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## Japanese Financial Development in Historical Perspective, 1968-1980

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CENTER DISCUSSION PAPER NO. 396

JAPANESE FINANCIAL DEVELOPMENT IN  
HISTORICAL PERSPECTIVE, 1868-1980

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## Introduction

Japan presents one of the most illuminating historical cases of generally successful economic development, in terms both of overall performance and of such specific features as the development of its financial system. An isolated, autarchic, low-income traditional economy until forcibly opened by Western intervention in the 1850s, Japan became the first non-Western country to absorb the industrial revolution of the West and to achieve Kuznetsian modern economic growth. This complex process meant not only the adoption, adaptation and innovation of Western technology, but also of many of its institutional forms. Once in Japanese culture, their evolutionary development took on lives of their own, though within well-recognizable Western forms. This was particularly true of the development and growth of the Japanese financial system, which as elsewhere in market economies has had at its core the banking system.

The purpose of this essay is to examine in broad terms the historical process of the development of the Japanese financial system from the beginning of the Meiji Restoration in 1868 to the present. I consider three major, inter-related themes: the growth and evolving institutional structure of the financial system; the nature and role of financial markets; and financial dualism. Since the concept of financial dualism is somewhat ambiguous in the literature, I briefly define and discuss it in the next section. The nature and changes of the financial system, markets, and dualism have been determined by an interacting combination of government policies and of market forces

related to the economic development process itself. Accordingly, considerable emphasis is placed upon government policy.

Given the brevity of this essay and the long time period under consideration, detailed quantitative data are not included to substantiate the generalizations made here. While considerable evidence appears in the references cited and in the references contained within them, it must be cautioned that we do not yet have full understanding of what occurred over the long sweep of Japanese modern financial history. In particular, we do not have adequate evidence on the allocative function and efficiency of the financial system. The allocative effect of financial intermediation is so central that it deserves separate treatment; here I am limited to only broad, general statements. What follows is plausible and, I believe, correct in overview but subject to further refinement in detail.

Japanese modern financial development can be divided into four phases. Our three main concerns--changes in the financial system, in financial markets, and in financial dualism--are discussed for each of these phases. Each phase can be summarized as follows. The first was devoted to the initial creation of a modern financial system--banks, other financial intermediaries, financial markets--and its rules, and its integration across geographical regions and types of financial intermediation. It began at the start of Meiji and came to an end by the first decade of the twentieth century. The second phase evolved from the first. It was devoted to the growth, development, and increasing diversification of the financial system in a

relatively free market environment. It came to an end in 1936. The third phase is characterized essentially by the replacement of market forces and institutions in finance as elsewhere in the economy by direct controls and new rules for the operation of the system, instituted in wartime and perpetuated with relatively modest change during the postwar Allied Occupation of Japan. This period is brief but traumatic: from approximately 1937 to 1952, when Japan once again became independent. While there are important elements of continuity between the second and third phases, the discontinuities are fundamental. The fourth phase--the postwar era--runs from the early 1950s to the mid-to-late 1970s. In most respects it embodies an evolutionary development from the patterns of regulated markets and institutions set in wartime. This evolution has now proceeded sufficiently that the Japanese financial system is probably entering a new, fifth, phase.

This phasing coincides closely with that for the real economy as described by Ohkawa and Rosovsky (1973) for the entire period and Ohkawa and Ranis (1978) for the pre-World War II period. While different evidence is used to determine the phases in financial and real sectors, there is a clear interrelationship. World War II was such a watershed as to be an obvious delineator of phases. That the first decade of this century seems to have been a turning point in so many dimensions is analytically even more interesting but more difficult to understand and interpret fully. Two factors seem to have been of particular importance: the institutional framework for modern economic growth in both its real and financial dimensions had become well

established; and industrial growth had come to supersede agriculture, bringing about an increasing demand for financial services. Phasing does not imply a single, inevitable causal path, and there seems little inevitability between second and third phases, or third and fourth; the evolution of the second from the first phase does seem somehow more natural, a hypothesis which requires further study.

### Financial Dualism

Financial dualism implies the co-existence of modern and traditional financial sectors. Over time as financial development takes place the modern sector increasingly replaces the traditional. These two sectors are differentiated by type of financial institution, nature of financial markets, and types and to some degree behavior of non-financial participants. Financial dualism is analogous to dualism in labor markets extensively discussed in the literature on Japan and other countries, and frequently involves the same economic units. Modern financial institutions include banks, thrift institutions such as savings banks and the postal savings system, insurance companies, credit associations, credit cooperatives, and the stock and bond markets. Traditional financial institutions include friends and relatives, moneylenders, and rotating credit cooperatives (tanomoshiko or mujin).

The clearest indicators of financial dualism are large differentials in interest rates on borrowed funds and in access to funds by type of borrower, substantially in excess of transactions costs and

default risks. Price (interest rate) differentials occur for a variety of reasons; only a subset can be regarded as characteristic of dualism. The determinants of interest rate differentials can be classified into three categories: those consistent with assumptions of the perfectly-competitive neo-classical model; those involving deviations of market structures from perfect competition; and those involving behavior different from the standard assumptions of economically-oriented, maximizing (hence marginalist, "rational") behavior.

Financial instruments are heterogeneous in risk, maturity, liquidity, transactions costs; interest rate differentials compensating for these specific features are to be expected in competitive markets. However, financial market structures may deviate from perfect competition due to government regulations (such as restrictions on entry or type of activity, regulation of interest rates) or to oligopoly and unequal bargaining power (market concentration, financial institutions captive of their clients, zaibatsu banks). These give rise to market segmentations not offset by arbitrage. What may be characterized as dualistic imperfections arise where markets are underdeveloped--financial institutions, and/or information channels are inadequate or do not exist, traditional elements prevail, markets are thin. In addition, there may be in financial dualism the analogue to the non-maximizing behavior of "traditional" economic units (typically families) which make allocative decisions of labor inputs and the sharing of outputs by average or other non-marginal rules. The most relevant example conceptually is relatives and friends who provide

finance for reasons of kinship/friendship not involving marginalist calculation; precise empirical evidence, even indirect, of such behavior is virtually impossible to obtain, however.

The modern and traditional financial sectors can be distinguished by their types of participants, by size of economic unit, type of activity, mode of production, availability of collateral. This concept overlaps substantially with that of traditional and modern sectors in the real economy. Historically the traditional sector in Japan consisted of very small-scale units of production--virtually all agriculture and the large numbers of miniscule industrial and commercial enterprises. These economic units were family-based, and relied heavily on unpaid family or apprentice labor. In addition credit to most individuals for consumption was in the traditional sector. In contrast, the main participants in the modern sector have been medium to large sized corporate enterprises and wealthy individuals. Most have collateral for credit, and good to excellent credit ratings. By the interwar period these participants may be divided into, say, three tiers. The first tier includes large creditworthy firms, able to borrow at the equivalent of the prime rate, often listed on the stock exchange, able to issue bonds, and often having a close (ownership) relationship with a particular bank. The second tier includes independent medium-sized firms, subsidiaries of or other affiliates with first-tier enterprises, and some riskier large firms as well. The third tier includes all those smaller enterprises able to borrow from modern financial institutions. The loan market for first-tier firms is competitive--a borrowers market. Lower tiers are lenders markets



where financial institutions exercise increasing market power.

Part of the process of financial development is that the modern financial sector increasingly supersedes the traditional financial sector. Initially, at the beginning of Meiji, the traditional sector was predominant in financial intermediation. It took time for savers to develop knowledge of and confidence in the new instruments of financial intermediation; similarly, it took time for modern financial institutions to develop superior information as to lending opportunities and their risks for efficient allocation for investment purposes. Indeed, while the market power of such traditional institutions as moneylenders was a negative factor, on the positive side they undoubtedly had better information on small borrowers, and were better able to assess risk and allocate credit. Gradually the efficiencies of modern finance overpowered the traditional financial sector, so that by the postwar era traditional sources of external finance have become insignificant<sup>1</sup> and financial dualism has essentially ended (though vestiges remain as in all economies).

The interplay between the two sectors is an important part of this process. Traditional financial institutions evolve into modern. Moneylenders establish banks; highly-personalized revolving credit cooperatives become institutionalized credit cooperatives, savings institutions, and (in the postwar period) mutual banks. Individuals deposit in modern sector institutions, but borrow from traditional sector institutions. Smaller enterprises, unable to borrow all they want from modern financial institutions, simultaneously rely on tra-

ditional sources as well. These possibilities for arbitrage increasingly link modern and traditional financial markets, and dualistic interest rate differentials narrow. Gradually modern financial institutions increase assets and diversify activities sufficiently that they are able to absorb essentially all borrowers and lenders into the modern financial system. This long-term process is founded upon the growth of the real economy--the increase in savings and investment, and the increasing separation of savers and investors--and the effectiveness of modern financial institutions.

#### Government Policy and Financial Development

Japanese government policy substantially affected the speed and the nature of this process of financial development. This has been important at three levels: the overall economy, macroeconomic policy, and specific measures affecting the development of the modern financial system. In Japan the government has always played an important role in shaping the economic environment in which the financial system is embedded. With the exception of World War II's controlled economy, that environment has been based on a capitalist system of private ownership and initiative combined with reliance on relatively free market mechanisms, yet with more or less active government involvement in institutional development and in providing guidance to achieve government policy goals.

This is not the place to review the long historical sweep of Japanese macroeconomic fiscal and monetary policy. Successful financial

development has been predicated upon successful economic development and growth. The most important macroeconomic variable in shaping the size, nature, and role of a financial system is the rate of inflation. With the dramatic exception of the third phase--the Great Inflation of the 1940s--Japan's economy has not been dominated by inflationary expectations which debilitated the financial system. Prior to World War II Japan's experiences with inflation (at more than 10 percent annually) were associated mainly with war--Sino-Japanese, Russo-Japanese, and World War I--and were always followed by periods of absolute price declines. For the 56 years between 1880-1937 the CPI increased more than 10 percent in only seven years, and actually decreased in 22. Inflation was not expected to persist and it did not. The highly inflationary consequences of World War II wrought a major change in Japanese sensitivities to the possibilities and dangers of persistent inflation. Nonetheless, by the early 1950s price stability was regained. The sole postwar period of double-digit inflation was in 1973-75, the consequence of an expansionary domestic monetary policy, the world commodities boom, and then the oil shock. Monetary policy was subsequently able to bring inflation under control, and later to prevent its domestic spreading in the 1979-80 round of oil price increases. The monetary authorities generally have been successful in preventing inflationary expectations from becoming a major force leading to financial disintermediation except following World War II.

Government policy has been of central, direct importance in determining the structure of the financial system through a mixture

of encouragement and regulation. It has set the conditions of entry, type of system (specialized versus general financial institutions, unit versus branch banking), nature and degree of competition, and the conditions of financial markets (whether interest rates are controlled or determined by market supply and demand). It has created government (and semi-governmental) financial institutions to complement private institutions for specified objectives. Over time government financial policies in all these dimensions have changed dramatically, an important feature of each of the four phases discussed below. It was important that Japan had already developed a diversified financial structure with a high degree of financial intermediation by the time the government moved from a market-oriented system to a regulated one. As the evidence of present-day developing country financial markets attests, premature use of controls over interest rates and other regulations over the modern financial sector would have retarded its development and lengthened the life of the traditional (or informal) financial sector.

#### The Four Phases of Financial Development: An Overview

Financial development is indicated by the growth and increasing diversity of type of financial institutions and by the increasing efficiency and effectiveness of financial markets. Ultimately financial development is the increased use of an ever-wider range of financial assets and liabilities, both absolutely and relative to real economic activities and to the holding of real (tangible) assets. A growing

financial superstructure is indicative of increased saving and investment, and more efficient allocation of real resources by means of fungible finance.

Table 1  
here

Table 1 provides summary data on Japan's modern financial development since 1885 when GNP estimates begin. Narrow and broad measures of money supply are available in time series. In addition Goldsmith in a monumental forthcoming study has made benchmark estimates of the ratios of financial assets to GNP and of financial assets to tangible assets (the financial interrelations ratio).<sup>2</sup> At first glance the data in Table 1 suggest a straightforward path of financial development: at the end of the period the currency ratio is lower, and all others are substantially higher. The startling fact, however, is that the ratio of money supply to GNP and the Goldsmith ratios are all larger in 1930 than in 1977! This despite the fact that postwar GNP per capita has been substantially higher than prewar peaks since the late 1950s. In other words, financial intermediation had progressed further relative to GNP and to GNP per capita in interwar Japan than it has in postwar Japan.

Figure 1  
here

This discontinuity between prewar and postwar levels and rates of financial development is clearly illustrated in Figure 1. The prewar data show both a higher level and greater slope (but lower intercept) of the line relating the ratio of non-financial sector liabilities to GNP and GNP per capita than for the postwar period.<sup>3</sup> Tests reject (at the 1 percent level) the null hypothesis that the data for 1910-1936 and 1950-1977 (or 1955-1977) represent the same structural relationship.

Why has this discontinuity occurred? The fundamental answer is simple: the Great Inflation of the 1940s, suppressed during wartime (hence understating nominal GNP and raising these financial ratios) and then quite open in the Occupation period, destroyed the real value of government debt and other fixed-nominal-value claims and caused great financial retrogression. The institutional structure remained intact, but financial assets and liabilities had been stripped of most of their value. Post-World War II financial development had to start from pre-World War I levels of financial ratios.<sup>4</sup> The growth of the Japanese financial system over the past three decades, while rapid in amount, is somewhat less impressive relative to GNP growth in the context of Japan's historical financial development.

#### Creation of the Modern Financial System: 1868-1905

A major feature of the Meiji government's commitment to building a modern economic system with all its institutions and appurtenances was the creation of a modern financial system centered on a modern banking system.<sup>5</sup> The government role was crucial. It set the basic rules. Financial markets were free, with interest rates determined in principle and in practice by supply and demand in the marketplace; this included bank deposit and loan markets as well as the nascent stock and bond markets. Entry into banking was easy, with low minimum capital requirements and little regulation.

The government did more than establish a competitive, private market framework. It actively encouraged the establishment of commercial

banks (notably the national banks) by various forms of implicit subsidy (government deposits, rights of national banknote issue). I earlier (1967) termed this "supply-leading" development of the banking system in that these institutions were created in advance of business and individual demand for their services.<sup>6</sup> In the early years the demand for both monetary and saving deposits was low; people held currency or real assets. Banks relied mainly upon their own capital, together with government deposits, as sources of funds. By the end of this first phase, nonetheless, deposit banking had become widespread.<sup>7</sup> The early creation and widespread geographical coverage of the postal savings system contributed to the development of knowledge about savings deposits.

By the beginning of the twentieth century Japan's modern financial system was well established. There were commercial banks, savings banks, long-term credit banks, a central bank, insurance companies, a small but active stock and bond market. The institutional structure was based upon the principle of specialization, though in practice large commercial banks were allowed to engage in a wide range of financial activities. The inherent tension between specialized and general (department-store) banking has persisted to the present. Particularly significant was the immense number and overwhelming importance of commercial banks. The number of ordinary banks peaked in 1901 at 1867; there were in addition 517 savings banks. It was predominantly a unit banking system, with less than one branch per bank on average. Bank size ranged enormously, from tiny "dwarf" banks to a few immense banks such as the Fifteenth,

Mitsui, Dai-ichi, and Yasuda; however, it was not until later that these "big banks" (later termed "city banks") were to become of such great importance for industrial development.

Financial markets were indeed free; interest rates were not regulated. With the increase in number of banks and decrease in relative importance of government support, price competition for deposits widened. Moreover, regional markets in finance as in commodities became increasingly integrated at the national level; regional differentials in deposit interest rates narrowed in the 1890s, though loan interest rate regional variance remained wide until the next phase (Teranishi and Patrick, 1978).

This modern financial system was superimposed upon a large and relatively well developed traditional financial sector. We do not have comprehensive data on the changing absolute and relative sizes of the modern and traditional financial sectors over time. It seems clear that throughout this first phase only small proportions of both finance and real economic activity were in modern sectors. After all, even by 1909 only 46.2 percent of manufacturing production took place in factories with more than five workers; most still occurred in tiny family establishments. Modern finance went mainly to commerce and to finance working capital for factory-sized establishments. Traditional finance continued to meet the needs not just of most producers but of most production. This shows up most clearly in agriculture. In 1888 only 7.2 percent of agricultural borrowings were from modern financial institutions; by 1911 this share had increased to 35.7 percent, while



traditional financial institutions (moneylenders, merchants, and pawn-brokers) provided 21.5 percent, and friends and relatives 42.9 percent (Teranishi, 1976-77).<sup>8</sup> Perhaps the most important point is that, while at the beginning of this period there was little connection between traditional and modern financial markets, they were somewhat integrated by about 1910. The detailed studies by Professor Ryuichi Shibuya (discussed in Teranishi and Patrick, 1978) on moneylenders indicate that movements in their interest rates were initially uncorrelated with bank loan rates, but the correlation came to be increasingly strong from about 1905 as the two sectors came into competition.

#### Financial Growth and Diversification in Free Markets, 1905-1937

Thus, the second phase began with a well-developed set of modern financial institutions including a very large number of banks, free and quite competitive financial markets, and considerable integration between modern and traditional financial sectors though the latter probably still provided most external finance to borrowers in the economy as a whole. As a consequence of economic development, and the now well-established institutional structure, the demand for (and supply of) modern financial services grew very rapidly throughout this period-- for deposits as well as loans. In contrast to the first phase, this was a period of "demand-following," i.e. market-oriented financial development in which demand generated supply. Growth is well reflected in comparisons of the financial ratios for 1900 and 1930 in Table 1. As one would expect, the system also became more diversified. Modern

financial institutions for agriculture and small business, trust companies, insurance companies, and the postal savings system all grow particularly rapidly. The relative shares of ordinary and savings banks in modern financial sector loans and deposits, more than four-fifths in 1900, declined to about one-half in 1930.

Despite rapid growth all was far from well, notably in the structure of the banking system. The banking structure was particularly vulnerable to bank runs and panics, since it included a large number of small banks operating in limited markets, with high proportions of loans to a relatively few borrowers, without a system of depositor insurance or other forms of depositor protection, and without adequate outside inspection of the quality of bank assets. Moreover, it was tested by a series of crises--world and domestic recessions and depression, the Kanto earthquake of 1923 which generated ultimately valueless "earthquake bills" in bank portfolios, and the resultant profound banking crisis of 1927. The government made entry considerably more difficult (though far from impossible) by imposing relatively high minimum paid-in capital requirements from 1927. Some 956 banks failed outright between 1905 and 1936; more (1,333) were merged; 549 banks were newly established, many through mergers. Interestingly, only a few mergers were with the Big Banks. The consolidation of the banking system was remarkable, particularly in the interwar period. The number of commercial banks, 1,697 in 1905, was reduced by 75 percent to 424 in 1936. However, the total number of bank offices increased modestly; Japan moved to a branch banking system. Consolidation

was designed to strengthen the banking system by eliminating its weakest elements while retaining a competitive structure with small, medium and large banks co-existing by lending in different geographic areas and market segments.

There was some concentration of market power in the "Big Five" banks. Their share in (ordinary and saving) bank loans and deposits, about 17 percent in 1910, had risen to 30 percent by 1930.<sup>9</sup> They behaved conservatively; they had surplus funds but sought large, safe customers. The zaibatsu conglomerates were able to fund much of their industrial activities from internal sources until the mid-1930s, when their first line companies increasingly entered the new issue market for stocks and bonds. Mitsui and Mitsubishi first-line companies not only were able to finance their subsidiaries but to maintain larger deposits than loans with their affiliated banks.<sup>10</sup>

Financial growth and diversification increased the coverage and efficiency of financial markets. Interest rates continued to be determined by market forces, unregulated by government. The Osaka and Tokyo Bankers Associations had, from the beginning of the century, attempted to set maximum interest rates on deposits, with higher rates allowed in local areas. Apparently this price-fixing was not very effective in earlier years, but in the 1920s and 1930s these inter-bank agreements probably resulted in substantial price leadership. From 1927 the city banks attempted to set minimum interest rates on loans, though apparently with less impact. Restrictions on new bond and stock issues were to ensure creditworthiness, not to set prices

and yields. Indeed, the government encouraged large, private-held zaibatsu firms to sell some shares to the public and be listed on the stock exchange.

Empirical evidence on prewar interest rate differentials and financial markets is too fragmentary to assess definitively how important market segmentation among first, second, and third tier firms was in the modern financial system, and how wide dualism was between modern and traditional financial sectors. First-tier companies, able to issue bonds, could obtain funds at lower cost. Otherwise there is little evidence that interest rate differentials widened inversely with firm size. Moreover, most firms of all sizes were able to finance long-term investment internally or through equity issue.

Slightly more evidence is available on the relative reliance on modern and traditional financial sources by type of borrower. Large enterprises could rely entirely on modern financial institutions. With decrease in firm size the proportion of external finance obtained from modern financial institutions declined and that from traditional sources increased. The myriads of tiny enterprises relied overwhelmingly on traditional sources of finance. A sample of urban manufacturers in 1932 indicates that three-fifths of total borrowings came from modern financial institutions, but for tiny firms the proportion was less than one-tenth (Teranishi and Patrick, 1977). And, despite the growing role of modern financial institutions specifically designed for farmers, in 1932 agriculture obtained only 44 percent of its funds from the modern financial sector.

With the rapid growth of the modern financial system during this

period, and the development of modern industry, the modern financial sector came to surpass the traditional financial sector quantitatively and qualitatively. The two sectors were ever more closely integrated; the degree of financial dualism declined substantially. Producers and individuals had ready access to modern financial institutions--banks, postal savings, credit cooperatives--for deposits, and increasing (though still limited) access for borrowing. The development of the financial system seemed to be along what might be termed a historical capitalist path of increasing, widening, deepening, and ever-more-efficient financial intermediation. And then came war.

#### Finance Under Military Control, 1937-1952

Government policies during wartime wrought fundamental changes in the Japanese financial system, bringing to an end the competitive, market-oriented environment which had characterized financial development for the previous seventy years. This was no mere temporary aberration. Important features of the financial structure and policies toward financial markets developed in wartime were continued virtually unchanged during the postwar Allied Occupation. More important, many became the foundation and framework for the postwar financial system, persisting virtually to the present.

In essence the government replaced the market with planning in allocation of real resources and finance. The institutional process for financial control developed in a piecemeal fashion, and indeed was foreshadowed by mechanisms to coordinate new bond issues and prevent capital flight abroad from the early 1930s. The government

obtained authority to allocate funds directly to munitions and other key war-related industries, to fund the increasingly huge government deficits through required bond purchase by financial institutions, and to absorb potential purchasing power of individuals by required deposits in financial institutions. Finance thus became the handmaiden of war. Financial planning and direct fund allocation went relatively smoothly during the war; credit was not a major problem (Cohen, 1949). Most production went to the war effort; consumption dropped sharply. Rationing and price controls prevailed.

The financing of Japan's war effort flooded the economy with financial assets. Between 1937 and 1944 the ratios of currency,  $M_1$ , and  $M_2$  to GNP more than doubled. Other financial claims increased even more rapidly. By war end financial ratios to GNP and to tangible assets came to have little meaning; price controls understated the value of production, production itself was distorted and interrupted, and more than one-quarter of the nation's tangible wealth had been destroyed.

This financing of war was highly inflationary. So too was the financing of postwar reconstruction before the Dodge Plan reforms of 1949. This was the era of Japan's Great Inflation. Prices increased more than three hundredfold before inflation was finally brought under control in 1951.<sup>11</sup> As with all periods of great inflation the real value of financial assets was sharply reduced, exacerbated by postwar financial reforms which wrote off a substantial proportion of wartime loans and deposits. The value of government debt evaporated, and hence

investor confidence in government and other long-term debt instruments.<sup>12</sup> Inflation, land reform, zaibatsu dissolution and other measures substantially altered and reduced the inequality of the distribution of wealth. The financial infrastructure imploded from war end until early 1949 or so; the money supply/GNP ratios dropped sharply, and Goldsmith suggests the ratio of financial assets to GNP, 6.23 in 1940, was only about unity in 1948. Financial development as measured by these summary ratios had retrogressed to levels some fifty years earlier. This, however, is overly simplistic. Once inflation had been conquered financial assets resumed their growth in real terms. More important, the financial system itself was much more developed and sophisticated in 1950 than a half-century earlier.

Wartime policies fundamentally changed the structure and rules of behavior for the banking system. Under the theme "one bank for each prefecture" the government forced consolidation of the banking system through merger and a freeze on new entries, in order to make it easier to control the banking system directly. By war end Japan had moved completely away from its Meiji system of a large number of unit banks with easy entry. The number of ordinary banks, 377 in 1937 and still 186 in 1941, had contracted to 61 in 1945; the savings bank system was virtually eliminated. More important, however, was the concentration of financial activities to a small number of Big Banks, dominated by the Big Five, which engaged in nationwide branch banking. Of the 2,240 companies designated as munitions producers, 70.6 percent were assigned to the Big Five (Cohen, 1949, p. 95). The Industrial Bank and other

government-related long-term credit banks ("special banks") played an increasingly important role, as did new government financial institutions set up to fund the war effort.

This bifurcated structure of nationwide "city banks" and local banks remained virtually intact under Occupation policy. The Occupation efforts to dismantle Japan's wartime economic system and to replace it with a competitive, "democratic" system were pervasive in the real economy but did not extend significantly to finance. There the Occupation authorities were concerned primarily with eliminating war-related institutions, dissolving the zaibatsu conglomerates, and coping both with inflation and the war-related losses of financial institutions. While specific financial institutions changed in status, the basic system remained intact based on the principle of specialized institutions for specific functions. Thus only the ownership of the zaibatsu banks were affected; the families were dispossessed and stock widely distributed, and control accrued to self-perpetuating management. Despite initial Occupation thinking, the Big Five banks were not broken up into smaller, independent units.<sup>13</sup> The "city banks," (the Big Five plus a few others engaging in widespread branch banking) retained power, prestige, and their main industrial and commercial clientele of large firms.

Even more profound than the war-forced changes in banking structure were the changes in the operations of financial markets: the structure of financial flows, and the replacing of market-determined interest rates by direct controls over the allocation of credit. Patterns were established which have persisted subsequently. For example,



production was concentrated increasingly in large firms; they had to rely increasingly on external sources of funds, especially loans; they had ever closer ties with the Big Banks. The Ministry of Finance assumed the power to decide which few companies could issue bonds, how much, and on what terms. It and the Munitions Ministry directly allocated bank credit to munitions firms. Bank portfolios, especially of the largest banks, shifted from commercial and working capital financing to increasing industrial term financing. Local banks and other small-scale financial intermediaries received savings deposits but had few customers to whom they could lend; funds were channelled to the Big Banks and to government financial institutions. Their demand for loans was so huge that for the first time in history the Big Banks began to borrow substantially and continuously from the Bank of Japan.

The allocative mechanism for finance thus moved from markets based on price signals to decisions by bureaucrats and administrators based on planning priorities. Market competition was no longer the rule. Under these circumstances, interest rates had no allocative role. Informal interbank agreements on interest rates on deposits and loans were replaced by formal regulations.

The Occupation did not fundamentally alter this war-generated system of direct controls over major components of the flows of funds and over interest rates, though somewhat more scope was given to market mechanisms.<sup>14</sup> The problems of reconstruction of war-ravaged Japan were so huge, the specific bottlenecks so great, that major priority

sectors--coal, electric power, transport, chemical fertilizers, eventually steel--had to obtain resources, especially financial, through planned, direct allocations. While the focus of priority allocation shifted from war to peace, the mechanisms remained much the same.

Even after quantitative allocations of private credit to specific industries and firms came to an end in the 1950s, the system of low interest rates and credit rationing persisted. Low interest rates were justified to encourage investment and reduce costs of production; their allocative role was not given serious attention. With the end of the war the banks reverted to their own agreements on maximum deposit and lending rates, with government bureaucracy blessing. In 1947 the government passed the Temporary Interest Adjustment Law which gave the Ministry of Finance and Bank of Japan control over maximum interest rates on deposits and loans, a "temporary" law still in effect. The stock market was re-opened, but new bond issue was severely regulated at low interest rates. The financial system continued to be constrained to lend only for productive industrial and commercial purposes, especially to high priority sectors.

During this third phase of financial development Japan's financial markets became insulated and isolated from world financial markets, which also were in disarray. It is unlikely Japan could have borrowed more abroad than it succeeded in doing. Like other countries facing severe balance of payments problems, Japan under the Occupation authorities instituted tight restrictions on imports, foreign exchange transactions, and short-term and long-term capital outflows and

inflows. These too persisted in the postwar era.

We do not know exactly what took place in the interrelationships between the modern and traditional financial sectors during this period. The size and role of traditional finance became greatly reduced during wartime, and financial dualism may even have temporarily ended. The flood of government deficit expenditures extended to agriculture and other small-scale units of production. They were able to pay off debts, and were forced to deposit in credit cooperatives, credit associations, and other small-scale institutions which were now part of the modern financial system. The share of these institutions in the assets of the modern financial system rose from 5.9 percent in 1936 to 11.2 percent in 1944. The overwhelming allocation of resources directly to war production precluded much traditional sector investment or intermediate-good expenditures, much less need for consumption loans. The inflation-generated financial implosion during the Occupation surely increased the need for and role of traditional finance. However, modern financial institutions for agriculture and small business were now well established, and markets integrated with other financial markets. The early postwar improvement in terms of trade for agriculture and the effective elimination of debt by the inflationary process meant that traditional sources of agricultural finance became much less important.

#### Financial Development in the Postwar Era, 1952-1980

The rapid growth and evolution of Japan's postwar financial system and its financial intermediation of the savings-investment process in an era of high GNP growth, as well as its many specific features, have

been described and analyzed elsewhere.<sup>15</sup> Here I stress the continuity of the postwar system with the system as it was transformed during wartime,<sup>16</sup> and hence its substantial discontinuity from prewar. Moreover, despite all the apparent success of financial intermediation, the relative postwar growth of the financial superstructure as evidenced by aggregative financial ratios is surprisingly modest.

This is shown in Table 1 and Figure 1. Two facts stand out: the relative size of the financial superstructure compared to the real economy in 1977 is below that in 1930; and its rate of growth relative to the real economy between 1955-1977 was somewhat less rapid than for the prewar period (between 1900 or 1920 and 1930). These are the reality even though financial diversification and sophistication today are substantially greater than in 1930, the separation of saving and investment more pronounced, the amount of real financial assets much greater, and the role of traditional finance far less, even negligible. What are the probable causes?

First, the slow rate of growth of postwar financial intermediation relative to GNP and to tangible assets masks a very rapid absolute rate of growth, substantially above prewar rates. This absolute increase was concomitant with, and mainly due to, Japan's great surge of extremely rapid GNP growth and accumulation of real assets. Second, however, the lower relative levels of financial assets imply that postwar asseholders have found real assets--land, houses, and productive fixed investment--relatively more attractive to hold than financial assets despite much higher levels of real income and wealth. The relative price of land has increased sharply--

but land declined from 69.1 percent of national tangible wealth in 1960 to 50.3 percent in 1977. While the share of housing increased from 4.2 percent to 10.0 percent, the big increase was in productive fixed assets from 16.3 percent to 30.2 percent. Part of the preference for real assets lies in assestholder aversion to long-term, fixed-yield financial assets generated by the Great Inflation of the 1940s. But undoubtedly a major factor has been the perpetuation of relatively low yields on financial assets through the government's low interest rate policy.

The basic institutional structure of the financial system has not changed significantly in the postwar period, following the relatively minor changes made during the Occupation. The full range of institutions was already well in place. The system has worked well, particularly given the constraints imposed by restrictions on the free operations of financial markets. Entry by banks has been limited; new banks cannot be established, and the creation of new branches is severely rationed by the Ministry of Finance. The patterns of flows of funds have nonetheless significantly altered the relative importance of different financial institutions and shaped their success. The relative position of city banks has diminished from their early post-war pre-eminence, due mainly to greater diversification throughout the system. Credit associations and other institutions have become more important. Segmentation among specific financial markets or different categories of financial institutions has decreased over time; aggressive institutions seek new customers and new sources of funds, even within the constraints of the system.

The persistence of war-inherited administrative controls over flows

of funds, interest rates, the bond issuance market, and related Ministry of Finance regulation of financial markets has been notable. The Government bureaucracy has long lost its direct controls over private sector production, investment, and imports. Only in finance does its hand remain heavy. This is not simply because the Ministry of Finance has been very powerful since World War II at least, though it certainly is reluctant to surrender its bureaucratic powers to the marketplace. The continuation into the 1970s of the wartime patterns of finance has made possible the perpetuation of administrative controls, most importantly exemplified by regulation of interest rates.

Suzuki (1980) has characterized the postwar financial system as having four distinctive characteristics: overloan; over-borrowing; imbalance of liquidity; and predominance of indirect finance. These mean respectively: the banking system (notably the city banks) has borrowed substantially and sustainedly from the Bank of Japan; business has depended heavily on funds borrowed from the banks; local banks have surplus funds which they lend to city banks, which have the best customers but insufficient loanable funds; and both individuals as accumulators of financial assets and business as borrowers rely on banks rather than on the stock and bond markets. All these features derive from Japan's wartime period. In addition, until the early 1970s Japanese financial markets were effectively insulated from world markets.

A system of low, maximum interest rates means that markets do not clear; this has been important in postwar Japan where the demand

for investment finance has been high. With demand greater than supply, the response has been credit rationing--and in much the pattern established during World War II. The financial system strongly favored producers of goods and certain services; it was much less ready to make credit available for consumer purchases of housing or consumer durables. Within industry it favored large firms over small. Key industries received low-cost government loans, and private loans unless the industry's prospects (such as shipping) were regarded with skepticism by bankers. Moreover, small government prevailed, and its borrowing was limited until the mid-1970s. Credit allocation may not have been optimal by either static or dynamic criteria, but it was effective in financing productive investment for growth. And, importantly, within somewhat segmented financial submarkets for first, second, and third tier business loans there was substantial competition among lenders and borrowers and fairly careful evaluation of projects and creditworthiness. Rapid growth helped cover over and smooth out mistakes in allocation. So too did the widespread requirement of collateral, frequently undervalued land; the actual losses of Japanese financial institutions, despite apparent willingness to take on risk, have been very low.

Three significant qualifications should be stressed. First, credit is fungible among uses; stated purposes or actual borrowers do not provide adequate evidence of how credit is actually used at the margin. For example, inter-firm trade credit, large firm financing of subcontractors, and the role of large trading companies as de facto financial intermediaries, especially for small firms, have been of major importance. Second, there are many ways to evade or mitigate

price (interest rate) controls over finance; to the extent such devices are successfully used what may appear as credit allocation by rationing may actually be by price. In postwar Japan compensating balances have been ubiquitous; lenders, by varying deposit balance requirements by type of borrower, have been able somewhat to raise and differentiate effective interest rates on short-term loans. Third, Japan's economy including its financial system has gone through some thirty years of very rapid growth; this dynamic has made for such change that any static characterization is misleading.

Accordingly, the financial system has gradually become increasingly market-oriented. Indeed, it can be argued that the short-term loan markets are now predominantly price-determined: large firms in the first tier are able to compete effectively for relatively low-cost finance; smaller firms in the second and third tiers face oligopolistic lenders and pay higher effective rates. Only in the long-term credit market (for loans and bonds) does credit continue to be rationed, predominantly in favor of first-tier firms. The persistence of a low interest rate policy is founded on the low interest rates at which new government debt issue is forced onto the financial system. The Treasury bill rate is so low that all bills are purchased by the Bank of Japan; it has almost no relationship to other short-term interest rates. However, the banks are still simply allocated a proportionate share of new government bond issue which they must purchase even at low rates. Other bond issue rates and long-term lending rates are tied to the government bond issue rate. Similarly, in the deposit market relatively low maximum interest rates are the rule. However, additional



payments have been made in practice for very large deposits, and the recently-created CD (certificate of deposit) market provides a competitive outlet for very large units of short-term funds. In deposits as in loans, controls over financial markets discriminate in favor of the large participant and against the small.

Over the long course of Japanese financial development traditional finance has been absorbed by and largely replaced by the modern financial system. The penetration of the traditional financial sector by the modern has been through the institutional development of specialized financial intermediaries for small business and agriculture, forestry and fishing. The immense flows of wartime credit greatly accelerated this process. While there was probably some reversion to traditional sources of funds by small borrowers in the early postwar years, by the late 1950s farmers and even very small businesses were able to obtain the overwhelming proportion of borrowed funds from the modern financial sector. For example, in 1957 even the smallest manufacturing firms (with 1-3 employees) obtained two-thirds from modern financial institutions (half of that from banks), 15 percent from friends and relatives, and only 0.8 percent from moneylenders (Teranishi and Patrick, 1977). For the financing of production, financial dualism essentially had come to an end.

The story is less clearcut for consumption loans, including loans to wage-earners. Pawnshops and moneylenders have continued to exist. Some moneylenders have established finance companies, which can be regarded as modern institutions. However, the interest rate

differentials have been so wide--up to 100 percent annual rates for short-term "salaryman loans"--as to indicate some persistence of financial dualism. Consumer credit has expanded rapidly over the past decade. Accordingly, moneylenders and similar forms of traditional finance now have only a minor role, no more so than in other advanced industrial economies.

The success of financial intermediation in the postwar era cannot be credited particularly to government financial policy or to the efficacy of financial institutions. Demand for financial claims grew mainly because of rapid GNP growth, an increasing proportion of wage-earners in the labor force, an evolving economic structure in which savings and investing were done increasingly by different economic units, urbanization, high personal savings rates, and the like. The modern financial system already existed. All it had to do was supply financial claims in response to the demand for them; it was not allowed to compete effectively against real assets. If it had, the growth of financial intermediation would have been more rapid, and probably the allocation of resources more efficient. The main role of the financial system has been to allocate credit among alternative users through a complex combination of credit rationing and effective interest rates higher than stated nominal ceiling rates.

#### A New Era: Has the Postwar Phase Come to an End?

It can be argued that Japan will move into its fifth phase of financial development when major interest rate controls are removed

and financial markets allowed to operate freely, flexibly, and competitively, because the changes in the system will be so profound. In this new era financial markets will be in principle free: competitive market forces will be the main determinants of short-term and long-term interest rates and the allocation of credit. Government bond issue will be through competitive bid rather than Ministry of Finance allocation to finance institutions; accordingly other bond issues will also be freed. The CD market will be broader and deeper, and money market funds will be allowed to develop for the benefit of a far wider range of depositors. Segmentation among financial markets will weaken. Financial institutions will take on a wider range of activities and clients. In other words the Japanese financial system will approach the textbook perfect financial market model. The historical problem of the absorption of the traditional financial sector by the modern will be long past. The evidence suggests that while a somewhat idealized view, this is nonetheless a realistic projection of underlying trends. To what extent the institutional structure of the financial system will change is problematic; major change in types of institutions is unlikely. The relative importance of the commercial banking system, particularly city banks, may well be strengthened in a more competitive environment.

This era will evolve gradually out of the postwar phase rather than through any major discontinuities in government policy, as evidenced by the various small steps taken toward financial liberalization during the decade of the 1970s. Indeed Suzuki (1980, Part V)

argues Japan has already begun its new phase. The specification of the timing of evolutionary transition from one phase to the next is not crucial. It is useful to examine both the forces bringing the postwar era of financial control to an end, and the evidence that this process is well underway.

The underlying sources of financial change lie in the real economy. Now huge, the Japanese economy is no longer dominated by super-fast growth, in policy objectives and in reality. The 1974-75 recession appears to have been a major turning point. The government took strong orthodox fiscal-monetary measures to end the inflationary spiral. It was successful but the cost was Japan's first postwar serious recession, with an absolute decline in output, a drop in the GNP growth rate by 10 percentage points,<sup>17</sup> and the emergence of very large excess capacity, shown in the gap between potential and actual GNP in excess of 10 percent.

Once inflation was brought under control private demand did not vigorously reassert itself as in past, minor recessions. Business investment demand since 1975 has become substantially less strong than earlier while the private saving rate has remained high. With inadequate private demand, large-scale government deficit finance through bond issue has been necessary in order to obtain a 5-6 percent growth rate and to reduce excess capacity gradually; in effect the Japanese economic environment has shifted at the macro level from neo-classical (supply side) to Keynesian, while continuing to maintain considerable flexibility at the micro level. Moreover, as Japan has become one of the largest world traders it has been difficult and increasingly undesirable

to insulate domestic financial markets from world financial markets. Institutionally this process has been supported by the expansion of Japanese city banks abroad and foreign banks into Japan. Further, with business investment no longer the predominant focus of credit, it has spilled over into other uses--housing, consumer credit, and especially the financing of the government debt. Inefficiencies in the allocation of financial resources have become more obvious. Moreover, the fact that the system of controlled, low interest rates on deposits and thereby on loans to large enterprises in effect represents a transfer of income from household savers to owners of big business is increasingly perceived as inequitable.

Over the past decade the financial system has been responding to these and to its own internal forces by evolving toward a greater market orientation (Christelow, 1981). However this evolutionary process has been gradual and slow. Those who bear the costs of financial control--individual savers and consumers and small businessmen--are weak and unorganized. The vested interests which benefit--big business, specialized financial institutions, and the government bureaucracy--are powerful. The Ministry of Finance is the key. Its officials have resisted the ending of controls over interest rates and other restrictions: free markets would reduce their power to implement monetary control, their ability to finance the government debt at low interest rates, their authority.

Nonetheless, the control mechanism is eroding under the force of domestic and international market pressures. Short-term money

markets have become substantially liberalized though still discriminatory restricted to large participants. To the earlier call market and bill discount markets have been added the gensaki market (sale of bonds under short-term repurchase agreements) and the CD market for very large deposits. Government restrictions have been sufficiently eased that these markets are virtually free: interest rates are competitively market-determined. As seven-year government bonds issued in very large amounts since 1977 approach maturity trading in them as short-term securities will virtually complete the process of liberalization of short-term money markets. As noted, the use of compensating balances has provided a sort of de facto market mechanism in the short-term loan market.

The main issue continues to be the long-term bond (and loan) market. Japan will not have finally moved to a new era of finance, symbolically and in reality, until long-term interest rates and credit allocations are determined in competitive markets. The key is the government bond issue market. The Ministry of Finance has been forced to adjust new issue rates closer to prevailing yields in the secondary bond market but the system of direct allocation to city banks and other financial institutions persists. With secondary yields typically above issue yields, with the ending of Bank of Japan guarantees to purchase bonds after a one-year holding period, and with very large amounts of debt outstanding and to be issued in the next several years, the pressures to change are strong indeed. However, given the strength of the Ministry of Finance in Japan's political-economic system one cannot predict with full confidence that the new era is upon us.

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This paper is an outgrowth of research over a number of years on Japanese finance, most recently in collaboration with Professor Juro Teranishi of Hitotsubashi University, Tokyo, as part of the Comparative Analysis Project of the International Development Center of Japan. See particularly Patrick (1967, 1971, 1972 and forthcoming) and Teranishi and Patrick (1977 and 1978). I wish to express my appreciation to Teranishi and also specific thanks to him and to Gustav Ranis for their comments on an earlier draft of this essay, while holding neither responsible for its contents.

<sup>1</sup>The main exception continues to be, in Japan as elsewhere, the reliance by entrepreneurs starting new, small businesses on initial finance from family and friends as well as their own assets. Venture capital institutions assist only a small proportion of new small businesses even in the United States.

<sup>2</sup>While specific estimates may require further refinement, the absolute numbers are less important than the trends. It should be noted that Goldsmith data cover only modern financial institutions, so that such traditional sources as moneylenders and friends and relatives are not included since comprehensive data are not available.

<sup>3</sup>Simple OLS regressions give the following results:

1910-1936

$$Y = 0.2962 + 0.00508X \quad R^2 = 0.379$$

$$(1.09727) \quad (3.90772) \quad D.W. = 0.3426$$

$$SSR = 1.13837$$

$$S.E. = 0.213389$$

1950-1977

$$Y = 0.6179 + 0.000877X \quad R^2 = 0.889$$

$$(13.2716) \quad (14.3963) \quad D.W. = 0.2680$$

$$SSR = 0.392780$$

$$S.E. = 0.122410$$

Where

$Y$  = Non-Financial Sector Liabilities/GNP

$X$  = Real GNP per capita (1934-36 prices)

The basic data are derived from Sakakibara et al (1981) and Ohkawa and Shinohara (1979).

<sup>4</sup>Goldsmith's estimates of the financial intermediation ratio (the ratio of net new issues by non-financial institutions absorbed by financial institutions) shows a steady, gradual rise from about one-half in 1886-1900 to three-quarters in 1932-36, before reaching almost nine-tenths in 1937-41 as government bond issue increased dramatically. It then dropped sharply to about one-third in the mid-1950s, rising to two-fifths in the early 1970s.

<sup>5</sup>For greater detail see Patrick (1967) and Teranishi and Patrick (1978), and references cited therein.

<sup>6</sup>As with most conceptual dichotomizations, reality is somewhat more blurred. Teranishi has pointed out that in highly commercial industrial regions, centering particularly on silk, tea and weaving, banks apparently were established in response to growing demand. It might be hypothesized that supply-leading lending results in lower allocative efficiency than demand-following; data on bank lending are not adequate to test this or other allocation hypotheses.

<sup>7</sup>Reliance upon private deposits (and similar borrowed funds) is the essence of modern banking. Banks which rely mainly on their own capital are little more than institutionalized forms of moneylenders;

those relying on government funds are merely conduits of government financial intermediation.

<sup>8</sup>In 1932 the respective shares were 43.7 percent, 8.6 percent, and 44.1 percent. Modern financial institutions replaced traditional, but (traditional) personal sources continued to be of great importance.

<sup>9</sup>The story is less clearcut than this implies. The capital of the Fifteenth National Bank at its establishment in 1877 comprised two-fifths that of the entire national banking system. It was founded by a large number of daimyo, lent initially mainly to the government, and never developed a major banking role. Accordingly even though it was among the largest banks, it has not typically been included in the Big Five grouping. It represents an outstanding case of failure to realize potential, and was eventually merged into the Teikoku Bank in 1944.

<sup>10</sup>The major exceptions were the trading companies which, not surprisingly, borrowed heavily for working capital--from their own bank, from Yokohama Specie Bank for foreign trade financing, and from other banks including major zaibatsu competitors.

<sup>11</sup>The wholesale price index, based on a 1934-36 average of 100, was 161 in 1940, 232 in 1944, 350 in 1945, 1,627 in 1946, 20,880 in 1949, and 34,250 in 1951.

<sup>12</sup>The ratio of government bonds to GNP was 190 percent in 1944, 10 percent in 1951 (Fuji Bank, 1967, p. 192).

<sup>13</sup>The one exception was the dissolution of the merger, which had

been forced, between the Mitsui and Dai-ichi Banks. The Occupation did convert the semi-governmental long-term credit banks and foreign exchange bank into private institutions. At the same time new governmental institutions, notably the Reconstruction Finance Board (later transformed into the Japan Development Board), were created.

<sup>14</sup>The SCAP Occupation authorities did intend to end direct controls over financial markets in due course, but the problems of economic reconstruction in a highly inflationary environment took precedent. The 1949 Dodge Plan broke the back of inflation, but further reform of financial policy was left to the Japanese government, especially once SCAP attention was diverted to the Korean War from June 1950.

<sup>15</sup>The "conventional" view stresses the predominance of interest rate controls and other regulation of financial markets and institutions; see Suzuki (1980) and Patrick (1972). Recently a revisionist school has emerged which argues that financial markets have been relatively free and competitive; Sakakibara, Feldman, and Harada (1981) presents that case. Murakami (1982) briefly summarizes the issues and provides a good bibliography of sources in Japanese.

<sup>16</sup>This point is well made in Sakakibara and Noguchi (1977).

<sup>17</sup>The GNP growth rate, 8.8 percent in 1973 was -1.2 percent in 1974, and only 2.4 percent in 1975. The decline in hours worked in Japan was about the same as the United States but recorded unemployment only increased slightly as firms kept on redundant workers and as those losing employment were old persons and middle-aged married women who "left" the labor force in terms of employment data.

Table 1. Major Financial Ratios for Japan (in percent)

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Currency</u>	<u>M<sub>1</sub></u>	<u>M<sub>2</sub></u>	<u>Financial</u>	<u>Financial</u>	<u>Real GNP</u>
	<u>GNP</u>	<u>GNP</u>	<u>GNP</u>	<u>Assets</u>	<u>Assets</u>	<u>per capita</u>
					<u>Tangible</u>	<u>(1934-36 prices)</u>
					<u>Assets</u>	
1885	22	27	28	190	30	102
1900	13	31	37	200	34	143
1913	13	36	55	306	62	158
1920	12	44	68	325	59	207
1930	13	46	93	568	120	221
1940	16	63	114	623	141	324
1944	31	118	189	-	-	279
1950	11	29	41	-	-	194
1955	7	25	55	231	54	282
1960	7	27	67	345	68	408
1965	7	32	79	385	80	616
1970	7	30	76	396	91	1,012
1975	8	34	84	473	93	1,221
1977	8	33	85	483	101	1,343

Sources: Columns 1-3, 1885-1950: Ohkawa, Kazushi and Shinohara, Miyoei,

Patterns of Japanese Economic Development (Yale University Press, 1979); Asakura, Kokichi and Nishiyama, Chiaki, Nihon Keizai no Kaiteiki Bunseki 1863-1970 (Tokyo: Sobunsha, 1973).

Columns 1-3, 1955-1977: Ohkawa and Shinohara, ibid; Bank of Japan, Economic Statistics Annual, various issues.

Columns 4-5: Raymond W. Goldsmith, The Financial Development of Japan 1868-1977 (Yale University Press, forthcoming).

Column 6: Estimated from Ohkawa and Shinohara, ibid; Bank of Japan, Economic Statistics Annual, various issues.

Figure 1: Prewar and Postwar Relationships  
Between Financial Development and Real Income Per Capita

