

How Useful Are Comparisons
of Present Debt Problems
With the 1930s?

by

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Working Paper No. 50

April 1991

Prepared for presentation at "The Crisis in Finance," a Conference of
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Introduction

My assignment for this Conference on the Crisis in Finance, as I understand it, is in the first instance to bring to bear the debt experience of the Great Depression of 1929/1940. I summarize first the record as shown in a Twentieth Century Fund report, which I prepared in 1938 for the Fund's Committee on Debt Adjustment.¹

This report already contained a good deal of hindsight, since it was written five years after the end of the recession of 1929/33. But the process of reconstruction is also relevant to present-day problems. In particular, the New Deal reforms in the debt field set the pattern of law and financial customs within which the forces of finance have been operating in recent decades.

Parallels and contrasts between the debt situations of 1928/1930 and of 1988/90 are next examined. After some institutional analysis, quantitative examination of changes through time (1966/1989) is undertaken, using a set of tables [reproduced in the ANNEX] on the balance-sheet history of households and of non-financial corporations.

In the light of all this experience, I make a quick excursion into the field of financial reform. It is not my business on this occasion to spell out the policy alternatives. But we must ask whether basic reform may not be needed to keep debt problems from plaguing us year after year-- and also whether attempts at reform may themselves bring the crisis to a head!

It turns out that the issue of reform in a crisis-context hinges on whether the United States can quickly set in motion a major new industry to act as an economic "locomotive". I claim that this is feasible-- the "new industry" being restoration and restructuring of the U.S. infrastructure. To get it in motion calls for a revival of fiscal policy along radical new lines.

¹ Albert G. Hart, Debts and Recovery, 1929 to 1937. New York, 1938, Twentieth Century Fund. In later footnotes this publication is referred to as "D&R".

I. Debts at the Start of the Great Depression

A look the way the debt situation stood before and during the Great Depression of the 1930's will both give a starting-point for my paper and offer some warnings about professional fallibility.

Debt problems as perceived in 1938

When in 1938 the Twentieth Century Fund published its report on the U.S. debt picture for the period of the great depression,² the Fund's Committee on Debt Adjustment (and the Fund's editors) wanted a single figure to measure the "total amount of outstanding debts in the United States". With great reluctance, I produced such a figure for 1929 and also for 1937-- in each case "well in excess of \$250 billion". Since US national income was \$84.7 billion in 1929 and \$72.2 billion in 1937, it was easy to suggest that debts were unduly high.

Components of "total debt"

Major components of the 1929 aggregate of \$250 billion were:

- a) \$53 billion of short-term debts receivable at banks and at non-financial corporations,
- b) \$47 billion of corporate bonded debt,
- c) \$47 billion of bank deposits,
- d) \$40 billion of mortgages,
- e) \$17 billion of federal government debt,
- f) \$17 billion of state-and-local government debt,
- g) \$14 billion of deposits and "shares" in savings institutions.
- h) \$12 billion in life-insurance reserves.

The layering of debt

To add together this jumble of figures was essentially meaningless. Items (a), (b) and (d) may be regarded as "primary debt", resting on a bottom layer which consists of the value of land and buildings and the going-concern value (including a good deal of what is now called "human capital") linked to private enterprises.

Items (c), (g) and (h) represent a distinct layer of claims-upon-claims. Adding this group to the primary-debt group and the government-debt group --items (e) and (f)-- involves double-counting.

It would have been more meaningful to sum up in terms of a cliché of classical economics: Since every debt has two ends -- debtorship and creditorship-- the total cancels out to zero when we look at the community as a whole, except for the difference between debts to and from the "rest of the world".

Debt study by sectors

The data actually examined in the debt report were much more meaningful than any mere "sum total". Successive chapters examined the debt positions of sectors of the economy: credit institutions in the large, commercial banks, non-bank credit institutions; individuals and unincorporated firms; corporate business, and governments.

Sector by sector, I searched for weak spots-- by examination of events from 1929 onward, study of documents (such as a New York State report on private mortgage-guarantee companies), and weighing of institutional evidence as to the terms of debt contracts and the customs and attitudes of creditors and debtors. Numerical data were exhibited in 58 well-annotated appendix tables.

Diagnosis from the evidence

This evidence, I held, did "show definitely that large sectors of the debt structure were bound to give way within a few years, even without being pushed by a prior decline in business". I instanced debts of guaranteed-mortgage companies without capital, bonds of railroads faced with truck competition, mortgages of "properties ... carried on a shoestring", and security loans in a "top-heavy stock market".

I seem to have ducked the question whether in the absence of a general recession there would be a simultaneous collapse of several vulnerable sectors. If the answer were "probably not", the danger presented by such sectors would have to be seen as much less acute.

On the broad situation, I took the position that:

"... if the history of the years before 1939 is evidence, major debt difficulties can leave prosperity unshaken so long as other conditions are not unfavorable.

"Once business had turned downward, however, there is little room for doubt that debt difficulties were among the chief influences which made the situation grow cumulatively worse."²

I would take more satisfaction in having held this position if I had actually carried out a careful scrutiny of the "history before 1929", to see when there had been major debt difficulties not followed by serious recessions. Unfortunately, I find that of the 50 tables dealing with private debts in the appendix to the debt report, only 41 are historical-- and only 7 of these give data for 2 or more years prior to 1929!

2. D&R, pp. 7-8. A longer quotation, framing the two sentences quoted here, is part of the ANNEX to this paper.

But I would still describe the first of my two assertions as a sensible horseback opinion, and the second as a finding well warranted by the facts about the transportation and real estate industries and by the record of some sectors of finance (above all building-and-loan associations and brokers).

Paying for dead horses

An important way in which debt problems helped intensify the great recession of 1929/1933 was only hinted at in the report (because Keynesian ideas had not been fully assimilated by 1938?). This was the pressure upon debtors to continue debt repayments even though the assets for which they went into debt had been taken over by creditors. A stock speculator whose account had been closed out at a loss, for example, still had to make repayments to his broker-- or more likely to the bank which had taken over assets when the broker went broke, or to the receiver for the bank-- if he still had salary income.

Anybody who was thus "paying for a dead horse" was subjected to forced saving. He was barred from doing what Keynesians came to feel was natural: taking more of any drop of earnings out of saving and less out of consumption.

As may be seen from Table TSD in the Annex, personal saving dropped in the recession years 1930-1933 by about 10% as much as personal disposable income dropped. In the recovery years 1934-1936, however, personal saving rose by over 20% as much as disposable income. Without the dead-horse effect, a quarter or a fifth of the income drop could have come out of saving. Thus an important "automatic stabilizer" tending to abate the cumulative effect of recession seems to have been much weakened during the downswing of the great depression.

The 1937-38 recession

Another point at which the 1938 report now looks inadequate was the analysis of the "depression within a depression" which had just passed its trough when the report went to press. The New Deal had brought us not so much a full economic recovery as a way to live with a fairly deep depression. At the 1937 peak, (as we were told by a Brookings study of America's Capacity to Produce, which is well confirmed by hindsight), the United States was producing at about 80% of potential. Although effective capacity had grown substantially, actual constant-dollar output in 1937 was about the same as 8 years earlier.

The sharp drop of activity and employment in 1937-38 showed once again (like British and German experience from 1923 to 1931) that to be in a depression is no guarantee against falling into a worse depression. It was generally believed at the time-- and still seems plausible today-- that the U.S. setback of 1937-38 *resulted from a shift toward tight money by the Federal Reserve in 1937. Many of us were saying at that time: "Well, so this is what prosperity is like these days!" And a price rise which in the postwar would seem trifling was enough to persuade policy-makers and many observers of the economy that it was time to act against inflation.

An oddity of the 1937 situation was that the economic impact of the new Social Security program was not brought into focus. Employer contributions for social insurance are reported in the national accounts at about \$0.2 billion for each year in 1931/35. They jumped to \$0.5 billion (0.7% of DPI) in 1936 and to \$1.3 billion (1.8%) in 1937.

The rate of rise of the implicit deflator for personal consumption expenditures was 2.5% from 1934 to 1935, 1.2% from 1935 to 1936 and 3.6% from 1936 to 1937. Since employer contributions drive a wedge between wages received by employees and labor costs paid by employers, the scheduled contribution-

change was equivalent to a non-recurrent inflationary jump of about 2% across the two years 1936/37, accounting for a good slice of the price rise of 4.8% which the consumption deflator indicates.

One might have thought the Federal Reserve could have waited a little before deciding it was appropriate to impair the position of debtors by imposing tight money. Yet neither my text in the report nor the final chapter of "Findings and Recommendations of the Committee on Debt Adjustment" hinted that the Fed-induced rise of interest levels should be challenged as a measure to intensify debt problems by reducing employment and income. The Committee concluded its chapter rather tamely with the remark that "The Committee is Emphatically of the Opinion that While Sounder Debt Policies Can Help to Forestall Depressions and Ease Crises They Cannot Alone Bring Recovery."

II. Debt Difficulties as of 1990-91

In 1991, we stand in a very different position than we did at the opening of the great depression. Looking at subsectors of the private corporate sector, we can again see deep vulnerability in transportation-- but this time in airlines and buses. We can again see weaknesses in mortgages-- but this time of quite a different type. The "junk bond" problem is also acute-- but has no clearcut earlier prototype. Debts of stock speculators, though, which were a major weakness in 1929, are not an important element in the 1990/91 situation.

Transportation debts

Both airlines and bus companies are faced in the early 1990's with over-capacity-- many more seats than passengers. What has hit the bus companies is the competition of airlines, which for the longer trips offer advantages in journey-time, in comfort and often in ticket price.

What has hit the airlines is more complex. Large new planes offer operating-cost advantages (reflected in high lease-prices and in orders for new aircraft). But planes of older vintages have proved surprisingly durable and usable. Though difficult and expensive to operate and maintain they can still yield revenues that more than cover operating costs.

The widespread impression that reduced fares and financial difficulties (and the demise of many airlines) arise from deregulation seems to be well-founded. But almost nobody seems to think that re-regulation could improve any aspect of the situation except flight safety and delays at airports.³

³ I note in passing that there is an element of market failure in the course of air transport. Advocates of deregulation have urged that if we leave things to the market, the "law of one price" will take hold and guarantee that all comers will pay a well-known and uniform price for any stated

Mortgage debts-- background

Mortgage debt has very different characteristics now than it had before the great depression. The difference results from New Deal financial reforms, from financial innovation, and from over-optimism of real estate investors in the 1980's.

Before the great depression, a substantial proportion of mortgages outstanding had been written for stated terms of 1 year, 5 years or 10 years. When the end of the term came, it was common to carry the mortgage "open", which meant that the creditor could legally call for payment at any time (but was ordinarily expected to "go easy" on debtors).

Amortization

Amortization, providing for repayment in full by a long series of monthly payments, was the alternative to handling mortgages as term or open loans. Amortization was rather rare

service.

What we observe is quite different-- a Chamberlinean process of "product differentiation". The airlines struggle to charge high prices to travelers with expense accounts and make price-cuts available only to travelers who use their own money. They bid for the former group by handing out "frequent flier" benefits to expense-account flyers in their personal rather than in their employee capacity. Whereas "free market" ideology indicates that the uniform market price will be high enough to keep a slight margin of seats available and guarantee that everybody can count on using the flight of his choice, definite advance reservation is made a privilege that demands special payment.

The result, as any travel agent can tell you, is that market-price information does not reach many participants in the market, and that essentially identical services are sold at differentiated prices-- to the great disadvantage of a large proportion of the market participants.

One suspects that similar price discrimination and mystification are rife also in the field of financial services.

in most groups of mortgage lenders. At building and loan associations, however, amortization had been standard practice for decades-- but in a form which caused great pain in the worst years of the great depression to B&L debtors.⁴

The financial reforms of the New Deal changed the picture because home-owners and farmers who had their mortgages scaled down and refinanced by the federal government's Home Owners' Loan Corporation and Farm Loan Corporation were all put on contracts for full amortization over a period such as 15 years.

Building-and-loan associations refloated as Federal savings and loan associations were all put on this footing, and so were most of the surviving state-chartered institutions. Federal mortgage insurance, written on scaled-down loans held by banks and other financial institutions, required amortization, as did the mortgage insurance provided for veterans after World War II.

Trading up

In the 1980's, while new mortgage contracts continued to call for amortization, the mortgage debt structure was much weakened by the practice of "trading up". Think of a home-owner who had bought a house for \$100,000 in 1975, with a

⁴ Members who saved through a building and loan association did so by acquiring "shares", which had a redemption value equal to the amount paid in, and which paid interest. When a member took out a mortgage with the association, he contracted to pay interest on the mortgage and also to put so many dollars a month into pledged shares, which were not redeemable. When the value of the pledged shares came to equal the value of the mortgage, there was a swap, wiping out both the mortgage and the pledged shares.

If the association became insolvent, the shortfall of the association's assets against its share-liabilities was spread over both pledged and unpledged shares. So if (for example) the shares of an association in liquidation were valued at 50 cents on the dollar, a borrower who thought he had paid off half of his mortgage would find that he still had to pay the association's receiver perhaps three-quarters of the original principal.

\$90,000 mortgage and a 30-year amortization schedule. If in 1980 his house was valued at \$150,000 and his mortgage balance stood at \$88,000, he would think of himself as having an equity of rather over \$60,000. Since meanwhile he had been promoted and his wife had also taken a paying job, he and his wife would feel it appropriate to trade up to a more commodious house in a more agreeable neighborhood, appraised at \$200,000.

They could sell the old house for \$150,000, buy the new house for \$200,000 with a 90% mortgage (borrowing \$180,000) and come away with \$130,000 in cash.

Some of this cash must go into brokerage and perhaps into "points" on the new mortgage. But the remainder could readily buy a new car and new furniture to match the new house, and still leave several tens of thousands to put into a mutual fund and ride the stock market. Should we be surprised if people in this situation reckoned the real estate market and stock market were doing their saving for them, and felt free to indulge themselves as consumers?

The same game could be played again later in the 1980's-- and with commercial real estate as well as with homes. As may be seen from the information in the press in recent months about the unfortunate Bank of New England, this escalation process was stimulated by wildly over-optimistic appraisals of property. As soon as overappraisals had cleared the track for a few purchases at prices well above the values real-estate holders had placed upon their property, these transactions became part of the record on which less starry-eyed appraisers would advise lenders who were considering fresh mortgage applications.

A real estate splurge of this character, responding to the upward jump of petroleum prices at the time of the "second oil shock" of 1979, had already bloomed and withered in Texas and the southwest before it had got very far elsewhere. Mushrooming S&L associations supposedly supervised by state authorities in Texas

wound up with a portfolio of what were often "104% mortgages" on properties whose appraisals had been pushed sky-high by a series of semi-fictitious transactions-- organized within cliques made up of irresponsible real-estate developers, shady construction companies, mysterious limited partnerships, and irresponsible S&L managers. Besides mortgages, the Texas S&L's acquired wildly over-valued golf courses and shopping centers, commercial properties (often unfinished) for whom no occupants were in sight, and vacant land.

Late in the 1980's, regulators and investigative journalists began to scent a similar pattern in California. At the very end of the decade, it began to be realized in the Northeast that while financial corruption was much less of a factor in real estate and mortgage dealings than in the Southwest, there still had been a major price bubble. Perceptions of real estate "values" faded. Many households and business enterprises that wished to relocate were deterred by inability to find buyers at acceptable prices for the real estate they already held.

The threat of "gridlock" in real estate

In such metropolitan areas as those of Boston and New York, the volume of sales of "used homes" etc. dropped sharply, and there began to be an image of real estate "gridlock". Supposedly conservative banks turned out to have made many construction loans on projects for which long-term financing had not been arranged, and sufficient tenants had not been lined up.

The curve of new construction and remodeling dropped sharply, and at this writing seems far from finding a bottom. Bank examiners and appraisers had a change of heart toward the end of 1989, and were perceived by many (including Treasury and Federal Reserve officials in Washington) as exerting deflationary influence through excessive caution.

By early 1990, the federal Reconstruction Trust Company was visibly accumulating a huge inventory of foreclosed properties and mortgages apt to default. These holdings came to RTC through absorption of "bad" assets of S&L associations in liquidation. RTC stood ready to buy such assets at face value so as to persuade acquirers to put substantial amounts of new capital into S&L's which which RTC had taken over because insolvency, and which RTC was trying to put back into private operation. These RTC real-estate holdings have come to be perceived as an "overhang" which threatens reduced occupancy and lower realizable sale prices for many properties whose mortgages had been regarded as sound.

Junk bonds

There have always been on the market a large number of small issues of corporate bonds regarded as "below investment grade". Because of the risk that debtors might default, because trust funds etc. have been limited to "investment grade" securities, and because few potential bondholders knew enough about the debtors to consider them seriously as investments, the market rates of yield on such "junk bond" securities have ruled far above the levels for investment-grade bonds rated by Standard and Poors and other rating agencies at AAA, AA or A.

In the "leveraged buyouts" of corporations which grew to enormous proportions in the 1980's, huge additional amounts of bonds have been emitted by operating companies, holding companies, and temporary companies set up to handle takeover operations. Though many specific issues of these bonds have been for large amounts, the lack of substantial collateral and the risk of default by issuing companies have caused them to be set up with

high contractual rates of interest, and the term "junk bonds" has

come to mean chiefly such takeover-issues.⁵

The collapse of the Penn Square bank in Oklahoma, which had originated and peddled to other banks a huge amount of oil-based loans, brought down the Continental Illinois Bank of Chicago in 1982. This bank was given a shaky second incarnation through an enormous investment of FDIC funds -- aimed to finance the protection not only of insured deposits but also of all other liabilities of the bank. Since this precedent was set by the Federal Reserve and FDIC, the principle of "too big to fail" has been a major element in official financial policy.

III. Evasive finance

Within the structure of financial layering, the layer devoted to intermediation has developed a tremendous number of what may be called "pockets"-- situations where a single financial operator or a small group can manipulate a whole bundle

5. The firm of Drexel, Burnham, which was the great leader in popularizing and marketing these bonds, made a rather successful effort to get rid of the unfortunate connotations of the word "junk" and transform the word into a 1-syllable synonym for "high-yielding".

A curiosity of the period has been the behavior of financial actors and observers who claim to believe in treating market prices as the only measure of economic "values". The difference between yields on junk bonds and investment-grade securities is surely the market's measure of the risk that issuers of junk bonds may default or get involved in bankruptcy proceedings, or that a holder who needs to sell sometime in the future may be unable to find a buyer except at distress price.

Nevertheless, accounting is carried on as if junk-bond interest constitutes pure income, rather than income-plus-a-risk-allowance. Loss reserves for junk-bond holdings at banks, as I understand a rather murky subject, have been set up as a rule only when specific issues developed conspicuous special weaknesses, rather than on general principles for junk-bond holdings at a whole. This roof-never-leaks-when-it-doesn't-rain philosophy is very convenient for any organization which wants to exaggerate its current income.

of financial claims. Creditors and equity-holders of companies in the goods-and-services economy are often surprised to find the meaning of their claims transformed beyond recognition.

A precursor of this situation was the evolution of bank holding companies, which first came into prominence at the end of the 1960's.⁶ Bank holding companies present themselves as organizations for bringing fresh capital into banks. But they have functioned largely to take capital out of banks. They acquire virtually 100% of the shares in the banks they own (leaving in individual hands only a few "qualifying shares" for members of the bank's Board of Directors). While exchange of

6. A very useful compilation of data on these companies is published in the Federal Reserve's FLOW OF FUNDS ACCOUNTS. (See Release Z.1, which in September 1990 carried an array of "Financial Assets and Liabilities, Year-End, 1966-1989". Under the head of "Domestic Affiliates of Commercial Banks (BHC's)" (pp. 21-22 of the release), we find a balance-sheet with eight asset entries and eight liability entries. Apparently these operations were an innovation (presumably carried on, if at all, under different rubrics), since the first entry in Release Z.1 is for the end of 1968.

From the beginning in 1968, this series shows BHC's as holding two principal types of assets: "Investment in bank subsidiaries" and "Investment in finance company subsidiaries". As of December 1989, these accounted for \$202.4 and \$74.2 billion, out of "Total financial assets" of \$301.7 billion. These assets are not debt claims but book values of equity in the subsidiaries. Identical figures appear in Release Z.1 as "investment by domestic affiliates" in the statement on "Assets and Liabilities of U.S.-Chartered Commercial Banks" (pp. 19-20 of the release) and as "funds from parent companies" in the statement for Finance Companies (pp. 29-30).

There is of course an important segment of U.S. banking still in unit banks not owned by holding companies. As of the end of 1989, the "miscellaneous liabilities" of \$282.9 billion were made up of the \$202.4 billion of holding-company equity plus \$80.5 billion of "other"-- presumably containing the part of bank equity not owned by holding companies, plus some oddments.

holding-company shares for bank shares has been the standard, part of the payment to bank stockholders has often been in cash. Holding-companies themselves carry credit-market debts, which account for a substantial fraction of their holdings in subsidiaries.⁷

Mystification about ownership

The "pockets" referred to above were a form of organization which came naturally to operators in real estate. It has long been a widespread practice to hold title to a building or a piece of land through a company with an unrevealing name and a non-specific location-- so as to make it easy to evade complaints from tenants or building inspectors, and on occasion to dodge taxes. Each operator would often have a large number of such companies.

When real-estate operators began to deal in hundred-millions of dollars, this practice of putting assets into a number of pockets continued (though in late years large operators have been boastful rather than secretive about their ownership of many subsidiaries). Operators who focused on such related activities as retailing, and those in more abstruse financial activities, have adopted similar patterns.⁸

⁷ At the end of 1989, according to Release Z.1, holding-company liabilities for "Credit market debt" (corporate bonds plus commercial paper) was equal to 47% of the total financial assets of bank holding companies (or to 51% of their reported "investments in subsidiaries").

⁸ This pattern has also washed back into banking. One of the most striking financial scandals of early 1991 has been the discovery that the largest commercial bank in the city of Washington was owned (through a chain of pockets) by a mysterious group of men-without-a-country much interested in "laundering" the proceeds of illicit trade in drugs and weapons.

In this case, the eminent American who has been chairman of the board at the bank in Washington told the press that if anybody had been injured by the concealment it was himself, because he had been deprived of his "right to know" who the

Sealing off of responsibility

Users of pockets often find it convenient to seal them off from each other when they run into financial difficulties. On occasion, they will draw upon one subsidiary to find more capital for another. This is common where the difficulties seem to be transitory and the troubled company has good long-run prospects.

But when the difficulties seem to be terminal, the operators often prefer to let the troubled company default. Then the creditors of the company must choose between writing off a good part of their claims or engaging in a long and painful struggle to enforce those claims. This is where holders of junk bonds may find they have bought a pocketfull of pesky problems, worthy of analysis by Peter Passell.

Bankruptcy threats

To ward off claims of creditors, a popular dodge these days is for the owners of a subsidiary to take it into bankruptcy court-- or threaten to do so. By invoking Chapter XI of the Bankruptcy Act, a debtor company obtains "protection" pending reorganization and the settlement of claims.

In this context, creditors and preferred shareholders have to work through committees, which are cumbersome and often seem not very representative of the claimants for whom they speak. If parent-company claims have been largely paid off before the crisis becomes visible, or if the parent interests contrive to have a voice through committees, not only junk-bond holders but suppliers and former shareholders who have taken preferred shares in exchange for their original common shares may fare badly.

At best, if they fight, the endangered claimants must face a long delay and heavy legal costs to get their entitlements. A

owners were. Odd! One would have said the chairman of the board had a duty to know about the ownership.

threat of invoking Chapter XI therefore sets the stage for a negotiation toward an "amicable" settlement-- in which perhaps the existing preferred stock will evaporate and part of the junk bonds will turn into a new issue of preferred stock. If the market values junk bonds a long way below face value, one can begin to see the reason why.

IV. Trouble Signals in Recent History

Tracing the composition of assets and liabilities of key sectors of the economy through a couple of recent decades can tell us a good deal about the threat presented by some aspects of the debt situation. For this purpose, I offer in the ANNEX a set of tables on the course of events in the two major sectors of the U.S. private goods-and-services economy-- the household sector and the corporate-non-financial sector.

Sources of information

The data underlying these tables come from the same Federal Reserve Board release that was used above in relation to holding companies.⁹ The original series of current-dollar figures are hard to use because they carry a powerful "trend" resulting largely from the rise of the U.S. price level. "Total financial assets" in the corporate sector, for example, stand at \$1982.7 billion at the end of 1989-- 7.3 times the \$272.7 billion for

⁹ Data for the household sector appear in the Z.1 release on Flow of Funds at pages 5/6; those for the corporate sector at pages 9/10. The household balance sheet presents 25 rows of figures on financial assets plus 12 rows on liabilities. The corporate balance sheet presents 18 rows on assets plus 19 rows on liabilities.

It might be tempting to use a fuller version of the accounts (published in Federal Reserve Board Release C.9 of October 1990, including 10 rows of data on "tangible assets". But unfortunately the basis of valuation of the tangible assets (which are imported from a study of Fixed Reproducible Tangible Wealth in the United States, 1925/1985) is so arbitrary that we dare rest no weight upon this part of the data.

the end of 1966; and there is only one year (1974) where the change across the year is reported as negative.

Since we want to look at debts payable and receivable in relation to each other, I have stated all the figures as ratios to the sector's total outstanding debt (short-term and long-term combined). The results are rather striking.

Changes in the debt position of households

Looking at the figures for debtorship items in the household sector balance sheet, we can see that the share of long-term "credit-market instruments" reached a high for the 1966/1989 period of 70.8% of total debts at the end of 1989. This level was reached by a sudden surge starting from 65.0% at the end of 1985. It must be read as a symptom of the real-estate situation sketched above, and confirms the view that the home-mortgage situation may be ripe for a major wave of defaults.

The figures in the second table-- for household creditorship-items which are short-term debts receivable-- we find at the end of 1989 a 24-year high ratio of 32.0% of total household debts payable. Between the 1985 level of 28.9% and the 1989 level, there was a trough in 1986 of 26.7%.

It is a curious fact that the ratio to debts payable for "effective money stock" moves inversely much of the time to the ratio for short-term receivables. As defined here, "effective money stock" includes not only currency-and-demand-deposits but also time deposits and "shares" in money market mutual funds and in other mutual funds (which commonly provide holders with checkbooks). Some of the items included here are rather close substitutes for items included in short-term debts receivable. If we add together these two groups, they show for the end of 1989 a ratio of 137.0%, perceptibly but not dramatically down from the ratio of 145.6% at the end of 1984. This combined ratio for 1984 was the highest since an early peak in 1968.

The figures just cited suggest that in the face of an unusually heavy load of mortgage debt, households recently have not been as well provided as usual with funds they could readily use for mortgage reduction or for real-estate purchases. It should be remarked, however, that the households with heavy mortgage debts are not necessarily the same people as those with strong cash positions. In fact, it is likely that these are two distinct groups, with a rather thin in-between group who hold moderate mortgages and moderate liquid resources.

The ratio to debts payable for "total of creditorship items" shows remarkable stability over time. Its 24-year high was 246.7% of debts payable in 1983-- rather closely matched with peaks of 245.6% in 1969, 246.5% in 1971, 243.8% in 1975, and 244.6% in 1989. The 24-year low for this ratio was 218.0% in 1979.

A considerable part of the creditorship of households comes from assets over which households have no direct control, and which are specifically locked away from current use. These are life insurance and pension fund reserves, lumped together here as "indirect holdings". The residue of direct holdings has shown a downward trend. Its peak ratios were 170.6% in 1968, 163.6% in 1976, 161.8% in 1984. It dropped in every year since 1984, to a low of 156.0% in 1989. We should note, however, that the 24-year low of this ratio (146.3%) came earlier, in 1979.

Debt position of non-financial corporations

The debt position of non-financial corporations is shown in a second pair of tables. On the side of debts-payable, the structure can be represented very simply. For long-term debts there is a simple dominant item: corporate bonds. For short-term debts there is a wider scatter of types (with bank loans amounting to over half the short-term total), but the detail seems unilluminating for the problems in hand. Hence the table splits the debt total called "credit market instruments" into

only two components, whose shares are thus mirror-images of each other,

For long-term corporate debt, the 24-year high came in 1967, with a ratio to total debts payable of 66.7%. The peak in the middle of the period was at the same level: 66.6% in 1976. But from 1976 onward, the long-term share declined in every year down to 1984, when it reached its 24-year low at 51.2%. In the later 1980's, there was a continuous rise from 1984 to a new high in 1988 on 56.2%. (1989 showed a small decline.)

This upward movement must be taken to show the effects of the large issue of junk bonds in connection with corporate takeovers. We must remember, too, that the burden of debt includes interest charges, and that the interest rates on junk bonds are very much higher than on normal corporate bonds.

On the expenditure side, the table carries one more column, sorting out "effective money holding" from short-term and long-term credit market instruments. The share of effective money reached its 24-year peak in 1982, with a ratio to total debts of 21.2%. Since reaching a secondary peak of 21.0% in 1986, it has fallen rather sharply to 17.4% in 1989. Earlier troughs were considerably lower: 14.5% in 1970, 15.4% in 1976, 16.6% in 1979.

For short-term credit-market instruments receivable, as well, there was a peak (6.7%) in 1984, followed by a decline to 3.7% at the end of 1989. If we combine cash and short-term items, we find a 24-year high of 27.9% in 1983, followed by a decline to a 24-year low of 21.1% in 1989.

As to holdings of long-term credit-market instruments, the 24-year peak comes at the outset: at the end of 1966, 6.5% of total debts payable. The most recent peaks have been proportionately much lower: 4.1% in 1983, 3.9% in 1986. The 24-year low came at 1.8% in 1973, while 1989 and 1985 show lows at 3.2%.

For total creditorship, the 24-year peak came fairly late: 31.9% at the end of 1983. From an interim peak of 29.6% in 1986, the ratio dopped to 24.3% at the end of 1989.

My surmise about the data for corporations is that the drastic shifts of the later 1980's reflect the effect of acquisitions by financial bodies which are treating their operating subsidiaries as "pockets". If we could trace relationships within groups of affiliates, I would guess, we would find that liquid holdings have been shifted out of operating companies in the goods-and-services economy into financially-oriented holding companies.

If the adoptive "parents" of the operating companies could be relied upon to give support in case of need, the loss of liquidity for non-financial companies indicated by the data for the late 1980's might make no difference. But the behavior of operators like Trump and Campeau suggests that they are quite willing too let operating units go into bankruptcy rather than help them out from group headquarters. Taking this factor into account, along with the heavy interest charges on junk bonds, it seems fairly clear that the debt position of non-financial corporations has weakened suddenly and substantially in the later 1980's, so that we must look for an intensification of debt problems.

TSD

TSD

**DISPOSABLE PERSONAL INCOME AND PERSONAL SAVING, 1929/1941:
LEVELS, INCREMENTS AND RATIO OF INCREMENTS**

(Levels and increments in billions of current dollars)

| Year | Disposable personal income | | | Personal saving | | | Ratio: |
|-------|----------------------------|------|-----------|-----------------|------|-----------|--------|
| | Actual | Base | Increment | Actual | Base | Increment | PSD |
| | DPA | DPB | DPD | PSA | PSB | PSD | DPD |
| 1930. | 73.0 | 81.7 | -8.7 | 1.9 | 2.6 | -0.7 | 0.080 |
| 1931. | 62.9 | 73.0 | -10.1 | 1.4 | 1.9 | -0.5 | 0.050 |
| 1932. | 48.0 | 62.9 | -14.9 | -1.3 | 1.4 | -2.7 | 0.181 |
| 1933. | 44.9 | 48.0 | -3.1 | -1.6 | -1.3 | -0.3 | 0.097 |
| 1934. | 51.6 | 44.9 | 6.7 | -0.4 | -1.6 | 1.2 | 0.179 |
| 1935. | 57.9 | 51.6 | 6.3 | 1.5 | -0.4 | 1.9 | 0.302 |
| 1936. | 65.8 | 57.9 | 7.9 | 3.0 | 1.5 | 1.5 | 0.190 |
| 1937. | 70.5 | 65.8 | 4.7 | 2.9 | 3.0 | -0.1 | -0.021 |
| 1938. | 64.8 | 70.5 | -5.7 | -0.1 | 2.9 | -3.0 | 0.526 |
| 1939. | 69.7 | 64.8 | 4.9 | 1.8 | -0.1 | 1.9 | 0.388 |
| 1940. | 75.0 | 69.7 | 5.3 | 3.0 | 1.8 | 1.2 | 0.226 |
| 1941. | 91.9 | 75.0 | 16.9 | 10.0 | 3.0 | 7.0 | 0.414 |

SOURCE: National Income and Product Accounts of the United States, 1929-82, Table 2.1, page 88. agh 4 April 1991

CODE

CODES (for all ratio tables)

- H* : Highest ratio for the variable in 1966/1989
- H : High point:
 - At least 0.03 higher than adjacent L's or l's;
 - At least 3 years in time away from adjacent H's;
- h : Intermediate high point (not meeting conditions for H).
- : Part of continuous rise or fall.
- l : Intermediate low point (not meeting conditions for L).
- L : Low point:
 - At least 0.03 lower than adjacent H's or h's;
 - At least 3 years in time away from adjacent L's;
- L* : Lowest ratio for the variable in 1966/1989.

**RATIOS OF DEBTORSHIP ITEMS TO TOTAL DEBTS PAYABLE,
HOUSEHOLDS, PERSONAL TRUSTS AND NONPROFIT INSTITUTIONS,
1966/1989**

| Date (Year -end) | Credit-market instruments | | Tax-exempt debt | Total of debtorship |
|------------------------|---------------------------|------------|--------------------|------------------------|
| | Short-term | Long-term | | |
| | Ratio Code | Ratio Code | Ratio Code | Ratio |
| 1966. | 0.337 L | 0.640 H | 0.024 l | 1.000 |
| 1967. | 0.341 -- | 0.628 -- | 0.031 -- | 1.000 |
| 1968. | 0.350 -- | 0.615 L | 0.035 H* | 1.000 |
| 1969. | 0.353 h | 0.622 h | 0.026 -- | 1.000 |
| 1970. | 0.351 l | 0.628 h | 0.021 l | 1.000 |
| 1971. | 0.359 -- | 0.617 -- | 0.024 -- | 1.000 |
| 1972. | 0.360 -- | 0.611 L* | 0.029 h | 1.000 |
| 1973. | 0.363 H* | 0.617 -- | 0.019 -- | 1.000 |
| 1974. | 0.356 -- | 0.628 -- | 0.016 -- | 1.000 |
| 1975. | 0.342 -- | 0.642 -- | 0.016 l | 1.000 |
| 1976. | 0.339 | 0.642 -- | 0.019 -- | 1.000 |
| 1977. | 0.335 -- | 0.646 -- | 0.019 h | 1.000 |
| 1978. | 0.333 -- | 0.649 -- | 0.018 -- | 1.000 |
| 1979. | 0.326 -- | 0.658 -- | 0.016 l | 1.000 |
| 1980. | 0.315 -- | 0.666 -- | 0.019 h | 1.000 |
| 1981. | 0.313 L | 0.670 h | 0.017 -- | 1.000 |
| 1982. | 0.315 -- | 0.667 -- | 0.018 -- | 1.000 |
| 1983. | 0.318 -- | 0.660 -- | 0.021 h | 1.000 |
| 1984. | 0.322 -- | 0.660 -- | 0.018 l | 1.000 |
| 1985. | 0.327 h | 0.650 l | 0.024 -- | 1.000 |
| 1986. | 0.317 -- | 0.659 -- | 0.024 h | 1.000 |
| 1987. | 0.296 -- | 0.687 -- | 0.017 -- | 1.000 |
| 1988. | 0.284 -- | 0.699 -- | 0.016 -- | 1.000 |
| 1989. | 0.277 L* | 0.708 H* | 0.015 L* | 1.000 |

SOURCE: Federal Reserve Board Release Z.1 for September 1990
pp. 9-10

COMPDEBT

**RATIOS OF CREDITORSHIP ITEMS TO TOTAL DEBTS PAYABLE,
HOUSEHOLDS, PERSONAL TRUSTS AND NONPROFIT INSTITUTIONS ,
1966/1989**

| Date (Year -end) | Effective money stock | Credit-market-institu- tion creditorship | | Indirect holdings | Total of creditor- ship items |
|------------------------|-----------------------------|---|------------|----------------------|--|
| | | Short-term | Long-term | | |
| Ratio Code | Ratio Code | Ratio Code | Ratio Code | Ratio Code | Ratio Code |
| 1966. | 1.147 L | : 0.254 h | . 0.253 H | : 0.729 l | : 2.384 L |
| 1967. | 1.210 -- | : 0.247 -- | . 0.245 -- | : 0.751 H | : 2.453 -- |
| 1968. | 1.221 H | : 0.246 l | . 0.238 l | : 0.750 -- | : 2.456 H |
| 1969. | 1.146 L | : 0.271 H | . 0.261 -- | : 0.734 l | : 2.412 L |
| 1970. | 1.194 -- | : 0.241 -- | . 0.269 H* | : 0.754 -- | : 2.459 -- |
| 1971. | 1.247 -- | : 0.197 -- | . 0.255 -- | : 0.767 -- | : 2.465 H |
| 1972. | 1.255 H* | : 0.165 L | . 0.236 -- | : 0.782 H | : 2.438 -- |
| 1973. | 1.205 -- | : 0.173 -- | . 0.226 l | : 0.719 -- | : 2.323 -- |
| 1974. | 1.192 L- | : 0.186 H | . 0.237 -- | : 0.689 L* | : 2.304 L |
| 1975. | 1.234 -- | : 0.177 -- | . 0.245 h | : 0.783 H | : 2.438 h |
| 1976. | 1.241 H | : 0.160 L* | . 0.235 -- | : 0.781 -- | : 2.417 |
| 1977. | 1.186 -- | : 0.167 -- | . 0.210 H | : 0.735 -- | : 2.297 |
| 1978. | 1.125 -- | : 0.182 -- | . 0.186 -- | : 0.725 -- | : 2.217 |
| 1979. | 1.079 L | : 0.209 -- | . 0.175 -- | : 0.717 L | : 2.180 L |
| 1980. | 1.095 -- | : 0.220 h | . 0.160 l | : 0.761 H | : 2.236 |
| 1981. | 1.128 -- | : 0.209 l | . 0.168 -- | : 0.759 l | : 2.263 |
| 1982. | 1.177 -- | : 0.218 -- | . 0.177 h | : 0.833 -- | : 2.406 |
| 1983. | 1.178 -- | : 0.246 -- | . 0.171 -- | : 0.872 H | : 2.467 H |
| 1984. | 1.191 H | : 0.265 -- | . 0.162 -- | : 0.846 l | : 2.464 |
| 1985. | 1.142 L | : 0.289 h | . 0.160 L* | : 0.857 h | : 2.449 |
| 1986. | 1.152 h | : 0.267 l | . 0.161 -- | : 0.850 -- | : 2.430 |
| 1987. | 1.110 -- | : 0.275 -- | . 0.181 -- | : 0.838 l | : 2.404 L |
| 1988. | 1.070 -- | : 0.307 -- | . 0.184 -- | : 0.850 -- | : 2.410 -- |
| 1989. | 1.050 L* | : 0.320 H* | . 0.190 H | : 0.886 H* | : 2.446 H |

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SOURCE: Federal Reserve Board Release Z.1 for September 1990,
pp 9-10.

**RATIOS OF DEBTORSHIP ITEMS TO TOTAL DEBT,
NONFINANCIAL CORPORATE BUSINESS (excluding farms),
1966/1989**

| Date (year -end) | Credit-market instruments payable | | | | Total debtor- ship |
|------------------------|-----------------------------------|------|-----------|------|--------------------------|
| | Short-term | | Long-term | | |
| | Ratio | Code | Ratio | Code | |
| 1966. | 0.334 | h | 0.666 | l | 1.000 |
| 1967. | 0.333 | L* | 0.667 | H* | 1.000 |
| 1968. | 0.343 | -- | 0.657 | -- | 1.000 |
| 1969. | 0.367 | H | 0.633 | L | 1.000 |
| 1970. | 0.360 | -- | 0.640 | -- | 1.000 |
| 1971. | 0.346 | l | 0.654 | h | 1.000 |
| 1972. | 0.358 | -- | 0.642 | -- | 1.000 |
| 1973. | 0.361 | -- | 0.639 | -- | 1.000 |
| 1974. | 0.389 | H | 0.611 | L | 1.000 |
| 1975. | 0.348 | -- | 0.652 | -- | 1.000 |
| 1976. | 0.334 | L | 0.666 | H | 1.000 |
| 1977. | 0.337 | -- | 0.663 | -- | 1.000 |
| 1978. | 0.346 | -- | 0.654 | -- | 1.000 |
| 1979. | 0.381 | -- | 0.619 | -- | 1.000 |
| 1980. | 0.401 | -- | 0.599 | -- | 1.000 |
| 1981. | 0.430 | -- | 0.570 | -- | 1.000 |
| 1982. | 0.468 | -- | 0.532 | -- | 1.000 |
| 1983. | 0.469 | -- | 0.531 | -- | 1.000 |
| 1984. | 0.488 | H* | 0.512 | L* | 1.000 |
| 1985. | 0.484 | -- | 0.516 | -- | 1.000 |
| 1986. | 0.460 | -- | 0.540 | -- | 1.000 |
| 1987. | 0.439 | -- | 0.561 | -- | 1.000 |
| 1988. | 0.438 | L | 0.562 | H | 1.000 |
| 1989. | 0.442 | h | 0.558 | l | 1.000 |

SOURCE: Federal Reserve Board, Release Z.1 of September 1990,
pp. 9-10.

COMPDEBT

RATIOS OF CREDITORSHIP ITEMS TO TOTAL DEBT,
NONFINANCIAL CORPORATIONS (excluding farms)
1966/1989

| Date (year -ens) | Effective money holding | | : | Credit-market instrument holdings | | | | : | Total credi- torship | | |
|------------------------|-------------------------------|------|---|--------------------------------------|--------------------|------|-------|----|-------------------------|-------|----|
| | Ratio | Code | | Short-term Ratio | Long-term Ratio | Code | Ratio | | Code | | |
| 1966. | 0.178 | H | : | 0.067 | h | . | 0.065 | H* | : | 0.309 | H |
| 1967. | 0.175 | -- | : | 0.066 | -- | . | 0.048 | -- | : | 0.289 | -- |
| 1968. | 0.170 | -- | : | 0.064 | l | . | 0.048 | -- | : | 0.282 | -- |
| 1969. | 0.160 | -- | : | 0.067 | -- | . | 0.031 | -- | : | 0.259 | -- |
| 1970. | 0.145 | L* | : | 0.068 | -- | . | 0.028 | L | : | 0.240 | L* |
| 1971. | 0.146 | -- | : | 0.076 | -- | . | 0.035 | h | : | 0.256 | -- |
| 1972. | 0.152 | -- | : | 0.079 | H | . | 0.030 | -- | : | 0.261 | h |
| 1973. | 0.168 | H | : | 0.073 | -- | . | 0.018 | L* | : | 0.259 | -- |
| 1974. | 0.154 | L | : | 0.070 | l | . | 0.020 | -- | : | 0.243 | l |
| 1975. | 0.165 | -- | : | 0.074 | -- | . | 0.035 | -- | : | 0.274 | -- |
| 1976. | 0.169 | h | : | 0.081 | H* | . | 0.035 | h | : | 0.285 | H |
| 1977. | 0.167 | l | : | 0.073 | -- | . | 0.021 | l | : | 0.261 | l |
| 1978. | 0.174 | h | : | 0.069 | -- | . | 0.022 | -- | : | 0.264 | h |
| 1979. | 0.166 | l | : | 0.066 | -- | . | 0.022 | -- | : | 0.254 | l |
| 1980. | 0.189 | H | : | 0.054 | L | . | 0.027 | h | : | 0.269 | h |
| 1981. | 0.185 | l | : | 0.056 | -- | . | 0.026 | l | : | 0.267 | l |
| 1982. | 0.205 | -- | : | 0.064 | -- | . | 0.035 | -- | : | 0.304 | -- |
| 1983. | 0.212 | H* | : | 0.067 | h | . | 0.041 | h | : | 0.319 | H* |
| 1984. | 0.197 | l | : | 0.062 | -- | . | 0.038 | -- | : | 0.297 | -- |
| 1985. | 0.203 | -- | : | 0.057 | -- | . | 0.032 | l | : | 0.292 | l |
| 1986. | 0.210 | h | : | 0.047 | -- | . | 0.039 | h | : | 0.296 | h |
| 1987. | 0.197 | -- | : | 0.047 | -- | . | 0.039 | -- | : | 0.283 | -- |
| 1988. | 0.182 | -- | : | 0.039 | -- | . | 0.033 | -- | : | 0.254 | -- |
| 1989. | 0.174 | L | : | 0.037 | L* | . | 0.032 | l | : | 0.243 | L |

SOURCE: Federal Reserve Release Z,1 for September 1990, pp.9/10

COMPDEBT

V. CHANGING THE CONTEXT OF FINANCE WITH A MAJOR NEW INDUSTRY

As I indicated just above, the whole context of U.S. financial policy will become much more favorable if we can set in motion a powerful new industry. The basis for such a new industry is something we all know-- but which looms over us so immense that it is hard to bring into focus:

THERE IS URGENT NEED TO PUT THE U.S. INFRASTRUCTURE
IN GOOD ORDER BY REPAIR, REPLACEMENT, SUPPLEMENTARY
CONSTRUCTION AND PROVISION FOR MAINTENANCE.

A firm decision by the United States government to move rapidly in this direction can ward off the risk of serious depression or stagnation and remove many of the obstacles to financial reform. To avoid mouthing long phrases time after time, I propose a one-word name for a program to this end: call it INFRAHAB.

The infrastructure backlog

An estimate attributed to the Associated Contractors of America is that a 9-year program to put the infrastructure in good order entails expenditures of \$3.3 trillion.¹ If we continue along present lines, infrastructure will get a very small fraction of this amount-- particularly since state and local governments are under budgetary pressure to avoid major construction and to cut back maintenance. The famous bridge crisis of New York City will serve to illustrate.

¹ In the midst of my work to frame the present paper, I ran onto this citation when I took half an hour off for recreational reading and picked up the Atlantic Monthly for April 1991. It occurs on page 72 in an article entitled "Strong but Sensitive", by John Sedgwick. The focus of the article is concrete-- its history and its very promising prospects.

Another citation in the Sedgwick article is to the work of Professor David Aschauer of Bates College, who argues that there is a "strong and robust link" between infrastructure development and the growth of productivity. International comparisons show that if we rank major industrial countries by the percent of gross product going into infrastructure and by the rate of growth of gross product, the two rankings come out essentially the same, and with very similar

It might be supposed that even a crash program for INFRAHAB would do little to strengthen the economy in the early 1990's. But this supposition is fallacious. We should remember President Eisenhower's Highway Trust Fund program of 1954. The U.S. economy was suffering a severe post-Korea depression. Tax increases to start the Trust Fund were scheduled to start at once, and expenditures on the Interstate Highway System to start after some funds had been accumulated. Why did we get a rapid recovery to full-employment levels instead of an intensified depression?

The answer is tooling up. Every construction firm which would relish road contracts needed to put itself in shape to make acceptable bids by getting new equipment, reorganizing, and devising new procedures. Hence private capital expenditure took an immediate upward jump. A similar process would naturally be set going by INFRAHAB. Some suggestions as to the form tooling-up can take in the context of the early 1990's are offered below.

Externalities of infrastructure

Infrastructure is of course owned chiefly by government rather than by the private sector because of externalities. Sensible allowance for these externalities should be a central consideration in planning INFRAHAB

If roads, drainage systems and the like were owned by private parties, a large part of the benefits they generate would be spread out to non-owners who could not be assessed to pay for them, and thus would fail to enter the incentive-system of those who decided what facilities to provide.

The value of the externalities from infrastructure facilities does not depend only on the scale of the services for whose sake they are established (and for which users can be constrained to pay). Externalities related to particular facilities arise largely from incidental flows of services and dis-services, which depend on the technology used to produce the main service, the location of the facilities, and the way maintenance is conducted.

To a considerable degree, these incidental services come as a surprise to the authorities that run the infrastructure and/or to the general public. Some of these surprises, however, would be obviated if intelligent use were made of experience at comparable facilities inside and outside the United States. And the cost of surprises could be abated by more resourcefulness in modifying facilities and maintenance-patterns as experience accumulates.

Broader externalities

The strategy and tactics of INFRAHAB should take account also of a set of still broader externalities. In recent years, for example, note has been taken of the noise-nuisance arising from the way highway users operate-- and this nuisance is mitigated by making "berms" part of the pattern of construction and modernization.

Main elements of a crash program for INFRAHAB

The looming presence of the infrastructure problem means that the main elements of an INFRAHAB program are not far from the surface in many people's minds.

Energy tax. The first question people ask when a large new spending program is recommended is "where will we get the money?" For INFRAHAB, there is a ready answer to this question: TAX THE USE OF PETROLEUM. An energy tax of the magnitude of those levied in Europe and Japan has failed of adoption in this country partly because "it would actually yield too much revenue", partly because the common sense of a use tax comes up against the protectionist impulse toward an import tax. An insufficiently understood consideration is that the incidence of either form of tax would be in good part (maybe half?) upon the overseas exporters: because we refuse to pay taxes to ourselves, we in effect pay taxes to Arab nabobs! The effect of the tax on the intra-US price (at a guess, of the order of half the per-gallon tax) is in line with the objectives of INFRAHAB because it will

discourage excess driving, idling of motors, neglect of home insulation and the like-- all factors in the U.S. economy which carry adverse externalities.

Revival of rail transport. Most economists seem to agree that in this country we overuse highway transport relative to rail transport.² The strategic error of letting highway transport squeeze out rail transport has doubtless had effects which will take decades to rectify. Our locations for industrial plants and for transshipment centers are far too heavily influenced by overuse of highway transport. By pulling these activities out of cities, incidentally, we have made it harder to develop employment where it is most needed. The externalities of railroad transport in terms of noise and air pollution are much more favorable than those of trucking.

A peculiarity of our transport structure is that rail and air transport are treated as competitors rather than as complements. Whereas Zurich has an airport rail terminal and London and Paris have convenient links to subway systems, we force our airport traffic onto overcrowded motor highways-- even though railway tracks typically run within a few miles of airports. Why can't we be sensible and let Penn Station be the place where we check in ourselves and our baggage for air trips?

The case for mass transport of people by "light rail" within metropolitan areas is rather well understood by the metropolitan public and rather thoroughly ignored by others. But more use of experience elsewhere might help. For example, such metro systems as those of London and Paris include ring lines so that not all trips need pass through the center. And some one of the effective fare-collection systems which work elsewhere in the world should work also in New York. Do we really have the world's most resourceful transit-cheaters in the world's cultural hub, or have we missed some bets?

² One suspects that if David Aschauer had ranked countries in order of their use of rail transport for goods, he would have found another rank ordering parallel to those for productivity growth and for infrastructure expenditure.

Disposal facilities. It is widely realized that our country has disastrous failures in the way we handle our voluminous wastes. Our use of nuclear energy has rested on a promise (never fulfilled despite serious efforts) that we will develop permanently safe disposal of nuclear wastes. Perhaps there are remedies in some of the reported success-stories from other parts of the world; but one notes that the canny Swedes have given up. Development of energy sources without disposal problems (nuclear fusion? capture of solar radiation outside the atmosphere?) is so urgent that efforts in this direction clearly belong in INFRAHAB.

Recycling of ordinary rubbish has become a matter of universal lip-service, if not yet much of a reality. Sorting, reuse of metals, plastics, glass and paper and high-temperature incineration all seem useful-- but only as ways to slow down our burial-in-trash, not yet to stop it. Most economists would probably agree that more use of taxes to reduce the generation of pre-rubbishy products and shift to more durable articles made from less trashy materials will be good public policy.

Resources for positive measures. The available resources in manpower, facilities and physical materials for an INFRAHAB program are enormous-- much greater, I would opine, than most economists think. And the externalities of their transfer from present uses can be invaluable.

To a very large extent, the actual infrastructure needed for INFRAHAB is low-tech-- entailing installation of fresh concrete, rust removal, etc. But high-tech equipment and procedures will be needed to do a good job of installation. And the design and application of systems to make sure the installation is without serious flaws is a high-tech job.

The role of high-tech industries. The companies which produce weapons are well qualified to produce the sophisticated equipment which INFRAHAB will require. There will be problems,

for example, of keeping bridges usable by supporting their load when work is going on to restore their underpinnings and their supporting members. This is a job for heavy equipment designed to be knocked down and moved on to another job, and to adapt to a variety of situations. Similar but distinct problems will arise when it is urgent to keep buildings usable while work goes on underneath them to restore infrastructure.

It appears that successful hardening of concrete can be furthered by running weak electric currents through their metal reinforcing members. Monitoring devices will be needed to assure that concrete is of the right consistency for its use, and that it is properly compacted as it is poured. If salt still has to be used for de-icing, special members must be devised, adapted and installed to direct to salt to places where it can do no damage. (With ingenuity, perhaps salt-runoff can be collected, recycled and reused.)

INFRAHAB thus offers ways for arms-producing companies to use their resources for products with strong markets for which high-tech companies have a natural advantage. Besides, manpower with just the right qualifications to oversee the proper installation of new infrastructure can be released from the labor force of the arms industries-- and from the armed forces, where the Gulf war showed that the forces had been very successful in training people for close cooperation and precise work.

Overseas-trade consequences.

The combined effect of the various sub-programs seem likely to ease the foreign-trade position of the United States.

- 1) Arms exports can and must be sharply reduced. The reduction of these exports offers the only escape in sight from an ugly spiral:

- (a) In order to keep the arms industry active, the United States government makes grants to Israel-- with the effect that
 - (b) Israel can pay for desired high-tech U.S arms-- with the effect that
 - (c) Jealous Arab neighbors buy similar arms to outdo Israel-- with the effect that
 - (d) Israel fears being outmatched and seeks US grants -- with the effect that
- We are back again to (a)!

The result of this spiral is to make a Middle East war more dangerous to the world if it happens, and also to increase the likelihood that it will happen.

Another such spiral exists in the tension between India and Pakistan. A third may exist in Africa.

High-tech arms exports to Latin America also must do a lot more harm than good, though its dynamics differ from those of the Middle East spiral. All the major Latin American countries (and almost all of the middle-sized ones) have long had the good sense to avoid war with each other. But the demand for high-tech arms has continued, though it is hard to see how Latin American governments could use them except against their own people. There are some indications of internal arms races in Latin American countries, with each branch of the armed services trying to outshine the others. In any case, the U.S. resources devoted to producing these items are doing Latin America and the United States less than no good.

2) With a lower quantum at lower (before-tax) prices, the cost of our oil imports should fall considerably.

3) Countries which now are arms buyers will (one hopes) become buyers of U.S. machinery.

4) The apparently favorable net effect on the U.S. current-account balance will have to be obviated in the not-too-long run by a rise in the foreign-exchange value of the dollar.

Prospects for the U.S. financial system

The effect of these changes should considerably reduce the financial tensions of the U.S. economy. The foreign-exchange position should make lower interest rates tenable, with a favorable effect on U.S. asset values.

Given these changes in the context, U.S. corporations will be enabled to ease their debt position by selling equity and buying back debt. The counterpart of this movement will be willingness of U.S. households and pension funds to hold a larger slice of their portfolio assets in equity rather than in debts receivable.

Oil tax revenue and the lowering of Treasury interest costs will enable the federal government to buy back some of its debt, and to give a financial lift to state and local governments (which also will have reduced interest costs).

To what extent the changed situation will enable debtor companies to clear away their junk-bond debt may be more debatable. But with a strong lift to the economy in sight for several years ahead from INFRAHAB, corporations and unincorporated business will be more interested in R&D and in fixed investment. Motives to save in order to invest will be intensified for both branches of business, and the capital needs of unincorporated business should generate additional saving by households.

Prospects for basic financial reform.

As I see it, this change in the situation will also smooth the path for what I would call basic financial reform. By this I mean:

- A) A shift in the standards of good management from efficiency in exploiting or creating tax loopholes to efficiency in running goods-and-services operations. This requires major changes in the content of tax legislation and also in the way tax legislation is concocted.
- B) Closing down the financial-loophole factory in Washington and in state capitals. This may not be feasible without basic electoral reform.
- C) A cleanup of the "pockets" of financial manipulation about which I complained above, and in general of the powers and responsibilities of holding companies.
- D) A reduction of the over-liquidity of households.
- E) Termination of "too-big-to-fail" protection except for banks (and perhaps other financial institutions) which sign and fulfil contracts under which they will rapidly build up authentic capital to a level where deposit insurance is superfluous.
- F) Curing the discrimination in favor of undue risk which results from the combination of deposit insurance with accounting rules which permit treating hypothetical future profits as actual current profits.³

³ I do not insist that everybody adopt a standard of "mark to market", which can have serious drawbacks if it is not feasible to hold interest rates within narrow bounds. But there should be a system of special reserves which will impound the excess of contractual interest over investment-grade interest until assets like junk bonds are either redeemed or sold on the

- G) Restoring and maintaining the professional integrity of auditors, loan officers and bank executives, appraisers and bank supervisors at all levels.
 - H) Curing the perverse incentives of policy-makers which arise from trying to restore confidence by telling the public that the true facts are too disturbing to elucidate. Such behavior at the top breeds insincerity all up and down the line of financial regulation, and contributes to the public's general loss of confidence in national leadership.
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market.