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Asset Price Inflation in the 1980s:  
A Flow of Funds Perspective

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Abstract

This paper examines how and why financial resources were channeled almost exclusively to specific asset markets in Japan, the United Kingdom, and the United States in the late 1980s. A decline in demand for funds by traditional borrowers, and a shift by savers from banks toward indirect securities investments were critical factors in all three cases. Until intermediaries and investors learned to evaluate new opportunities, funds were recycled in certain asset markets. The pressures on Japanese asset markets were particularly intense because of the size of Japan's domestic saving relative to traditional domestic investment opportunities.

JEL Classification Numbers:

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### Summary

During the 1980s, many industrial countries experienced a significant accumulation of debt, which was accompanied by a boom in asset markets and dramatic increases in asset prices. This paper adopts a flow of funds perspective in order to examine how and why financial resources were channeled almost exclusively to certain asset markets. It does so both by focusing on the microeconomic changes underlying the asset price and debt cycles and by examining where imbalances emerged, how funds were redirected toward certain asset markets, and why the process continued until price increases became unsustainable in some markets. Although similar patterns emerged in several countries, the paper looks particularly at the experiences of Japan, the United Kingdom, and the United States.

An important feature in all three economies was a declining demand for funds by traditional borrowers--corporations, governments, and, in the case of Japan, both. In all three economies, the financial system had to cope with a major redirection of funds to new borrowers. This shift in the demand for investment funds coincided with a shift in the types of financial assets demanded by savers, who moved increasingly toward trusts, pensions, and insurance. Thus, at the same time that borrowers were changing, the financial systems also had to create new instruments for savers, primarily households. Until new investments and financial instruments were developed, and consumers learned to evaluate them, funds were recycled in certain asset markets.

Country-specific factors meant that these financial market developments played out differently in each of the three countries. Changes in the behavior of borrowers and savers in Japan, for example, were accompanied by a large mismatch between saving flows and traditional investment opportunities, and Japanese asset inflation extended across both equity and real estate markets. In the United Kingdom, by comparison, asset inflation was largely confined to the real estate market, primarily because U.K. banks chose to fill the gap left by changing borrowing needs by taking advantage of the excess demand for housing that had accumulated during the earlier period of regulation, which provided a natural outlet for bank investment. In contrast to the other two economies, the changes in U.S. borrowing and saving patterns were accompanied by a major decline in the depository institutions' share of financial intermediary liabilities. Two major factors accounted for this decline: the government increased its borrowing, and thus expanded the pool of marketable securities available to investors, and financial innovation permitted the securitization of traditional bank assets, such as mortgages. Thus, funds were redirected away from the corporate sector as savers moved into marketable securities and, unlike in both Japan and the United Kingdom, the resources available to the insured banking system for taking risks were limited. As a result, asset inflation was relatively subdued in the United States.



## I. Introduction and Overview

During the 1980s, many industrial countries experienced a significant accumulation of debt that was accompanied by a boom in asset markets and dramatic increases in asset prices (Charts 1, 2, and 3). The 1980s asset price increases were reversed in the early 1990s during a period of asset price deflation, debt decumulation, and economic recession followed by a weak or delayed economic recovery. Among the major industrial countries, Japan experienced the most dramatic rise and fall in both stock and property prices, and a severe economic recession. The United Kingdom also experienced a sharp real estate price cycle and a recession lasting more than two years. Compared with Japan and the United Kingdom, the United States experienced a more moderate property price cycle and a relatively mild recession, which was followed by a prolonged subpar economic recovery. <sup>1/</sup>

An interesting common feature of the asset price inflations of the 1980s was that financial resources during this period were concentrated in specific asset markets--and recycled there repeatedly--rather than being allocated more evenly to goods, labor, and asset markets as they had been in the past. This paper adopts a flow of funds perspective to examine how and why financial resources were channeled almost exclusively to specific asset markets, and argues that observed shifts in the pattern of transactions were the result of fundamental structural changes. It does so by focusing on microeconomic changes that underlay the asset price and debt cycles and by examining where imbalances emerged, how funds were redirected toward specific asset markets, and why the process continued until price increases became unsustainable in some markets.

Several related factors were instrumental in directing financial resources to specific asset markets: financial liberalization, deregulation, and innovation; reduced attractiveness of traditional investment opportunities; changes in the participation of the public sector in financial markets; and economic policy changes which encouraged some types of financial activity over others. All of these factors created incentives for households and businesses to manage their assets and liabilities more actively, which, along with other structural adjustments, led to an increase in competition in the financial sector.

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<sup>1/</sup> Previous work has focused on macroeconomic aspects of the asset price cycle and the debt deflation, analyzing the interplay of structural changes in financial markets and macroeconomic developments and their impact on private sector financial positions and asset prices, and examining the role of monetary policy in first inadvertently permitting the accumulation of debt and then in eliminating the subsequent overheating. See Garry J. Schinasi and Monica Hargraves (1993). For an analysis of the effects of asset deflation episodes in three east Asian economies, and the roles played by financial market structure and regulatory policies, see Weisbrod and Lee (1993).

A related point not developed here is that in the absence of expansionary macroeconomic policies, the extreme overshooting of asset prices and debt levels that was observed in many industrial countries probably would not have occurred. Instead, asset price adjustments and the debt accumulations would have more accurately reflected fundamental changes in the real economy and the financial environment, and therefore would not have proceeded beyond sustainable levels. This is not to suggest that overshooting would have been avoided completely, but that expansionary policies were critical in exacerbating the price movements.

The paper begins by examining the shifting patterns of financing in Japan during the 1980s. The fundamental source of pressure in asset markets in Japan was the growing supply of investable funds relative to the pool of traditional domestic investment opportunities. The domestic surplus of funds reflected the traditionally high household saving rate and the accumulated returns from productive investment undertaken through the mid-1970s. The growth in investable funds continued in the 1980s while the growth of sufficiently attractive real domestic investment opportunities was evidently slowing: during the first half of the decade, Japanese foreign investment increased considerably, and over the period as a whole, corporations' investments in financial assets grew much faster than real fixed investment. The slowing of foreign investment later in the decade was a result, in part, of the sharp rise in the yen following the Plaza Accord in 1985, which reduced profits and in some cases created losses on earlier foreign investments and made investors more cautious about international investments.

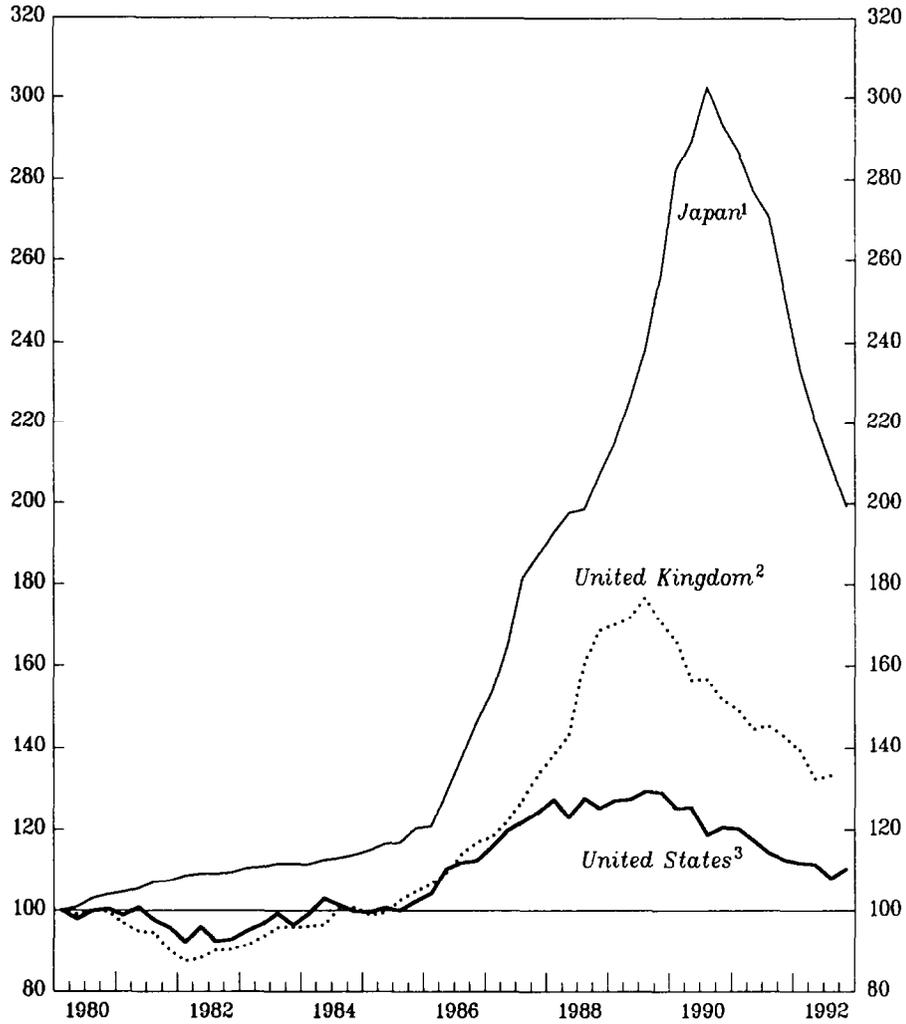
The resulting increase in demand for domestic assets in Japan created pressures for asset prices to rise. This normal pressure, however, was intensified by the erosion of the traditional role of banking institutions, by the development of new financial institutions and markets to allocate savings, and by an overexpansionary monetary policy to counteract the domestic impact of the appreciation of the yen. <sup>1/</sup> Average annual inflation in goods prices--measured either in terms of the CPI or the GDP deflator--was 1 1/2 percent during 1985-89. In contrast, during the same period the average annual rate of increase in property prices was 16 percent, and in equity prices it was 22 percent. This concentration of inflation in asset markets is consistent with what emerges from the analysis of the flow of funds data in Japan, namely that excess demand was heavily concentrated in domestic asset markets and did not spill over into goods markets.

The paper then analyzes the flow of funds in the United Kingdom and the United States, where the experience was in some ways quite different from Japan's even though similar structural changes were taking place. Both

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<sup>1/</sup> See the following studies for more detail: on the first point Steven R. Weisbrod, et al. (1992); on the second, Morris Goldstein, et al. (1992); on the third point, Garry J. Schinasi and Monica Hargraves (1993).

**Chart 1. Property Prices**  
(As a ratio to the consumer price index; 1980:Q1 = 100)



Sources: For the United States, Data Resources, Inc. data base; for the United Kingdom, Central Statistical Office, Financial Statistics; and for Japan, Japan Real Estate Institute, Bulletin of Japan Land Prices.

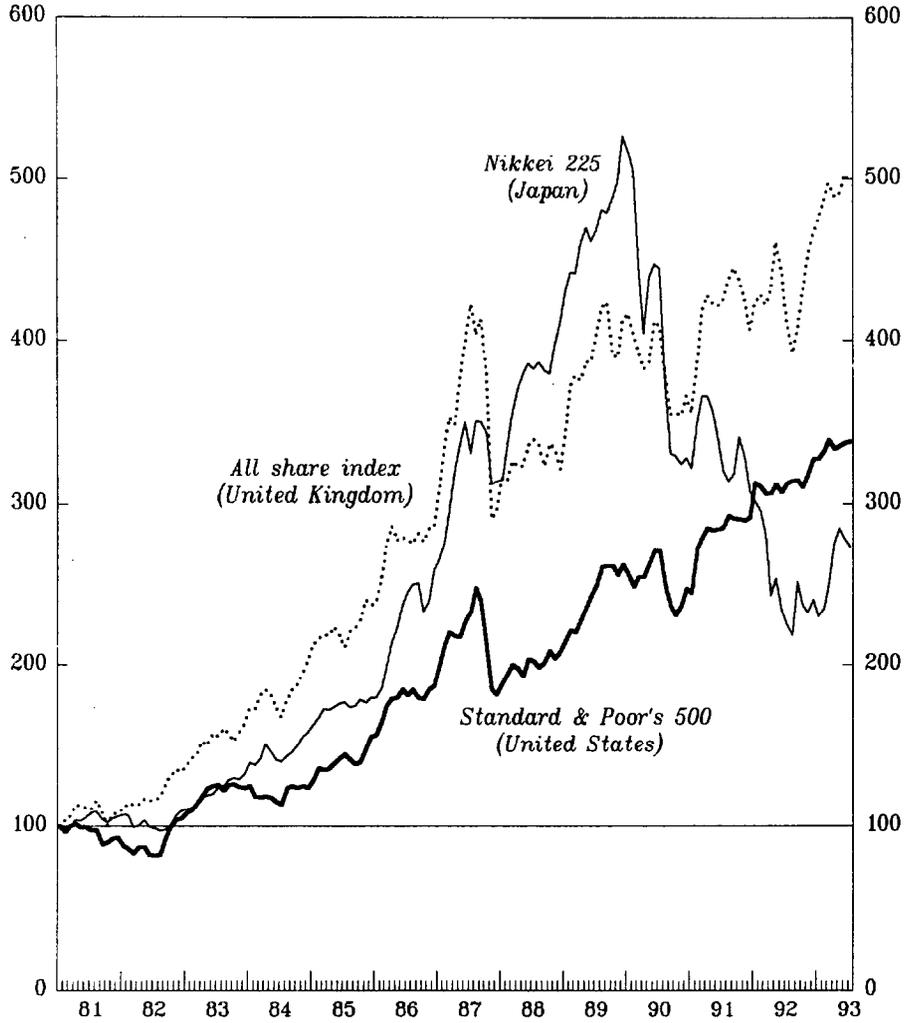
<sup>1</sup>Urban residential land price in six largest cities.

<sup>2</sup>Index of prices on dwellings.

<sup>3</sup>Average price of a new house.



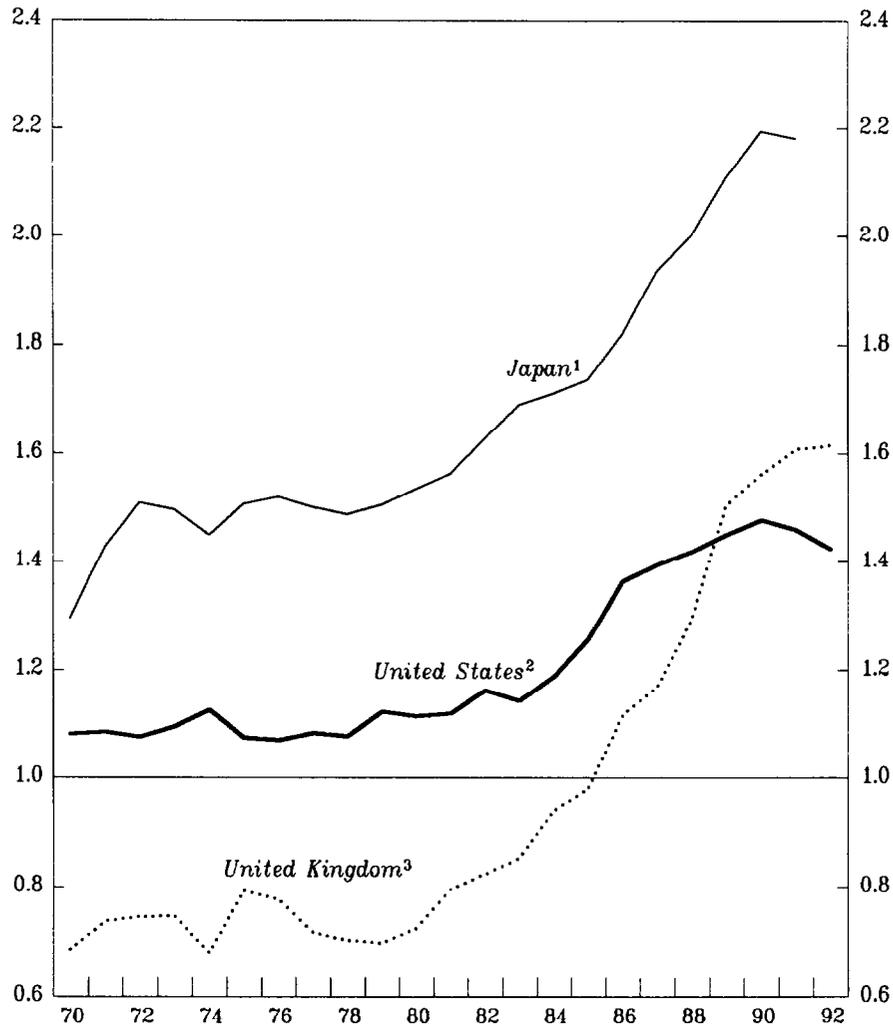
Chart 2. Stock Market Indices  
(January, 1981 = 100)



Sources: For the United States, Data Resources Inc. data base; for Japan, Nikkei Services; and for United Kingdom, Central Statistical Office, Financial Statistics.



**Chart 3. Total Private Nonfinancial Sector Debt**  
(Ratio to GDP, end of period)



Sources: For the United States, Data Resources, Inc. data base; for the United Kingdom, Central Statistical Office, Financial Statistics; and for Japan, Economic Planning Agency, National Income Accounts.

<sup>1</sup>Total financial liabilities of the private nonfinancial sectors less trade credit.

<sup>2</sup>Total credit market debt outstanding of the private nonfinancial sectors.

<sup>3</sup>Total financial liabilities of the personal and the industrial and commercial sectors, less outstanding domestic trade credits and ordinary and preference shares. Data for 1992 are through the third quarter.



the United Kingdom and the United States were net debtor countries during this period but similar financial imbalances emerged in the private sectors of the economy as investment patterns changed and as funds were redirected to real estate markets. There was an increased allocation of household saving to intermediaries such as pension funds, and a need to redirect funds to new investments. In the United Kingdom, the rapid pace of deregulation of mortgage markets unleashed pent-up demand for owner-occupied housing that could not easily be absorbed by existing supply. The latent relative price adjustment was artificially fueled and extended by overexpansionary monetary policy. In the United States--where the asset price inflation was much less severe--the rise and subsequent fall in real estate prices was associated with changes in the tax laws, expansionary fiscal policy, and to a lesser extent expansionary monetary policy. 1/

As in Japan, asset price inflation and debt accumulation in the United Kingdom and the United States were associated with rapid changes in financial structure and private sector behavior and overexpansionary macroeconomic policies. Unlike Japan, however, the asset price inflations were less dramatic, especially in the United States, and there were more significant increases in economy-wide inflation in goods and labor markets, especially in the United Kingdom. These differences occurred in part because deregulation of the U.K. and U.S. financial systems permitted a more flexible response to changes in financial flows and in part simply because the size of Japan's domestic surplus meant that the required adjustments were much larger than those in the United States or the United Kingdom.

## II. Changing Financial Patterns in a High-Saving Economy: Japan

The asset price inflation in Japan can best be understood against the historical background of changes in corporate investment and earnings patterns, changes in the relationship between corporations and banks, and changes in the role of banks in the economy. Critical developments included a significant reduction in the corporate demand for short-term bank financing, a shift on the part of households towards less liquid investments, and reduced government borrowing needs as budget surpluses emerged and increased. The chronological discussion that follows traces developments and responses in the corporate sector, in the household sector, in the financial industry, and ultimately in asset markets.

### 1. Finance and investment before 1980

Japan's financial structure in the late 1980s reflected gradual changes that had taken place over a period of more than thirty years. The process began during an earlier period of equity price deflation, which ran from 1961 through 1965. It was around this time that corporations,

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1/ Demographic changes were also significant in the United States in boosting demand in the housing market.

motivated in part by a desire to reduce the threat of takeovers, increased their practice of mutual shareholding and the Keiretsu system, or industrial grouping system, came into its own. 1/ Domestic nonfinancial corporations held 18 percent of equity issues in 1965. By 1970, their share rose to 23 percent and by 1975, to 26 percent.

In the Keiretsu system, individual members of the group purchased small blocks of shares in each of the other members. 2/ However as a group, the Keiretsu purchased a large enough portion of the shares of the individual members to exercise control, at least potentially. Thus, the corporate sector was in a position in which it could govern its affairs with little outside interference.

In the early days the Keiretsu were heavily dependent on banks as a source of funds. Between 1968 and 1975, major corporations in Japan raised an average of 65 percent of their total funds externally, from financial markets and through loans from financial institutions (Chart 4). 3/4/ Loans from domestic financial institutions, primarily banks, accounted for almost two thirds of these external funds.

Corporate dependence on bank funds weakened considerably, starting in the mid-1970s, with the large profits earned by major Japanese corporations. These profits generated retained earnings that permitted the corporate sector to fund much of its investment internally, as indicated by the decline in the ratio of external funds as a proportion of total funding by principal enterprises (see Chart 4). Between 1976 and 1980, only 48 percent of funds were obtained externally, and, on average, only 33 percent of this was borrowed from financial institutions.

This shift in corporate funding was one of several sources of pressure on banks in the mid- to late 1970s. An additional important factor was the change in government financing needs. The government incurred large deficits in the wake of the oil crises in the 1970s, with the result that the supply of government securities increased significantly: government

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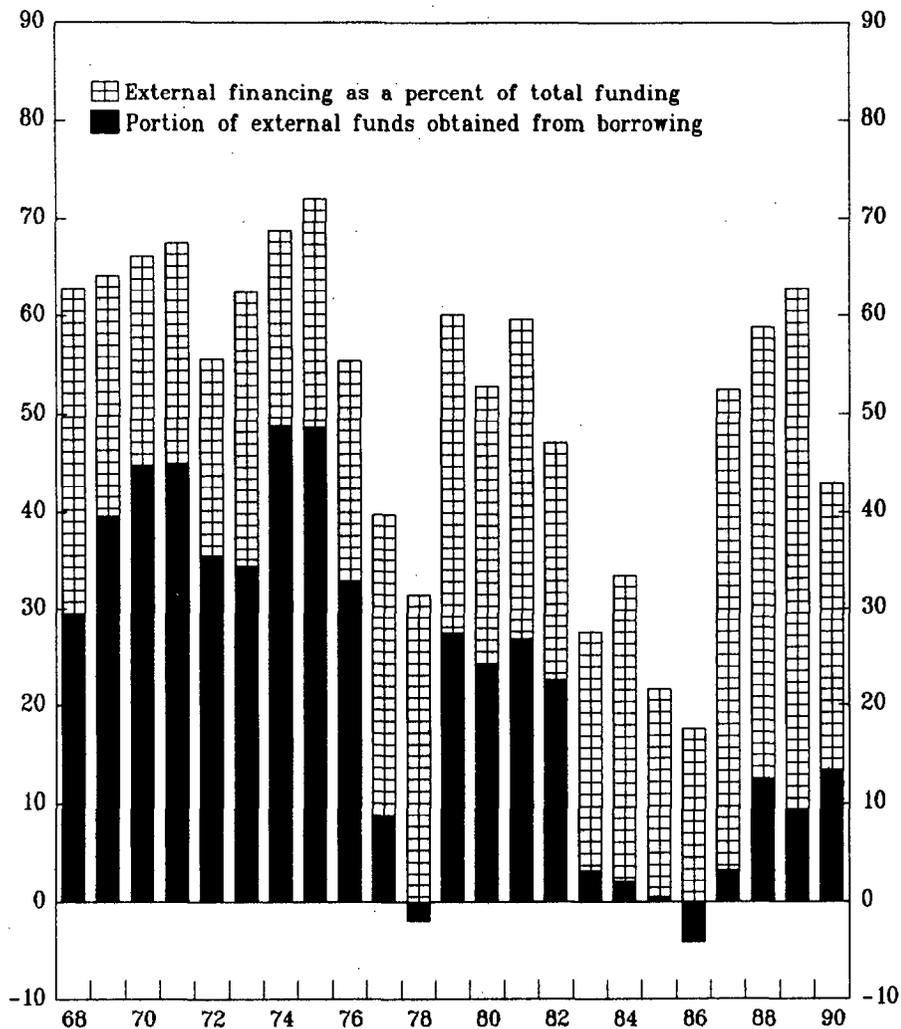
1/ See Daniel A. Citrin (1992) for additional discussion of the origins of the Keiretsu.

2/ The share purchased by any individual member in another member is limited to 5 percent by the antimonopoly law.

3/ This external funding ratio is created from the income statements of principal enterprises. The numerator is comprised of borrowing plus increase in equity capital, the denominator is total funds raised; both exclude payables.

4/ The data on principal enterprises is created from a survey of approximately 500 firms that are listed on the stock market and have capitalization of over ¥1,000 million. These surveys are reported in "Financial Statements of Principal Enterprises" ("Financial Statements of Main Industrial Enterprises" for 1968 data), in Bank of Japan, *Economic Statistics Annual*.

Chart 4. Reliance on External Financing by Principal Enterprises in Japan



Source: "Financial Statements of Principal Enterprises", Bank of Japan, Economic Statistics Monthly.



bonds increased from 21 percent of household financial net worth in 1975 to almost 41 percent in 1980. 1/ At the time, government securities were not sold through auctions but were placed through direct negotiations between the government and selected financial institutions. In this environment, the government was able to negotiate favorable prices for its bonds, which placed pressure on bank interest revenue.

Banks also faced cost pressures on the liability side of their balance sheets from the postal savings system. The funds raised through post offices were turned over to the postal savings trust fund, managed by the Ministry of Finance. This fund in turn purchased government securities. Interest on deposits in the postal savings system were sheltered from taxes, so the postal savings system was able to compete aggressively with banks for household savings. The percentage of household deposits held in the postal savings increased from 23 percent in 1975 to almost 30 percent in 1980. 2/ The competition from postal savings placed pressure on banks to petition for higher interest rates on deposits, which eroded their net interest margins further in the late 1970s.

## 2. 1980 to 1985: Depository institutions under pressure

As the 1980s opened, banks were under pressure from three sources: declining corporate demand for borrowing, the costs of supporting government bond prices, and disintermediation by households in favor of the postal savings system. A favorable factor supporting bank earnings up to 1980 was that corporations, unlike households, had no alternative to bank deposits as a liquid investment.

Corporate investment remained high through the early 1980s, and corporations relied increasingly on internal funds to finance this investment. Between 1980 and 1985, only 38 percent of funding for principal enterprises was raised externally, and, on average, less than one quarter of external funds represented borrowing from domestic financial institutions. More importantly, however, corporations began to withdraw deposits from banks. Capital controls were liberalized in 1980 under the pressure arising from the trade surpluses that began to mount in the late 1970s--Japanese corporations and financial institutions needed to be able to invest the economy's foreign earnings. Corporations were thereafter permitted to hold funds outside the domestic banking system. Deposits in Euromarkets were not subject to interest rate ceilings and domestic corporate deposits as a percent of total deposits at Japanese city banks declined from 77 percent in

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1/ These data are from "Flow of Funds Accounts: Financial Assets and Liabilities Accounts," reported in Bank of Japan, *Economic Statistics Annual*, various issues.

2/ "Flow of Funds Accounts: Financial Assets and Liabilities Accounts," Bank of Japan, *Economic Statistics Annual*, various issues.

1979 to 69 percent in 1982. 1/ Bank net interest margins declined even further.

With competition from overseas deposit markets, city banks no longer could afford to hold government bonds; their net interest margins (including noninterest expenses) actually turned negative in 1980 and 1981. 2/ Banks were forced to sell bonds at a loss, and securities as a percent of domestic bank assets declined from 21 percent in 1980 to 17 percent in 1985. 3/ As a secondary market in government bonds emerged, banks faced new competition for corporate deposits from securities dealers who entered into repurchase agreements with corporations. Banks responded by requesting permission to issue certificates of deposit at unregulated interest rates.

Another critical development in the 1980s was a significant shift in household financial portfolios away from deposit accounts and toward investments with trust and insurance companies. Both banks and the postal savings system were affected, as deposits declined from 59 percent of Japanese household assets in 1980 to 54 percent in 1985 (Table 1). Trust and insurance holdings increased from 21 percent of assets to 26 percent of assets over the same period. 4/

Unlike depository institutions, trust and insurance companies offer accounts with payoffs that vary with changes in market valuations of underlying investments. 5/ They do this by holding a relatively large percentage of their assets in marketable securities. Thus, a shift in household demand toward trust and insurance companies amounted to an indirect increase in demand for securities. The release by banks of government securities into the new secondary market provided an important expansion of investment opportunities for trust and insurance companies. Between 1980 and 1985, trust and insurance companies increased their holdings of government securities from 5.3 percent to 15.3 percent of their

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1/ Data from "Banking Accounts of City Banks," Bank of Japan, *Economic Statistics Annual*, various issues; and Bankers Associations of Japan, *Analysis of Financial Statements of All Banks*, various issues. City banks are large banks operating primarily in major urban areas.

2/ Data on net interest margins (after noninterest expenses) are from "Income and Expenses of Ordinary Banks," Bank of Japan, *Economic Statistics Annual*.

3/ Data are from "Banking Accounts of All Banks," Bank of Japan, *Economic Statistics Annual*, various issues.

4/ "Flow of Funds Accounts: Financial Assets and Liabilities Accounts," Bank of Japan, *Economics Statistics Monthly*, various issues. Household assets are calculated with equities at market value.

5/ In the case of insurance companies, the variable component of payoffs is made in the form of dividend payments.

Table 1. Japan: Household Financial Balance Sheet

(Fiscal year, in trillions of yen)

	1980		1985		1990	
	Total	As percent of assets	Total	As percent of assets	Total	As percent of assets
Financial assets	353.1	...	587.8	...	954.5	...
Deposits	208.3	59.0	317.0	53.9	469.5	49.2
Trust (including investment trust)	26.1	7.4	58.4	9.9	102.6	10.7
Insurance	47.1	13.3	92.2	15.7	199.5	20.9
Securities <u>1/</u>	55.2	15.6	99.4	16.9	140.5	14.7
Financial liabilities	131.8	37.3	196.5	33.4	331.5	34.7

Source: Bank of Japan, *Economic Statistics Monthly*, (August 1981, p. 205; August 1986, p. 207; September 1991, p. 201).

1/ Equities at market value, as reported in the table in the 1991 issue of the *Economics Statistics Monthly*, and in the table footnotes in the earlier issues.

total assets. 1/ The financial system had adjusted to the dislocations produced by the shift in corporate financing, and from the shift in household portfolios away from depository institutions toward trust and insurance investments. The banking sector had been under pressure on both the asset and liability sides, but still had a role in providing consumer and small business finance and to some extent in the deposit market, especially as deregulation allowed banks to compete more effectively. The postal savings system had expanded with the government's increased borrowing needs. Trust and insurance intermediaries expanded with the increased investment by households, and had access to pools of domestic and foreign securities.

Two developments, however, disrupted the emerging financial equilibrium: the decline in Japanese government borrowing, and the sharp appreciation of the yen following the Plaza Accord. These two factors combined to channel the large pool of domestic saving very narrowly into domestic corporate securities and real estate markets. The asset inflation, or now more commonly, the "bubble economy", was poised to take off.

### 3. 1985 to 1990: Asset inflation

The central government budget deficit, which was 3 3/4 percent of GDP (or 23 percent of expenditures) in 1985, fell sharply to 1/2 of 1 percent of GDP (or 11 percent of expenditures) by 1990. 2/ Government bonds outstanding, which stood at 40 percent of household financial net worth in 1985, declined to 27 percent of financial net worth by 1990. Trust and insurance companies maintained revenues somewhat with heavy purchases of foreign securities--especially U.S. Treasuries. The postal savings system, however, could not avail itself of this alternative, and, after 1985 its role shrank relative to other financial intermediaries (Table 2).

The substitution of foreign securities for domestic government debt might have been sufficient to maintain profits except for the second major event: the Plaza Accord called for efforts to reverse what was viewed as an overvalued dollar exchange rate. The subsequent appreciation of the yen eased tensions among Japan's main trading partners, but forced non bank intermediaries to take large losses on their dollar assets that they had funded with yen liabilities. Intermediaries, and investors in general, became more cautious about foreign investment.

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1/ Flow of Funds data. Most of this increased holding of government securities was undertaken by trust companies and trust accounts of banks. The ratio of government securities to total assets at these institutions increased from 7.7 percent in 1980 to 22.5 percent in 1985. At insurance companies, the ratio rose from 3.0 percent in 1980 to 6.3 percent in 1985.

2/ Data from "Breakdown of Revenue and Expenditure of General Account," Bank of Japan, *Economic Statistics Annual*, various issues.

Table 2. Japan: Financial Institution Assets

(Fiscal year, in trillions of yen)

	1980		1985		1990	
	Assets	As percent of total	Assets	As percent of total	Assets	As percent of total
Insurance assets	34.5	7.0	63.9	7.6	149.3	10.7
Trust assets	32.4	6.6	79.7	9.5	176.4	12.6
Depository institution assets	304.5	61.8	486.0	58.1	767.6	54.9
Government financial institution assets <u>1/</u>	121.2	24.6	207.0	24.7	305.4	21.8
Total assets of financial institutions	492.6	...	836.6	...	1398.7	...

Source: "Flow of Funds Accounts: Financial Assets and Liabilities Accounts," Bank of Japan, *Economic Statistics Monthly* (August 1981, p. 207; August 1986, p. 209; September 1991, p. 203).

1/ Funded primarily with postal savings deposits.

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At the same time, household demand for trust and insurance assets continued to increase, rising from 26 percent of financial assets in 1985 to 32 percent in 1990 (see Table 1). Thus the supply of investable funds for corporations continued to grow, without commensurate growth in investment opportunities. Principal enterprise demand for externally generated funds had declined dramatically by 1986, and fixed investment growth rates had slowed. 1/ Corporate securities issuance initially remained limited, and demand for securities put upward pressure on stock prices.

In 1986, the Bank of Japan adopted a liberal stance of monetary policy that further increased the supply of liquid funds to the domestic economy. To ease the domestic impact of an appreciating yen, in March 1986 the Bank reduced the discount rate from 4.5 percent to 4 percent. This was followed by two more decreases in 1986, and in February 1987 the discount rate was reduced to 2.5 percent. With deposit interest rates correspondingly low, households had additional incentives to shift toward equity-based financial assets.

In 1986, the Nikkei index began its dramatic ascent. Expectations of continued price increases made the perceived cost of equity issuance in terms of current earnings very low, and meant that corporations could also borrow at low cost by issuing bonds with equity warrants attached. In 1987, corporations returned to financial markets (see Chart 4). External funds raised by principal enterprises rose to an all time high in nominal terms, and bond and stock issuance by these enterprises increased from ¥ 4,640 billion in 1986 to ¥ 7,209 billion in 1987. 2/

The increase in external financing by major corporations was not accompanied by a corresponding rise in fixed investment and inventory, however. Instead, financial investments accounted for 42 percent of funds raised between 1986 and 1989, compared to 19 percent between 1981 and 1985 (Table 3). Evidently the return on new fixed investment projects had fallen below the return corporations earned from holding deposits.

By 1989, deposit acquisition of principal enterprises increased to ¥ 9,518 billion, which exceeded the amount of fixed investment they had made in any year prior to 1985. Thus, the household shift out of deposits into indirect holdings of corporate securities had a paradoxical outcome because the major corporations themselves became large holders of bank deposits.

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1/ In 1984-85, gross fixed private business capital formation increased at an average annual rate of 12 percent; in 1986-87 this declined to 5 1/2 percent.

2/ These data include both foreign and domestic issuance, as reported in "Financial Statements of Principal Enterprises," Bank of Japan *Economic Statistics Annual*, various issues. Data provided in the *Tokyo Stock Exchange Factbook* include only domestic issuance, which differs significantly from total issuance starting in the late 1980s.

Table 3. Japan: Sources and Uses of Funds at Principal Enterprises

(In billions of yen)

	1981-85		1986-89	
	Average per year	As percent of funds raised	Average per year	As percent of funds raised
Funds raised (excluding payables)	12,568	...	25,727	...
Financial investment	2,344	18.7	10,729	41.7
Deposit investment	719	5.7	6,441	25.0

Source: "Financial Statements of Principal Enterprises," Bank of Japan, *Economic Statistics Monthly*, various issues.

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Households desired capital gains, but the major corporations that received the funds held interest-paying assets.

Bank portfolios had, in the meantime, shifted toward higher-risk, higher-return investments--principally in the form of loans for property or indirectly as loans to nonbank finance companies (Table 4). The immediate cause in the shift in bank portfolios was that there were very few readily available domestic assets in which to invest the deposits that were created by the expansionary monetary policy and by corporate deposit demand. Major corporations had long ago abandoned banks as a source of loans, and the government was no longer an issuer of securities.

In itself, bank investment in real estate need not have led to real estate asset inflation. If bank depositors had borne the risk of the asset decisions made by banks, they would have insisted on higher ex ante returns on bank deposits than they received. In this case, banks would have earned lower spreads on their real estate investments, which would have encouraged them to expand more slowly. The banking system was insured, however, and capital standards had not yet been firmly established as a supervisory tool. The insurance of banks was valuable to corporate depositors who gained protection in this indirect investment in property markets. The shift by both corporations and banks to the property market in the mid- to late 1980s put pressure on the fixed supply and drove land prices up sharply starting in 1985. 1/

#### 4. Checks and balances on corporate decisions

Major Japanese corporations were able to raise equity in securities markets in the late 1980s for investments in bank deposits and in real estate that households could have funded directly, but had chosen to avoid. Through their investments in pension funds and trust accounts, however, households held equities and thereby did finance these investments indirectly. This suggests a lack of information to investors about corporate investment activity or a lack of expertise needed to evaluate corporations' use of funds, or both. Before the 1980s, when banks were essential suppliers of funds to the corporate sector, bank oversight was an important mechanism disciplining corporate investment allocation. With the banking system no longer in this position, and in fact experiencing its own transitional problems, there may have been a gap in oversight mechanisms.

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1/ Estimates of the extent of corporations' direct investment in real estate are difficult to obtain. However, indirect evidence suggests that such real estate ventures were significant. For example, the bankruptcy of Itoman, a trading company, in the summer of 1992 was blamed on its real estate investment. Major industrial companies also held stakes in real estate companies. Thus, the problem of risk-taking was not confined to the insured banking system.

Table 4. Japan: Loans of All Banks, By Category <sup>1/</sup>

(In billions of yen)

	1980		1985		1990	
	Total	As percent of total	Total	As percent of total	Total	As percent of total
Real estate loans	7,413	5.7	16,017	7.5	42,125	11.3
Nonbank finance company loans	3,920	3.0	14,818	6.9	34,345	9.2
Small business loans	54,004	41.3	98,777	46.3	213,510	57.3
Total loans	130,691	...	213,460	...	372,492	...

Source: "Outstanding Loans and Discounts and Loans for Equipment Funds of Banking Accounts of All Banks by Industry," in Bank of Japan, *Economic Statistics Monthly* (Special Tables), October 1980, November 1985, and November 1990.

<sup>1/</sup> Amounts outstanding at end-September. 1990 data include former Sogo banks, which were converted to bank charters in the late 1980s, and had previously been chartered as mutual banks specializing in consumer lending.

Increased dividend payments would have been a natural solution to the corporate sector's problem of surplus earnings: the distribution of excess funds to investors is efficient in an environment where corporate uses for funds have become no more attractive than external investments to which investors already have access. Principles of corporate finance would suggest that there is an additional benefit to mature, cash-rich, corporations of increased dividend payments. <sup>1/</sup> Paying out excess retained earnings means that, eventually, additional investments will have to be funded externally. This ensures that the corporation gets the benefit of disciplined market scrutiny when new securities are issued, which provides a critical check on the allocation of funds. The value of this mechanism depends on the strength of information flows and on the presence of security analysts, underwriters, and other market institutions for investment review. With other corporations as major shareholders, however, there may have been little pressure to change dividend policy because these other corporations may also have been cash-rich, with limited internal need for funds. Households had already demonstrated a reduced demand for liquidity, and presumably did not pressure corporations for increased dividend payments.

Another potentially important control mechanism that was essentially absent from the Japanese corporate system was an active takeover market. This reflected the fact that the Keiretsu system had been developed in part as a means of preventing outside corporate takeovers. Although takeovers can at times be costly, the resulting competition for the right to reorganize and improve existing firms also can provide discipline by discouraging entrenched management from pursuing inefficient investment strategies. In the absence of such competitive oversight, and without the investment control that had earlier been exercised by banks, key checks on corporate investment policies were not available. With evidently limited internal uses for investment funds the "bubble economy" took off, with funds concentrated and recycled in the equity and property markets.

### III. Changing Financial Patterns in Low-Saving Economies: The United Kingdom and the United States

The United Kingdom and the United States also experienced asset price inflation in the late 1980s, but their asset price inflations were confined primarily to real estate markets, and were less dramatic than in Japan. This is noteworthy because many of the structural changes that triggered asset inflation in Japan were present in the United Kingdom and the United States as well. In all three countries, the household sector increased its demand for trust and insurance assets, and important securities issuers reduced their demand for funds.

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<sup>1/</sup> See Frank H. Easterbrook (1984).

There were also significant differences. The major difference was that the United Kingdom and the United States had balance of payments deficits whereas Japan had huge surpluses. Thus, the flow of domestic saving relative to potential investment projects was larger in Japan than in the other two economies. A second contrast was that both the United Kingdom and the United States experienced a greater increase in inflation in goods and labor markets. As compared to the experience in Japan, inflation in both the United Kingdom and the United States was more limited in asset markets and more broadly distributed to goods and labor markets. This occurred in part because funds were distributed more broadly throughout the economy--rather than just to the corporate sector as in Japan--and in part because the funds that were distributed to the corporate sector were allocated more effectively to activities with real expansion opportunities. Thus, with the exception of the real estate investments, the allocation mechanisms and systems for market-based checks on investment activity appear to have been more successful in disciplining the redirection of funds.

1. The United Kingdom

a. Changes in real estate markets and flows of investment funds

Housing prices escalated sharply in the United Kingdom between 1986 and 1989. An underlying cause was that deregulation of the mortgage market in the early 1980s released a large backlog of demand for housing. Prior to deregulation, specialized lenders, known as building societies, dominated the mortgage market. <sup>1/</sup> A few large building societies dominated individual banking markets and there was limited competition. Deregulation permitted commercial banks to enter the market, increasing competition for mortgages. At the same time, saving patterns changed and increased the supply of funds available for housing investment.

As in other industrial countries, U.K. household financial assets shifted toward pension funds and insurance companies (Table 5). In the early 1980s, the withdrawal came primarily from deposits at banks and building societies and from direct holdings of U.K. corporate securities. In the latter half of the 1980s, the withdrawals came from government liabilities--government securities and cash, for example. The shift toward pension and insurance intermediaries was accompanied by a shift in the portfolios of these institutions toward securities, primarily equities, issued by corporations. Net government borrowing declined from 40 percent of household net assets in 1980 to 16 percent in 1990 (see Table 5). Government securities formed a correspondingly decreasing percentage of pension and insurance company assets.

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<sup>1/</sup> See John S. Flemming (1992).

Table 5. United Kingdom: Household Financial Balance Sheet

(In billions of pounds sterling)

	1980		1985		1990	
	Total	As percent of assets	Total	As percent of assets	Total	As percent of assets
Financial assets	306.1	...	645.9	...	1,174.6	...
Sterling deposits with banks	36.6	12.0	61.5	9.5	157.2	13.4
Sterling deposits with building societies	49.7	16.2	103.9	16.1	158.5	13.5
Total sterling deposits	86.3	28.2	165.4	25.6	315.7	26.9
Life insurance, pension	106.6	34.8	290.8	45.0	586.5	49.9
United Kingdom company securities	38.4	12.5	64.9	10.0	113.8	9.7
Central government obligations <u>1/</u>	31.4	10.3	59.6	9.2	54.2	4.6
Liabilities	91.3	29.8	207.4	32.1	441.7	37.6
Building society mortgages	42.7	...	97.2	...	176.5	...
Bank mortgages	9.9	...	30.4	...	111.4	...
Memorandum:						
Public net liabilities/household net financial worth	40.3	...	30.4	...	16.5	...

Source: Central Statistical Office, *Economic Trends* (October 1991, pp. 139, 140, and 148).1/ Includes government securities, national savings, and cash.

Although government borrowing declined during the 1980s, the demand for funds by both the household and corporate sectors increased. Household liabilities increased by more, relative to assets, than was the case in either Japan or the United States. Most of this increase in borrowing was for real estate purchases, as indicated by the increased proportion of mortgage financing (see Table 5). Corporate financial liabilities increased at the same pace as household liabilities. Over the period, the ratio of securities issued to corporate financial liabilities rose (Table 6). Thus the shift by households toward intermediated investment in corporate securities coincided with the shift by corporations to nonbank sources of funding.

In contrast to the Japanese experience, the increased demand for corporate securities did not contribute to a significant stock price inflation. Corporations did not raise funds to invest in bank deposits, as evidenced by the fact that financial assets relative to financial liabilities actually declined over the decade (see Table 6). Thus, it appears that sufficient corporate projects were profitable at prevailing securities prices to satisfy investor demand for corporate securities.

Bank deposit volume had not contracted significantly during this period as a percent of liabilities of all financial institutions because, although households were shifting toward pension and insurance company holdings, very little of the shift came from deposits (Table 7). In the second half of the decade households' deposits increased as a proportion of household assets. In addition, foreign holdings of U.K. deposits at banks increased sharply over the decade. By the mid-to late 1980s, as banks faced the steady withdrawal of corporate borrowers and as government borrowing needs also declined, pressure for a new outlet for bank funds increased. Personal loans (including mortgages) and loans to property companies rose from 34 percent of bank loans in 1983 to 44 percent by 1991. Over that same period, loans to manufacturing fell from 18 percent of the total to 9.5 percent. <sup>1/</sup>

During the 1980s, banks entered the mortgage market aggressively, taking a significant market share away from building societies. In 1980 building societies supplied 80 percent of U.K. household mortgages; by 1990 this ratio had fallen to 60 percent (see Table 5). Prices in the property market started to rise significantly in 1986, and during the height of the boom in the period 1986-89, property prices rose at an annual rate of 19 1/2 percent. Construction also increased sharply, particularly of commercial property, as builders responded to the price changes.

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<sup>1/</sup> Data from "Analysis of Bank Lending to U.K. Residents," Central Statistical Office, *Annual Abstract of Statistics*, various issues.

Table 6. United Kingdom: Business Firms' Balance Sheet

(In billions of pounds sterling)

	1980	1985	1990
Financial assets net of receivables	78.2	169.3	319.2
Financial liabilities net of payables	171.1	382.8	836.5
Financial assets/financial liabilities (in percent) <u>1/</u>	45.7	44.2	38.2
Securities/financial liabilities (in percent) <u>2/</u>	50.6	62.2	60.6

Source: Central Statistical Office, *Economic Trends* (October 1991, p. 140).

1/ Net of receivables and payables.

2/ Liabilities net of payables.

Table 7. United Kingdom: Financial Firms

(In billions of pounds sterling)

	1980		1985		1990	
	Total	As percent of total	Total	As percent of total	Total	As percent of total
Total financial liabilities <u>1/</u>	322.6	...	777.5	...	1,695.4	...
Sterling bank deposits	98.3	30.5	187.9	24.2	541.4	31.9
Building society deposits	50.0	15.5	108.3	13.9	180.0	10.6
Life and pension reserves	102.2	31.7	283.2	36.4	576.2	34.0
Memorandum:						
Sterling deposits of foreigners (net of sterling loans to foreigners)	11.5	...	33.9	...	85.1	...
Percent of total sterling deposits	7.8	...	11.4	...	11.8	...
Total financial assets <u>2/</u>	357.5	...	884.6	...	1,746.3	...
United Kingdom company securities	55.4	15.6	166.5	18.8	340.6	19.5
Home mortgages	47.7	13.3	122.1	13.8	284.0	16.3

Source: Central Statistical Office, *Economic Trends* (October 1991, pp. 138, 141, and 142).1/ Less foreign currency deposits.2/ Less foreign currency bank loans.

b. The causes of real estate price inflation

By itself, mortgage market deregulation would have led to a significant relative price adjustment given the effective reduction in the cost of housing finance. However, what might have merely been a relative price adjustment became a real estate price inflation because of two factors: banks were under pressure to find new markets as corporate funding shifted from loans to open market securities, and monetary policy eased in 1986.

The increase in real estate prices relative to the general level of inflation was in part due to banks' willingness to take risks in a new market, risks which other financial intermediaries and investors had not been willing to bear. <sup>1/</sup> With the easing of monetary policy in 1986, banks saw their cost of funds decline, which encouraged them to expand their balance sheets. Because their traditional customer base had reduced its dependence on bank loans, however, banks were forced to find a new outlet for their funds. Since bank deposits were insured, unlike the liabilities of other financial institutions, banks were in a position to expand into risky markets at the government's expense. They were the most visible risk-takers in the real estate market, which suggests that deposit insurance provided a critical ingredient distinguishing bank investment behavior from that of other investors. The experience in the United Kingdom thus differed from that of Japan, where corporations and nonbank intermediaries participated heavily in the real estate market along with banks.

Real estate price inflation was also in part driven by low interest rates resulting from an expansionary monetary policy. The inflation in property prices continued until the Bank of England tightened monetary conditions and raised interbank rates in late 1988. The inflation was then abruptly reversed, and housing prices declined by 1992 to levels only somewhat above their 1987 range. Because the interest rate on most mortgages floated with market rates, mortgage payments adjusted rapidly when short rates rose, forcing some borrowers into default. This increased the supply of properties on the market, adding to the downward pressure on prices.

In summary, asset price inflation occurred in the United Kingdom for reasons similar to those in Japan. Saving flows were changing and monetary policy was expansive. Financial resources were allocated to real estate markets because banks had an incentive to take risk whereas other intermediaries did not. An expansive monetary policy compounded what would otherwise have been a more limited relative price adjustment in the real

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<sup>1/</sup> Nonfinancial corporations could have engaged in real estate speculation by purchasing real estate subsidiaries, as they did in Japan. However, because they did not build up financial assets, which would have included investments in real estate subsidiaries, we can conclude they were not active risk takers in real estate markets.

estate market, and when policy tightened the inflation in property markets was reversed.

2. Redirection of funds in the United States

In the United States, in the 1980s, as in Japan and the United Kingdom, there was a continuing shift of corporations away from bank loans toward direct securities markets, and a relatively new shift by households from bank deposits and direct securities holdings toward mutual funds and pension funds (Table 8). The latter, however, did not lead to a relative increase in the flow of saving toward large corporations. As a proportion of total private sector assets, the nonfinancial corporate sector shrank during the 1980s, while the household and noncorporate business sectors expanded (Table 9).

An important difference in the United States is that mutual fund and pension fund portfolios were not as concentrated in corporate securities in the late 1980s as in Japan and the United Kingdom. Government borrowing increased during the decade, creating a large pool of traded government securities. In addition, large investment funds held a significant portion of their portfolios in private securities other than corporate equities. The commercial paper market was well developed and channeled funds directly to corporations and indirectly to consumers and small businesses through finance companies. Former bank assets were securitized and sold on the open market, creating another noncorporate securities market that proved to be attractive to mutual funds and pension funds. In these ways, the increased funds supplied by households as they moved out of banks were distributed broadly across economic sectors rather than being recycled excessively within the corporate sector.

As in Japan and the United Kingdom, depository institutions in the United States shrank as nonbank intermediaries expanded. A large portion of the securitized assets that appeared on the balance sheets of nonbank intermediaries represented pools of residential mortgages. In 1980, 84 percent of residential mortgages were held on the balance sheets of financial institutions--primarily banks and thrift institutions--as mortgages. By 1990, only 46 percent were held as mortgages (Table 10). The thrift industry's original purpose had been to originate and hold residential mortgages. Because these mortgages could now be sold as securities, thrift institutions were no longer necessary for the market to function. The increase in the commercial paper market had the same effect on large banks, whose original business was making short-term loans to large corporate customers.

As in Japan and the United Kingdom, the loss in traditional customers encouraged U.S. depository institutions to take increased risk. They did this by selling safe assets and retaining the relatively risky ones such as commercial mortgages. In contrast to the residential mortgage market, commercial mortgages were not securitized. Over 85 percent were held as mortgages in financial institutions throughout the 1980s (see Table 10).

Table 8. United States: Household Financial Balance Sheet

(In billions of U.S. dollars)

	1980		1985		1990	
	Total	As percent of financial assets	Total	As percent of financial assets	Total	As percent of financial assets
Financial assets <u>1/</u>						
Deposits and cash	1512.9	33.7	2507.6	30.1	2896.8	25.3
Money market and other mutual funds	117.0	2.6	418.0	5.4	934.5	8.2
Pensions and insurance	1132.5	25.2	2051.2	26.7	3340.0	29.1
Equities	1111.3	24.8	1700.0	22.2	2007.8	17.5
Total financial assets <u>1/</u>	4486.9	...	7671.8	...	11462.2	...
Financial liabilities	1485.0	33.1	2395.1	31.2	4007.7	35.0

Source: Federal Reserve, Board of Governors, *Balance Sheets of the U.S. Economy, 1960-1991*.1/ Excluding equity in private business.

Table 9. United States: Private Sector Assets 1/

(In billions of U.S. dollars)

	1980		1985		1990	
	Total	As percent of total	Total	As percent of total	Total	As percent of total
Households	11,069.1	64.8	16,256.3	65.7	22,592.6	67.5
Nonfarm, noncorporate	1,546.6	9.0	2,453.2	9.9	3,223.7	9.6
Nonfinancial corporations	4,478.7	26.2	6,022.5	24.4	7,648.4	22.9

Source: Federal Reserve, Board of Governors, *Balance Sheets of the U.S. Economy 1960-1991*.

1/ Assets include real and financial assets.

Table 10. United States: Mortgage Markets

	1980	1985	1990
Total mortgages	1,472	2,268	3,858
Residential mortgages	987	1,468	2,710
percent held at financial institutions	84.0	62.7	46.7
Commercial mortgages	255.7	480.7	756.3
percent held at financial institutions	87.3	88.3	87.1

Source: Federal Reserve, Board of Governors, *Federal Reserve Bulletin* (October 1982, Table 1.55; April 1987, Table 1.54; February 1992, Table 1.54).

The commercial real estate market was the one asset market in the United States that experienced significant inflation. The onset and reversal of this inflation are associated with the introduction in 1981 and subsequent withdrawal in 1986 of special tax provisions that made commercial property investment more attractive. The increased demand for commercial mortgages created an outlet for banks and thrift institutions to shift into riskier investments. The portfolios of these institutions, particularly in some regions, became heavily concentrated in the real estate market.

U.S. asset inflation remained limited to a relatively small market partly because insured deposit liabilities shrank dramatically as a percent of financial institution liabilities--from 47 percent in 1980 to 33 percent by 1990. Thus, the financial intermediaries that had the least to lose by taking risk were much smaller actors in financial markets than in Japan and the United Kingdom.

#### IV. Conclusions

An important feature in all three economies was the decline in demand for funds by traditional borrowers--corporations, governments, or, in the case of Japan, both. In all three economies the financial system had to cope with a major redirection of funds to new borrowers. This shift in demand for investment funds coincided with a shift in the types of financial assets demanded by savers, who moved increasingly toward trusts, pensions, and insurance. As the borrowers changed, the financial systems also had to create new saving instruments for savers, primarily households. Until new investments and financial instruments were developed, and consumers learned to evaluate them, funds were recycled in certain asset markets. The price increases that followed were ultimately unsustainable.

The impact of the changing demands of borrowers and savers was most dramatic in Japan where the mismatch of saving flows to traditional investment opportunities was largest and asset inflation extended across both equity and real estate markets. The household sector's increased demand for marketable securities put pressure on the corporate sector, whose need for external funds had declined to very low levels because of the buildup of internal surpluses and a relative shortage of traditional domestic investment projects. Equity prices rose, and in the absence of sufficiently attractive real investment outlets, corporations increasingly invested funds raised in the securities markets in bank deposits. Hence, even though households reduced their demand for deposits, the banking system did not shrink as rapidly as it otherwise would have. With this influx of funds and the loss of corporate borrowers, banks faced a surplus as well and turned to real estate ventures. Banks were in a position to take high risks because government deposit insurance shielded depositors from the potential costs of bank investments.

In the United Kingdom, asset inflation was largely confined to the real estate market. As in Japan, banks found themselves with excess funds

as large corporate borrowers shifted toward securities markets while deposit supply, from domestic and foreign depositors, remained stable. As occurred elsewhere, the banks chose a risky course to fill the asset void left by the changing borrowing needs of corporations. The excess demand for housing that had accumulated during the earlier period of regulation provided a natural outlet for bank investment.

In the United States, in contrast to the other two economies, the changes in borrowing and saving patterns were accompanied by a major decline in depository institutions' share of financial intermediary liabilities. This was due to two major factors: The government increased its borrowing and thus expanded the pool of marketable securities available to investors, and financial innovation permitted the securitization of traditional bank assets such as mortgages. Thus funds were redirected away from the corporate sector as savers moved into marketable securities and, unlike both Japan and the United Kingdom, the resources available to the insured banking system to take risk were limited. As a result, asset inflation was not as widespread.

Among the three financial systems, the United States has experienced financial innovation and liberalization over the longest period of time. This set the stage for the shrinkage of the banking system, a key factor in limiting the extent of asset inflation. Money market instruments had replaced traditional bank deposits starting in the early 1960s, and markets for non-corporate securities were well-developed and could channel investment funds more widely through the economy. Many of the pressures that had built up in Japan and the United Kingdom were absent in the United States.

The challenge faced by financial intermediaries is that they had to identify new outlets for investment as well as create new savings instruments. On a microeconomic level, financial systems are least effective in reducing inflationary pressures when they must adapt rapidly to large changes in the environment. Deregulation and liberalization must therefore proceed gradually, long before pressures in a system become extreme. The experiences in Japan, the United Kingdom, and the United States highlight the importance of a broad array of financial markets and instruments, and the need for more effective oversight mechanisms to replace traditional ones--such as bank involvement--as the roles of these institutions decline.

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