7430006
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	62.825715516	17.225836
Std Err of Coef.	24.157882255	6.3792349

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		-449.9578
Std Err of Y Est		162.56094
R Squared		0.1768367
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	6.7263912434	
Std Err of Coef.	5.1309028347	

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		-478.9109
Std Err of Y Est		160.84426
R Squared		0.1941305
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	27.406584245	
Std Err of Coef.	19.742189485	

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		-67.77820
Std Err of Y Est		177.83149
R Squared		0.0149213
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.2728665889	
Std Err of Coef.	0.7838557183	

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3 & X4

Regression Output:				
Constant		-608.8476		
Std Err of Y Est		71.535007		
R Squared		0.9003744		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	141.40343177	-0.334237	-2.6094692493	33.659028566
Std Err of Coef.	44.362606515	8.7102816	0.9811802772	15.2451682093

TABLE 3.10B

Y2 a) Correlation Analysis: Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-2885.202
Std Err of Y Est		401.05098
R Squared		0.7847934
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	270.32837529	85.166178
Std Err of Coef.	99.775347619	26.347110

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:		
Constant		-1958.220
Std Err of Y Est		733.40413
R Squared		0.1775016
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	30.415826752	
Std Err of Coef.	23.148397972	

Y2 c) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:		
Constant		-130.4904
Std Err of Y Est		804.51225
R Squared		0.0102770
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	1.0220737508	
Std Err of Coef.	3.5461746427	

Y2 d) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:		
Constant		-1984.689
Std Err of Y Est		732.94619
R Squared		0.1785285
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	118.621757226	
Std Err of Coef.	89.962565209	

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4

Regression Output:					
Constant					-2703.531
Std Err of Y Est					302.61923
R Squared					0.9124771
No. of Observations					10
Degrees of Freedom					5
X Coefficient(s)	577.61737676	15.379600	-10.4732400998		140.57725979
Std Err of Coef.	187.67004535	36.847676	4.1507513103		64.492635442

SOURCE:

FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV), REPORTS 1975 - 1988; INTERNATIONAL FINANCE CORPORATION, EMERGING STOCK MARKETS FACTBOOK 1990; INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989, NOVEMBER 1990.

- 1/ In the correlation analysis that tests the dependent variable against each independent variable, only "Y1a" is significant. The R squared for the correlation between market value of shares traded and M2 is 74 percent. This means that 74 percent of the variation in Indonesia's stock market value of shares traded, for the sample used, can be explained by knowing the level of M2. R squared can be any value between 0.0 and 1.0; if there is a perfect linear relationship between two variables, the coefficient of determination, R squared, will be 1.0.

Of course in addition to the R squared, one must also examine the significance of the X coefficients in relation to the standard error of the coefficients. In this case both the X coefficients (mean) of the M2 components are twice their standard error, indicating that the coefficients represent a true sample figure. In other words, given this we can state with a 95 percent confidence level that we can accept the hypothesis that the true population coefficient is not equal to zero.

- 2/ In the correlation analysis that tests the dependent variables, there is significance but not in all of the X coefficients, despite the high R squared. The R squared in this case is 90 percent, while X coefficients that are significant are: M2 and GNP.

Here we can say that around 90 percent of the variation in Indonesia's stock market value of shares traded, for the sample used, can be explained by both the level of M2 and GNP, as both these independent variables are statistically significant.

2) Correlation Between Stock Market Capitalization And The Independent Variables (Table 10b)

In examining the correlation results for the market capitalization against the other independent variables, the following observations can be made:

- 1/ In the correlation analysis that tests the dependent variable against each independent variable, only "Y1a" is significant again. The R squared is 78 percent indicating that of the total variation in Indonesia's stock market capitalization, 78 percent can be explained by the level of M2, based on the sample. Moreover, both the X coefficient of the M2 component are statistically significant, in that their values are more than twice the standard error.
- 2/ In the correlation analysis that tests the dependent variable against all the independent variables, there is significance but not in all of the X coefficients. The R squared in this case is 91 percent, while the X coefficients that are significant are: M2 and GNP. Again we can state here that around 91 percent of the variation in Indonesia's stock market capitalization, for the sample used, can be explained by both the level of M2 and GNP, as both these independent variables are statistically significant.

In the case of Indonesia, we find that M2 and GNP show significant correlation towards the dependent variables: stock market value of shares traded and stock market capitalization. For the remaining seven countries, the results have been summarized in Tables 3.11 and 3.12. The correlation analysis for each of these countries is included in the appendix.

TABLE 3.11SUMMARIZED RESULTS OF CORRELATION ANALYSIS (1)

Market Value of Shares Traded and Independent Variables

DEPENDENT VARIABLE	INDEPENDENT VARIABLES				
Market Value of Shares Traded	GNP	GNP Per Capita	Merchandise Exports	M 2	
				M 1	Quasi-Money
INDONESIA	P	N	N	P	P
MEXICO	N	N	N	N	N
KOREA	P	P	P	N	N
JAPAN	P	P	P	P	N
THAILAND	P	P	P	P	N
MALAYSIA	N	N	N	P	N
INDIA	P	N	P	N	N
USA (2)	P	P	P	P	N

(1)

SEE STATISTICAL ANNEX FOR INDIVIDUAL COUNTRY CORRELATION TABLES.

(2)

USING Y1(A) AS THE DEPENDENT VARIABLE.

KEY:

P = POSITIVE CORRELATION

N = NO CORRELATION

TABLE 3.12**SUMMARIZED RESULTS OF CORRELATION ANALYSIS (1)**

Market Capitalization and Independent Variables

DEPENDENT VARIABLE	INDEPENDENT VARIABLES				
Market Capitalization	GNP	GNP Per Capita	Merchandise Exports	M 2	
				M 1	Quasi-Money
INDONESIA	P	N	N	P	P
MEXICO	N	N	P	N	N
KOREA	P	P	P	N	N
JAPAN	P	P	P	P	N
THAILAND	P	P	P	N	N
MALAYSIA	P	P	P	P	N
INDIA	P	P	P	N	N
USA	P	P	P	N	N

(1)

SEE STATISTICAL ANNEX FOR INDIVIDUAL COUNTRY CORRELATION TABLES.

KEY:

P = POSITIVE CORRELATION

N = NO CORRELATION

3.3.3 Cross Sectional Correlation

Having conducted a correlation analysis over a period of time, it will also be useful to examine the relationship between the value of shares traded and market capitalization (as dependent variables) with selected independent variables for 30 countries in one given year (1987). Again the countries chosen are from all income groups; in the correlation they will be grouped as low-and middle-income economies, high-income economies, and then all economies. (Table 3.13)

1) Correlation analysis between the value of shares traded and all independent variables (Table 13b)

Low and Middle-Income Economies:

The R squared here is 84 percent but only one of the five independent variables examined is significant, merchandise exports. This indicates that for low-and middle-income economies, 84 percent of the variability recorded in the value of shares traded, for the sample used, can be explained by knowing the level of merchandise exports.

High-Income Economies:

The R squared here is 99.7 percent and again only one independent variable is significant M2.

All Economies:

The R squared here is 98 percent, while the independent variable that holds significance is the same as that of high-income economies, M2. Interestingly enough, the significance of merchandise exports no longer exist.

2) Correlation analysis between the market capitalization and all independent variables (Table 13c)

Apart from the slight differences in R squared for all the three groups, the significant independent variables are the same as those observed in (1).

T A B L E 3.13

CROSS – SECTIONAL ANALYSIS

Selected Economic Data for 30 Sample Countries (1987)

COUNTRY	GNP (US\$ MN)	POPU- LATION (MN)	VALUE OF SHARES TRADED (VST.) (US\$ MN)	MARKET CAPITALIZATION (US\$ MN)	M_2 (US\$ MN)	MERCHANDISE EXPORTS (US\$ MN)	INDUSTRY SHARE OF GDP (%)	GROSS DOMESTIC SAVING / GDP (%)	
Low – Income Economies									
1. Nigeria	26,197	101.91	7	974	6,978	7,702	43.0%	20.0%	
2. India	255,184	781.37	6,743	14,480	119,496	11,375	30.0%	22.0%	
3. Pakistan	36,942	102.24	162	1,960	14,907	4,172	28.0%	11.0%	
4. Indonesia	65,745	170.18	3	68	20,550	17,135	33.0%	29.0%	
5. Sri Lanka	6,367	16.36	11	608	1,981	1,388	27.0%	13.0%	
Middle – Income Economies									
Lower–Middle – Income Economies:									
6. Peru	10,972	20.73	301	831	4,791	2,661	33.0%	23.0%	1
7. Thailand	47,834	53.60	4,633	5,485	32,250	11,854	35.0%	26.0%	1
8. Philippines	33,815	57.36	1,524	2,948	7,508	5,649	33.0%	16.0%	1
9. Zimbabwe	5,155	8.64	23	718	1,710	1,452	43.0%	22.0%	1
0. Morocco	17,989	22.71	8	357	9,685	2,781	31.0%	14.0%	1
1. Mexico	83,104	81.16	15,554	8,371	23,290	20,887	34.0%	17.0%	1
2. Jamaica	2,522	2.41	73	631	1,368	706	41.0%	23.0%	1
3. Turkey	57,195	53.25	115	3,221	27,310	11,929	36.0%	23.0%	1
4. Colombia	32,725	29.73	80	1,255	6,884	5,661	35.0%	26.0%	1
5. Egypt	65,824	51.26	167	1,826	64,113	2,037	25.0%	8.0%	1
6. Jordan	5,677	3.79	420	2,643	7,307	930	38.0%	–3.0%	1
7. Malaysia	30,223	16.53	3,829	18,531	22,610	17,939	28.0%	37.0%	1
8. Uruguay	6,014	3.04	4	40	2,500	1,182	32.0%	11.0%	1
Upper–Middle – Income Economies:									
9. Venezuela	48,269	18.27	148	2,278	19,869	10,577	38.0%	25.0%	1
0. Korea	123,100	41.57	24,919	32,905	50,840	47,281	43.0%	38.0%	2
1. Portugal	38,918	10.25	1,518	8,857	42,763	9,170	40.0%	18.0%	2
2. Greece	50,238	9.99	441	4,464	34,366	6,533	29.0%	8.0%	2
High – Income Economies									
3. Singapore	21,652	2.61	6,854	17,931	18,559	28,687	38.0%	40.0%	2
4. Spain	324,835	38.83	36,070	71,188	220,642	34,192	37.0%	22.0%	2
5. Belgium	159,654	9.92	7,148	41,377	77,854	76,100	31.0%	19.0%	2
6. Canada	410,132	25.65	75,189	218	185,759	98,168	35.0%	22.0%	2
7. United States	4,526,700	243.93	2,423,066	2,568,890	2,811,000	254,122	30.0%	13.0%	2
8. Germany	1,277,395	61.17	373,428	213,166	766,866	294,364	38.0%	25.0%	2
9. Japan	2,795,887	122.09	2,047,224	2,802,956	3,017,770	231,286	41.0%	34.0%	2
0. Switzerland	208,372	6.54	128,527	128,527	253,466	45,515	31.0%	31.0%	3

TABLE 3.13A

CORRELATION VARIABLES

(Countries classified by GNP per capita)

	DEPENDENT VARIABLES			INDEPENDENT VARIABLES			
	VALUE OF SHARES TRADED (VST) (US\$ MN)	MARKET CAPITALIZATION (MC) (US\$ MN)	GNP PER CAPITA (US\$)	M ² (US\$ MN)	MERCHANDISE EXPORTS (US\$ MN)	INDUSTRIAL SHARE OF GDP (%)	GROSS DOMESTIC SAVING / GDP (%)
1. NIGERIA	7	974	257	6,978	7,702	43.0%	20.0%
2. INDIA	6,743	14,480	327	119,496	11,375	30.0%	22.0%
3. PAKISTAN	162	1,960	361	14,907	4,172	28.0%	11.0%
4. INDONESIA	3	68	386	20,550	17,135	33.0%	29.0%
5. SRI LANKA	11	608	389	1,981	1,368	27.0%	13.0%
6. PERU	301	831	529	4,791	2,661	33.0%	23.0%
7. THAILAND	4,633	5,485	892	32,250	11,654	35.0%	26.0%
8. PHILIPPINES	1,524	2,948	590	7,508	5,649	33.0%	16.0%
9. ZIMBABWE	23	718	597	1,710	1,452	43.0%	22.0%
10. MOROCCO	8	357	792	9,685	2,781	31.0%	14.0%
11. MEXICO	15,554	8,371	1,024	23,290	20,887	34.0%	17.0%
12. JAMAICA	73	631	1,046	1,368	706	41.0%	23.0%
13. TURKEY	115	3,221	1,074	27,310	11,929	36.0%	23.0%
14. COLOMBIA	80	1,255	1,101	6,884	5,661	35.0%	26.0%
15. EGYPT	167	1,826	1,284	64,113	2,037	25.0%	8.0%
16. JORDAN	420	2,643	1,498	7,307	930	38.0%	-3.0%
17. MALAYSIA	3,829	18,531	1,828	22,610	17,939	28.0%	37.0%
18. URUGUAY	4	40	1,978	2,500	1,182	32.0%	11.0%
19. VENEZUELA	148	2,278	2,642	19,869	10,577	38.0%	25.0%
20. KOREA	24,919	32,905	2,961	50,840	47,281	43.0%	38.0%
21. PORTUGAL	1,518	8,857	3,797	42,763	9,170	40.0%	18.0%
22. GREECE	441	4,464	5,029	34,366	6,533	29.0%	8.0%
23. SINGAPORE	6,854	17,931	8,296	18,559	28,687	38.0%	40.0%
24. SPAIN	36,070	71,188	8,366	220,642	34,192	37.0%	22.0%
25. BELGIUM	7,148	41,377	16,094	77,854	76,100	31.0%	19.0%
26. CANADA	75,189	218	15,990	185,759	98,168	35.0%	22.0%
27. UNITED STATES	2,423,066	2,588,890	18,557	2,811,000	254,122	30.0%	13.0%
28. GERMANY	373,428	213,166	20,883	766,866	294,364	38.0%	25.0%
29. JAPAN	2,047,224	2,802,956	22,900	3,017,770	231,286	41.0%	34.0%
30. SWITZERLAND	128,527	128,527	31,861	253,466	45,515	31.0%	31.0%

TABLE 3.13B**CORRELATION ANALYSIS :**

1/ VALUE OF SHARES TRADED TO INDEPENDENT VARIABLES

a: Low- & Middle-Income Economies:

Regression Output:					
Constant		-1452.5743012			
Std Err of Y Est		2766.3049275			
R Squared		0.8434852379			
No. of Observations		22			
Degrees of Freedom		16			
X Coefficient(s)	-0.6374880381	0.0164069499	0.6338	8243.588873	-20158.951659
Std Err of Coef.	0.5324142286	0.025396867	0.0891	12464.63676	8907.9517205

b. High-Income Economies:

Regression Output:					
Constant		1813567.3622			
Std Err of Y Est		91502.372889			
R Squared		0.99760003			
No. of Observations		8			
Degrees of Freedom		2			
X Coefficient(s)	-16.412098502	0.8196159731	0.5031	-5635025.75	1072391.9078
Std Err of Coef.	6.4432644057	0.0411985227	0.6150	1640981.774	739867.98617

c. All Economies

Regression Output:					
Constant		112049.532225			
Std Err of Y Est		82027.627606			
R Squared		0.9827093885			
No. of Observations		30			
Degrees of Freedom		24			
X Coefficient(s)	-2.9450615617	0.8113889469	-0.297	-283836.847	-121011.19876
Std Err of Coef.	2.7891588025	0.0361176959	0.4105	329515.9851	177709.23242

TABLE 3.13C

CORRELATION ANALYSIS:

2/ MARKET CAPITALIZATION TO INDEPENDENT VARIABLES

a. Low- & Middle- Income Economies:

		Regression Output:				
Constant						-2765.4923738
Std Err of Y Est						3855.3898561
R Squared						0.8159731858
No. of Observations						22
Degrees of Freedom						16
X Coefficient(s)	0.7937026646	0.0688440245	0.5360	-1981.79069	5035.6303383	
Std Err of Coef.	0.7420239164	0.035395528	0.1243	17371.92226	12414.9822967	

b. High-Income Economies

		Regression Output:				
Constant						636232.54891
Std Err of Y Est						86340.725364
R Squared						0.9985565862
No. of Observations						8
Degrees of Freedom						2
X Coefficient(s)	-7.4828164343	1.0884564491	-1.511	-2158155.85	733820.58124	
Std Err of Coef.	6.0797999543	0.0388745147	0.5803	1548414.016	698132.04383	

c. All Economies

		Regression Output:				
Constant						-32443.899452
Std Err of Y Est						44511.220216
R Squared						0.9964617276
No. of Observations						30
Degrees of Freedom						24
X Coefficient(s)	-1.27106414	1.0829304335	-1.853	38134.07731	93062.975268	
Std Err of Coef.	1.5135005766	0.0195987957	0.2227	178807.5433	96431.592738	

4. CONCLUSION

4. CONCLUSION

The unique relationship between financial deepening, capital markets and economic growth is the central theme of this paper. Of course, the various aspects of this relationship have been well recognized by Edward Shaw, Ronald McKinnon and a number of other authors in such classics as "Financial Deepening in Economic Development" and "Money and Finance in Economic Growth and Development". However, this project is not an exercise in regurgitating what has already been written on the subject; on the contrary, it is an attempt to amalgamate the various literature works in a manner which will facilitate the study of linkage between economic development and capital markets. Through the aid of extensive correlation studies between stock market and economic indicators, this linkage is examined in depth for a number of countries.

In this final chapter, some conclusions on the empirical study will be developed. The issue here is to synthesize the academic postulations presented in chapter II with the evidence from the correlation studies. However, before doing so, there are few points regarding this project that must be clarified to the reader as to avoid unnecessary misconceptions.

- (1) A country's financial system comprises of many interdependent subsets. This paper focuses on one such subset, the capital market, and its relation to economic development. Within this subset, the stock market element is examined in considerable depth particularly for purposes of empirical analysis. In ascertaining this relationship, one must keep in mind the interdependency factor of the financial system due to one simple reason. If economic development is subject to some degree of influence from capital market existence then, by the same token the capital market must be subject to influence by some other factors. Therefore, although the empirical study focuses on correlations between stock markets and economic development, there are numerous other factors which influence this relationship but which have been excluded to avoid complications.
- (2) The reader must bear in mind one important distinction between the two stock market variables used in the correlation analysis. Market capitalization and value of shares traded must be viewed in terms of the stock and flow concept; the former variable is considered stock, while the latter is considered a flow variable. In the correlation analysis, it is the stock variable that is relatively more important as it is primarily affected by macroeconomic factors. For example, an economy that is relatively underdeveloped and subject to considerable instability will witness slower growth in its stock market capitalization compared to those in industrialized countries. On the other hand, value of shares traded are not only affected by macroeconomic factors, but also by company-specific factors, i.e. corporate profits or losses, indicating more fluctuation. However, this does not imply that the flow variable is irrelevant.
- (3) The two stock market variables used in the correlation study only include data from official, organized stock exchanges, excluding the over-the-counter markets. One might argue that this limits the relevance of the correlation results as both, market capitalization and value of shares traded are compared against macroeconomic variables such as GNP, however, the aim here is to examine trends rather than the absolute relationship.
- (4) It is important to note that the independent variables used in the correlation analysis are themselves correlated to some degree, i.e. GNP is undoubtedly correlated with merchandise exports as the latter is an integral part of the former. For this reason, there tends to exist some distortion in results of the correlation analysis when comparing results of the multiple regression with those of the simple regression. However, given the nature of the subject it is virtually impossible to eliminate this effect as only a number of economic indicators can be used as independent variables.

- (5) Finally, this paper did not examine the causal relationship between stock markets and economic development as this issue is very complex and warrants an independent study on its own. The aim of this project has been to determine the role stock markets play in economic development rather than ascertaining whether one causes the other.

OBSERVATIONS AND REMARKS

Efficient allocation of economic resources are best achieved through private sector and market signals, supported by efficient financial systems. In this process, the capital market, particularly the stock market, contributes to economic activity by providing a conduit which enables the matching of savings and investments, and thereby, propelling growth. In this regard, the results obtained in the correlation analysis may not be absolutely conclusive, however, they do provide enough evidence to suggest that a link between economic development and stock markets can be established.

In a recent study by the UN-backed World Institute for Development Economics Research the importance of stock markets in economic development was emphasized: "Equity markets are a vital part of economic development - they encourage savings, help channel savings into productive investment, and encourage entrepreneurs to improve the efficiency of investments."

The study, led by Sir Kenneth Berrill, former chairman of the Securities and Investment Board in Britain, focused on the importance of stock markets in developing countries particularly, in acting as a source of foreign capital which does not create debt. The report added that emerging stock markets have grown five-fold over the last five years and a capitalization \$620 billion in 1989. The \$15 billion of foreign investment in these markets represents about a quarter of 1 per cent of the total pool of institutional funds in the main markets. Of the roughly 30 emerging markets, foreign investors were attracted to long-term potential of about 20, including low-income countries such as India and highly-indebted countries such as Brazil and the Philippines.

Combining the ideas presented earlier in the paper and the points highlighted in the above UN-backed studies, one might misguidingly conclude that stock markets may indeed solve the problems of savings mobilization, investment, and growth for a given country. However, numerous studies have concluded that in some countries stock market contribution is negligible, while in others it could have harmful effects on the distribution of income and wealth, although no firm evidence of the latter has come to light.

If stock markets are not an absolute panacea, what then is their significance in light of the evidence presented in Chapter III.

- (1) Clearly, among the first points that one observes from the empirical analysis is the sheer number of companies that are publicly listed on official stock exchanges around the world in 1989, there were a total of 29,272 domestic companies listed on both the developed and emerging markets compared with 21,225 in 1980 (International Finance Corporation listing). Although similar data is not available for foreign company listings, using FIBV annual reports, we can see that the total number of foreign companies in these exchanges alone grew almost 40 percent between 1983 and 1988. These figures underscore the fact that the dramatic deregulation of the 1980s was a major incentive for companies to go public as the business and private sector found a new avenue to raise finance. The implications of greater capital mobility have been emphasized in the theory base.
- (2) Stock market capitalization in both the developed and emerging markets has grown more than three-fold, while the value of shares traded has grown a phenomenal nine-fold. This implies that both the private and the government sector have begun to rely on the stock market increasingly to raise fresh or additional capital, enabling companies to expand more readily while, governments can raise funds efficiently and use them for the benefit of the national economy. In many countries, stock prices are considered among the leading economic indicators.

- (3) The relationship between economic growth, savings and investment, income and financial deepening that has been developed in Figure 3.3 and subsequently tested using empirical data (Venezuela and Korea) may be considered one of the most important facets of the link between stock markets and economic development. Changes in private and social rates of capital accumulation are among the striking features of the development process; when an economy begins to lag, both private and public budgets shift away from capital accumulation to consumption when the pace of development picks up, accumulation accelerates. As more savings begin to move through the financial system, the demand for efficient allocation of those funds will rise, boosting investment rates and fuelling financial deepening. Generally the financial systems of higher-income countries are usually deeper than those in poorer ones. Within a framework of a liberalized financial environment, not only will superior allocations of savings be enjoyed, but the market system itself will diversify alongside, greater market opportunities.
- (4) Substantial financial liberalization in response to a number of endogenous and exogenous developments has been the order since the last decade for most countries. This, alongside, growing financial deepening, has induced a proliferation of financial services which is particularly evident in the capital markets. The capital market can be a source of long-term finance - both debt and equity - and can help to foster sounder corporate capital structures. Going back to the Indonesian case example which was presented in chapter III, this point can be well demonstrated.

Indonesia, essentially an oil-based economy, undertook wide-ranging reforms in the early 1980s to broaden the country's export base. At the heart of the reforms was the "Pakto 27" package designed to mobilize domestic savings, increase bank efficiency, make monetary, policy more effective and develop the capital and stock markets, with the overall aim to enable efficient allocation of financial resources as a locomotive for growth. Indonesia's stock exchanges are seen both at home and abroad as a symbol of the country's modernization.

Although Indonesia's stock exchanges are suffering from initial teething problems, market-capitalization between the 1980-1989 period has grown almost 39 times, while the value of shares traded has grown 59 times. The country has also witnessed substantial growth rates in its savings and investment real GDP and financial deepening, while the GNP per capita is among the highest of the comparable low-income economies.

- (5) In the summarized results of the correlation analysis shown in Tables 3.11 and 3.12, the linkage between stock markets and economic development can be statistically verified in most cases. The important point to note is that in countries like the USA and Japan, which are among the most economically and financially advanced nations of the world, the correlation between their respective stock markets and economies is very high. Classifying these countries as optimal cases, one can then compare them to lesser advanced ones to examine the relationship further. In Table 3.11, the correlation between market value of shares traded and economic indicators is very strong even for middle-income countries like Korea and Thailand and moderately strong for low-income countries like Indonesia and India. In Table 3.12, the correlation between market capitalization and economic indicators is very strong for all countries and relatively strong for Indonesia. Based on both the results, it can be concluded that when comparing the results of USA and Japan with the other countries, the latter fare quite well. This reinforces the notion of the link between stock markets and economies.

* * *

Although the spread of stock markets in recent years has been quite rapid, and the scope for new ones may now be limited, the role of stock markets in economic development countries to be a popular issue. However, it must be emphasized that the quantum gain to an economy from the existence of stock markets must come from concurrent liberalization of economic and financial policies.

The extensive studies conducted on this subject indicate that the economic impact of stock markets has been small for developing countries, while many others have concluded that issues of stocks and bonds through the capital markets of such countries will not become a solution for capital formation and economic development problems. Stock markets can play a positive role, however, and this has been clearly evidenced in the EAC's, but it will be initially modest and only gradually increasing.

This study focused on establishing a link between stock markets and economic development on the basis of cross-country comparative work. In the final analysis, it appears that this link does reasonably exist to some extent, but there are a number of reservations to this issue. Overall, the economic benefits derived from stock markets can only come about in a supportive social, political and legal, as well as economic environment.

ENDNOTES

ENDNOTES

- 1 Edward S. Shaw, **Financial Deepening in Economic Development** (New York: Oxford University Press, 1973), p.3
- 2 The World Bank, **World Development Report 1989** (Washington D. C.: The International Bank for Reconstruction and Development, 1989), p.3
- 3 Paul Stonham, **Global Stock Market Reforms** (Cambridge: University Press / Gower Publishing Company, Ltd., 1987), p.1
- U Tun Wai and Hugh T. Patrick, "Stock and Bond Issues and Capital Markets in Less Developed Countries", **IMF Staff Papers** (Vol. XX, No. 2, July 1973), p.253-254
- 4 Wai and Patrick, p.254
- 5 Lynette J. Kemp, **The Wardley Guide to World Money and Securities Markets** (London: Euromoney Publications, Ltd., 1984), p.3
- 6 Wai and Patrick, p.255
- 7 Compiled from: Peter S. Rose and Donald R. Fraser, **Financial Institutions**, 2nd ed. (Texas: Business Publications Inc., 1985), p.82-85
- 8 Kemp, p.3
- 9 Paul Samuelson, **Economics**, 11th ed. (Japan: McGraw-Hill Kogakusha, Ltd., 1980), p.27
- 10 The World Bank, p.26
- 11 Compiled from the World Bank, p.25-32
- 12 Shaw, p.4
- 13 Alan Gelb and Patrick Honohan, **Financial Sector Reforms in Adjustment Programs** (Policy, Planning, and Research Working Paper 169 / Washington D. C.: The World Bank)
- 14 Compiled from Shaw, p.7
- 15 Shaw, p.113
- 16 Shaw, p.114
- 17 Shaw, p.128
- 18 The World Bank, p.38
- 19 Wai and Patrick, p.256
- 20 Wai and Patrick, p.258
- 21 Wai and Patrick, p.268
- 22 Drake, **Money, Finance and Development**, Chapter 8: Securities Markets, p.201
- 23 Drake, p.192

- 24 Shaw, p.144
- 25 Drake, p.196
- 26 Kitchen, **Finance for the Developing Countries**, Chapter 6: Mobilizing Domestic Finance - Securities Markets, p.159
- 27 Drake, p.193
- 28 Kitchen, p.149-151
- 29 Drake, p.196
- 30 Wai and Patrick, p.281
- 31 Wai and Patrick, p.282
- 32 Kitchen, p.157
- 33 Ronald I. McKinnon, ed. **Money and Finance in Economic Growth and Development**, Comment by Frank C. Child for Nathaniel H. Leff's paper, "The Group Principle", (New York: Marcel Dekker Inc., 1976), p.123
- 34 Drake, p.208

APPENDIX A
STATISTICAL ANNEX

T A B L E A - 1

CORRELATION ANALYSIS : MEXICO

Y - RANGE			X - RANGE					
Y1	Y2		X1	X2	X3	X4	X5	
Market Value of Shares Traded (US\$ bn)	Market Capitalization (US\$ bn)		Money (M) (US\$ bn)	Quasi Money (US\$ bn)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn)	Gross Nat'l Product (GNP) (US\$ bn)	Population
1980	3.262	12.99	20.47	35.19	2,682.43	15.51	186.14	0.0694
1981	4.161	10.10	24.24	49.54	3,163.25	20.10	225.38	0.0713
1982	0.761	1.72	10.68	20.97	1,307.95	21.23	95.64	0.0731
1983	1.112	3.00	10.06	24.31	1,557.14	22.31	116.75	0.0750
1984	2.160	2.20	12.02	31.24	1,880.36	24.20	144.39	0.0763
1985	2.360	3.82	9.31	22.80	1,548.04	21.66	121.55	0.0785
1986	3.841	5.95	6.27	16.79	1,020.54	16.03	81.19	0.0796
1987	15.554	8.37	5.71	18.12	1,023.96	20.66	83.10	0.0812
1988	5.752	13.78	9.29	9.76	2,097.87	20.66	173.56	0.0827
1989	6.232	22.55	10.88	24.56	2,219.90	22.77	187.07	0.0843

A - 1 cont.

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		6.8089475
Std Err of Y Est		4.6098133
R Squared		0.0937233
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	-0.3081881778	0.0544110
Std Err of Coef.	0.5905002944	0.3141907

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		6.2916373
Std Err of Y Est		4.4811568
R Squared		0.0212699
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	-0.0125117264	
Std Err of Coef.	0.030068413	

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		5.9822921
Std Err of Y Est		4.5247548
R Squared		0.0021328
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	-0.0712157714	
Std Err of Coef.	0.5446094284	

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		6.8060917
Std Err of Y Est		4.4348055
R Squared		0.0414124
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	-0.0012348144	
Std Err of Coef.	0.0021004248	

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3 & X4

Regression Output:				
Constant		15.038113		
Std Err of Y Est		5.0350231		
R Squared		0.2277363		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	-1.493153914	0.3210868	0.0062099135	-0.6034330606
Std Err of Coef.	1.4467152872	0.4473632	0.0073023805	0.7845083102

A - 1 cont.

Y2 a) Correlation Analysis: Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:			
Constant		8.1610794	
Std Err of Y Est		6.8027496	
R Squared		0.1745164	
No. of Observations		10	
Degrees of Freedom		7	
X Coefficient(s)	1.0565914669	-0.484820	
Std Err of Coef.	0.871406396	0.4636540	

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:			
Constant		-3.147074	
Std Err of Y Est		5.5069587	
R Squared		0.3817629	
No. of Observations		10	
Degrees of Freedom		8	
X Coefficient(s)	0.0819608198		
Std Err of Coef.	0.0368758426		

Y2 c) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:			
Constant		-0.299190	
Std Err of Y Est		6.0494570	
R Squared		0.2539564	
No. of Observations		10	
Degrees of Freedom		8	
X Coefficient(s)	0.004728152		
Std Err of Coef.	0.0028651604		

Y2 d) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:			
Constant		15.189607	
Std Err of Y Est		6.9369641	
R Squared		0.0189970	
No. of Observations		10	
Degrees of Freedom		8	
X Coefficient(s)	-0.3236340696		
Std Err of Coef.	0.8349482455		

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4

Regression Output:				
Constant		16.118728		
Std Err of Y Est		4.5938256		
R Squared		0.7311187		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	-2.5873754152	0.2348622	0.0214005015	-1.0939246992
Std Err of Coef.	1.3199458358	0.4081626	0.0066625042	0.715765214

SOURCE:

FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV), REPORTS 1975 - 1988; INTERNATIONAL FINANCE CORPORATION, EMERGING STOCK MARKETS FACTBOOK 1990; INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989, NOVEMBER 1990.

TABLE A - 2

CORRELATION ANALYSIS : KOREA

	Y - RANGE			X - RANGE					
	Y1	Y2		X1	X2	X3	X4	X5	
	Market Value of Shares Traded (US\$ bn)	Market Capitalization (US\$ bn)		Money (Ml) (US\$ bn)	Quasi Money (US\$ bn)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn)	Gross Nat'l Product (GNP) (US\$ bn)	Population
1980	1.87	3.83		5.77	13.22	1,457.82	17.21	55.57	0.0391
1981	3.72	4.22		5.68	16.69	1,663.73	20.67	64.42	0.0387
1982	2.70	4.41		7.74	18.84	1,722.39	20.88	67.74	0.0393
1983	2.26	4.39		8.53	20.31	1,856.99	23.20	74.15	0.0399
1984	3.87	6.22		7.66	20.09	1,841.50	26.34	74.60	0.0405
1985	4.16	7.38		8.77	24.39	2,072.83	26.44	84.57	0.0409
1986	10.89	13.92		10.23	29.05	2,367.36	33.91	97.49	0.0412
1987	24.92	32.91		12.76	38.08	2,961.27	46.24	123.10	0.0416
1988	79.16	94.24		17.76	53.77	4,396.50	59.65	184.52	0.0420
1989	121.26	140.95		21.08	65.20	4,897.88	61.41	207.57	0.0424

A - 2 cont.

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-45.01871
Std Err of Y Est		12.669483
R Squared		0.9264753
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	0.9392618768	2.0206488
Std Err of Coef.	9.1660552784	2.7324271

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		-52.75926
Std Err of Y Est		11.040543
R Squared		0.9361900
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.7568901893	
Std Err of Coef.	0.069863429	

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		-51.65741
Std Err of Y Est		17.735081
R Squared		0.8353455
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	2.296135714	
Std Err of Coef.	0.3604178002	

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		-58.44086
Std Err of Y Est		10.709120
R Squared		0.9399635
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.0332526637	
Std Err of Coef.	0.0029712096	

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3 & X4

Regression Output:				
Constant				-50.95005
Std Err of Y Est				7.3012058
R Squared				0.9825588
No. of Observations				10
Degrees of Freedom				5
X Coefficient(s)	-3.4011957589	1.4018626	0.0659866154	-2.8593305521
Std Err of Coef.	5.4105301277	2.3657617	0.0240887354	0.8345870433

A - 2 cont.

Y2 a) Correlation Analysis: Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-51.47962
Std Err of Y Est		13.747614
R Squared		0.9352247
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	1.5861456047	2.1997962
Std Err of Coef.	9.9460556231	2.9649475

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:		
Constant		-59.61155
Std Err of Y Est		11.893171
R Squared		0.9445959
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.878930115	
Std Err of Coef.	0.0752587678	

Y2 c) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:		
Constant		-66.19402
Std Err of Y Est		11.510173
R Squared		0.9481068
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.0386082416	
Std Err of Coef.	0.0031934591	

Y2 d) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:		
Constant		-58.64618
Std Err of Y Est		19.649394
R Squared		0.8487677
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	2.6757119017	
Std Err of Coef.	0.3993210556	

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4

Regression Output:				
Constant				-59.27494
Std Err of Y Est				8.2054763
R Squared				0.9835170
No. of Observations				10
Degrees of Freedom				5
X Coefficient(s)	-3.0096372953	1.3068542	0.0730499114	-3.009395835
Std Err of Coef.	6.0306362837	2.6587665	0.0270721787	0.9379524996

SOURCE:

FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV), REPORTS 1975 - 1988; INTERNATIONAL FINANCE CORPORATION, EMERGING STOCK MARKETS FACTBOOK 1990; INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989, NOVEMBER 1990.

TABLE A - 3

CORRELATION ANALYSIS : JAPAN

	Y - RANGE			X - RANGE						
	Y1	Y2	Market Value of Shares Traded (US\$ bn)	Market Capitalization (US\$ bn)	Money (Ml) (US\$ bn)	Quasi Money (US\$ bn)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn)	Gross Nat'l Product (GNP) (US\$ bn)	Population
1975	60.31	n.a.			163.69	247.03	4,352.11	54.65	485.56	0.112
1976	92.27	n.a.			191.87	293.95	5,040.03	65.93	568.36	0.113
1977	102.89	n.a.			257.44	405.19	6,789.41	79.16	773.04	0.114
1978	194.08	n.a.			354.21	564.19	9,144.87	95.32	1,050.75	0.115
1979	180.02	n.a.			296.29	511.89	7,986.77	101.12	925.43	0.116
1980	180.23	379.68			342.72	676.92	10,128.01	126.74	1,182.75	0.117
1981	255.75	417.94			347.93	694.39	9,926.74	149.52	1,167.88	0.118
1982	165.29	417.41			344.26	705.04	9,688.87	137.66	1,147.65	0.118
1983	266.60	545.85			347.98	787.18	10,131.67	145.47	1,208.30	0.119
1984	337.76	644.41			343.99	841.66	9,903.20	168.29	1,188.58	0.120
1985	454.10	948.26			443.79	1,086.40	13,103.97	174.02	1,582.30	0.121
1986	947.76	1,842.92			617.31	1,490.21	17,137.62	205.59	2,082.05	0.121
1987	1,997.21	2,802.96			833.79	2,183.98	22,900.21	224.63	2,795.89	0.122
1988	2,497.27	3,906.68			888.71	2,364.18	23,743.03	259.76	2,911.13	0.123
1989	2,800.70	4,392.60			1,007.14	2,392.12	22,135.19	269.59	2,725.28	0.123

A - 3 cont.

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-834.4908
Std Err of Y Est		217.79058
R Squared		0.9532741
No. of Observations		15
Degrees of Freedom		12
X Coefficient(s)	3.0233843926	0.1671243
Std Err of Coef.	1.7084197618	0.6025866

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		-892.4336
Std Err of Y Est		327.16888
R Squared		0.8857687
No. of Observations		15
Degrees of Freedom		13
X Coefficient(s)	1.0974433069	
Std Err of Coef.	0.1093056567	

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		-1143.363
Std Err of Y Est		454.00901
R Squared		0.7800268
No. of Observations		15
Degrees of Freedom		13
X Coefficient(s)	12.2628128688	
Std Err of Coef.	1.8061280886	

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		-970.5328
Std Err of Y Est		332.31375
R Squared		0.8821478
No. of Observations		15
Degrees of Freedom		13
X Coefficient(s)	0.1377738229	
Std Err of Coef.	0.0139666761	

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3, X4

Regression Output:				
Constant		156.64705		
Std Err of Y Est		102.43593		
R Squared		0.9913860		
No. of Observations		15		
Degrees of Freedom		10		
X Coefficient(s)	2.0809033635	2.3757952	-0.1689750911	-5.0381757704
Std Err of Coef.	0.3216599213	0.4393636	0.033658666	1.4263374816

A - 3 cont.

Y2 a) Correlation Analysis : Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-1543.661
Std Err of Y Est		245.92160
R Squared		0.9801719
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	5.7354410092	0.0112972
Std Err of Coef.	2.4205926803	0.8796861

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:		
Constant		-1883.218
Std Err of Y Est		463.40940
R Squared		0.9177890
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	1.9526034623	
Std Err of Coef.	0.2066152274	

Y2 c) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:		
Constant		-2013.524
Std Err of Y Est		481.80305
R Squared		0.9130204
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.2448542203	
Std Err of Coef.	0.0267196647	

Y2 d) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:		
Constant		-3854.020
Std Err of Y Est		331.46113
R Squared		0.9588335
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	29.463163183	
Std Err of Coef.	2.1584126383	

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4.

Regression Output:				
Constant		-1426.916		
Std Err of Y Est		200.86542		
R Squared		0.9905513		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	4.2551528476	1.3184814	-0.1451272952	6.0449087128
Std Err of Coef.	2.1511162143	1.6994383	0.111952063	7.2968763831

SOURCE:

FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV). REPORTS 1975 - 1988; INTERNATIONAL FINANCE CORPORATION. EMERGING STOCK MARKETS FACTBOOK 1990; INTERNATIONAL MONETARY FUND. INTERNATIONAL FINANCIAL STATISTICS. YEARBOOK 1989, NOVEMBER 1990.

TABLE A - 4

CORRELATION ANALYSIS : THAILAND

Y-RANGE			X-RANGE					
Y1	Y2		X1	X2	X3	X4	X5	
Market Value of Shares Traded (US\$ bn)	Market Capitalization (US\$ bn)		Money (M) (US\$ bn)	Quasi Money (US\$ bn)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn)	Gross Nat'l Product (GNP) (US\$ bn)	Population
1960	1.21		3.46	8.74	677.61	6.45	31.06	0.0467
1981	1.09		3.19	9.53	681.41	6.90	32.53	0.0477
1982	1.26		3.41	12.37	719.97	6.84	35.09	0.0487
1983	1.49		3.56	15.89	769.83	6.31	39.28	0.0497
1984	1.72		3.44	16.59	698.73	7.34	35.43	0.0507
1985	1.86		3.38	19.11	723.75	7.06	37.40	0.0517
1986	2.88		4.05	21.79	782.92	8.80	41.22	0.0527
1987	5.49		5.28	26.97	892.43	11.60	47.83	0.0536
1988	8.81		5.88	32.00	1,076.73	15.78	58.72	0.0545
1989	25.65		6.78	40.19	1,240.71	19.82	68.80	0.0555

A - 4 cont.

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of residents other than central government).

Regression Output:		
Constant		-10.39120
Std Err of Y Est		1.5281829
R Squared		0.9001705
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	2.9089063046	0.0361640
Std Err of Coef.	1.3007099505	0.1629431

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		-11.55220
Std Err of Y Est		1.3790862
R Squared		0.9070356
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.3326745826	
Std Err of Coef.	0.0376436712	

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		-5.905349
Std Err of Y Est		1.1638783
R Squared		0.9338217
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.8366023197	
Std Err of Coef.	0.0834463148	

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		-15.16213
Std Err of Y Est		1.3106513
R Squared		0.9160782
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.0215442464	
Std Err of Coef.	0.0023054551	

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3 & X4

Regression Output:				
Constant		-8.704653		
Std Err of Y Est		1.4333282		
R Squared		0.9372705		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	-0.2476517555	-0.033197	0.0072910213	0.7302055733
Std Err of Coef.	2.2941349791	0.1611837	0.0140472554	0.6429230357

A - 4 cont.

Y2 a) Correlation Analysis : Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-15.68906
Std Err of Y Est		3.8895729
R Squared		0.7974160
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	4.1676023773	0.1546639
Std Err of Coef.	3.3106025195	0.4147273

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:		
Constant		-19.38362
Std Err of Y Est		3.2058298
R Squared		0.8427198
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.5729155258	
Std Err of Coef.	0.0875066395	

Y2 c) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:		
Constant		-25.73154
Std Err of Y Est		3.0423781
R Squared		0.8583490
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.0372606557	
Std Err of Coef.	0.0053515953	

Y2 d) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:		
Constant		-9.669914
Std Err of Y Est		2.9274077
R Squared		0.8688526
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	1.52800118	
Std Err of Coef.	0.2098869258	

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4

Regression Output:				
Constant				-12.87637
Std Err of Y Est				3.2432376
R Squared				0.8993924
No. of Observations				10
Degrees of Freedom				5
X Coefficient(s)	-5.1436651311	-0.061900	0.0264787578	1.9793552692
Std Err of Coef.	4.987479781	0.3647156	0.0317851737	1.4547824956

SOURCE:

FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV). REPORTS 1975 - 1988; INTERNATIONAL FINANCE CORPORATION. EMERGING STOCK MARKETS FACTBOOK 1990; INTERNATIONAL MONETARY FUND. INTERNATIONAL FINANCIAL STATISTICS. YEARBOOK 1989. NOVEMBER 1990.

TABLE A - 5

CORRELATION ANALYSIS : MALAYSIA

	Y - RANGE		X - RANGE					
	Y1	Y2	X1	X2	X3	X4	X5	
	Market Value of Shares Traded (US\$ bn)	Market Capitalization (US\$ bn)	Money (Ml) (US\$ bn)	Quasi Money (US\$ bn)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn)	Gross Nat'l Product (GNP) (US\$ bn)	Population
1980	2.572	12.40	4.39	7.96	1,680.50	12.87	23.12	0.0138
1981	3.496	15.50	4.91	9.51	1,758.64	11.63	24.80	0.0141
1982	1.392	13.90	5.38	10.83	1,778.29	11.97	25.71	0.0145
1983	3.398	22.80	5.74	11.86	1,880.15	13.68	27.86	0.0148
1984	2.226	19.40	5.51	13.40	2,013.86	16.41	30.59	0.0152
1985	2.335	16.23	5.82	14.34	1,893.40	15.13	29.69	0.0157
1986	1.180	15.07	5.58	15.28	1,582.57	13.70	25.50	0.0161
1987	3.829	18.53	6.57	16.04	1,828.35	17.71	30.22	0.0165
1988	2.623	23.32	6.90	14.88	1,856.15	20.97	31.41	0.0169
1989	6.888	39.84	8.13	17.50	2,042.71	24.83	35.36	0.0173

A - 5 cont.

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident of resident sectors other than central government):

Regression Output:		
Constant		-3.813303
Std Err of Y Est		1.0838202
R Squared		0.6497196
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	2.1369765633	-0.439664
Std Err of Coef.	0.67950391	0.2377753

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		-4.969723
Std Err of Y Est		1.3106027
R Squared		0.4146233
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.2801591891	
Std Err of Coef.	0.1176930102	

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		-1.235486
Std Err of Y Est		1.2258159
R Squared		0.4879130
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.2661188619	
Std Err of Coef.	0.096389852	

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		-9.518690
Std Err of Y Est		1.3777247
R Squared		0.3531283
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.0068321321	
Std Err of Coef.	0.0032692947	

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3 & X4

Regression Output:				
Constant		-5.604140		
Std Err of Y Est		1.2491849		
R Squared		0.6676262		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	1.6928605961	-0.401011	0.001615106	0.0592283926
Std Err of Coef.	1.3844879839	0.2840013	0.0039735178	0.2828546242

A - 5 cont.

Y2 a) Correlation Analysis: Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors of
of resident sectors other than central government.

Regression Output:		
Constant		-21.12132
Std Err of Y Est		3.5373445
R Squared		0.8462525
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	9.8718681122	-1.320370
Std Err of Coef.	2.2177473227	0.7760451

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:		
Constant		-32.02985
Std Err of Y Est		4.4634238
R Squared		0.7202427
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	1.8190366701	
Std Err of Coef.	0.4008184633	

Y2 c) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:		
Constant		-53.69192
Std Err of Y Est		5.9654065
R Squared		0.5002817
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.0400809593	
Std Err of Coef.	0.0141557096	

Y2 d) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:		
Constant		-6.400286
Std Err of Y Est		4.0969271
R Squared		0.7642988
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	1.6408168249	
Std Err of Coef.	0.32215457	

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4

Regression Output:				
Constant		-33.04729		
Std Err of Y Est		3.7753441		
R Squared		0.9749054		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	7.2280684794	-1.079448	0.010446183	0.3274085194
Std Err of Coef.	4.1842630619	0.8583219	0.0120089475	0.8548562108

SOURCE:

FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV). REPORTS 1975 - 1988: INTERNATIONAL FINANCE CORPORATION. EMERGING STOCK MARKETS FACTBOOK 1990: INTERNATIONAL MONETARY FUND. INTERNATIONAL FINANCIAL STATISTICS. YEARBOOK 1989. NOVEMBER 1980.

T A B L E A - 6

CORRELATION ANALYSIS : INDIA

	Y - RANGE		X - RANGE					
	Y1	Y2	X1	X2	X3	X4	X5	
	Market Value of Shares Traded (US\$ bn.)	Market Capitalization (US\$ bn.)	Money (Ml) (US\$ bn.)	Quasi Money (US\$ bn.)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn.)	Gross Nat'l Product (GNP) (US\$ bn.)	Population
1960	2.760	7.585	25.80	36.12	254.37	8.30	171.70	0.675
1961	7.386	11.802	25.55	39.88	253.99	8.44	175.25	0.690
1962	5.030	11.497	28.41	44.01	260.53	9.23	183.67	0.705
1963	2.377	8.510	29.49	48.46	273.89	9.77	197.20	0.720
1964	3.916	8.018	29.36	47.92	248.93	10.19	183.21	0.736
1965	4.959	14.364	33.90	58.55	284.93	9.47	213.96	0.751
1966	10.781	13.588	36.48	64.60	290.05	10.25	222.22	0.766
1967	6.743	14.486	42.18	77.63	326.64	11.88	255.23	0.781
1968	12.241	23.845	39.99	77.31	332.79	15.10	265.23	0.797
1969	17.362	27.316	43.85	80.14	317.87	16.40	258.06	0.812

A - 6 cont.

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:			
Constant			-7.506840
Std Err of Y Est			3.5371749
R Squared			0.5727612
No. of Observations			10
Degrees of Freedom			7
X Coefficient(s)	0.22007842	0.1298891	
Std Err of Coef.	1.6116086625	0.6700138	

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:			
Constant			-13.39681
Std Err of Y Est			3.4091366
R Squared			0.5464362
No. of Observations			10
Degrees of Freedom			8
X Coefficient(s)	0.0976240605		
Std Err of Coef.	0.0314457002		

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:			
Constant			-8.501809
Std Err of Y Est			2.7292293
R Squared			0.7093103
No. of Observations			10
Degrees of Freedom			8
X Coefficient(s)	0.0014544655		
Std Err of Coef.	0.0003291964		

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:			
Constant			-21.90509
Std Err of Y Est			3.6956278
R Squared			0.4670015
No. of Observations			10
Degrees of Freedom			8
X Coefficient(s)	0.1028851549		
Std Err of Coef.	0.0388607823		

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3 & X4

Regression Output:				
Constant				3.0776809
Std Err of Y Est				3.3333612
R Squared				0.7289844
No. of Observations				10
Degrees of Freedom				5
X Coefficient(s)	0.034114623	0.1254072	-0.0699219354	1.2946225834
Std Err of Coef.	1.6949825875	0.8795908	0.1420130163	0.8331631776

A - 6 cont.

Y2 a) Correlation Analysis : Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-0.408450
Std Err of Y Est		4.1487001
R Squared		0.6933086
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	-0.5029507874	0.5438337
Std Err of Coef.	1.890231932	0.7858493

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:		
Constant		-18.77429
Std Err of Y Est		3.7372550
R Squared		0.7155703
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.1546511977	
Std Err of Coef.	0.0344722466	

Y2 c) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:		
Constant		-33.99360
Std Err of Y Est		4.0959731
R Squared		0.6583482
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.1691069361	
Std Err of Coef.	0.0430705494	

Y2 d) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:		
Constant		-9.931200
Std Err of Y Est		2.7131682
R Squared		0.8500926
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.0022042376	
Std Err of Coef.	0.0003272591	

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4

Regression Output:				
Constant		-22.44667		
Std Err of Y Est		3.3327595		
R Squared		0.8586299		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	0.1518668824	-0.138633	0.0616463038	2.0106463037
Std Err of Coef.	1.69467662	0.8794320	0.141987381	0.8330127803

SOURCE:

FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV), REPORTS 1975 - 1988; INTERNATIONAL FINANCE CORPORATION, EMERGING STOCK MARKETS FACTBOOK 1990; INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989, NOVEMBER 1990; INTERNATIONAL INSTITUTE OF FINANCE, INDIA COUNTRY REPORT, JUNE 1990.

TABLE A-7

CORRELATION ANALYSIS : UNITED STATES

Y-RANGE				X-RANGE				
Y1	Y1 (A)	Y2		X1	X2	X3	X4	X5
Market Value of Shares Traded (US\$ bn)	Market Value of Shares Traded (US\$ bn)	Market Capitalization (US\$ bn)		Money (M)	Quasi Money (US\$ bn)	GNP Per Capita (\$)	Merchandise Exports (US\$ bn)	Gross Nat'l Product (GNP) (US\$ bn)
1975	5.78	n.a.	n.a.	298.10	722.30	7,401.03	335.10	1,593.40
1976	7.57	n.a.	n.a.	318.10	841.80	8,176.48	357.00	1,782.80
1977	8.62	n.a.	n.a.	343.70	938.80	9,037.87	387.30	1,990.50
1978	15.42	n.a.	n.a.	372.20	1,009.20	10,106.92	425.20	2,249.70
1979	20.85	n.a.	n.a.	397.00	1,070.10	11,144.58	467.80	2,508.20
1980	34.91	409.82	1,448.12	424.10	1,146.40	11,995.08	530.30	2,737.00
1981	26.54	415.76	1,333.39	451.40	1,192.30	13,264.10	588.10	3,052.60
1982	19.75	508.14	1,520.17	490.90	1,296.20	13,616.03	641.70	3,166.00
1983	31.85	797.12	1,898.06	538.30	1,540.00	14,504.68	675.00	3,405.70
1984	21.47	786.20	1,892.95	570.30	1,696.40	15,926.16	735.90	3,774.50
1985	26.71	997.19	2,324.65	641.00	1,842.40	16,779.09	820.80	4,014.90
1986	43.65	1,796.00	2,636.60	746.50	1,960.20	17,549.46	871.20	4,240.30
1987	53.17	2,423.07	2,588.89	766.40	2,044.60	18,557.37	924.80	4,526.70
1988	31.17	1,719.73	2,793.82	804.40	2,171.60	19,747.09	964.90	4,804.30
1989	n.a.	2,015.54	3,505.69	824.10	2,276.30	20,852.41	1,025.60	5,200.80

A - 7 cont.

Y1 a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-9.0348541817
Std Err of Y Est		8.4121600901
R Squared		0.6782757479
No. of Observations		14
Degrees of Freedom		11
X Coefficient(s)	0.1394127998	-0.0269407969
Std Err of Coef.	0.1015033743	0.036291091

Y1 b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		-8.2405496992
Std Err of Y Est		8.3466878446
R Squared		0.6544700907
No. of Observations		14
Degrees of Freedom		12
X Coefficient(s)	0.0105408001	
Std Err of Coef.	0.00221095	

Y1 c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		-7.0585257493
Std Err of Y Est		8.3281008771
R Squared		0.6560072758
No. of Observations		14
Degrees of Freedom		12
X Coefficient(s)	0.0511469623	
Std Err of Coef.	0.0106917679	

Y1 d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		-12.7558899582
Std Err of Y Est		8.2859687619
R Squared		0.659479011
No. of Observations		14
Degrees of Freedom		12
X Coefficient(s)	0.0028008983	
Std Err of Coef.	0.0005810023	

Y1 e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3 & X4

Regression Output:					
Constant		-23.409352621			
Std Err of Y Est		8.6521378239			
R Squared		0.7215383297			
No. of Observations		14			
Degrees of Freedom		9			
X Coefficient(s)	0.1692230682	-0.0580498183	0.0066662267	-0.0754717694	-0.0087906333
Std Err of Coef.	0.1323340374	0.0470717297	0.0069741637	0.1738662414	0.1578520242

A - 7 cont.

Y1A a) Correlation Analysis: Market Value of Shares Traded & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-1606.3230826
Std Err of Y Est		251.35335302
R Squared		0.9093261548
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	8.8427228823	-1.5961790671
Std Err of Coef.	3.2183794843	1.1876659777

Y1A b) Correlation Analysis: Market Value of Shares Traded & Gross National Product (GNP)

Regression Output:		
Constant		-1953.556579
Std Err of Y Est		347.56491897
R Squared		0.8018580266
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.8056930045	
Std Err of Coef.	0.1416002764	

Y1A c) Correlation Analysis: Market Value of Shares Traded & Merchandise Exports

Regression Output:		
Constant		-1914.1670578
Std Err of Y Est		315.75153527
R Squared		0.8364707082
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	3.9367638916	
Std Err of Coef.	0.6232293994	

Y1A d) Correlation Analysis: Market Value of Shares Traded & GNP Per Capita

Regression Output:		
Constant		-2459.5000043
Std Err of Y Est		348.8937135
R Squared		0.8003400755
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.2239894589	
Std Err of Coef.	0.0395540316	

Y1A e) Correlation Analysis: Market Value of Shares Traded & X1, X2, X3, X4

Regression Output:				
Constant				-949.1050231
Std Err of Y Est				285.84329548
R Squared				0.9162392318
No. of Observations				10
Degrees of Freedom				5
X Coefficient(s)	9.225935677	-0.8985825201	-0.1808854898	1.0929507114
Std Err of Coef.	5.2306380509	1.7939635365	0.3823281117	9.1366258249

A - 7 cont.

Y2 a) Correlation Analysis: Market Capitalization & Money(M1) and Quasi-Money (time, savings, and foreign currency deposits of resident sectors other than central government).

Regression Output:		
Constant		-624.50905556
Std Err of Y Est		204.38125064
R Squared		0.9332180596
No. of Observations		10
Degrees of Freedom		7
X Coefficient(s)	1.8113036286	0.981764099
Std Err of Coef.	2.6169391267	0.9657187976

Y2 b) Correlation Analysis: Market Capitalization & Gross National Product (GNP)

Regression Output:		
Constant		-1025.5854266
Std Err of Y Est		182.76716459
R Squared		0.9389669288
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.8260643306	
Std Err of Coef.	0.0744605672	

Y2 c) Correlation Analysis: Market Capitalization & Merchandise Exports

Regression Output:		
Constant		-911.47779964
Std Err of Y Est		189.19134409
R Squared		0.9346009558
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	3.9927868553	
Std Err of Coef.	0.3734252872	

Y2 d) Correlation Analysis: Market Capitalization & GNP Per Capita

Regression Output:		
Constant		-1534.7112229
Std Err of Y Est		192.38056595
R Squared		0.9323774923
No. of Observations		10
Degrees of Freedom		8
X Coefficient(s)	0.2290625327	
Std Err of Coef.	0.0213101579	

Y2 e) Correlation Analysis: Market Capitalization & X1, X2, X3 & X4

Regression Output:				
Constant		-1049.0764705		
Std Err of Y Est		233.40179844		
R Squared		0.9377904171		
No. of Observations		10		
Degrees of Freedom		5		
X Coefficient(s)	0.957574167	0.3997067031	0.0932123193	0.5663782253
Std Err of Coef.	4.3119395201	1.4648386805	0.3121852787	7.4603985224

•
FIGURES OBTAINED FROM FIBV REPORTS AND INCLUDE THE NEW YORK STOCK EXCHANGE INC. & THE AMERICAN STOCK EXCHANGE INC. ONLY.

••
FIGURES OBTAINED FROM THE INTERNATIONAL FINANCE CORPORATION'S "EMERGING STOCK MARKETS FACTBOOK 1990", AND REPRESENTS TOTAL FOR UNITED STATES.

SOURCE:
FEDERATION INTERNATIONALE DES BOURSES DE VALEURS (FIBV), REPORTS 1975 - 1988; INTERNATIONAL FINANCE CORPORATION, EMERGING STOCK MARKETS FACTBOOK 1990; INTERNATIONAL MONETARY FUND, INTERNATIONAL FINANCIAL STATISTICS, YEARBOOK 1989, NOVEMBER 1990.

APPENDIX B
A NOTE ON SOURCES

APPENDIX B:

Federation Internationale Des Bourses De Valeurs (FIBV)

The FIBV is an association of stock exchanges around the globe with the specific aim to "promote a closer collaboration between member stock exchanges and associations of stock exchanges in the best interests of issuers of securities and of investors, and to cooperate with national and international organizations to achieve this purpose". (FIBV Statutes, Article 2).

Member countries include:

- Argentina	- Egypt	- Korea	- Sweden
- Australia	- France	- Luxembourg	- Switzerland
- Austria	- Finland	- Malaysia	- Sri Lanka
- Belgium	- Germany	- Mexico	- Spain
- Brazil	- Great Britain	- Morocco	- Thailand
- Canada	- Greece	- Netherlands	- Trinidad & Tobago
- China	- Hong Kong	- New Zealand	- United States
- Chile	- Israel	- Norway	- Uruguay
- Colombia	- Italy	- Portugal	
- Denmark	- Japan	- Singapore	

International Finance Corporation (IFC)

The IFC, an international organization, was established in 1956 to promote economic growth of its developing member countries through private sector investment. It is the world's largest multi-lateral organization providing financial assistance in the form of loans and equity to the private sector in the developing countries. Its capital resources are provided by its more than 130 member countries. The IFC data base has become one of the leading sources of information on stock markets around the world.

The IFC Composite Index

comprises of Argentina, Brazil, Colombia, Greece, India, Jordan, Korea, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Portugal, Taiwan, China, Thailand, Turkey, Venezuela and Zimbabwe.

BIBLIOGRAPHICAL NOTES

BIBLIOGRAPHY

- Ayling, D. E., **The Internationalization of Stockmarkets**. Hants: Gower Publishing Company Ltd., 1986.
- Clements, Johnathan, ed. **Stock Answers**. New York: Nichols Publishing Company, 1988.
- Drake, **Money, Finance and Development**. Chapter 8: Securities Markets.
- Gelb, Alan and Patrick Honohan, **Financial Sector Reforms in Adjustment Programs**. Policy, Planning, and Research Working Paper 169. Washington D. C.: The World Bank.
- International Finance Corporation, **Emerging Stock Markets Factbook 1990**. Washington DC: 1990.
- International Monetary Fund, **International Financial Statistics**. Yearbook 1986; Yearbook 1989; November 1990.
- Kemp, Lynette J., **The Wardley Guide to World Money and Securities Markets**. London: Euromoney Publications, 1984.
- Kitchen, **Finance for the Developing Countries**. Chapter 6: Mobilizing Domestic Finance - Securities Markets.
- Mckinnon, Ronald I., ed. **Money and Finance in Economic Growth and Development**. New York: Marcel Dekker Inc., 1976.
- Rose, Peter S. and Donald S. Fraser, **Financial Institutions**, 2nd ed. Texas: Business Publications Inc., 1985.
- Samuelson, Paul, **Economics**, 11th ed. Japan: McGraw-Hill Kogakashu, Ltd., 1980.
- Shaw, Edward S., **Financial Deepening in Economic Development**. New York: Oxford University Press, 1973.
- The Spicer & Oppenheim Guide To **Securities Markets Around the World**. New York: John Wiley & Sons, Inc., 1988.
- Stonham, Paul., **Global Stock Market Reforms**. Cambridge: University Press / Gower Publishing Company, Ltd., 1987.
- The World Bank, **World Development Report 1989**. Washington DC: International Bank for Reconstruction and Development, 1989.
- Wai, U Tun and Hugh T. Patrick, "Stock and Bond Issues and Capital Markets in Less Developed Countries". **IMF Staff Papers**. Vol. XX, No. 2, July 1973.