# 7
# Debt Problems and Macroeconomic Policies

*Lawrence H. Summers*

Events of the last few years have led to increasing concern about the possibly adverse consequences of the substantial accumulation of debt by key sectors of the American economy.

Fears are often expressed that excessive private debt burdens will threaten financial stability, with adverse consequences for the real economy, or that increases in debt will create political pressures that will make an acceleration of inflation inevitable.

A combination of a rapidly rising ratio of total indebtedness to gross national product (GNP) and widespread financial distress manifested most vividly in the Continental Illinois bank failure, the agricultural sector of the American economy, and problematic foreign loans, has led to calls for policy action to head off debt problems. Henry Kaufman (1986, p. 52), for example, has labeled the rapid growth of debt as "one of the most pressing problems of the day." And one study group has urged that we "fix the roof while the sun is shining" (Center for a New Democracy, 1986).

Debt problems have both a micro and a macroeconomic dimension. The case for microeconomic policies directed at limiting the indebtedness of firms and households is easily made on the basis of standard externality arguments. In an interdependent economy, the failure of any institution has pervasive consequences for the remainder of the economy, consequences that cannot be internalized by the affected parties. Creditors represent only one class of losers when a large corporation or bank fails. When a corporation fails, a network of employees, customers, and suppliers, all of whom have made investments in anticipation of the corporation's continued viability,

suffer as well. And in a world where information is far from perfect, the failure of any one company inevitably creates doubts about the solvency of others, making it harder for them to attract capital and enter into long-term relationships with customers and suppliers. In addition to these types of costs, the failure of a bank imposes direct costs on the government because of deposit insurance or through the costs of bailout.

The externalities associated with financial failure make it unlikely that any laissez **faire** policy towards the accumulation of debt will be optimal. The private costs of taking on increased debt almost certainly do not reflect the full social costs that are imposed by the increased risk of financial failure. This creates some presumption in favor of regulatory and other microeconomic policies directed at preventing the excessive accumulation of debt, especially in sectors of the economy, like banking, where the externalities are likely to be large. But regulation imposes costs of its own and in many cases requires information that government is unlikely to possess or be able to obtain easily. It is reasonable, therefore, to ask whether there are alternative macroeconomic policies that could complement microeconomic measures by altering the environment to make the accumulation of debt less attractive. Even if macroeconomic policy can do little to alleviate debt problems, it should surely be sensitive to their existence.

This paper explores the issue of monetary and fiscal policy responses to possible debt problems. In considering debt problems, I draw a sharp distinction between private and public sector debt. The excessive accumulation of private sector debt is a source of concern primarily because of default risks. For the foreseeable future, the risk of explicit default is not a serious concern with respect to the buildup of federal debt. Rather, distortion in the composition of economic activity is the primary problem posed by federal deficits.

The first part of the paper considers the relationship between monetary policies and the accumulation of debt in the private sector. I begin by assessing the usefulness of credit aggregates in the setting of monetary policy. Following the decision of the Federal Reserve in 1983 to monitor domestic **nonfinancial** debt as an **intermediate** target, increasing attention has focused on the debt-GNP ratio as an object of policy. I review the evolution of this ratio briefly, noting its recent extreme instability. Then I argue that while it may have some value as a cyclical indicator, a number of definitional and conceptual prob-

lems preclude its use as a gauge of risks to financial stability. More generally, it appears that monetary policy, as distinct from regulatory policy, is too blunt a tool to be useful in preventing debt problems. However, when debt problems do surface, the Fed has a crucial role as a "lender of last resort."

Recent years have witnessed an increased **degree** of financial distress. However, this distress is for the most part a concomitant of sharp disinflation and major changes in the **sectoral** composition of output. It is not primarily the result of excessive financial leverage. If policies restricting growth in **nonfinancial** debt had been in place over the last five **years, they** would have exacerbated the costs of disinflation.

The second part of the paper examines the relationship between fiscal policies and debt problems. I **argue** that rapid increases in government debt burdens, such as those experienced recently in the United States, have potentially serious consequences for long-term economic growth because of their crowding out effects. They may also exacerbate the debt problems of the private sector by pushing real interest rates upwards and causing **sectoral** dislocations.

Beyond the effects of the total level of tax collections on the government deficit, the structure of taxation exerts an important impact on financial structure. Because much more interest paid is reported on tax returns and deducted than interest received is reported and taxed, the tax system works to encourage the issuance of debt. The tax incentive to issue debt for corporations at least is likely to be increased by the **tax** reforms currently under consideration. However, **tax** reforms that moved in the direction of consumption taxation could significantly reduce the tax incentive to leverage.

The paper concludes by arguing that concerns about the buildup of debt should occupy a prominent place on the microeconomic but not the macroeconomic policy agenda. Macroeconomic policies can best contribute to financial stability by trying to keep the real economy on an even keel. Reductions in federal deficits are especially important in this regard.

## Monetary policy, credit growth, and financial stability

The maintenance of financial stability has been a priority of the Federal Reserve since its inception. The current combination of disinflation, high real interest rates, financial deregulation, and severe **sectoral** dislocations has brought the problem of financial stability

into sharp policy focus. While monetary policy has traditionally focused on monetary aggregates and interest rates as intermediate targets in its efforts to ensure steady growth and price stability, attention has recently focused also on credit aggregates. Following demonstrations by **Friedman** (1982) that there had been a stable relationship over many years between the level of total domestic **nonfinancial** debt and nominal GNP and that the linkages between this credit aggregate and GNP was as close as the relationship between nominal GNP and the traditional money aggregates, the Federal Reserve in 1983 decided to set monitoring ranges for this aggregate.'
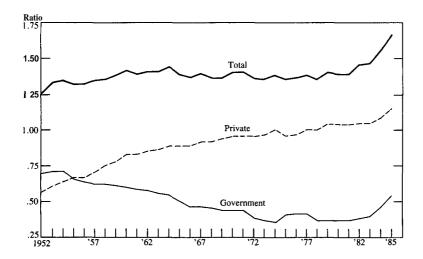
Since the Federal Reserve's announcement, the debt-GNP relationship has broken down. Over the last three years, nonfinancial debt has grown at an average rate of over 12 percent, exceeding the upper end of the monitoring range in each year. Since 1981, the ratio of **nonfinancial** debt to GNP has risen by 22 percentage points after varying within a 13 percentage point range over the whole of the 1952-80 period. The seemingly anomalous behavior of the debt aggregate and recent strains on the financial system raise obvious questions for policy. Does the unusual pattern exhibited by the debt-GNP ratio recently represent a cause for concern? Are changes in debt ratios likely to be useful forecasters of **future** financial problems? If so, what monetary policy response is called for? I take up these questions in turn.

Explaining movements in the debt-GNP ratio

Chart 1 illustrates the evolution of the total debt-GNP ratio over the 1952-85 **period,** along with movements in several of its components. The unprecedented movement in the total debt-GNP ratio in recent years is evident as is its remarkable stability over the 1952-80 period. **Friedman** (1982) noted the stability of the debt-GNP ratio and stressed that total debt appeared to be much more closely related to GNP than to any of its components. He went on to offer several hypotheses regarding the reasons for stability in the debt-GNP ratio. On the view that the debt-GNP ratio tends to revert toward some long-run equilibrium value, the recent sharp rise in the ratio is alarming. It

---

1 **Domestic nonfinancial debt is defined as the sum of the credit market instruments issued by federal government, state and local governments, business firms, and households. It does not include the obligations of financial intermediaries. For a fuller description of its measurement, see Friedman (1982).**

## CHART 1
### Debt Ratios Over Time



Ratio

presages either rapid inflation, tending to reduce the value of the debt relative to GNP, or a wave of defaults, tending to bring the value of outstanding debt back in line with GNP. Either would be a cause for serious concern.

Studying the chart with the benefit of recent experience suggests an interpretation of the evolution of debt and GNP that is less alarming than **Friedman's**. It may be that there has been a secular, relatively steady trend towards increased private sector indebtedness that only coincidentally was offset by a declining ratio of government debt to GNP up until 1980. On this view, there is nothing very surprising about the recent behavior of the total debt-GNP ratio. Increases in private debt have continued since 1980, but the long-term decline in the federal debt-GNP ratio has been reversed. And there is no particular cause for concern about the solvency of the private sector. To assess the validity of this alternative view, Charts 2, 3, and 4 present some evidence on trends in the ratio of household, business, and total private debt to GNP. In each case, the values during the mid-1980s are quite close to what would have been predicted on the basis of secular trends. There is no indication that either businesses or households have deviated from long-term patterns in recent years. The aberrant behavior of the ratio of total debt to GNP appears to be almost
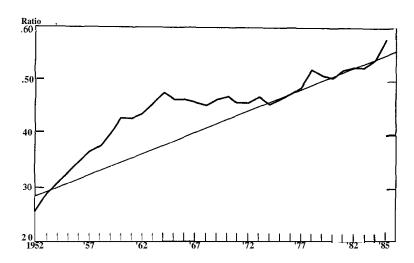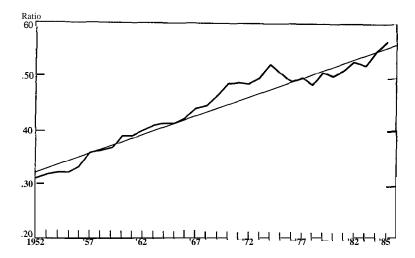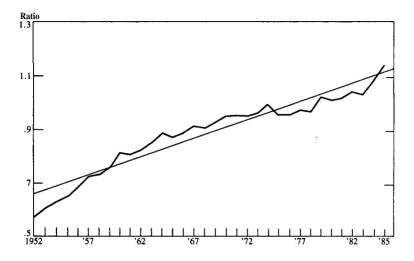
## CHART 2
## Total Household Debt/GNP



## CHART 3
## Total Business Debt/GNP

## CHART 4
## Total Private Sector Debt/GNP

Ratio



entirely the result of increases in federal borrowing. As I discuss below, the rapid growth of the national debt during the 1980s is a serious problem but not one closely related to the question of the financial stability of the private sector.

It could be argued that the conclusion that nothing unusual has happened to private sector indebtedness is misleading because one would expect, as **Friedman** originally argued, that increases in federal borrowing would curtail private borrowing. On this view, the failure of private: debt' ratios to grow less rapidly than normal in recent years should be a source of concern. An easy way to test this idea is to see whether there has been a tendency historically for increases in government debt'to be **offset** by reductions in private debt, once allowance is made for trends. **Table** 1 presents a number of regression equations for both the 1953-85 and the 1953-80 periods relating the private debt-GNP ratio to the federal government debt-GNP ratio, its lags, and a simple time trend.

The results suggest that there is no systematic historical tendency for increases in federal indebtedness to be **offset** by reductions in private sector indebtedness. Equations estimated through 1985 suggest that after controlling for the trend, increases in gwernment debt **are** actually

# TABLE 1
## The Relation Between Government and Private Debt Ratios

**1952-1985**

| GOVDEBT | GOVDEBT(−1) | GOVDEBT(−2) | TIME | RHO | $R^2$ |
|---|---|---|---|---|---|
| .281 | | | .013 | | |
| | | | | .834 | .981 |
| (.166) | | | (.003) | (.085) | |
| .466 | −.276 | | .012 | .780 | .980 |
| (.120) | (.242) | | (.002) | (.010) | |
| .572 | −.592 | .678 | .012 | .883 | .984 |
| (.178) | (.216) | (.195) | (.006) | (.079) | |

**1952-1980**

| GOVDEBT | GOVDEBT(−1) | GOVDEBT(−2) | TIME | RHO | $R^2$ |
|---|---|---|---|---|---|
| −.154 | | | .008 | .816 | .983 |
| (.229) | | | (.004) | (.096) | |
| −.038 | −.352 | | .005 | .784 | .981 |
| (.249) | (.231) | | (.004) | (.109) | |
| .228 | −.502 | .363 | .009 | .844 | .978 |
| (.323) | (.277) | (.290) | (.006) | (.109) | |

Note: The table presents regressions of total private debt on a constant, a time trend, and lags of total government debt. Total private debt and total government debt are expressed as a percentage of GNP. GOVDEBT(−1) and GOVDEBT(−2) are one and two period lags of total government debt. TIME is the coefficient on the time trend, and RHO is the AR(1) coefficient. Standard errors are in parentheses.

associated with increases in private debt. Even the equations estimated through 1980 do not reveal any statistically significant negative relationship between government and private debt accumulation. Moreover, the point estimates suggest that any effect of increases in public debt on private debt is relatively modest. Quite similar results are obtained from alternative specifications using logarithms of the debt ratio variables and various components of the private and government debt ratios. This evidence suggests that rather than there being a stable ratio of total debt to GNP, private sector debt has trended upwards

relative to GNP largely independent of the behavior of government debt.[2]

Such an empirical conclusion is consistent with received economic theory. There is little reason to expect stability in the ratio of private debt to GNP or to expect that it will be systematically negatively related to increases in federal debt. Leaving aside the foreign sector, which even today holds only a negligible fraction of total U.S. financial liabilities, private debt is a purely inside obligation. Increases in debt on one part of the private sector's balance sheet are tautologically related to increases in assets on another part of the balance sheet. The level of both assets and liabilities in the economy depends largely on the extent of intermediation in the economy, a variable about which economic theory makes few predictions.

Friedman, on the contrary, suggests a number of possible mechanisms through which the debt-GNP ratio might tend to be stabilized, relying alternatively on ultrarkionality, limits on collateral, and limits on the substitutability of assets in individual portfolios. Even on the unlikely supposition that households were ultrarational in the sense of David and **Scadding** (1974) and **Barro** (1974) and saw through the government sector fully, it is unlikely that they would reduce their liabilities dollar for dollar when the government issued debt. Rather, they would increase their asset holdings in anticipation of future **tax** obligations. Recall that the private sector as a whole cannot affect its wealth position by issuing less debt since private sector debt is a purely inside asset.

Nor is it likely that increases in government debt would reduce the private sector's ability to take on debt. Government debt surely represents **as** good collateral **as** any tangible assets that it might crowd out. It is hard to see why one should expect the private sector's willingness both to hold and issue debt obligations of the nonfinancial sectors to be reduced when government indebtedness rises. Any set of risk preferences that asset holders might have would presumably condition their net, not gross, holdings of financial assets and liabilities.

A fair conclusion seems to be that what has happened to the debt-GNP ratio in recent years is not surprising, given the fiscal policies

---

[2] Friedman (1982) emphasizes the stability of the debt ratio over periods much longer than the one considered here. The longer term evidence is however difficult to interpret. The debt-GNP ratio fluctuated substantially during the Depression and War years. Whether the similarity of its value in the 1920s and the post war period has structural significance or whether it is coincidental is difficult to judge.

followed by the federal government. Both empirical evidence and theoretical considerations support the judgment that' the **private-** sector's long-term trend toward increased indebtedness has continued largely independent of the actions of the federal government. Although the private sector's debt ratio has not behaved aberrantly in recent years, the question of whether its secular increase poses problems remains, as does the question of whether a policy response would be apropriate if it were to show large unexpected movements in the future.

### Financial stability and the credit aggregates

The debt ratio monitored by the Federal Reserve is the sum of all the debt issued by the nonfinancial sectors of the economy. In thinking about financial stability, it is clearly necessary to treat the debt issued by private households and firms and federal debt very differently. Only the former is plausibly likely to lead to financial distress. Therefore, I focus on the question of whether or not the ratio of aggregate debt to GNP for the household and business sectors is likely to be a very satisfactory proxy for future financial risks. I also consider the closely related question of whether, in an aggregate sense, the business and household sectors of the economy are overly leveraged.

The most obvious problem with using debt-GNP ratios to measure financial risks is that they ignore the asset side of the balance sheet. Careful evaluations of potential debt problems such as **Benjamin Fried**-man's contribution to this volume have long recognized the importance of simultaneously considering both sides of the balance sheet. Non-academic evaluations of financial stability have sometimes been less careful. Many types of transactions that are innocuous from the point of view of financial stability because they lead to equal increases in assets and liabilities will lead to increases in debt ratios. For example, if a corporation issues debt to fund its pension obligations, the measured debt ratio will increase with little consequence for financial stability. If corporations make increased use of bank as opposed to trade credit, their debt ratio will increase while financial stability is actually enhanced. If households borrow in order to take advantage of attractive investment opportunities, to make Individual Retirement Account contributions, or to engage in other forms of tax-favored savings, their measured debt will increase without important consequence for financial stability. A similar pattern will be observed if,

as has been the case recently, households make increased convenience use of credit cards. Without knowing why the debt to GNP ratio has moved, it is impossible to make inferences about financial stability.

While movements in the debt-GNP ratio need not have important implications for financial stability, it is also the case that developments with important consequences for financial stability are likely to leave little trace in debt-GNP ratios. When the assets of a sector decline in value relative to its liabilities, the risks of default are increased but the ratio of liabilities to GNP need not decline. This point is vividly illustrated by the farm sector of the U.S. economy. While financial distress is painfully evident, the ratio of farm sector credit market liabilities to GNP has declined by 25 percent over the last five years. The point is very general. Fundamentally, financial solvency has to do with differences between assets and liabilities. Measures that look only at liabilities are not likely to be especially useful in assessing financial risks.

While the debt-GNP ratio may at times move in tandem with the degree of financial distress, the preceding considerations suggest that it is hardly satisfactory as an indicator of the degree of distress. Examining net worth rather than total liabilities on a **sectoral** basis is likely to provide a much better indicator of the risks of financial distress. Viewed in this light, it is unlikely that recent increases in debt pose serious risks. The dramatic increase in the stock market over the past three years has improved the net worth of both the corporate and household sectors. Even making some allowance for differences in the distributions of assets and liabilities within sectors, it is hard to see how the risks of default could have increased a great deal recently. Indeed, the impressive feature of recent experience is that a period of sharp disinflation and unprecedentedly high real interest rates has been associated with so little financial distress outside of parts of the economy that have experienced adverse **sectoral** shocks.

A point of major concern in many discussions of financial stability has been the sharp increase in the use of junk bonds in recent years, particularly in the context of hostile takeovers. In assessing the risks posed by junk bond financing, two points frequently ignored in popular discussions should be recalled. First, the vast majority of junk bond financing has not been associated with hostile takeovers. The total volume of new issue high-yield debt grew from $1.7 billion in 1981 to $19.8 billion in 1985, while new issue debt for takeovers

was only **$1.6** billion in the first half of **1986.** In many cases, it is likely that junk bond financing was used by companies as a substitute for more expensive bank debt. In these cases, it probably enhanced financial stability. Second, as Jensen **(1986)** persuasively argues, in many cases where junk bond financing substitutes for the use of equity it improves capital market efficiency. Where fixed debt obligations constrain managers from investing in marginal projects, and so force more investments to meet market tests, they probably improve the allocation of investment in the economy.

The preceding discussion does not imply that current concerns about financial stability are wholly unwarranted. Strains on the financial system are an inevitable concomitant of the sharp disinflation of recent years. The agricultural and energy sectors of the economy, along with parts of the manufacturing sector, are in difficult straits. But these problems reflect the very large adverse demand shocks that have **buffetted** these sectors in recent years and the effects of high real interest rates more than they reflect a systematic pattern of overborrowing. There is little basis for generalized concerns about the excessive growth of private sector debt.

The point may be made in another way. Suppose that **policymakers,** either through direct credit controls or indirect monetary policies, had restricted the growth of debt in recent years. Marginal borrowers would have been rationed out of credit markets. No doubt, some would have failed. Others would have survived but cut back on new capital outlays, reducing the total level of demand in the economy. It is likely that restrictions on debt growth would have raised rather than lowered the costs of disinflation.

### Monetary policy and credit aggregates

It might be argued, however, that debt ratios, even if they are not useful predictors of financial distress, are useful in predicting movements in GNP. As a huge amount of econometric literature documents, there are literally hundreds of variables with some predictive power for GNP over some intervals. The crucial issue is whether or not there is a strong reason to expect movements in the debt ratio to have a causal influence on GNP. The financial distress arguments just considered would, if anything, tend to suggest that increases in the debt-GNP ratio would tend to precede downturns associated with financial problems.

On the other hand, arguments linking economic activity to credit availability such as those of **Wojnilower** (1980) and Blinder and Stiglitz **(1982),** would tend to suggest that increases in debt ratios should be associated with subsequent strength in GNP. If, as these authors suggest, various informational imperfections lead to credit rationing at relatively rigid interest rates, it **may** be necessary to look at the quantity of loans being made as well as their price to gauge the effects of monetary policy on the real economy. However, it is hard to see why credit availability doctrines would justify looking at an aggregate that included government debt and freely traded long-term **securities.** Credit availability theories would suggest investigating much narrower aggregates linked to the parts of the **financial** system where credit might plausibly be rationed. A measure of total bank credit would seem more suitable, but **Friedman** (1982) reports that the empirical evidence linking such measures to GNP fluctuations is very weak. On balance, there is no obvious reason for expecting movements in the total debt-GNP ratio to lead systematically either to booms or to busts.

All economic indicators contain some information that is useful in assessing the future course of the economy and in guiding policy. But the foregoing analysis suggests that the debt-GNP ratio is probably not an especially useful indicator for guiding monetary policy. Because it focuses on only one side of the balance sheet, it is unlikely to be a reliable predictor of either future financial distress or economic fluctuations. As the recent experience with monetary targetting has taught us, reliance on any simple aggregate is unwise. **Friedman** is correct in noting that conventional monetary aggregates also examine only one side of the balance sheet. Like credit aggregates, they do not provide a very satisfactory basis for conducting monetary policy.

One way to see the problem with making use of a credit aggregate in setting monetary policy is to consider a basic question. In which direction should the knowledge that debt growth has been rapid in recent years influence policy? To the extent that it occasions fears of spreading default, the appropriate macroeconomic policies are expansionary. To the extent that credit growth presages rapid growth in nominal GNP, unexpectedly, as **Friedman** argues has been true historically, large growth may call for contractionary policies to raise interest `rates and reduce debt growth.

This ambiguity sharply distinguishes credit and monetary aggregates. A finding that money has grown rapidly may or may not be an indication that policies to reduce its growth are in order, depending

on whether the money demand function is thought to have shifted. But it is difficult to imagine circumstances in which rapid past growth of money would suggest that more expansionary Federal Reserve policies were called for. On the other hand, rapid growth in the credit aggregates can easily occur in situations, where very expansionary policies are appropriate, because of the risk of financial panics.

As the example of the Depression makes abundantly clear, the Federal Reserve has a crucial role to play as lender or deposit insurer of last resort. Declines in confidence can be both contagious and self-fulfilling in a tightly knit financial system like that of the United States. The willingness of the Federal Reserve to act decisively to preserve confidence is crucial to the maintenance of stability. While crucial to stability, the willingness of the Federal Reserve and the government more generally to take actions to restore confidence in times of crisis no doubt encourages private sector risk-taking. This is part of the case, noted in the introduction, for regulatory policies directed at financial stability. It is very unlikely, however, that by tracking the debt-GNP ratio or any other financial aggregate that monetary policy can do much to maintain stability.

## The federal deficit problem

As Chart 1 illustrates, the behavior of the private sector in taking on debt during the 1980s has been consistent with long-term historical trends. On the other hand, recent years have seen a sharp departure from long-term trends in the behavior of the federal deficit. The downwards trend in the ratio of the national debt to GNP, which continued essentially without interruption during the 30 years following World War II, has been reversed in the 1980s. The ratio of outstanding government debt to GNP has risen sharply from 37 percent in 1980 to 53 percent in 1985, and is likely to continue to increase for the next two years even on very optimistic projections. It is this behavior that gives rise to the "Reagan parabola" in the graph of government debt-GNP ratio.
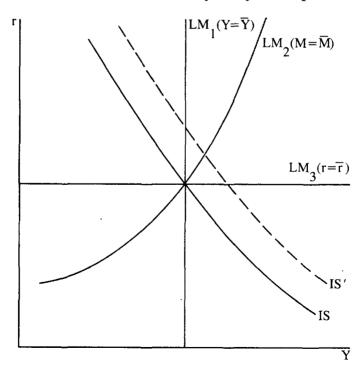
It is important to clarify the dimensions in which the federal deficit represents a serious economic problem. Unlike the debt of the private sector, federal debt has almost unlimited backing—the government's capacity to tax. The risk of explicit default by the federal government is not an important one for the foreseeable future. Nor is there much reason to fear that the private sector will lose confidence and become

unwilling to hold federal debt. Rather the continued growth in federal indebtedness is primarily a problem because of its impact in distorting the composition of GNP and reducing its growth in the long run. I begin by considering the federal deficit's impact on the level and composition of GNP and then suggest that through its effects on interest rates and the composition of economic activity, the federal deficit may indirectly exacerbate the debt problems of the private sector. The distorting effects of federal debt on the composition of GNP has probably caused more financial distress than the build-up of private debt in recent years.

### Federal deficits and the level of economic activity

Economists have long debated the pure effects of expansionary fiscal policies. Opinions have fluctuated through time, though it is fair to

**FIGURE 1**
**Fiscal Policy Effects**
**Under Alternative Monetary Policy Assumptions**

say that the consensus estimate of the fiscal policy multiplier has declined fairly steadily since World War II under the influence of increasing evidence of the interest sensitivity of aggregate demand and the interest insensitivity of money demand. The increasing **recognition** that expansionary policies lead to price increases has also contributed to reductions in estimates of the fiscal multiplier.

The relevance of these debates about pure fiscal policies to the analysis of actual deficit policies is questionable. The impact of deficits depends critically on what monetary policies accompany them. A homely analogy illustrates the point. Suppose one were interested in the effect of making a car more powerful on the speed at which it would be driven. What should be held constant, the **degree** of pressure the driver applies to the accelerator, the setting of the transmission, or the speed limit the driver respects? Clearly the question of the effect of a more powerful car on driving speed is meaningless without a specification of what is to be held constant.

**As** illustrated in Figure 1, the fiscal multiplier can vary between zero and quite substantial values, depending on what monetary policy holds constant in the face of deficits. If the Federal Reserve acts to maintain the level of nominal **GNP**, fluctuations in the deficit will have no effect on the level of output. On the other hand, if they act to maintain the level of interest rates, the multiplier is likely to be quite large. On the assumption that they maintain the level of the money stock, standard analysis suggests that the multiplier will have an intermediate **value.**[3]

Academic controversies about the effects of fiscal policy have centered on the magnitude of the multiplier on this last assumption that the money stock is held constant. It is far from clear that this is a very realistic assumption about the monetary policy response to changes in federal deficits in the current policy environment, where monetary policy is no longer directed at pegging the monetary aggregates? The difficult issue for the analysis of fiscal policy is

---

[3] **Mankiw** and Summers (1986) note that the standard analysis of the effects of **tax** induced deficits like those we are not experiencing depends on the implausible and empirically **unsup**-]ported assumption that income and not consumption is the proximate determinant of the transactions demand for money. If this assumption is not maintained, it is possible **for** the multiplier to be negative when the money stock is held **constant.**

[4] The relevance of the constant money assumption in the past is also highly questionable. In the pre-1970 period, monetary policy sought, at least to some extent, to peg interest rates. Even when monetary policy was explicitly tied to the monetary aggregates, the existence of fairly broad target ranges for the money stock and adjustments for base **drift** allowed for changes in the money stock in response to fiscal policies.

deciding what alternative reaction function is more plausible to use for monetary policy. My preference is for the assumption that the Federal Reserve seeks to maintain a nominal GNP target in the face of fiscal shocks. That is, it offsets any expansionary impact of deficits with contractionary monetary policies. This assumption is appropriate if monetary policy is selected to balance economic growth and inflation. Fiscal expansions that do not shift the tradeoff between inflation and growth will not lead to the choice of a different level of GNP.

Even if the assumption that the Federal Reserve acts to stabilize nominal GNP in the face of changes in deficits is not completely accurate as a predictive theory, it is still a useful benchmark for the analysis of fiscal policy. It permits isolation of the effects of deficits on the composition of GNP. In the long run, when wages and prices are flexible, these effects are likely to be the primary consequences of fiscal policies.

## Fiscal deficits and the composition of GNP

The effects of fiscal deficits on the composition of GNP are a subject of continuing controversy. If GNP remains constant following an increase in government deficits, some other component of spending, consumption, investment, or net exports must be crowded out. The conventional view embodied in most textbooks is that increases in government deficits—arising from tax cuts, for example—increase the demand for goods. If monetary policy maintains a fixed level of output, interest rates rise to choke off the additional demand created by deficits. Increased interest rates reduce investment demand. They also lead to capital inflows from abroad, which cause an exchange rate appreciation that, in turn, leads to increases in import demand and reductions in export demand.

This view of the effects of budget deficits has been challenged in recent years by Barro (1974) and a number of other authors. Their counterargument is often referred to as the Ricardian Equivalence Proposition.[5] They suggest that increases in budget deficits lead instead to reductions in consumption as households save in anticipation of future tax liabilities. Their argument runs as follows. In the long run, the present value of the government's tax receipts must equal the pre-

---

[5] While Ricardo laid out the argument, he concluded that it was unlikely to be valid in practice. My views on the Ricardian equivalence proposition are laid out in detail in Summers (1985), on which the subsequent discussion draws heavily.

sent value of its expenditures. Deficit-increasing reductions in taxes today, with expenditures held constant, necessarily entail increases in taxes tomorrow. The present value of the taxes that will be collected from consumers is unaffected by a tax change. This means that their wealth is unchanged and, therefore, that they should not alter their consumption decisions. Instead, households should save the whole of any tax reduction in anticipation of future tax liabilities. In this case, there will be no increase in the demand for goods and so interest rates will not rise when the government deficit increases?

Much of the discussion of the Ricardian Equivalence Proposition has centered on whether or not persons currently alive are likely to be able to use debt to impose burdens on future generations, thereby making themselves wealthier and leading to increases in spending. Proponents of the Ricardian equivalence view have stressed the possibility that any altruistic parents will tend to offset any burdens imposed on future generations by increasing their bequests. Skeptics have dismissed this possibility. In all likelihood, however, intergenerational transfers are not of great importance in determining the effects of changes in government deficits? The typical adult consumer has an expected life span of about 35 years. If the government runs a deficit, most of the burden of servicing the resulting debt will be borne in his lifetime. Hence, the opportunities for passing burdens on to future generations are relatively limited and so are unlikely to cause deficits to have large effects on consumption spending.

The most serious problem with the Ricardian Equivalence Proposition is its extreme assumptions about consumers' rationality in foreseeing future tax changes. Even where future tax changes have been legislated, consumers appear not to take account of them in making their consumption decisions. This is well illustrated by recent experience. In the summer of 1981, a three-year program of substantial reductions in income taxes was enacted and government spending was slashed. If consumers acted in a forward looking way, one would have expected consumption to surge immediately and then not to change much at all when the tax cuts actually took place. In fact,

---

6 **This analysis is exactly correct for the case of a change in taxes or a permanent change in government spending. The Ricardian equivalence view allows for the possibility that a transitory increase in government spending will affect national savings and interest rates in the short run.**

7 **The point made here is developed more fully in Poterba and Summers (1986).**

the personal savings rate was higher in **1981** when the tax cuts were anticipated than in **1982** and **1983** after they took place. Similar patterns have been observed when other **tax** changes were announced in advance. If consumers do not take account of **tax** changes that have already been legislated, it seems most unlikely that they consider tax changes that will ultimately be made necessary by government deficits.

While the Ricardian Equivalence Proposition seems implausible, its validity is ultimately an empirical question. More generally, in considering the effects of budget deficits, it would be useful to have estimates of the effects of deficits on each of the components of GNP. The starting point for an analysis of this question is the national income accounting identity:

**(1)** $D = G - T = PS + NFI - I$

where D represents the total government deficit, PS is private saving, NFI is net foreign investment, and I is domestic investment. This identity demonstrates that, with GNP held constant, increases in federal deficits must raise private savings, draw funds in from abroad by crowding out net exports, reduce investment, or have some combination of these effects. I estimate the effects of increases in deficits on the composition of national output by fitting reduced form equations of the type:

(2) $Z_{it}/GNP_t = a_i + b_i(D_t/GNP_t) + c(Cycle) + u_i$

where $Z_i$, $i = 1 - 3$ represent components of GNP and Cycie represents a vector of variables intended to control for cyclical conditions. The coefficients $b_i$ measure the extent to which deficits affect each national income component. In alternative specifications, Cycle contains controls for contemporaneous and lagged real growth, and for these variables and contemporaneous and lagged inflation? The equations are estimated by using the total government deficit as reported in the National Income Accounts. The sample period was **1950-1985.** The

---

[8] For estimates of a wider range of specifications over a slightly shorter sample period than used here with broadly similar results, see Summers (1986). Corroborating evidence from econometric model simulations is also reported. Because of the inclusion of cyclical controls, very similar results are obtained using either actual or cyclically adjusted budget deficits. With the annual data used here, the inclusion of lagged deficits also has little impact on the results.

# TABLE 2
## Deficits and the Composition of GNP

| | Real GNP Growth as Cyclical Control | Real GNP Growth and Inflation as Cyclical Controls |
|---|---|---|
| Investment | −.674 | −.605 |
| | (.088) | (.098) |
| Nonresidential | −.297 | −.299 |
| | (.075) | (.081) |
| Residential | −.272 | −.282 |
| | (.086) | (.086) |
| Inventory | −.143 | −.074 |
| | (.053) | (.047) |
| Private Savings | −.061 | −.019 |
| | (.113) | (.129) |
| Net Foreign Investment | −.320 | −.364 |
| | (.095) | (.108) |

Note: Coefficients indicate the effect of a $1 increase in the deficit of the federal government and state and local governments on the indicated variable. The estimated equations relate the percentage of GNP accounted for by the indicated sector to a constant, a time trend, the percentage of GNP of the combined budget deficits of the federal government and state and local governments, the contemporaneous and twice)lagged values of real GNP, and, for the second column, the contemporaneous and once)lagged value of the change in the GNP deflator. All equations are estimated for the period 1950-85 except for nonresidential and residential investment, which, due to data limitations, are only estimated for the period 1950-84. Standard errors are in parentheses.

equations are not corrected for autocorrelation in order to focus on the "low frequency" effects of budget deficits. Results are reported in Table 2.[9]

Both specifications produce similar results regarding the effects of budget deficits. Increased budget deficits calls forth only a negligable amount of extra private savings. Put differently, they crowd out only

---

9 The major difference in the results when a correction is made for autocorrelation is that deficits are estimated to have a large impact on savings and a smaller impact on net exports.

very little consumption expenditure. The data easily refute the prediction of the Ricardian equivalence view that deficits lead to dollar-for-dollar increases in private savings.

The estimates suggest that, historically, the primary burden of government deficits has fallen on private investment and net exports. Each dollar of deficit reduces investment by about 60 cents. The three components of investment, nonresidential, residential, and changes in inventories are reduced by approximately equal amounts—about 20 cents apiece.

The results also confirm the prediction that increased deficits crowd out net exports by attracting foreign capital inflows. However, the effect appears relatively modest; only about 25 cents of net exports are crowded out by each $1 increase in budget deficits. This is quite likely the result of the relatively long sample period used in the estimation. The coincidence of large budget deficits and large current account deficits at present suggests that, in the current flexible exchange rate environment, budget deficits have somewhat larger effects on net exports. Consequently, their effects on aggregate investment are probably somewhat smaller than these estimates imply.

These estimates confirm the conventional view that deficits have their primary impact on investment, with secondary impacts on the foreign trade sector of the economy and on private savings. For this pattern of responses to fluctuations in the deficit to be observed, deficits must tend to increase real interest rates. This suggests that deficits have potentially serious consequences for economic growth. In assessing these costs, it is important to recall that deficits are not an alternative to tax increases or spending cuts. Rather, they simply postpone these actions and increase the size of the adjustment that will ultimately be necessary.

## Federal deficits and financial stability

The arguments suggesting that federal deficits distort the composition of economic activity carry the implication that they may pose threats to financial stability. To the extent that they raise real interest rates, highly leveraged borrowers are put under increased financial pressure. The importance of this effect is difficult to gauge.

Probably more serious are the large sectoral dislocations associated with increased budget deficits. Financial health depends more on the balance sheet position of the worst-off parts of the private sector than

it does on the aggregate private sector balance sheet. Policies, such as those pursued recently, that lead to large shifts in the composition of output, increase the demand for some products at the expense of others. From the point of view of total demand, the shifts may be neutral but almost certainly the adverse shocks create more financial distress than the favorable ones alleviate. The financial distress of the agricultural sector of the economy, for instance, is in substantial part the result of the crowding out of agricultural exports by the strong dollar.

If this distress and many of the problems faced by the manufacturing sector are to be ameliorated, profitability needs to be enhanced. The most direct way of assuring this is reductions in federal deficits.

## Financial stability and the tax structure

The overall level of tax collections determines the level of the federal deficit **and** so has ramifications for financial stability through its effects on the composition of demand. Changes in the overall level of `tax` collections do not have a direct effect on the private sector's incentive to take on risky debt, but these incentives are directly affected by the structure of the tax system.

Table 3, drawn from the work of Eugene Steuerle (1985), illustrates a fundamental and little recognized feature of the tax system. Total tax collections on interest income are substantially negative in the United States. **Steuerle's** calculations suggest that in 1981 tax deductions for interest exceeded `tax` payments on interest income by almost $30 biilion.

This reflects primarily two factors. Most importantly, borrowers tend to be in higher tax brackets than lenders. For example, corporations, do a great deal of borrowing while a substantial amount of debt is held by tax-exempt organizations, pension funds, and other tax-favored savings vehicles, and foreigners, none of whom pay taxes on interest income. Moreover, underreporting appears to be much more serious for interest income than for interest deductions.

The fact that total interest tax collections are negative means that the tax system is subsidizing the use of debt finance. When a transaction can be structured in a way that enables a high-bracket taxpayer to make and deduct interest payments to a low or zero-bracket taxpayer, the Treasury loses revenue. Transactions that can be structured this way are therefore subsidized. Tax arbitrage can account for the way in which many transactions are structured.

# TABLE 3
## Estimated Taxes Paid on Interest Income in 1981
### (billions of dollars)

| Type of Payer or Recipient | Taxes Paid |
|---|---|
| Interest paid: | |
|   Nonfinancial corporations | −48 |
|   Sole proprietors and partnerships | −18 |
|   Other individuals who pay interest | −31 |
| | |
| Interest received: | |
|   Nonfinancial corporations[a] | 19 |
|   Individuals[b] | 38 |
|   Businesses[c] | 7 |
|   Financial intermediaries | 4 |
| | |
| Total | −29 |

Source: C. Eugene Steuerle, "Tax Arbitrage, Inflation and the Taxation of Interest Payments and Receipts," *Wayne Law Review,* vol. *30* (Spring 1984), p. 1007, as reprinted in Steuerle (1985), *Tares, Loans and Inflation,* p. 55.

[a] Includes a small amount from financial noncorporate business
[b] Includes receipts of estates and trusts
[c] Services to businesses

## *Taxes and corporate debt equity decisions*

An obvious example is provided by the issuance of corporate debt.[10] For simplicity, consider initially a corporation whose future stream of profits is riskless. It is clear in this case that, in the absence of tax considerations, the labelling of claims on the corporation as debt or equity will be a matter of complete indifference. But the choice of a means of finance is consequential, given the tax system. When the firm relies on equity finance, its cash payments to shareholders are not deductible. But, when it relies on debt finance, interest payments to bondholders are tax deductible. If the taxation of debt and equity income at the individual level were identical, individuals would require the same rate ,of return on both debt and equity

---

10 The discussion here explicates the so called "Miller Model" of the determination of corporate capital structure. **See** Miller (1977) for more details.

securities. In this case, corporations would all rely on debt finance. However, equity is tax favored at the individual level because capital gains are taxed preferentially. This means that individuals will require a higher pretax rate of return on debt than on equity, with the differential depending on their tax bracket.

The ultimate debt-equity ratio actually selected by corporations will depend on the **tradeoff** of the tax advantages to deducting debt at the corporate level, against the tax advantages of holding equity at the individual level, and any associated **bankruptcy** risks. Under current tax rules, there are few if any taxpayers for whom the tax advantage to holding equity securities exceeds the corporate advantage to being able to deduct interest payments. Therefore, debt-equity result largely from a balancing of the tax advantages to debt finance against the associated risks. In the absence of the tax advantage to debt, corporations would **find** it profitable to issue less debt and take on fewer risks.

I have highlighted the effects of the tax system on the choice of corporate debt-equity ratios. Similar logic may be applied in other situations. Consider a stock trader considering margining his holdings to purchase more stock. If the interest deductions he receives were exactly matched by interest taxes paid by the holder of his debt, the issuance of debt would have no effect on total tax collections and the tax system would provide no inducement to leverage. All the tax savings provided by the deductability of interest would be offset by the higher interest necessary to compensate debt holders for their tax burdens. On the other hand, if, as Table 3 suggests, debt issuers are typically in higher tax brackets than debt holders, the tax system provides an incentive to leverage. The crucial point parallels the analysis of corporate debt-equity ratios. The tax incentive to debt depends on the difference between the tax rates of borrowers and lenders. Because this difference is normally positive, the tax system provides incentives for the private sector to take on more leverage than it otherwise would.

It is difficult to gauge the quantitative significance of tax incentives on private sector financing decisions. One piece of evidence suggests, however, that it may not be very large. The last decade has seen reductions in **tax** rates on individuals, expansions in the availability of tax sheltered savings, and sharply higher interest rates, all of which should have provided significant impetus to the use of debt. But as Charts 2, 3, and 4 illustrate, there has been little or no acceleration

in the long-term trend towards the increased use of debt over this period.

### *Tax reform and financial stability*

It is unlikely that the tax incentives toward the increased use of private debt will be reduced very much by the tax reform package currently working its way through Congress. While tax reform will reduce marginal tax rates on both firms and individuals, it is unlikely to reduce the difference between the tax rate on borrowers and the tax rate on lenders by very much. Indeed, because the corporate rate will rise relative to the rates of tax on high-income individual tax-payers, it is likely that the incentive for corporations to issue debt will be increased. This effect will be enhanced by increases in capital gains taxes, which will make equity securities less attractive. Reductions in after-tax corporate profits will reduce internal finance and so will also tend to raise reliance on debt.

While whatever tax reform bill is passed is likely to contain limits on the deductability of interest for various purposes, it is far from clear that these will, in fact, bind for many taxpayers. Many will find it easy to rearrange their borrowing—by increasing their home mortgage for example—and so avoid any limits contained in the law.

To reduce the tax incentive to use debt finance, it is necessary to reform the tax system to narrow the spread between the rate at which interest is deducted and taxed. This is likely to be very difficult within the context of an income tax system that exempts a great deal of interest income from taxation. Reforms that move in the direction of a consumption tax and disallow all interest deductions probably offer the best hope of reducing the tax incentives favoring debt finance. But such reforms are not likely to be enacted in the near future.

## Conclusions

This analysis of debt problems and their interaction with macro-economic policies suggests that ensuring financial stability is primarily a microeconomic policy problem. There is relatively little that aggregate fiscal or monetary policies can do to insure financial stability other than trying to maintain economic stability. Nor, despite widely expressed concerns about the increases in various debt ratios, is there cause for generalized concerns about excessive leverage at present. Given the economic record of the past decade, aggregate private sector balance sheets appear surprisingly healthy. The problems that exist

are largely **sectoral** and so call for microeconomic rather than macroeconomic remedies.

While financial stability is not a critical **macroeconmic** policy problem at the present time, there is a compelling case to be made for reducing government budget deficits. Budget deficits have little effect on the overall level of output in the current policy environment but badly distort the composition of output away from the investment and export sectors of the economy. The longer the delay until action is taken to reduce deficits, the larger will be the tax increases or spending cuts that will ultimately be required. Prompt action to reduce federal deficits would enhance both financial stability and economic growth.

# References

Barro, Robert J. (1974), "Are Government Bonds Net Wealth?" *Journal of Political Economy,* November/December 1974, 82, 1095-117.

Blinder, Alan S. and George E. Stiglitz (1983) "Money, Credit Constraints, and Economic Activity." *American Economic Review,* May 1986, pp. 297-302.

Center for a New Democracy (1986), *Fix the Roof While the Sun is Shining,* Center for a New Democracy, Washington, D.C.

David, Paul A. and John L. Scadding (1974), "Private Savings: Ultrarationality, Aggregation, and "Denison's Law." *Journal of Political Economy,* Part *I,* March-April, 1974, 82(2), pp. 225-49.

Friedman, Benjamin M. (1982), "Debt and Economic Activity in the United States", Friedman, (ed.) *The Changing Roles of Debt and Equity in Financing US. Capital Formation.* University of Chicago Press, Chicago.

Jensen, Michael C. (1986) "Agency Costs of Free Cash Flow, Corporate Finance and Take-overs", *American Economic Review,* May 1986, pp. 323-329.

Kaufman, Henry (1986), *Interest Rates, the Markets, and the New Financial World,* Times Books, New York.

Mankiw, N. Gregory and Lawrence H. Summers (1986), "Money Demand and the Effects of Fiscal Policies," forthcoming in *Journal of Money, Credit and Banking,* November.

Miller, M. H. (1977), "Debt and Taxes", *Journal of Finance,* Volume 32, Number 2, May.

Poterba, James M. and Lawrence H. Summers (1986), "Finite Lifetimes and the Crowding Out Effects of Budget Deficits" Working Paper 1955, National Bureau of Economic Research.

Steuerle, C. Eugene (1985), *Tares Loans and Inflation: How the Nation's Wealth Becomes Misallocated.* The Brookings Institution, Washington, D.C.

Summers, Lawrence H. (1985), "Issues in National Savings Policy" Working Paper 1710, National Bureau of Economic Research.

Wojnilower, Albert M. (1980), "The Central Role of Credit Crunches in Recent Financial History" *Brookings Papers on Economic Activity,* No. 2.