

## ECONOMIC GROWTH AND STOCK MARKET DEVELOPMENT

By Aurora Sanchez\*

The paper examines Japan's equity capital market to find out whether stock market development proceeds from, or precedes, economic growth. It first starts with a general description of the capital market, its principal players and the various methods of financing investment. It then explores the relationship of economic growth and capital market development, focusing on the Japanese experience. The empirical evidence illustrates the case of growth first before stock market development, a finding which could prove useful for developing countries planning to develop their capital markets.

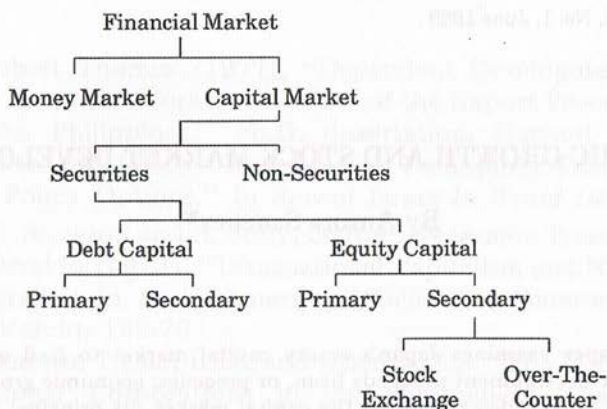
The financial system, by mobilizing savings and channeling these to investment, serves an important role in the process of development. Raymond Goldsmith (1969), using a long historical series for major industrial countries, has shown a statistical relation between economic growth and financial development. The association he found was positive and striking. But though the association may be clear, the direction of causation remains unsettled. Is it financial development that leads to economic growth or is it economic growth that causes financial structures to develop? The exact nature of the relationship between economic growth and financial development varies from country to country and depends on the extent to which the financial system is relied upon for savings mobilization and investment allocation.

The financial system comprises several markets. Chart 1 shows the different components making up the financial structure and helps to delineate this study's scope.

The financial market consists of two major segments — the money market and the capital market. The money market deals in short-term instruments, i.e., instruments with maturities of less than a year, while capital markets deal in long-term credit in the form of loans or bonds and stock issuance. The two markets are interrelated

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\*This paper was written when the author was a research fellow at the Institute of Developing Economies.



**Chart 1 - The Financial Market and its Components**

in two ways: 1) through borrowers who resort to both markets to finance their fixed investment and their working capital needs depending on the cost and availability of funds; and, 2) through funds supplier — financial institutions operating in the money market who have excess funds for investment in the capital market. The capital market has two sub-markets: 1) the non-securities market which provides non-negotiable and long-term debt finance (such as loans, mortgages, leases etc.); and, 2) the securities market which provides negotiable medium- and long-term equity and debt funds. Under the securities market are the debt capital market, which enables capital to be raised through borrowing, and the equity capital market, which enables investment funds to be raised through investor equity participation. Both the debt and equity capital markets have primary and secondary markets. The former constitutes the facilities for the initial sale of financial instruments — the issuing houses and underwriters; and the latter comprises the market for “already issued” and outstanding securities. The secondary market consists of an organized sector or securities exchange and an unorganized sector or over-the-counter market where securities not listed in the exchanges are traded “over-the-counter”. An active secondary market is essential for the issue of securities because in its absence or its inactivity, the amount of funds that can be raised via the capital market will be limited by the amount the primary market is prepared to hold until maturity.

This study's focus is the equity capital market. Emphasis on this segment of the financial system stems from the following considerations: 1) there is growing interest on the part of international portfolio investors in the emerging equity markets of developing coun-



tries, 2) the debt crisis makes external financing of economic development via commercial loans less likely to be forthcoming in the foreseeable future, and development of the capital market, insofar as it increases foreign equity investment, helps relieve debt-ridden countries from a financial crunch and of the pressure for new debt; and, 3) capital market development, and the wider equity participation that comes along with it, provides foreign direct investors with an avenue with which to create a more favorable and cooperative relationship with the local community through opening up ownership to participation by private local individuals.

Is there a relationship between economic growth and stock market development? What is the direction of the relationship? These are the questions this paper explores. It examines the development of Japan's equity capital market and from the Japanese experience seeks to find an answer to the question of whether stock market development can take place before stable economic growth is established. This is particularly relevant to developing countries where governments are considering taking an active as opposed to a passive role in developing their capital markets. An active approach by government involves resources and these resources have an opportunity cost.

The paper is divided as follows. Section 1 describes the capital market, its principal players and the various methods of financing investment. Section 2 considers the relationship between economic growth and capital market development. Section 3 discusses the development of Japan's stock market and analyzes the factors behind the phenomenon. Section 4 concludes the paper.

This study suffers from several limitations. Firstly, its approach is macroeconomic and partial equilibrium, and it is not an in-depth study, and, therefore, it may not capture the dynamics of development. Secondly, it is a simplification of what is admittedly a complex phenomenon, and in the process of simplification certain underlying factors may have been omitted. Thirdly, it looks at one country's experience and, therefore, the findings and conclusions arrived at may not have general application. Be that as it may, this study can be looked at as a first step towards understanding stock market development, in general, and Japanese stock market growth, in particular.

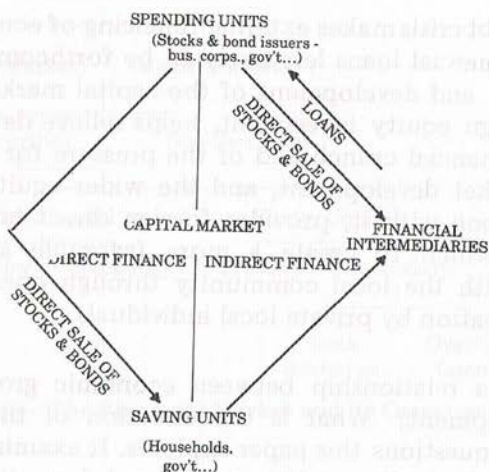


Chart 2

## 1. The Capital Market

Chart 2 shows schematically the major capital market players and distinguishes 1) between direct sale or private placement and sale through the capital market; 2) between direct and indirect finance; and 3) between internal and external sources of financing.

Capital markets enable investing units to raise investment funds through stock and bond issues. Stock markets, in particular, enable companies to raise capital, initially, through primary issues and, subsequently, through secondary issues. Capital markets, too, provide savers and financial institutions with a further outlet for their funds.

The principal players in a capital market operation are the spending units, the saving units and the financial intermediaries (brokers, dealers, and market makers are considered part of the capital market). Government is in a peculiar position in that it can assume all three roles. It is a saver when it incurs a budget surplus, a spending unit when its budget is in deficit, and a financial intermediary when it collects savings from individuals and channels them to spending units.

Besides the issuance of stocks and bonds, spending units can have recourse to other sources of finance for investment purposes. Direct loans are, like stock and bond issuance, an external financing source. Because of its availability and easy accessibility, it is often the more popular. An internal source is internally generated funds



the use of which confers advantages to management in the form of less uncertainty and the avoidance of heavy transactions cost associated with borrowing and with securities issuance.

Saving units have several alternatives with which to hold savings. Deposits (savings, demand and time deposits), insurance, trusts, etc. all require the intermediation of financial institutions. Stocks and bonds purchase, on the other hand, requires no financial intermediation, constituting, therefore, a form of direct finance. However, it does require the facilities of a capital market (not in the case of direct placement) to effect transactions. The choice by saving units as to the form in which to hold savings determines, in large measure, the importance or lack of importance of financial intermediation.

The growth of financial intermediation has made financial intermediaries a major capital market player and has increased the importance of indirect as opposed to direct financing of investment.

Private placement is a transaction bypassing the capital market. It is a direct sale of stocks and bonds to saving units and financial intermediaries. As such it presents an alternative to the capital market as a means of raising capital funds.

## **2. Economic Growth and Stock Market Development**

The observation has been made that as a country's income rises, the financial ratio, i.e. the proportion of financial assets to GNP, also increases. Gurley (1967) cites several reasons why financial ratios should rise with GNP: a) increase in net issues of primary securities during the development process; b) increasing demand for money balances for transaction purposes; and, c) expansion of financial intermediaries. He notes, for example, that "the money-GNP ratio rises from around 10 per cent in the poorest countries to 20 per cent in countries with per capita GNPs of about \$300"; and "These deposits (time and savings) are a negligible fraction of GNP in the very poor countries, but they rise steadily and rapidly during development . . .". As a country develops does the size of its capital market also increase?

Using cross-section and time-series data for 30 countries representing developed and emerging capital markets and for a seven-year period from 1980 to 1986, the regression of capital market size (measured by the ratio of market capitalization to GDP and of

trading value to GDP) against GDP per capita, yielded the following results:

$$LCAPSH = 5.41659 + 0.57561 LGDPPC \quad \bar{R}^2 = .9218$$

(-4.986)                      (4.479)\*

$$LTRAVASH = -50.20879 + 4.94635 LGDPPC \quad \bar{R}^2 = .8742$$

(-5.957)                      (5.522)\*

where

- LCAPSH* = the logarithm of the ratio of market capitalization to gross domestic product
- LTRAVASH* = the logarithm of the ratio of trading value to gross domestic product
- LGDPPC* = the logarithm of gross domestic product per capita.

\*Significant at .01%.  
(Figures in parenthesis are t-values.)

Whether the measure of stock market size used is market capitalization or trading value as a proportion of GDP, the results depict a strong and positive association between stock market size and GDP per capita, and the form of the relationship is nonlinear. That is, the higher is GDP per capita, the larger also is the size of the equity capital market, and an increase in income leads to a constant percentage increase in the size of the stock market.

A look at individual countries gives a similar picture. Plots of stock market size against GDP per capita for the 1980-86 period show upward sloping curves for over half of the 30 countries examined. There thus seems to be a tendency for the stock market to rise with income. Why and how such a tendency arises is not easy to ascertain primarily because the forces exerting influence are numerous and varied across and within countries, and the interrelationships between these forces are often intricate and complicated by institutional structures that differ from country to country. A look at a specific country may help to identify some of the influences and to clear some of the issues involved.

Japan is taken as the specific case, having achieved a phenomenal growth of its stock market from modest beginnings at the end of



World War II. In 1949 when the new stock exchange founded on the basis of a membership system was opened, the value and volume traded were merely 0.02 and 0.13 percent, respectively, of those registered in 1986. Presently, the Tokyo Stock Exchange, in market capitalization, is the world's biggest, having surpassed that of the New York Stock Exchange which before was number one.

Using time-series data for Japan for the period 1952 to 1986, the regression of stock market size against GDP per capita reveals a similar tendency for stock market size to rise with income. The GDP per capita coefficient obtained was positive and significant, and the variation in GDP per capita explained 57 percent of the variation in stock market size. The result of the estimation is reported below.

$$LMKTVASH = -8.51475 + 0.52409 LGDPPC \quad \bar{R}^2 = .5661$$

$$(-7.883) \quad (6.734)^*$$

$$DW = .531$$

where

*LMKTVASH* = the logarithm of the ratio of market value to GDP.

\* Significant at .01%

With regard to the financial sector as a whole, we earlier raised the question of whether it is economic growth that leads to financial development or whether economic growth follows from financial development. A similar question is now posed with respect to the specific case of the stock market — does stock market development precede or proceed from economic growth? The question is answered with Japan as a case in point.

### 3. Development of Japan's Capital Market

Japan entered the rapid growth phase of its economic development relying very little on the securities market to finance its rapidly increasing investment requirements. Japanese corporations relied heavily on short-, medium- and long-term loans from banks, insurance companies and other financial institutions to finance its investment needs. This heavy reliance on indirect (i.e. the channelling of investible funds to industries through financial intermediaries) as opposed to direct financing was the consequence not so much of government policy but of conditions prevailing at the time that rapid growth commenced.

Funds generated internally were inadequate to finance the rapid buildup of capacity that ensued during the period of high growth, and Japanese companies had no recourse but to resort to external sources of financing. Conditions strongly favored loans over securities as a source of finance.

For one, individuals showed a strong preference for safe and liquid assets and held a large proportion of their savings in bank deposits. As a consequence, a large amount of funds was concentrated in banks and was made available to industry through loans. Two, the bond market was underdeveloped, and trading was fairly thin. Low interest yields brought about by the government's policy of keeping yields on all types of new bond issues low and unchanging made bonds an inexpensive source of funds from the viewpoint of the issuer, but an unattractive form of investment from the point of view of the investor. This, coupled with low incomes and the consequent low capacity of pension funds and life insurance companies to absorb bonds, made bonds difficult to sell. Three, stock issue was an expensive source of funds due to 1) the differential tax treatment of dividend and interest payments — dividends were subject to the corporate profit tax while interest payments were deductible from corporate profits before taxes; 2) the par value system whereby new stocks were issued at par with subscription rights to shareholders; 3) the tradition of paying dividends of at least 10 percent of par value. Thus, the reliance on indirect financing (i.e. the channeling of investible funds to industry through financial intermediaries) was a likely consequence.

What this Japanese experience suggests is that development of the securities market is not crucial to the initial takeoff to sustained growth. What is essential is the uninterrupted flow of funds from surplus to deficit units. The securities market is one of the several channels for the flow of funds from savers to users, and Japan during its high growth phase chose not to source a large part of its financial requirements via this channel.

### *Periodization*

Japan's stock market started to develop in 1967, or thereabouts, when most indicators showed sharpening and continuing upward trends interrupted only intermittently by forces not strong enough to vitiate the trends established. Graphs showing the pattern of movement of stock market indicators—stock price index, market value,



daily average trading value and volume, number of listed issues, and number of listed companies—are shown in Charts 3 to 6. The pictures demarcate the period around 1967 as that from which the sharpening of trends begin to occur.

Prior to 1967 the TSE stock price index registered very little variation. After 1967, however, the price changes became more marked, and a discernible upward trend was established. From 1977 onwards, the price trend continued to rise uninterruptedly and the price rises were sharp.

The TSE market value and daily average trading value displayed patterns similar, in many respects, to that outlined by the stock price index — small changes prior to 1967 and marked changes after 1967 with sharp increases beginning 1977.

The daily average trading volume began its upward climb earlier than did any of the above indicators. In 1957 the uptrend was in place, but the increases in this early period were moderate compared to those after 1967.

The number of listed companies shot up most markedly after 1967, and the increases were continuous compared with the ups and downs registered in the pre-1967 period.

The number of listed issues fluctuated widely prior to 1967, but after this period, the number of listed issues moved upwards in a smooth and continuous manner.

### *Reforms*

At around this period Japan initiated reforms to improve the climate under which stock markets could operate. These came in the heels of the 1963-65 securities panic when stock prices plunged as a consequence of the large amount of new stock issues by corporations forced (by government's credit stringency policy) to turn to the stock market for new capital; and of repercussions from investor cancellation of stock investment trusts. Among these reforms were: 1) the amendment of the Securities and Exchange Law (in October 1965) substituting a licensing system for the then prevailing registration system for securities companies (the new system was to be implemented after a two-and-a-half year grace period); 2) major revisions of the investment trust system to provide further pro-

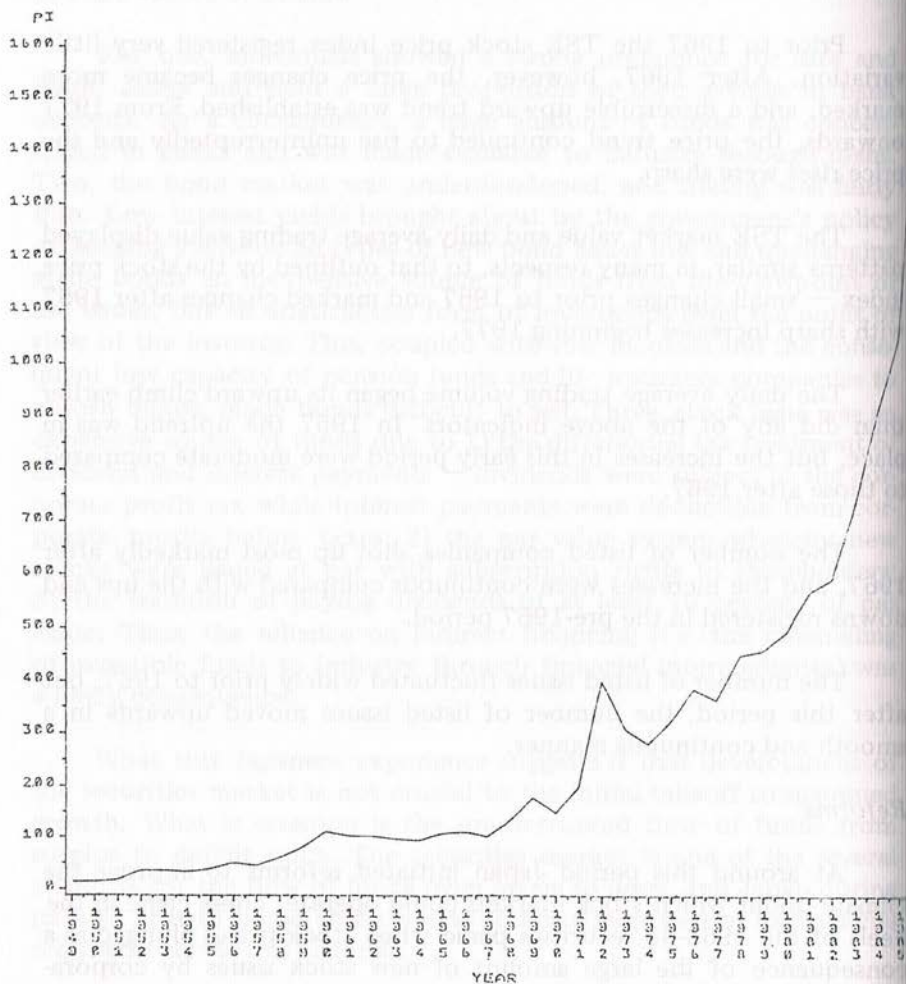
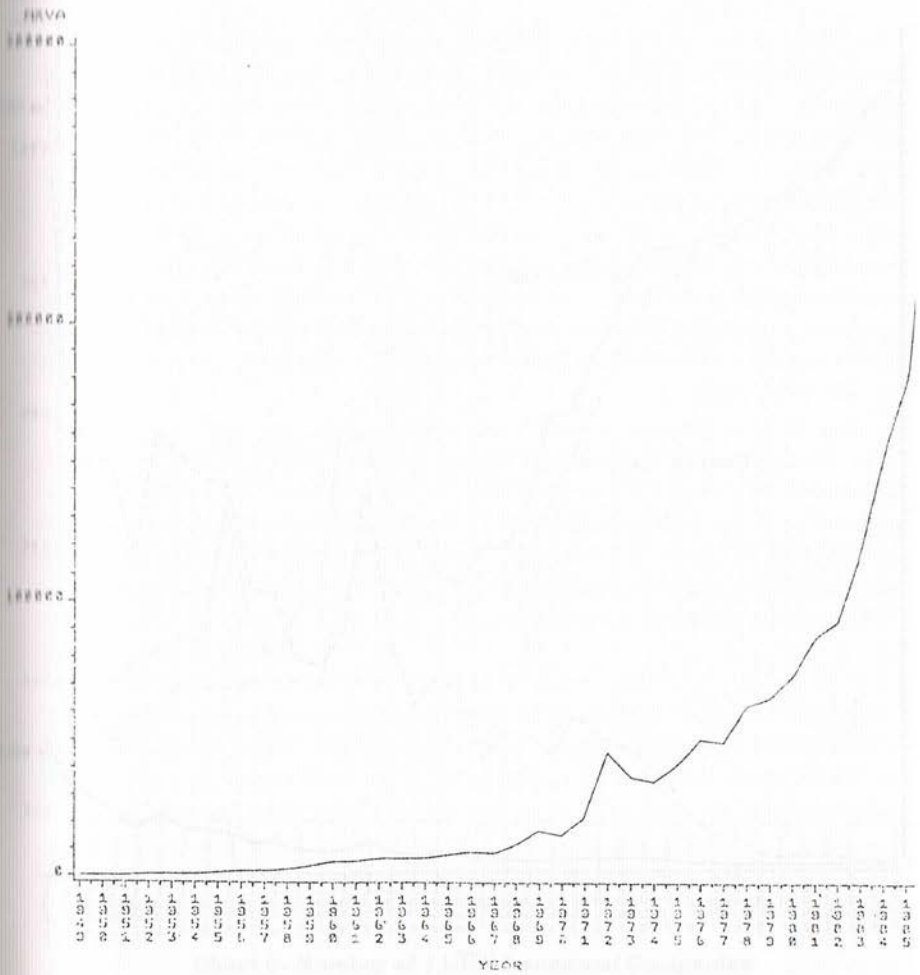


Chart 3 - Stock Price Index





**Chart 4 - Market Value**

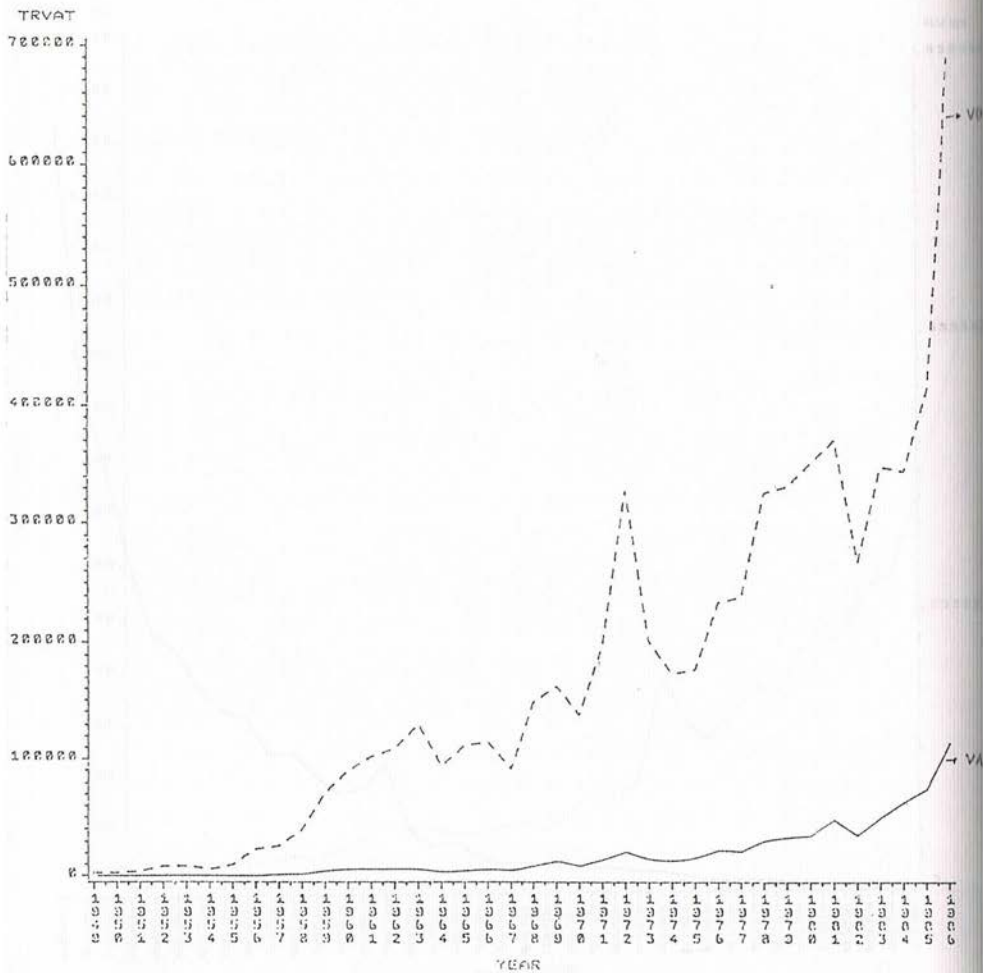
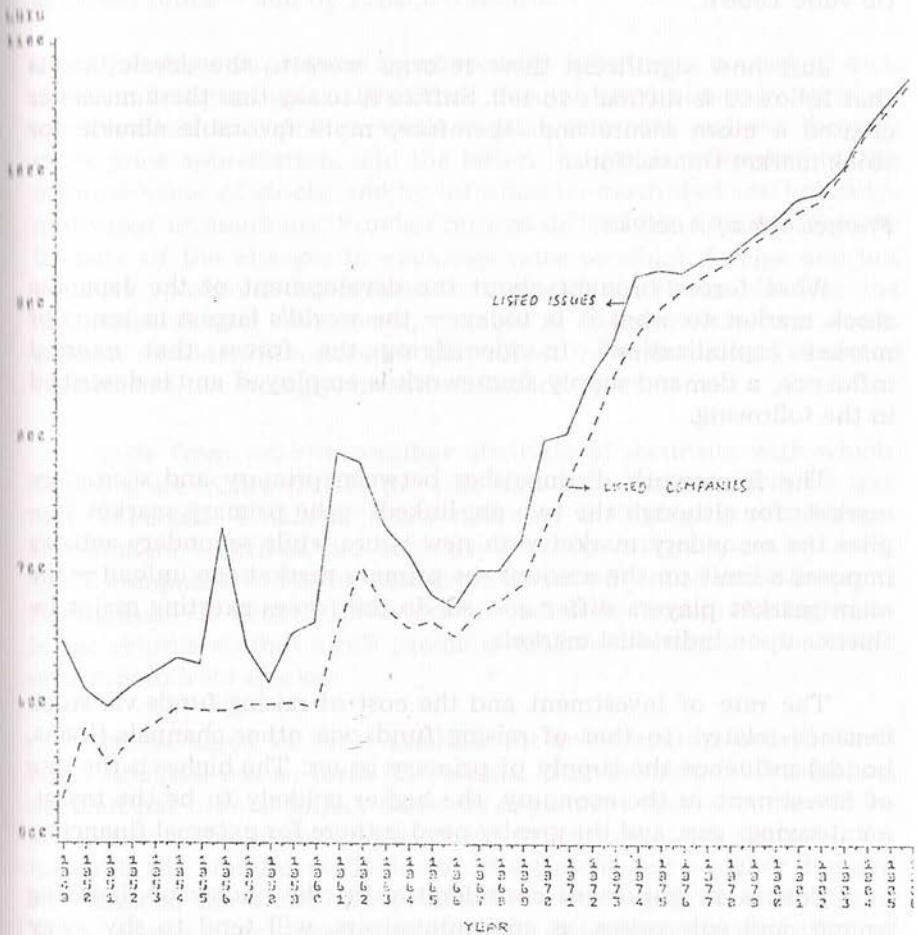


Chart 5 - Daily Average Trading Value and Volume





**Chart 6 - Number of Listed Issues and Companies**

tection to beneficiaries; 3) measures to improve the system of margin transaction (undertaken in August 1967); 4) measures to prevent corporations from submitting false statements of accounts after 1965; and 5) amendment of the Certified Public Accountant Law (in June 1966).

Just how significant these reforms were to the developments that followed is difficult to tell. Suffice it to say that these measures created a more secure and, therefore, more favorable climate for stock market transactions.

### *Framework of Analysis*

What forces brought about the development of the Japanese stock market to what it is today — the world's largest in terms of market capitalization? In identifying the forces that exerted influence, a demand-supply framework is employed and is described in the following.

The framework distinguishes between primary and secondary markets for although the two are linked — the primary market supplies the secondary market with new issues while secondary activity imposes a limit on the amount the primary market can unload — the main market players differ and so do the forces exerting major influence upon individual markets.

The rate of investment and the cost of raising funds via stock issuance relative to that of raising funds via other channels (loans, bonds) influence the supply of primary issues. The higher is the rate of investment in the economy, the higher is likely to be the investment-savings gap, and the greater need is there for external financing.

Cost is an important consideration in the choice of financing source, and enterprises, as cost minimizers, will tend to shy away from high cost and move into low cost sources of finance. The cost associated with stock issuance consists of 1) a primary distribution cost which has two components, an explicit cost given by the underwriting spread, i.e. the difference between offering price and the purchase price by underwriters; and an implicit cost given by the difference between the public offering and the price that might have been obtained otherwise; and 2) the cost of funds which constitutes, primarily, the dividend rate policy.



In the secondary market, the demand to hold stocks (the difference between what investors are willing to hold and their actual holdings of stocks) is hypothesized to be influenced by the availability of funds for investment purposes — from hereon to be referred to as excess funds — and by expected returns.

The domestic returns from security investment consist of dividends and capital gains. Dividends depend upon company earnings and dividend rate policy, while capital gains are realized through stock price appreciation, and the latter, in turn, is influenced by the intrinsic value of stocks and by information-motivated and liquidity-motivated transactions. Foreign returns differ from domestic returns because of the changes in exchange rates to which foreign and not domestic portfolio investment is exposed to. Hence, besides the influences already mentioned, changes in exchange rate are an important consideration because they affect the evaluation of expected returns and, accordingly, investor behavior.

Aside from returns, another attribute of securities with which investors are concerned is the risk that actual returns will be less than expected. Financial assets differ in their degree of riskiness. Government securities and bank deposits, for instance, are less risky assets compared to stocks whose prices are subject to more frequent fluctuations. In general, investors are risk averse and prefer higher to lower returns so that a risk premium may be necessary to motivate investors to hold stocks.

Excess funds, or those available for investment in securities and other financial assets, form the residual after the money transactions demand has been satisfied; these are dependent upon income and interest rates. The greater is the excess over transactions demand, the higher is the amount available for investment, and a higher demand for financial assets can be expected. The return and risk attributes of financial assets and investor preferences determine the allocation of this increased demand among the various financial assets.

### *The Primary Market*

Japan's primary market is the stock market's link with the productive sector of the economy. Through the primary market fresh funds find their way to fund users. The primary market consists of the stock issuers, the underwriters and the purchasers of the new

issues. Securities companies underwrite only those shares that are up for public offering; allotments to shareholders and private placement are done directly.

The number of listed issues and the amount of new capital raised by companies listed in the Tokyo Stock Exchange have grown over the 1949-86 period. From a little over ¥1 million in 1956 the amount of new capital raised through the stock market rose to ¥723 million in 1986, while listed issues increased in number from 650 in 1949 to 1079 in 1986. The rise may be attributable, in large part, to the decline in the cost of security financing that has come about as a result of the weakening of the par value system (the system of new stock issuance at par with subscription rights to shareholders) which has been one of the reasons for the high cost of stock issuance in Japan and the consequent lack of interest in the stock market as a source of financing. The veering away from the par value system is evident from statistics shown in Table 1.

Between the subperiods under consideration (1949-66 and 1967-86), there has been a noticeable shift in the pattern of allotments from subscription rights to shareholders to public offerings. Between 1956 to 1966, a substantial proportion of new issues were allotted to shareholders — 95 per cent compared to only 4 per cent through public offerings. Between 1967 to 1986, the bulk was made through public offerings at 50 per cent compared to only 42 per cent through shareholder allotments.

Table 1 --- Pattern of Share Allotment  
(In percentage)

Period	Shareholder Offering	Public Offering	Private Placement	Exercise of Warrant
1956-66	94.7	4.3	1.0	—
1967-86	42.1	49.8	4.7	3.4
1956-86	60.8	33.7	3.3	2.2

Source of basic data: *Manual of Securities Statistics*, 1987, The Nomura Securities Co., Ltd., The basic data are for companies listed in all stock exchanges. Exercise of warrants appeared in 1982.



Table 2 -- Excess Over Par, Public Offering,  
Share Offering and Private Placement

	Excess Over Par (¥ Million)			As Proportion of Public Offering's Excess over Par	
	Public Offering	Share Offering	Private Placement	Share Offering	Private Placement
1956-66	11947	210	307	0.13	0.41
1967-86	436873	14781	31131	0.03	0.09
1956-86	286092	9611	20194	0.07	0.20

Source of basic data: *Manual of Securities Statistics 1987*, The Nomura Securities Co., Ltd.  
Basic data are for companies listed in all stock exchanges.

As Table 2 shows, the excess over par of public offerings has been far greater than the excess over par of offering to shareholders and of private placement. The proportions of the last two to the excess over par of public offerings have been low, 0.07 and 0.20, respectively, over the 1956-86 period. The magnitude of the excess over par of public offering has risen appreciably between 1956-66 and 1967-86; and the magnitude of the difference between public offering and private placement has widened through time. The shift away from shareholder offering towards public offering has raised offering prices and has reduced the cost of fund raising via stock issuance.

The policy (tied to the par value system) of a dividend rate of at least 10 per cent that is maintained even after new shares have been issued makes for a high cost of funds raised through stock issuance. The evidence suggests a decline in the ratio of dividend to stock prices or yield rate as indicated by the drop in the arithmetic average of yield rates paid out by dividend paying companies listed in the first section of the Tokyo Stock Exchange from 9.53 per cent in 1950 to 5.92 per cent in 1965, and to 0.99 per cent in 1985 (see Table 3). In other words, between 1949 and 1986, there has been a decline in the cost of stock issuance both on account of the rise in offering prices and the decline in yield rates.

Although the number and amount of listed issues have been on the rise, stock issuance as financing source remains of relatively little importance, however. Of the external sources of financing, loans have



Table 3 — Yield Rate  
(In percentage)

Year	Yield rate
1950	9.53
1955	7.96
1960	3.93
1965	5.92
1970	3.47
1975	2.31
1980	1.63
1985	0.99

Source: *Manual of Securities Statistics 1987*, The Nomura Securities Co., Ltd.  
Arithmetic average, all dividend paying companies.

Table 4 — Distribution of Industrial Funds, By Source  
(In percentage)

	Loans	Bonds	Stocks	Foreign Investment
1950-66	81.6	4.5	13.4	0.5
1967-85	88.9	3.8	6.7	0.6
1950-85	85.4	4.1	9.9	0.6

Source of basic data: *Japan Statistical Yearbook*, Statistics Bureau, Prime Minister's Office.

been by far the largest, accounting for 85 per cent of total industrial funds supplied externally over the 1950-85 period, while stocks and bonds accounted for merely 10 and 4 per cent, respectively, of the total (see Table 4). Between 1950-66 and 1967-88 there has been a decline in the proportion of total supply of industrial funds accounted for by stocks from 13 percent to 7 percent. The bigger companies that rely more heavily on the stock market to raise funds (smaller companies depend on banks for 100 per cent of their financing) have found access to foreign financial markets. In

Table 5 — Growth Rates of Gross Fixed Capital Formation and Number of Listed Issues and Listed Shares (In percentage)

	Gross Fixed Capital Formation	Number of Listed Issues	Number of Listed Shares
1956-66	15.7	8.2	21.6
1967-86	6.5	0.7	6.0
1956-86	9.7	3.4	11.6

Sources of basic data: *Japan Statistical Yearbook*, Statistical Bureau, Prime Minister's Office; and *Manual of Securities Statistics 1987*, The Nomura Securities Co., Ltd.

Refer to all issues in all stock exchanges.

In addition, a driving force behind the increase in supply of stock issues has been disappearing — the rate of domestic investment has slackened as shown by the drop in the growth rate of gross fixed capital formation from an average of 16 percent between 1956-66 to 7 percent between 1967-86 (see Table 5). Concomitant with the drop in the rate of investment has been a decline in the growth of the number of listed issues and listed shares from 8.2 and 21.6 percent respectively, between 1956-66 to 0.7 and 6 percent, respectively, between 1967-86. Regression of the growth in the number of issues and shares listed in all stock exchanges against the growth of gross domestic capital formation indicates a positive correlation between dependent and independent variables as shown in the results below.

$$GLSSH = 0.043 + 0.5947 \text{GINVST} \quad \bar{R}^2 = .3478$$

$$(2.068) (3.991)^*$$

$$DW = 1.058$$

$$\#GLSIS = -0.037 + 0.6977 \text{GINVST} \quad \bar{R}^2 = .2474$$

$$(-1.052) (2.924)^*$$

where

$GLSSH, GLSIS$  = growth rates of the number of listed shares and issues

$GINVST$  = growth rate of gross domestic capital formation

\*significant at 1%.

The decline in relative importance of equity financing (stocks as a proportion of total financial assets declined from an average of 10 percent between 1954-66 to 3 percent between 1967-85) has contributed to rising share prices inasmuch as the new issues have not been adequate to absorb the huge amount of investment available from export-rich corporations and wealthy Japanese searching for portfolio diversification in the local stock market.

### *The Secondary Market*

Japan's secondary market consists of eight exchange markets and the over-the-counter (OTC) market. Japan's eight stock exchanges are the Tokyo, Osaka, Nagoya, Kyoto, Hiroshima, Fukuoka, Niigata and Sapporo stock exchanges, of which the Tokyo Stock Exchange (TSE) is the largest, accounting for 83 percent (as of 1986) of total transaction both by value and volume. The Tokyo stock market has two sections, first section with 1075 (as of 1986) listed stocks which accounts for 99 percent of the TSE's total equity capitalization and a second section (set up in 1961) with 424 companies listed (as of 1986).

The OTC market provides a trading market for stocks delisted from the exchanges and stocks that, as yet, do not meet the exchanges' listing requirements. Japan's OTC market is miniscule; its trading volume is but a tiny slice of the TSE cake representing 0.03 percent of the volume traded in the first section of TSE.

In view of the above considerations, the discussion that follows lays greater emphasis on the organized sector of the stock market, the stock exchanges, and except when specified, utilizes information relating to TSE and its first section.



Table 6 — Excess Funds, by Investing Sector  
(¥ 100 million)

Period	Financial Institutions	Business Corporations	Households
1954-66	41554	39317	21400
1967-86	364348	209689	217923
1954-86	233213	140475	138086

Source of basic data: *Manual of Securities Statistics 1987*, The Nomura Securities Co., Ltd.

Computed as

$$EX_i = FT_i - (CUR_i + TC_i + ST_i)$$

where

- $EX$  = Excess Funds
- $FT$  = Total financial transactions
- $CUR$  = Currency and demand deposits
- $TC$  = Trade credit
- $ST$  = Stock investment
- $i$  = investing sector.

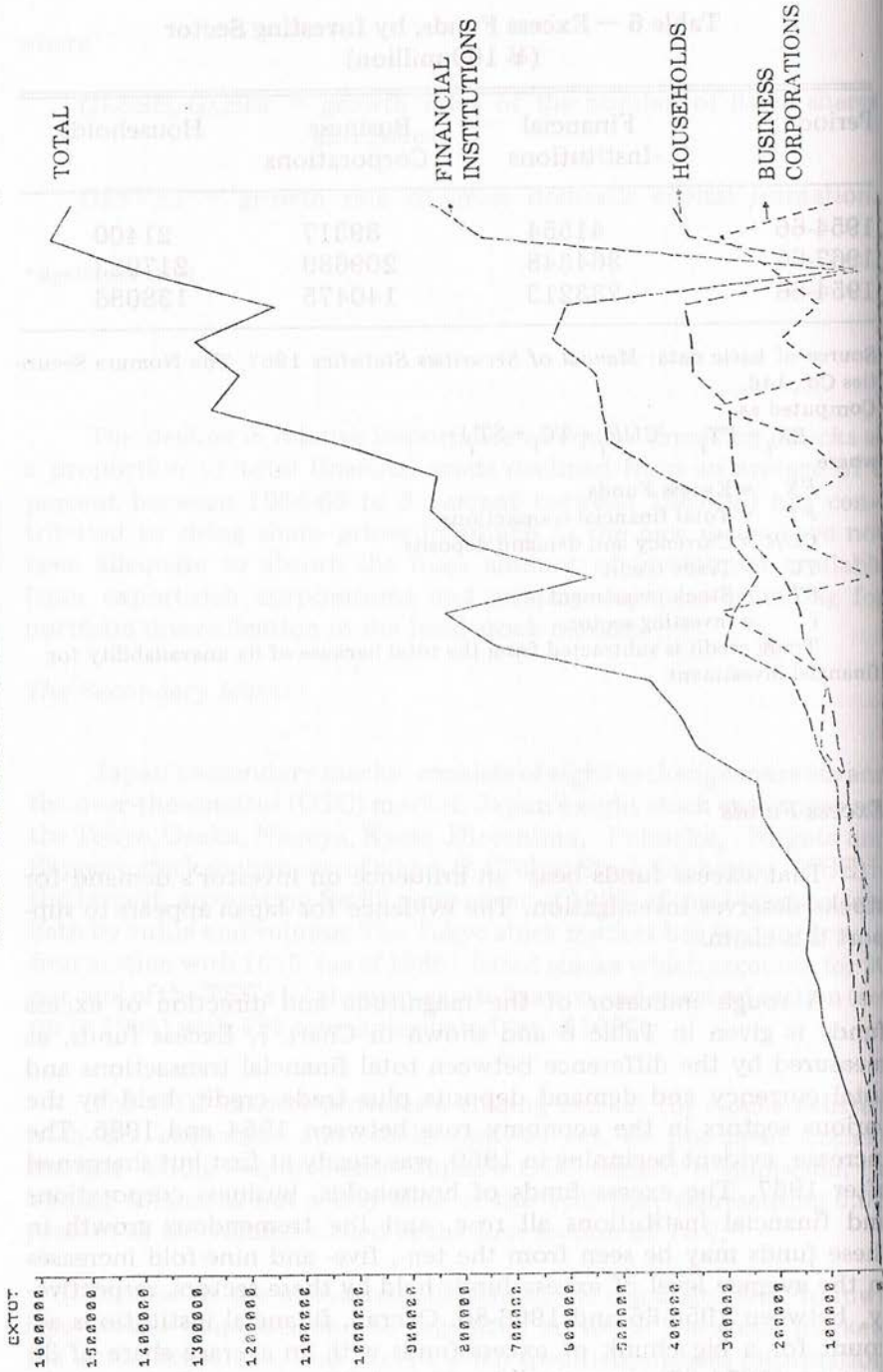
Trade credit is subtracted from the total because of its unavailability for financial investment.

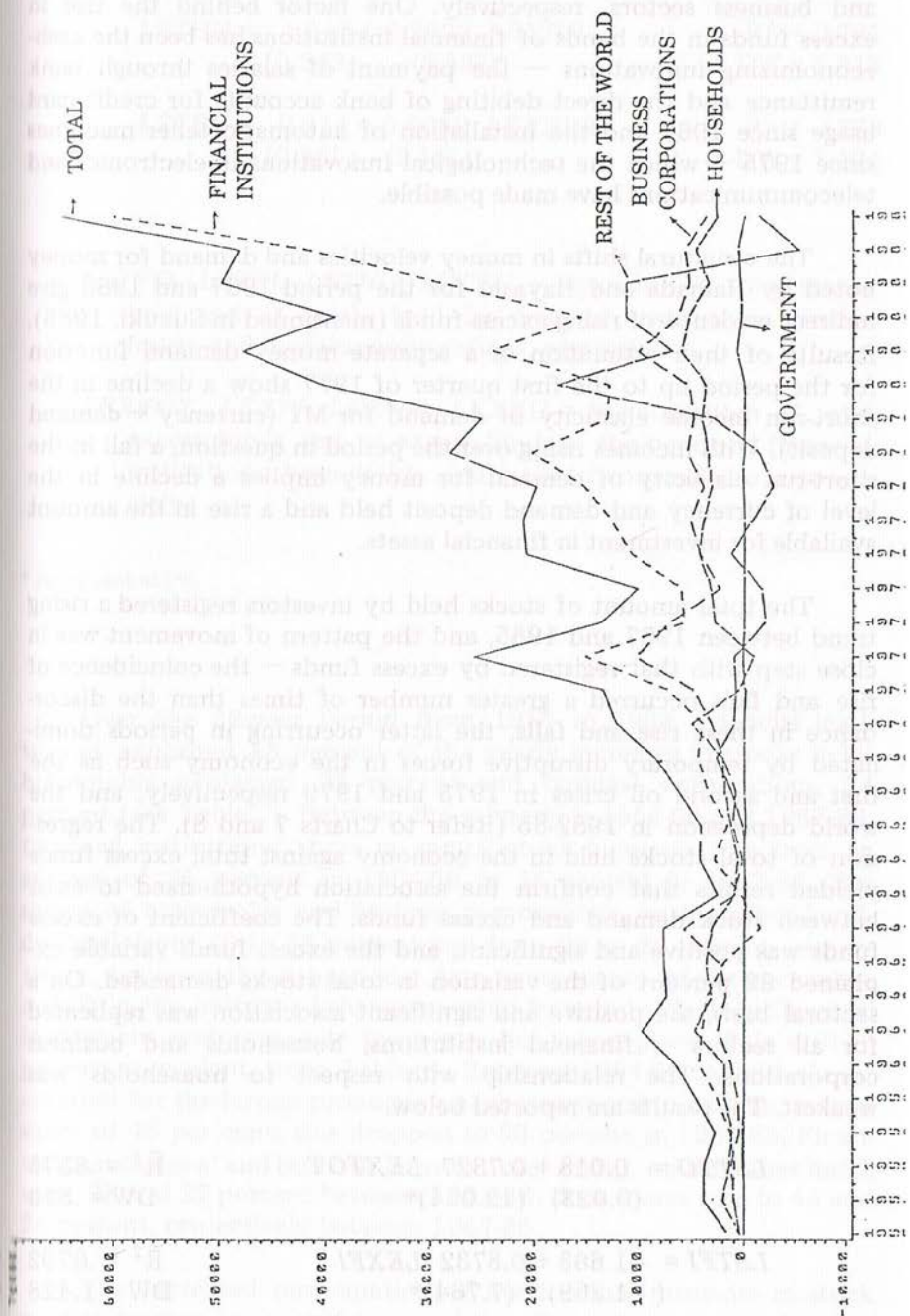
### Excess Funds

That excess funds bear an influence on investor's demand for stocks deserves investigation. The evidence for Japan appears to support this claim.

A rough indicator of the magnitude and direction of excess funds is given in Table 6 and shown in Chart 7. Excess funds, as measured by the difference between total financial transactions and total currency and demand deposits plus trade credit, held by the various sectors in the economy rose between 1954 and 1985. The increase, evident beginning in 1959, was steady at first but sharpened after 1967. The excess funds of households, business corporations and financial institutions all rose, and the tremendous growth in these funds may be seen from the ten-, five- and nine-fold increases in the average level of excess funds held by these sectors, respectively, between 1954-66 and 1966-86. Overall, financial institutions account for a big chunk of excess funds with an average share of 38 percent (1954-86) compared to 23 and 29 percent for household

**Chart 7 - Funds for Financial Investment**







and business sectors, respectively. One factor behind the rise in excess funds in the hands of financial institutions has been the economizing innovations — the payment of salaries through remittance and the direct debiting of bank accounts for credit card usage since 1969 and the installation of automatic teller machines since 1975 — which the technological innovations in electronic telecommunications have made possible.

The structural shifts in money velocities and demand for money noted by Hamada and Hayashi for the period 1967 and 1983 provide indirect evidence of rising excess funds (mentioned in Suzuki, 1983). Results of their estimation of a separate money demand function for the period up to the first quarter of 1977 show a decline in the short-run income elasticity of demand for M1 (currency + demand deposit). With incomes rising over the period in question, a fall in the short-run elasticity of demand for money implies a decline in the level of currency and demand deposit held and a rise in the amount available for investment in financial assets.

The total amount of stocks held by investors registered a similar trend between 1967 and 1985, and the pattern of movement was in close step with that registered by excess funds — the coincident rise and falls occurred a greater number of times than the divergence in these rise and falls, the latter occurring in periods dominated by temporary disruptive forces in the economy such as the first and second oil crises in 1973 and 1979 respectively, and the world depression in 1982-85 (Refer to Charts 7 and 8). The regression of total stocks held in the economy against total excess funds yielded results that confirm the association hypothesized to exist between stock demand and excess funds. The coefficient of excess funds was positive and significant, and the excess funds variable explained 82 percent of the variation in total stocks demanded. On a sectoral basis, the positive and significant association was replicated for all sectors — financial institutions, households and business corporations. The relationship with respect to households was the weakest. The results are reported below.

$$LSTTO = 0.018 + 0.7327 LEXTOT \quad \bar{R}^2 = .82$$

$$(0.023) (12.054)^*$$

$$DW = 1.8$$

$$LSTFI = -1.663 + 0.8732 LEXFI \quad \bar{R}^2 = .82$$

$$(-1.269) (7.764)^*$$

$$DW = 1.8$$

$$LSTHH = 4.642 + 0.2808 LEXHH \quad \bar{R}^2 = .1761$$

(5.243)      (3.532)\*

DW = 1.618

$$LSTBU = 0.814 + 0.6089 LEXBUS \quad \bar{R}^2 = .5378$$

(0.985)      (2.161)\*

DW = 1.174

where

*LSTTO*, *LSTFI*, *LSTHH*, *LSTBU* = logarithm of total stocks held and of stocks held by financial institutions, households, and business corporations, respectively;

*LEXTOT*, *LEXFI*, *LEXHH*, *LEXBU* = the logarithm of total excess funds and of excess funds in the hands of financial institutions, households, and business corporations, respectively.

significant at 1%.

Over the 32-year period from 1954 to 1986, financial institutions explained 45 percent of the yearly increases in stocks held; households explained 25 percent and business corporations, 24 percent (see Table 7). Between the subperiods 1954-66 and 1967-86, financial institutions' share in annual stock increases rose from an average of 31 percent in 1954-66 to 55 percent in 1967-86. The shares of households and business corporations, on the other hand, declined from 39 to 16 percent and from 28 to 22 percent, respectively, between the subperiods. As a consequence of these changes, a shift in the pattern of shareownership from individuals to financial institutions and corporate businesses has taken place. This shift in pattern is evident from Table 8. Between 1954-66 individuals accounted for the largest proportion of shareownership with an average share of 48 per cent; this dropped to 30 percent in 1967-85. Financial institutions' and business corporations' shares, on the other hand, were 28 and 22 percent between 1954-66; their shares rose to 45 and 11 percent, respectively between 1967-85.

The increased participation of institutional investors in stock market trading is a significant and beneficial development because



**Table 7 — Distribution of Yearly Stock Investment,  
by Type of Investor  
(In percentage)**

Period	Financial Inst.	Business Corp.	Households	Gov't	Rest of the World
1954-66	31.1	28.2	39.1	2.3	-0.7
1967-86	55.0	21.8	16.2	0.4	6.6
1954-86	45.3	24.4	25.5	1.1	3.7

Source of basic data: *Flow of Funds Account in Japan*, The Bank of Japan.

**Table 8 — Pattern of Share Ownership  
(In percentage)**

Period	Financial Institutions	Business Corporations	Households	Gov't
1954-66	28	22	48	2
1967-85	45	24	30	1
1954-85	38	23	37	2

Source of basic data: *Flow of Funds Account in Japan*, The Bank of Japan.

institutional players 1) provide the stock market with a fair constant net flow of new funds, 2) have the capability to evaluate potential investments on a more professional basis than individual investors, and 3) constitute a base of long-term investors. In short, institutional players are investors who buy and sell primarily on the basis of their assessment of the present performance and future prospects of the companies concerned, rather than speculators who go in and out of the market to take advantage of fluctuations in market prices. Their presence lends stability to the market and enhances investor confidence.

The rise of corporations and financial institutions as a powerful force in the stock market is linked to the strong performance of the Japanese economy. Robust economic growth has enabled corporations to accumulate financial surpluses that have found the



way to the stock market. Furthermore, a long and sustained growth has caused individual incomes to rise, and financial institutions that lean on individual asset accumulation for their growth — banks, insurance companies, investment trusts — to flourish.

### Returns

The return to holding Japanese stocks has been high. While yield rates have been falling, stock price appreciation has been rapid and substantial especially when yen appreciation is taken account of. The average rate of stock price increase between 1959 and 1986 has been 12 percent. This represents a more favorable return compared with those of assets that compete with stocks in the investors' portfolio (see Table 9). The returns to loans, deposits, government bonds and money market placements over the period have been 7.51, 4.02, 7.43 and 7.59 percent, respectively, way below that for stocks. However, stocks are a far riskier investment, being subject to more frequent price fluctuations such that, the difference in yield, in part, reflects a premium for risk bearing.

Foreign returns to stock differ from domestic returns due to changes in exchange rates. Japan adopted a floating exchange rate policy in 1971 and since then the yen has registered a rise in value, with the rate of appreciation against SDR averaging 4 percent between 1971 and 1986. Thus, with yen appreciation included in the calculations, the returns from stocks is considerable.

Regressing the rate of growth of demand for stocks against the rate of growth of stock prices has yielded the following results:

Table 9 — Yield Comparison, Period Averages  
(In percentage)

Period	Deposit Rate	Lending Rate	Money Market Rate	Gov't. Bond Yield	Stock Yield	
					Stock price Appreciation	Yield Rate
1959-66	4.12	7.81	8.61	6.86	6.56	6.43
1967-86	3.98	7.39	7.18	7.46	14.19	2.23
1959-86	4.02	7.51	7.59	7.43	12.21	4.09

Source of basic data: *Manuel of Securities Statistics* 1987, The Nomura Securities Co., Ltd.

$$\# \text{ GSTTO} = -0.037 + 1.279 \text{ GPI} \quad \bar{R}^2 = .2280$$

(.444) (2.881)\*

$$\# \text{ GSTFI} = 0.035 + 2.7274 \text{ GPI} \quad \bar{R}^2 = .1331$$

(.133) (2.073)\*\*

$$\# \text{ GSTBU} = 0.337 + 0.0713 \text{ GPI} \quad \bar{R}^2 = .002$$

(1.453) (.102)

$$\# \text{ GSTHH} = 0.109 - 1.0960 \text{ GPI} \quad \bar{R}^2 = .0214$$

(.330) (-0.783)

where

*GSTTO*, *GSTFI*, *GSTBU*, *GSTHH* = the growth rates of total stocks held and stocks held by financial institutions, business corporations and households, respectively;

*GPI* = growth rate of stock prices.

\* significant at 10%

\*\*significant at 5%

# Estimates after correcting for autocorrelation.

The results show a positive and significant association between the growth of stock demand and stock prices, but the positive and significant relationship is confined to the case of financial institutions. Households' and business corporations' demand for stocks is poorly related to the growth of stock prices, and in the case of households the relationship is negative.

### *Riskiness*

The holding of stocks involves risk. This risk consists mainly of 1) market risk, the variance in returns related to market movements and 2) specific risk, the variation arising from factors specific to a company or industry. While the latter can be diversified away by holding a portfolio of assets whose returns move diversely, the former, which affects all shares similarly, cannot as easily be diversified. It is this market risk that is referred to in the discussion of the riskiness of Japanese stocks.

A study by Cohen, Ness, Jr., Okuda, Schwartz, and Whitcomb (1976) provides empirical evidence of the influence which "thinness" exerts on common stock returns volatility, based on a sample of 178 common stocks listed in NYSE, AMEX, TKYO and RIO in 1971. With thinness and turnover variables accounted for, it has found that Tokyo securities, which is commonly perceived as volatile compared to New York Stock Exchange securities, have the lowest overall level of returns variance.

The evidence, based on monthly time series data on stock prices for the period 1949-86, indicates declining riskiness of Japanese stocks. The price volatility index (the ratio of high to low stock prices), the measure used to indicate price variability, dropped from 1.079 between 1949-66 to 1.054 between 1967-86 (see Table 10). The coefficient of variation of TSE stock prices fell from 8.77 between 1949-66 to 6.14 between 1967-86.

#### *Foreign Demand*

Risk and returns are important considerations in investment decisions. The rising returns from and the lowered risk of Japanese stocks are inducements not only to domestic investors but also to foreigners to invest in these assets.

One significant factor contributing to the rise in stock prices has been foreign demand. Foreign demand for Japanese stocks started in earnest in 1968 (up to 1960, foreign portfolio investment

**Table 10 — Price Volatility Index and Coefficient of Variation**

Period	Price Volatility Index	Coefficient of Variation
1949-66	1.08	8.77
1967-86	1.05	6.14
1949-86	1.07	7.39

Source of basic data: *Manual of Securities Statistics* 1987, The Nomura Securities Co., Ltd.

The price volatility index is the ratio of high to low share prices registered during a month and averaged over a year.



was prohibited and between 1960 to 1970 was restricted). Foreign investor interest in the Japanese stock market sprang from the following considerations: 1) the Japanese yen was believed to be undervalued and, sooner or later, will have to be revalued; and, therefore, holding Japanese assets through stock purchases was deemed highly desirable; 2) interest rates in Japan were higher than in the U.S.; 3) the average price-earnings ratio of Japanese stocks was low by international standards; and, 4) Japan had achieved a track record of sound economic performance and the prospects for its continuation were bright. The Japanese economy withstood the four-month-long international monetary crisis triggered by the series of measures President Nixon announced on August 15, 1971 to bolster the sagging dollar. These measures were the discontinuance of the dollar's conversion into gold and the imposition of a 10 percent import surcharge. Weathering the storm proved to the world that the Japanese economy was strong and resilient.

Foreign demand was given fresh impetus with the enforcement in December 1980 of the new Foreign Exchange Law which authorized foreign investors to acquire, through indirect investment, up to 10 percent of the outstanding shares of a Japanese corporation. In response to the liberalization move, foreign demand rose sharply

Between 1967 and 1986, foreigners accounted for, on average, 6.6 percent of the annual increases in stocks held (refer to Table 7). This represented a substantial rise considering the almost next to nothing foreign investment prior to 1967. Increased foreign demand has been another factor contributing to the upsurge in demand for Japanese stocks and this pent-up demand has added fuel to the surge in share prices.

### Concluding Remarks

Empirically, an association between economic growth and stock market size has been found on the basis of time-series data on a single country and of time-series cross-section data on several countries typifying both mature and emerging capital markets. This tendency for stock market size to rise with income has been analyzed with Japan as a specific case.

While financial development may be critical to growth — with out it growth cannot continue for long as it would be without fuel

so to speak — stock market development is not as crucial as the Japanese experience demonstrates.

Although the Japanese stock market has matured and has surpassed the New York Stock Exchange which used to be the world's largest, it nevertheless remains a marginal source of industrial funds in Japan. New issues of stock represent a small proportion of the total capital raised by industries and in recent times, have declined due to the greater access of large Japanese corporations to foreign equity markets and to the reduced need for funds as Japanese corporations accumulated surpluses and became investors rather than borrowers. It has been the large Japanese corporations that have accessed the stock market for funds; smaller corporations continue to rely on banks for 100 percent of their financing.

The development of Japan's stock market took place against the backdrop of long sustained economic growth. It was this long period of growth that allowed surpluses to accumulate in the hands of investors. Some of these surpluses have found their way to the stock market.

Japan's stock market developed on the strength of demand which outpaced the supply of new issues. The strength of this demand would not have evolved had there been no period of stable and sustained growth such as that which Japan experienced.

Excess funds have been found to be a significant factor explaining the demand for stocks, and this variable is highly dependent on the growth of the economy. Statistical findings point to a positive and significant relationship between excess funds and the amount of stocks held. The relationship is strongest for financial institutions, a sector that has increasingly become a major stock market player, outdistancing individual investors. The growth of financial institutions (banks, insurance companies, investment trusts) is built upon the growth of individual savings and the latter, on individual incomes which has been possible because of growth in the economy.

Foreign demand for Japanese stocks has been another factor contributing to demand. Foreign demand stemmed from speculation in the yen's appreciation, as well as, the strong performance and bright prospects of the economy. Both these underlying factors hinge on the established track record of economic growth established.

As to the question of which comes first, economic growth or stock market development, the Japanese experience clearly illustrates the case of growth first before stock market development.



Developing countries that wish to pursue a planned development of the capital market, in particular, the stock market, need consider whether the pursuit of such a goal for the purpose of catalyzing economic growth may be putting the cart before the horse. Such efforts would bear greater fruit if carried out under a climate of stable growth.

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