Implications of Balance Sheet Restructuring for the U.S. Business Cycle

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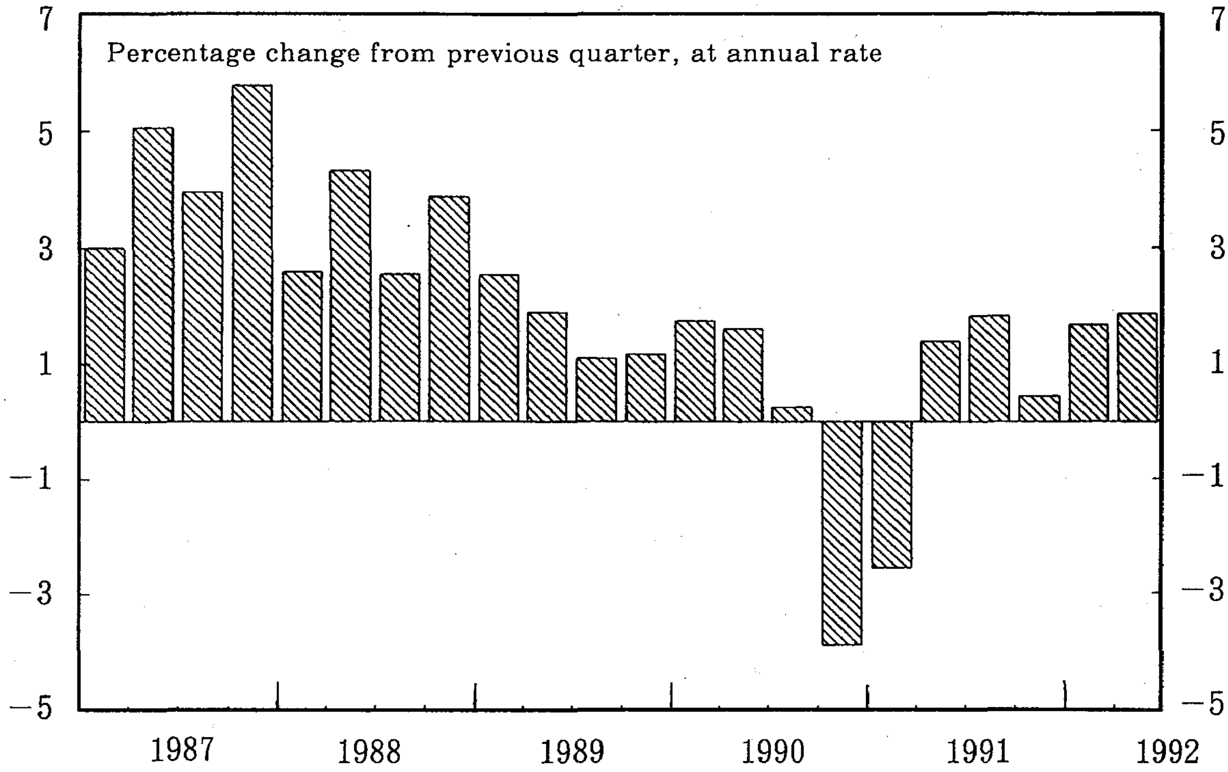
1. Introduction

U.S. economic recovery has been much more sluggish and protracted during the current business cycle than previous cycles. The economic slowdown that started in mid-1989 initially seemed mild by conventional measures : between mid-1989 and mid-1991 unemployment rose by only half a percentage point, and the level of industrial production fell by only 1 percent, the smallest decline in any of the postwar slowdowns. However, a robust economic recovery that had been widely anticipated to take place in the second half of 1991 failed to materialize ; instead, economic activities remained sluggish and unemployment continued to rise. For nearly three years since mid-1989, the economy grew at an average annual rate of less than 1 percent (Chart 1). Although there are increasing signs that the recovery is gathering momentum, the pace of recovery has been much slower than it was during any of the postwar recoveries.[1] Why has the recovery been so slow?

1) The view that economic recovery would be slow is also supported by the forecast of the Bayesian vector autoregression (BVAR) model used at the Federal Reserve Bank of Minneapolis. From the forecast of the BVAR model, Runkle (1991) predicted that the growth in the first year of this recovery would be only half of the actual average first-year growth (6 percent) in postwar recoveries.

CHART 1 UNITED STATES: REAL GROSS DOMESTIC PRODUCT



Source: Survey of Current Business

The slow pace at which the U. S. economy is recovering from recession is believed to be linked to a rapid rise in levels of household and business indebtedness during the 1980s and their subsequent attempts to restructure their balance sheets in the face of an economic slowdown. The Federal Reserve Chairman Alan Greenspan has stated that

> "[T]here are some extraordinary forces at work in the economy that add an exceptional measure of uncertainty to the current picture. I refer, in particular, to the sizable adjustments to business and household balance sheets now under way. These adjustments, which are without parallel in the postwar period, are a consequence of the enormous accumulation during the 1980s of certain kinds of real assets and even faster growth of debt and leverage."[2)]

Indeed, debt-financed asset accumulation was widespread among both businesses and households during the 1980s. In the business sector, there was overbuilding of commercial real estate, which was propelled by generous depreciation provisions, and a dramatic increase in leverage among corporations, which was associated with a wave of mergers and buyouts. In the household sector, there were increased purchases of motor vehicles and homebuying, largely financed by debt accumulation. Although the increased leverage of corporations and households was in part a natural outcome of tax changes, financial deregulation, and technological innovations, it also reflected a widespread optimism that the U. S. economy would continue to expand at a high rate and asset prices would rise rapidly enough to make debt-financed purchases of assets profitable.

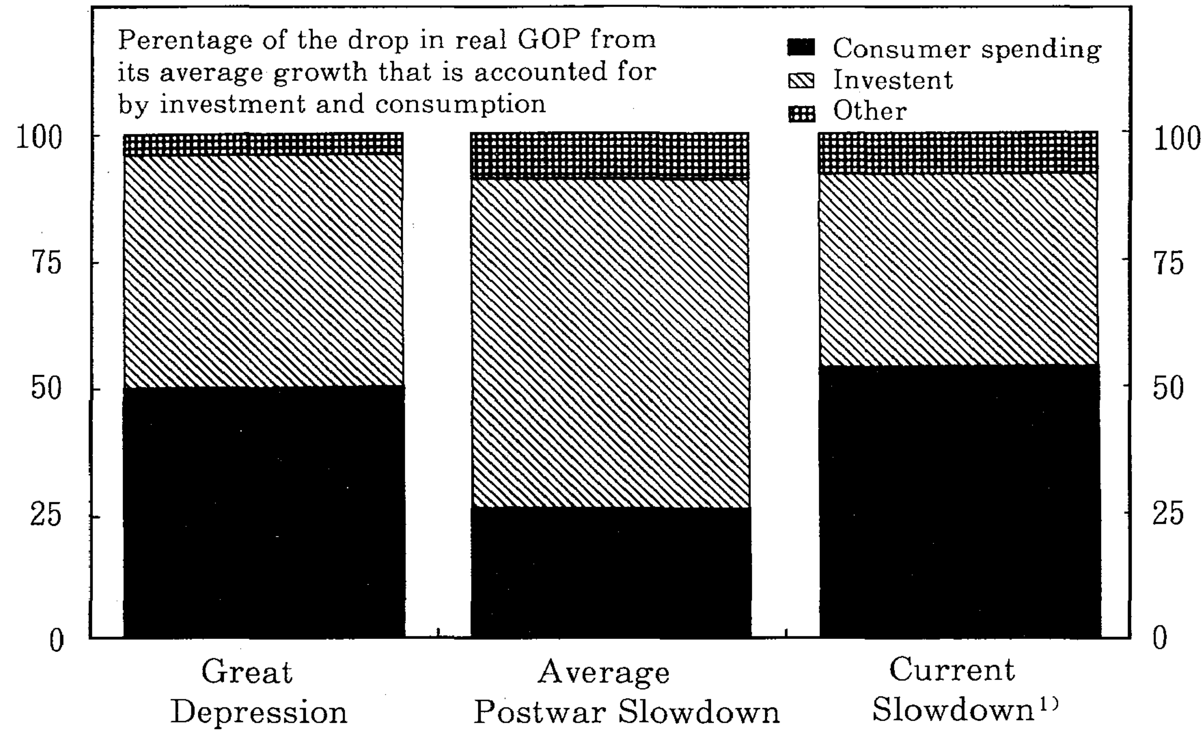
In retrospect, however, such optimism seems to have been excessive as witnessed by the subsequent attempts by households and businesses to reduce their leverage. Following the monetary tightening of the late 1980s, the economic optimism started to fade and both households and businesses began to recognize a possible mismatch between the stream of debt-service burden and cash flows. Higher interest rates, which were engineered by the Federal Reserve in the late 1980s to prevent the economy from overheating, raised the debt-service burden and reduced the asset values of households and corporate businesses. Faced with mounting debt-service burden and uncertainty about the future growth of the

2) Statement by Alan Greenspan, Chairman, Board of Governors of the Federal Reserve System, before the Joint Economic Committee, U. S. Congress, March 3, 1992.

economy, they have taken measures to reduce the drains on their cash flows and their exposure to further unfavorable shocks through restructuring of balance sheets. The balance sheet adjustments of households and businesses have made the process of economic recovery much more sluggish and protracted than usual. The current recession, therefore, rose out of the process in which the private sector balance sheets are being realigned with a more realistic outlook for future income and asset values.

Thus, the restructuring of balance sheets is linked to a perceived shift in the long-term economic prospects for the U. S. economy. This is consistent with another unusual characteristic of the current business cycle : namely, that a large share of the shortfall in the GDP is accounted for by consumption slowdown more than investment slowdown. During a normal course of the business cycle, it is investment slowdown, rather than consumption slowdown, that accounts for a large share of shortfall in the GDP. During the current economic slowdown, however, some 54 percent of the shortfall in real GDP is attributed to slower consumption growth while the corresponding figure for the average postwar slowdown was only 26 percent (Chart 2). Why did consumption slowdown play so much more of a significant role in the current slowdown than it did during previous ones? The most plausible explanation is that consumers have become more pessimistic this time about future income growth. The permanent income hypothesis suggests that if consumers perceive a permament decline in their income growth, they will scale back their consumption plans more sharply than during the trough of a typical business cycle as they realize that their original consumption plans will no longer be

CHART 2 UNITED STATES : COMPOSITION OF ECONOMIC SLOWDOWNS



[1)] The current slowdown is measured from the second quarter of 1989 through the fourth quarter of 1991.

Source : Runkle (1991).

sustainable.

In summary, the current economic slowdown is closely linked to the increased private sector indebtedness of the 1980s and the shift in the growth prospects for the U. S. economy in the 1990s. These relationships will be discussed further in the following sections : Section 2 reviews the economic and financial developments in the 1980s. Section 3 discusses the effects of the anti-inflationary monetary policy of the late 1980s on the debt-service burden of households and businesses. Setion 4 examines subsequent balance sheet restructuring by households and businesses. Section 5 discusses their implications for medium-term growth and the risk of economic crisis. Section 6 discusses the policy implications of all these developments.

2. Ecomomic and Financial Legacies of the 1980s

The greatest economic legacy of the 1980s is the increased public and private sector indebtedness and their effects on the prospects for the U. S. economy in the 1990s.

(1) Federal government

During the 1980s, the federal fiscal deficit consistently absorbed nearly 3/4 of the nation's net private saving. The national saving rate fell, reflecting initially a significant worsening in the federal fiscal balance and since 1983 a decline in the private saving rate that more than offset an improvement in the federal fiscal position. Gross federal debt more than tripled during the 1980s to $2.9 trillion at the end of the decade. Net national saving declined from the average 8 percent of GNP in 1950-79 to the average 3 percent in the 1980s.

This deterioration in the national saving performance has led to serious underinvestment in and undermaintenance of the nation's productive capacities—factories, machines, research, infrastructure, and human capital—despite a record borrowing from abroad. Net private investment fell from the average 8 percent of GNP in 1950-79 to the average 5 percent in the 1980s despite the large inflow of foreign investment equivalent to 2 percent of GNP. This recent decline in net private investment led to prospects of sluggish long-term productivity growth for the U. S. economy.

(2) Corporate businesses

A fundamental shift in the corporate financial structure occurred in the 1980s, during which an extraordinary wave of debt-financed transactions swept over much of corporate America.[3] The main result of the corporate borrowing wave of the 1980s was increased balance sheet leverage. With the market value of equities much less than net worth at replacement cost in the early 1980s (44 percent in end-1982), corporate businesses borrowed to an unprecedented degree to buy up existing assets instead of investing in new earning assets. Both the debt/GDP ratio and debt/net worth ratio rose significantly during the 1980s (Chart 3). Moreover, corporate businesses substituted debt for equity in a very large scale : between 1984 and 1990, net equity issues by U.S. nonfinancial corporations declined by more than $600 billion.

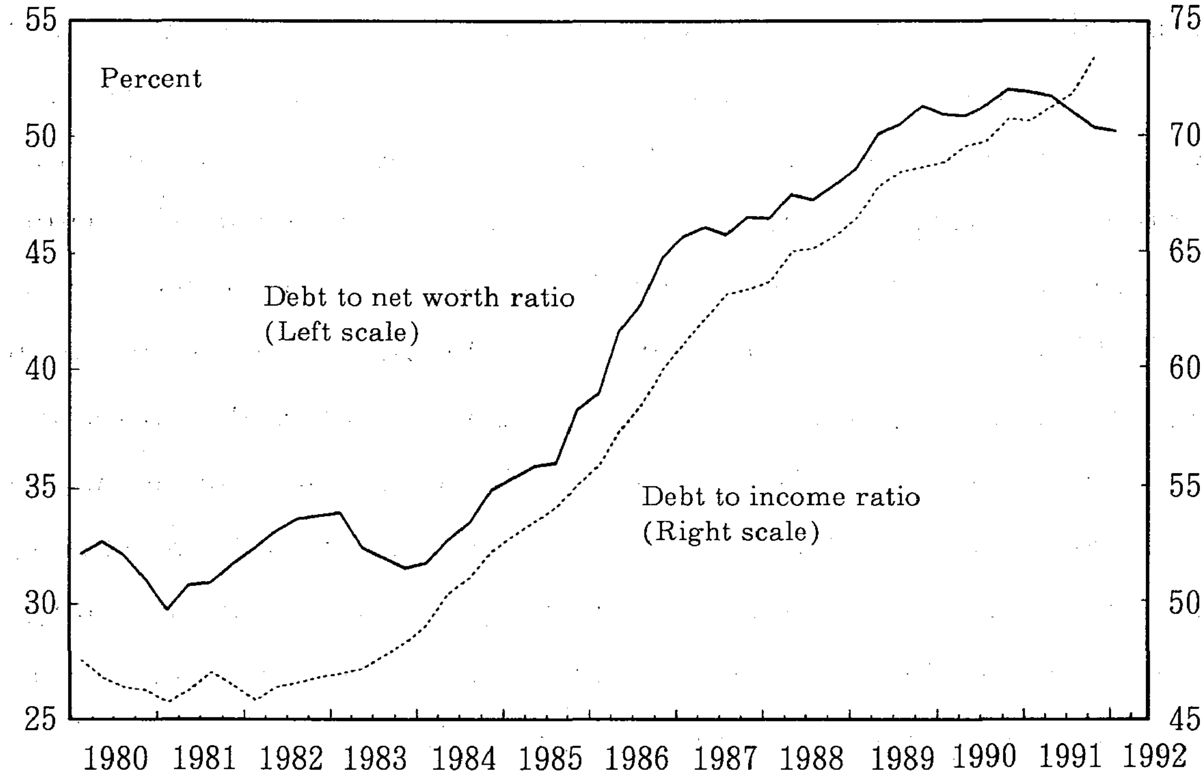
The debt-service burden of U.S. nonfinancial corporate businesses rose in line with the increasing debt outstanding. The interest payments as a share of corporate earnings before taxes rose from less than 40 percent to nearly 60 percent during the 1980s ; and the interest payments as a share of cash flows rose from 20 percent to 40 percent during the same period.[4] This upward trend was particularly remarkable for a higher percentile of the distribution : in fact, for the ninetieth percentile of the distribution of highly indebted corporations, the interest/cash flow ratio more than tripled.[5] As the effective interest rate generally declined and

3) See Benjamin (1982, 1985, 1990, 1992), Auerbach (1988), Bernanke and Campbell (1988), Crabbe, Pickering and Prowse (1990), Pollin (1992).

4) See Benjamin (1990, 1992).

5) See Bernanke and Campbell (1988) and Warshawsky (1991).

CHART 3 UNITED STATES : DEBT OF NONFINANCIAL CORPORATE BUSINESS SECTOR



Source : Board of Governors of the Federal Reserve System

corporate cash flows increased during the economic expansion of 1982-89, the increasing interest/cash flows ratio can be attributed mainly to the rapid increase in debt outstanding.

Furthermore, what was remarkable about the increased corporate indebtedness was not just the record volume of corporate debt and debt-service burden, but the purpose for which many corporations borrowed. In debt-financed mergers and acquisitions, they borrowed to acquire the existing assets instead of new earning assets. Corporate businesses borrowed largely to buy up existing assets with the expectation of capital gains. As long as the initial optimism for future economic growth is realized, a high degree of indebtedness and debt-service burden will not present any problem ; however, if optimism is shakened by an unexpected negative shock to the economy, it can force some major restructuring of corporate balance sheets. Therefore, conditions were in place for a potential corporate debt crisis and subsequent economic contraction.[6]

(3) Households

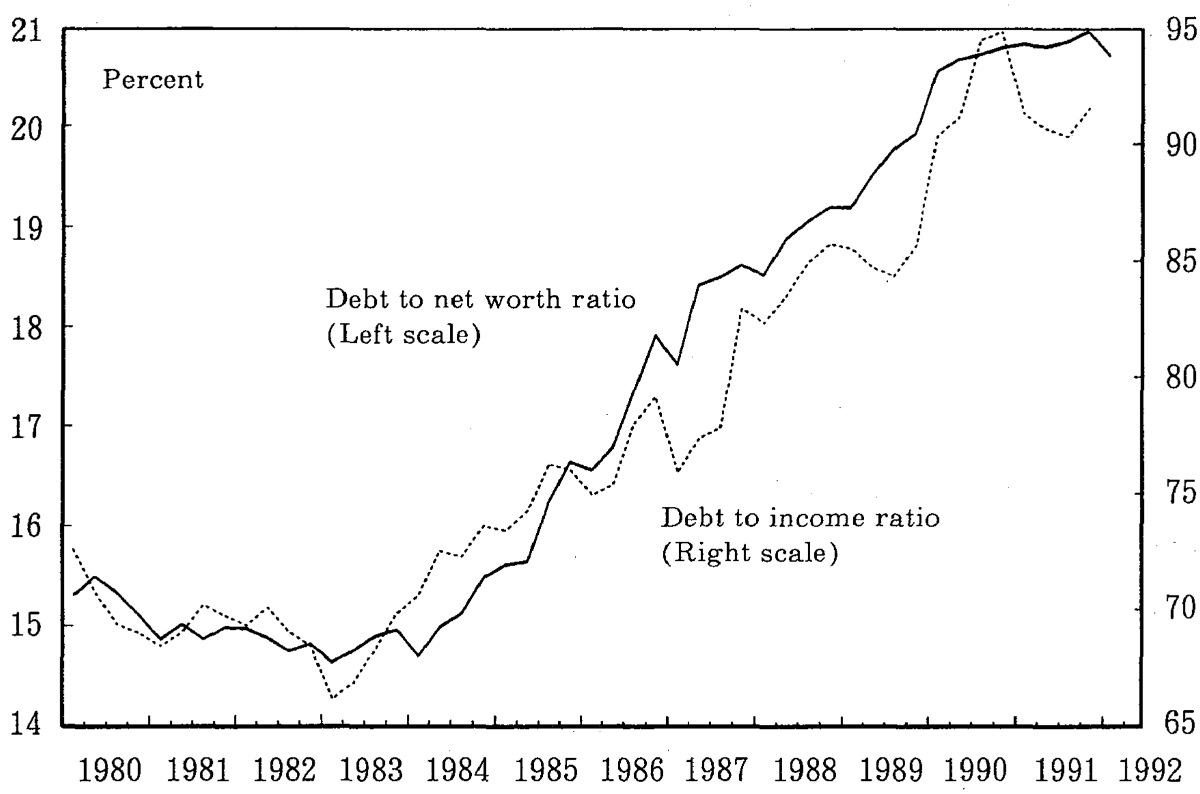
The indebtedness of households also increased substantially during the 1980s. The sum of home mortgages and consumer credit outstanding rose from $1.3 trillion in end-1980 to $3.1 trillion in end-1989 ; this translates into an average growth of 10 percent per year—a figure much higher than that of household income growth. In percent of disposable personal income, it rose from 65 percent to 90 percent during the decade (Chart 4). Both supply-side and demand-side factors contributed to this large increase in household debt outstanding. It was driven in part by aggresive loan marketing by financial intermediaries, and also by increased demand for credit by households.

While this increase in household indebtedness occurred broadly across the cross section of households, there have been some marked differences in the distribution and characteristics of debt across different income and asset profiles.[7] About half of the total increase in household debt was attributed to the top 20 percent of the income distribution. During the 1980s, the upper 20 percent of high

6) Reflecting these developments, the median bond rating of nonfinacial corporations by Standard and Poor's Corporation declined from grade A in the early 1980s to BB at the close of the decade. See Crabbe, Pickering and Prowse (1990) and Warshawsky (1991).

7) See Friedman (1992) and Kennickell and Shack-Marquez (1992).

CHART 4 UNITED STATES : DEBT OF HOUSEHOLD SECTOR



Source : Board of Governors of the Federal Reserve System

income households experienced both sharply rising real income and greater access to credit markets. High income households borrowed to invest in financial assets and real estate, matching their increased indebtedness with larger asset acquisitions. On the other hand, the lower 40 percent of households saw their real income stagnate or fall while housing costs rose. They increased their mortgage and consumer borrowing just to maintain stable living standards.

These heavily indebted households faced growing repayment difficulties through the 1980s, despite slower growth in debt-service burden owing to financial innovations. Financial innovations, such as consumer loans with a longer repayment period and substitution of home equity loans for consumer loans, helped annual debt-service payments to grow much slower than the level of debt itself. Thus, the average debt-service burden of households did not rise as high as the average level of household debt. Nevertheless, the dispersion in the proportion of debt-service obligations among high-debt and low-debt households was widened.[8] It is not so much as the debt-service burden of the average households as that of highly indebted households that is more crucial to the stability of the financial system. In fact, deliquencies on mortgage loans and the rate of personal bankruptcies were at peak levels in 1982-90 ; in particular, the rate of personal bankruptcies was twice as high in 1982-90 (19 per 1,000) as in the 1970s (9 per 1,000).[9]

(4) Financial intermediaries

Since the mid-1980s, nearly every lender in the credit markets has suffered some deterioration in its willingness and ability to extend credit. This is linked in part to the aforementioned overleveraging by businesses and households during the 1980s. If financial markets were perfect, a firm's ability to borrow against future earnings would depend only on whether the present value of net earnings is positive. In the real financial system faced with uncertainty and asymmetric information, there is no assurance that every firm with positive (expected) net present value can always

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8) See Canner and Luckett (1991).

9) It should be noted, however, that this surge in personal bankruptcies may in part reflect a shift in the way households choose to respond to debt problems, rather than an increase in debt problems *per se*, because of legal changes that made bankruptcy a more attractive option to troubled debtors. See Canner and Luckett (1991).

borrow. In the context of an imperfect market for credit, the structure of liabilities will play a more significant role in bank lending decisions. In particular, overleveraging will affect not only credit demand but also credit supply because it increases the risk of default, to which lenders respond by cutting back on lending to overleveraged borrowers.

Moreover, in a financial system in which many lenders are themselves highly leveraged intermediries that must meet minimum capital and reserve requirements, an increased private sector indebtedness could impair their ability to accommodate business expansion through provision of credit in the recovery phase of the business cycle. The deterioration in the balance sheets of households and businesses adversely affected the quality of commercial banks' balance sheets. During the 1980s, net loan losses of commercial banks steadily increased from 1/3 percent of total loans in 1980 to over 1 percent at the close of the decade ; and their net income as percent of assets declined from 3/4 percent to 1/2 percent during the same period.[10] The deterioration in the loan quality of commercial banks could tighten their lending conditions and limit their ability to extend credit to the private sector. Therefore, conditions were in place for a potential credit crunch.[11]

10) See Brunner, Duca and McLaughlin (1991).

11) Bernanke and Lown (1991) defined a "credit crunch" as a significant leftward shift in the supply curve for bank loans, holding constant both the safe real interest and the quality of potential borrowers.

3. Anti-Inflationary Monetary Policy from 1988 to 1989

While both public and private sectors were accumulating debt during the 1980s, the U.S. economy expanded briskly after recovering from the 1980-82 recession. The dramatic stock market crash of October 1987 notwithstanding, domestic demand remained strong in early 1988 and a sharp upswing in net exports of goods and services that had begun in 1987 continued into 1988. Although the personal saving rate rose by 1 percentage point after the crash, consumer spending for durable goods remained brisk. A surge in spending for business equipment—led by sizable investment in high technology items such as computers and comunication equipment—continued through early 1988. The unemployment rate continued to fall—by almost 1 percentage point in a year to early 1988—reflecting both a rise in employment and a slowing of working age population growth. The capacity utilization in manufacturing as measured by the Federal Reserve Board also continued to rise. The increased domestic and foreign demands on U.S. producers at a time when the utilization of domestic labor and capital was already high heightened concern about a worsening inflation.[12)]

At this point, the Federal Reserve shifted its policy towards monetary restraint on the ground that "accommodating the improvement in our external position while limiting the risk of heightened inflation required restraint on the growth of domestic

12) Shapiro (1989), however, has argued that the product supply curve is highly elastic, and that the level of capacity utilization has little or no effect on output or pricing decisions.

demand."[13] Before the tightening began in the spring, the monetary aggregates (particularly M 3) had been running near the top of their 1988 growth ranges; but, the growth of the aggregates slowed after the spring. The monetary restraint was further tightened in the fall, and the monetary aggregates closed the year in the mid-point of their 1988 target ranges. The federal funds rate rose from 7 percent to 10 percent in a year to early 1989; and short-term market interest rates correspondingly moved up from 6 percent to 9 percent during the same period (Chart 5).

This 1988-89 anti-inflationary monetary policy reduced the borrowers' ability to meet debt-service obligations. It raised nominal interest rates, increasing the volume of debt-service payments, and at the same time it slowed the pace of economic growth, reducing earnings and cash flows. Debt-service burden had already reached a historically high level by the early 1980s; but, in 1988-89 after stabilizing somewhat in the middle 1980s, interest payments as a share of available earnings and as a share of cash flow began to rise again. Moreover, the prospects of slower growth in revenue and cash flows heightened the concern of households and corporate businesses about adverse implications of their highly leveraged balance sheets. Thus, although the restictive monetary policy in 1988-89 was primarily intended as a preemptive anti-inflationary measure, it at the same time provided a strong incentive to both households and businesses to begin the necessary balance sheet restructuring by reducing outstanding debt and debt-service burden.

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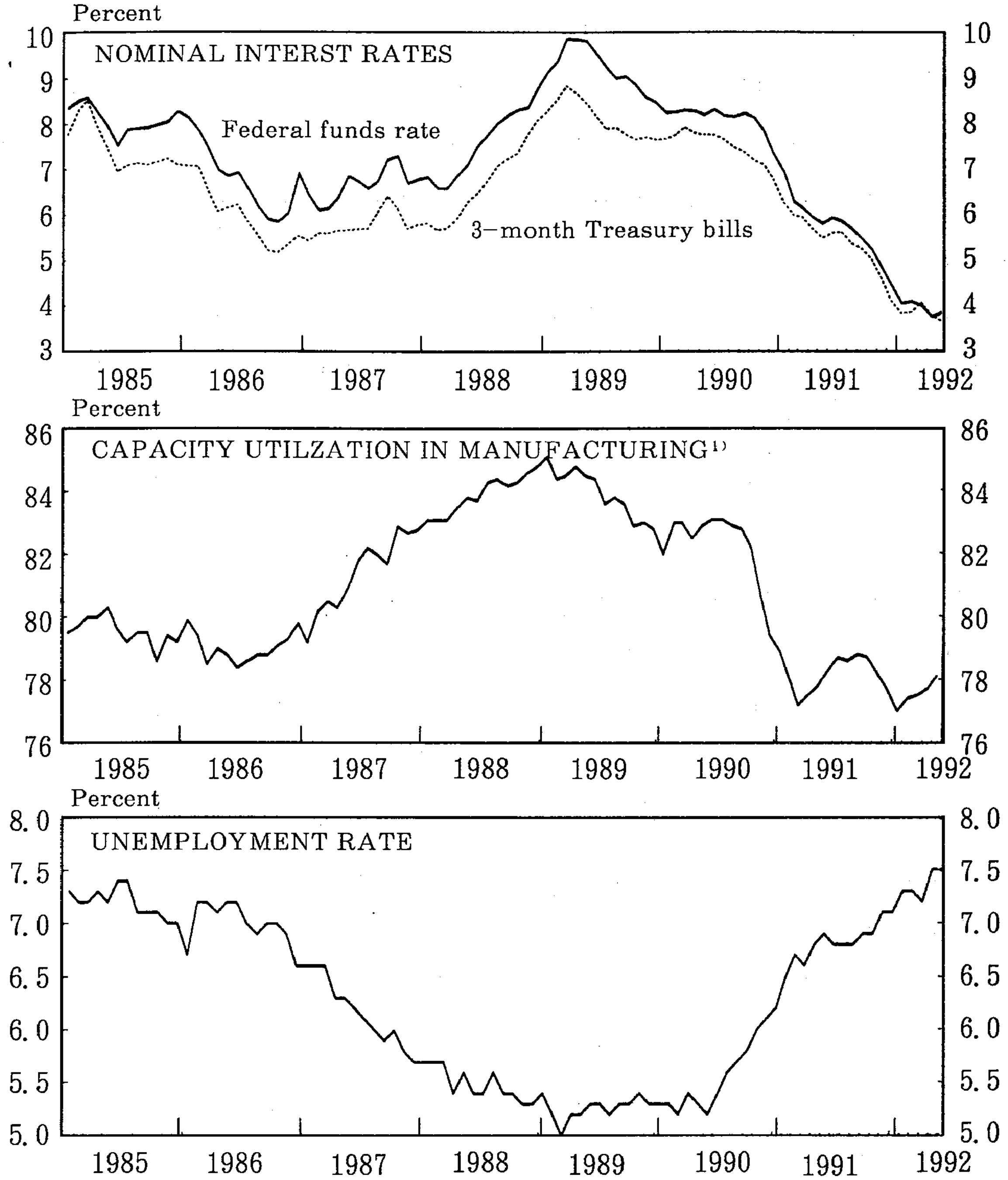
13) The 1988 Annual Report of the Board Governors of the Federal Reserve System (p. 3).

CHART 5 UNITED STATES : ECONOMIC INDICATORS



[1] As calculated by the Federal Reserve Board.

Source : Board of Governors of the Federal Reserve System

4. Private Sector Balance Sheets Restructuring in 1990-92

The financial strain that was caused by monetary tightening of 1988-89, together with the prospects of sluggish income and productivity growth after a decade of underinvestment, have compelled households and businesses to restructure their balance sheets in 1990-92.

Businesses cut investment outlays and employment in response to the desire to reduce debt-service burden and the weakened demand for business output. Business outlays for fixed investment rose by only 1 percent in real terms in 1990 and then fell by 7 percent in 1991. Outlays for industrial equipments continued to decline as excess capacity limited expansion in the manufacturing sector, and business purchase of motor vehicles dropped off sharply. Nonresidential construction plummeted by 15 percent in real terms in 1991. Investment outlays were depressed by a desire on the part of many businesses to reduce debt and by a continued oversupply of office and other commercial space. As many businesses started to lay off many workers, the unemployment rate rose by 2 percentage points during the two-year period of 1990-91 (Chart 5). Businesses also started substituting equity for debt in 1991, in part taking advantage of the buoyant stock market, which was supported by the Federal Reserve's low interest rate policy (Table 1).

Households started cutting outstanding consumer loans and reduced spending with moderate recovery in household saving. As income growth weakened in 1990, households struggled to meet the monthly obligations on their accumulated debt and curtailed consumer spending in particualr by deferring the purchase of

Table 1 United States : Selected Flow of Funds Statistics
(In billions of dollars)

	1987	1988	1989	1990	1991
I. Net Funds Raised by Nonfinancial Sectors					
Total	**651.4**	**645.0**	**618.4**	**611.9**	**533.1**
U.S.Government	143.9	155.1	146.4	246.9	278.2
State and local governments	83.0	48.9	63.2	42.5	24.5
Households	302.2	315.8	287.3	257.6	157.1
Mortgages	265.4	257.5	232.5	229.8	149.1
Consumer credit	33.5	50.4	43.1	14.2	-12.1
Bank loans	-2.7	-1.1	1.6	-2.3	1.8
Other	6.0	9.1	10.1	15.8	18.4
Nonfinancial business	118.2	117.9	93.7	34.3	20.6
Corporate equities	-75.5	-129.5	-124.1	-63.0	17.5
Corporate bonds	78.2	103.5	73.3	47.3	84.6
Commercial paper	1.6	11.9	21.4	9.8	-18.4
Mortgages	59.1	49.0	43.2	5.7	-13.4
Bank loans	12.6	41.6	38.3	3.4	-34.4
Other loans	42.2	41.3	41.7	31.1	-15.4
Foreign	4.1	7.3	27.9	30.4	49.7
II. Net Funds Supplied by Nonfinancial Sectors					
Credit market	**644.2**	**764.3**	**683.8**	**596.2**	**333.7**
U.S.Government	-7.9	-9.4	-2.6	33.6	9.8
Sponsored credit agencies and pools[1]	-2.4	-7.8	-25.7	-0.6	12.3
Federal Reserve System	24.7	10.5	-7.3	8.1	31.1
Private financial intermediaries[2]	320.2	435.5	452.5	315.9	213.0
Commercial banks[3]	132.6	159.1	173.4	138.8	101.1
All other	187.6	276.4	279.2	177.1	111.9
Private domestic nonfinancial	247.9	240.5	194.2	185.9	21.7
Foreign	61.8	95.0	72.7	53.2	45.8
Equities market	**-81.4**	**-123.6**	**-109.2**	**-49.9**	—

Source: Board of Governors of the Federal Reserve System.
1) Net of federal agency borrowing in credit markets and pool security issues.
2) Net of financial institutions' own borrowing in credit markets.
3) Includes chartered commercial banks and their domestic affiliates, Edge Act corporations, and agencies of foreign banks.

consumer durables. A renewed pessimism on the part of households may have also contributed to the reluctance of consumer to step up spending and borrowing. Consumer confidence remained low and the Conference Board's confidence index stood below that seen in the 1981-82 recession. Consumer credit slowed substantially in 1990 and actually fell by $ 12 billion in 1991 (Table 1). With household finances adversely affected by job losses and declining real income, real consumer spending rose only 1/4 percent per annum in 1990 and also in 1991. In particular, consumer spending on "big ticket" durable goods fell sharply, underscoring the important role of household balance sheet restructuring in restraining the growth of aggregate demand.

The prominent role of balance sheet restructuring in restraining economic expansion is also evident in an unusual characteristic of the current recession : that is, declines in both interest rates and credit (money) growth, which suggests that it is the credit demand curve, more than the credit supply curve, that shifted downwards. In other words, it was not just a "credit crunch" but also the balance sheet restructuring that was propagating the current economic slowdown. The aggregate debt of domestic nonfinancial sectors—excluding federal government debt which continued to grow briskly—expanded only 2 3/4 percent in 1991, the slowest expansion in decades and below the pace of nominal GDP growth.

Another piece of evidence that suggests the prominent role of the balance sheet restructuring is the fact that commercial paper issuance, not just bank lending, also slowed since the onset of the economic slowdown (Table 2). If it had been a "credit crunch" that played a major role in the current recession, large corporate

Table 2 United States : Selected Flow of Funds Statistics
(In billions of dollars, seasonally adjusted at annual rates)

	1990				1991			
	I	II	III	IV	I	II	III	IV
I. Net Funds Raised by Nonfinancial Sectors								
Total	**779.2**	**681.5**	**547.5**	**439.5**	**511.5**	**526.9**	**551.1**	**542.8**
U.S. Government	234.2	239.6	242.3	271.5	199.2	269.1	365.5	279.0
State and local governments	74.3	48.9	34.6	12.4	25.5	28.0	20.2	24.3
Households	367.2	274.5	223.8	165.0	177.2	176.4	115.6	159.4
Mortgages	308.4	234.1	205.4	171.4	160.0	171.2	113.7	151.4
Consumer credit	33.6	14.2	13.4	-4.2	-10.6	-16.0	-19.6	-2.3
Bank loans	1.8	3.2	3.3	-17.5	11.4	9.1	-8.9	-4.5
Other	23.4	23.0	1.7	15.3	16.4	12.1	30.4	14.8
Nonfinancial business	90.9	58.3	18.5	-30.5	28.0	65.8	-0.9	-10.4
Corporate equities	-69.0	-48.0	-74.0	-61.0	-12.0	11.0	17.0	54.0
Corporate bonds	25.7	68.2	29.2	66.2	82.5	106.8	87.2	61.9
Commercial paper	54.9	-0.7	19.3	-34.4	-6.9	-16.1	-42.4	-8.1
Mortgages	44.1	-21.9	5.1	-4.4	20.3	7.1	-60.9	-19.9
Bank loans	5.0	23.5	-10.1	-4.6	-11.3	-46.3	-17.0	-63.0
Other loans	30.3	37.3	49.0	7.7	-44.6	3.3	15.2	-35.3
Foreign	12.5	60.2	28.4	20.6	89.0	-23.0	58.0	74.7
II. Net Funds Supplied by Nonfinancial Sectors								
Credit market	**780.0**	**625.1**	**567.0**	**412.5**	**395.3**	**347.0**	**313.7**	**278.8**
U.S.Government	38.3	36.1	63.6	-3.7	28.1	28.8	4.6	-22.5
Sponsored credit agencies and pools 1)	14.3	-9.2	36.2	-43.7	14.4	5.8	12.1	16.9
Federal Reserve System	-0.3	30.8	26.2	-24.2	60.2	1.8	57.4	5.0
Private financial intermediaries 2)	382.0	182.4	301.3	397.9	153.8	116.9	253.0	228.3
Commercial banks 3)	181.9	167.3	133.6	72.4	144.1	41.2	79.6	139.5
All other	200.1	15.1	167.7	325.5	109.7	75.7	173.4	88.9
Private domestic nonfinancial	344.3	325.4	64.6	9.4	8.2	134.5	-56.8	0.8
Foreign	1.4	59.6	75.1	76.8	30.6	59.1	43.3	50.3
Equities market	**-58.9**	**-15.9**	**-70.4**	**-54.5**	**10.0**	**53.2**	–	–

Source: Board of Governors of the Federal Reserve System.
1) Net of federal agency borrowing in credit markets and pool security issues.
2) Net of financial institutions' own borrowing in credit markets.
3) Includes chartered commercial banks and their domestic affiliates, Edge Act corporations, and agencies of foreign banks.

businesses would have substituted commercial paper issuance for bank loans as they did in previous recessions where slowdowns in bank lending were accompanied by spurts in commercial paper issuance.[14] But, in 1990-91, commercial paper outstanding actually declined, indicating the dominance of changes in credit demand over changes in the supply of bank credit.

Thus, the wide-spread efforts by debt-burdened households and businesses to strengthen their balance sheets, which had been strained by the general slowdown in economic activity and by declines in property values triggered by the 1988-89 monetary restraint, exerted further dampening effects on credit demand and on aggregate spending. This development has made the current economic slowdown unique among the postwar recessions.

5. Medium-Term Economic Growth and the Risk of Economic Crisis

The prospects for the medium-term economic growth depend on the answer to the following questions :

(1) How long will the balance sheet adjustments take to complete ? : Households and businesses made considerable progress in strengthening their balance sheets in 1991. Less reliance on debt and lower interest rates helped ease debt-service burden for many households and corporations. Although private sector's effort to strengthen its balance sheets has restrained aggregate demand and income growth, over time this trend should help place households and businesses on a more sound financial footing, paving the way

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14) See Bernanke and Lown (1991).

for a stronger sustainable medium-term economic growth.

(2) What is the risk of a "credit crunch"? : Financial intermediaries have always played an important role in the recovery phase of business cycles by providing the private sector with sufficient credit to support the process of economic recovery. But, the inability of financial intermediaries to extend credit in the presence of the private sector's high leverage could halt the process of economic upswing. Thus, if the balance sheet positions of households and businesses are not sufficiently improved before they start spending again, a "credit crunch" can delay the timing of economic recovery from the current recession.

(3) What is the risk of financial crisis ? : The wave of restructuring and reorganizations of corporations during the 1980s involved the substitution of debt for equity capitalization rather than the creation of new earning assets. As a result, the corporate sector's debt-service burden has risen sharply in relation to its earnings and cash flows, thereby raising questions about the ability of heavily indebted corporations to meet their obligations in the event of a general slowdown in economic activity. For assessing the likelihood of financial crisis, the ability of financial intermediaries to absorb portfolio losses is also crucial. Financial crises in the past have involved not just debt defaults by nonfinancial borrowers but also disruptions of the financial system, interrupting the normal process of financial intermediation. [15] Although corporations made progress in adjusting balance sheets in 1991, the prolonged recession can force many corporations into bankruptcies, which may in turn

15) See Kindleberger (1978), Minsky (1964, 1977), Bernanke (1982), Schwert (1989).

trigger major disturbances of the financial system.

(4) What is the risk of the "hard-landing" of the dollar? : The "hard-landing" of the dollar will be triggered if private foreign investors stop providing some $5-10 billion of net capital inflow needed by the United States each month to finance its current account deficit and if foreign central banks decline to fill the gap—the dollar could fall by 10-20 percent or even more because of the "overshooting" that is to be expected in such a situation. If the dollar collapses, expected price inflation will rise and the Federal Reserve may well be compelled to stop the process, causing both nominal and real interest rates to rise.[16] This will not only halt any economic recovery but also cause serious financial disturbances by raising the private sector's debt-service burden if the balance sheets adjustments are not completed by that time. Thus, the "hard-landing" of the dollar could develop into the "hard-landing" of the real economy.

6. Policy Implications

To the extent that the current recession is characterized by the private sector balance sheet restructuring rather than by a simple aggregate demand deficiency, an attempt to "jump start" the economy through expansionary monetary and fiscal policies would delay the necessary balance sheet adjustments and thereby risk forced adjustments later on—in the form of financial and economic crises. Thus, it would be a better policy strategy from a

16) See Marris (1987).

medium-term perspective to help the private sector complete the on-going adjustments over time and guide the economy onto a sustainable balanced growth path while improving the federal fiscal balance, thereby reducing the risk of financial and economic crises that might erupt without the balance sheet restructuring.

Nevertheless, economic developments need to be monitored closely to guard against the possibility that the economy might falter and fall into deeper recession. The Federal Reserve's low interest rate policy is aimed at achieving two goals : first, to prevent aggregate demand from falling too sharply while households and businesses adjust their balance sheets and, second, to prevent the current financial stress from developing into a financial crisis by reducing the debt-service burden. Thus, interest rates must be low enough to prevent deeper recession and financial crisis, but not so low that the private sector loses incentive to reduce leverage and strengthen their balance sheets. Moreover, if the "hard-landing" of the dollar happens before the balance sheet adjustments are through, the Federal Reserve will face a serious policy dilemma—to confront the task of achieving both internal and external balances with only one policy instrument.

If financial crisis occurs, the Federal Reserve must act as a lender of last resort to prevent the financial crisis from developing into a real economic crisis. However, the Federal Reserve's scope to act as a lender of last resort may be limited by the already low interest rates and the risk of a currency crisis. While sufficiently activist lender of last resort policies can contain a liquidity crisis by lowering interest rates and providing liquidity, there is a risk that they will set off a currency crisis when exchange rates are flexible and expectations are forward-looking. Thus, providing liquidity in time of crisis may prove difficult. In such an event, however, targeted assistance can presumably restore confidence in financial institutions with less of a reduction in interest rates than would be necessary with general monetary policies.

The possibilities of many of these problems will be substantially reduced if productivity growth recovers in the 1990s. Thus, to improve the productivity performance, the government should implement the policies that would encourage more saving and more investment. The most reliable way to raise national saving and encourage private sector investment is to eliminate the federal budget deficit ; a substantial improvement in the federal fiscal position should remain the single most important long-term policy goal. [17] In the short term, however, this policy goal has to face some restrictions due to the current recessionary phase of the business cycle and the fiscal policy's role as an automatic stabilizer. Therefore, in addition to the goal of reducing the federal budget, a substantial shift in the composition of the federal budget may be necessary from nonproductive expenditures (such as military spending and entitlements)towards expenditures that either add directly to investment activity or encourage the private sector to do so(such as public infrastructure, research and development, and education). The policy agenda should also include changes in the tax codes to provide incentives for saving and investment such as the investment tax credit which the 1986 Tax Reform Act abolished.

17) See Summers and Carrol (1987).

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