takeovers and leveraged buyouts made more efficient and thus have improved its ability to pay debts, leading to a decrease in federal debt. Federal debt, however, is only one part of the overall economic picture. When looking at the broader context of economic activity, it becomes clear that the economy is growing at a rate of 6% faster than it was in 1982. This rapid growth has led to an increase in the demand for credit, as more people and businesses are looking to borrow money to finance their economic activities. The Federal Reserve has responded to this increase in demand by raising interest rates, which has made it more expensive for borrowers to take out loans. The Fed has also been increasing the size of its balance sheet, which has led to an increase in the money supply.

The Federal Reserve Bank of Cleveland has been monitoring this situation closely. They have been tracking the nonfinancial debt (DNFD) and have found that it has been growing at a much faster rate than nominal gross national product (GNP). This has led to a significant increase in the ratio of DNFD to GNP, which has implications for the stability of the economy.

The Federal Reserve has been using DNFD as an intermediate target in its monetary policy framework. This means that they have been trying to keep the growth rate of DNFD within certain target ranges. They have also been using short-term interest rates as a guide to policy action. The Fed has been raising short-term interest rates in order to reduce the demand for credit and to slow down the growth of DNFD. This has led to a decrease in the money supply, which has helped to bring down inflation.

Despite these efforts, inflation has continued to be a concern. The Federal Reserve Bank of Cleveland has been monitoring this situation closely and has been making adjustments to its monetary policy as necessary. They have been using a combination of short-term and intermediate targets in their policy framework, which has helped to keep inflation in check.

In conclusion, the Federal Reserve Bank of Cleveland has been monitoring the nonfinancial debt (DNFD) and has found that it has been growing at a much faster rate than nominal gross national product (GNP). This has led to a significant increase in the ratio of DNFD to GNP, which has implications for the stability of the economy. The Fed has been using DNFD as an intermediate target in its monetary policy framework and has been using short-term interest rates as a guide to policy action. Despite these efforts, inflation has continued to be a concern, but the Federal Reserve Bank of Cleveland has been making adjustments to its monetary policy as necessary in order to keep inflation in check.

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DNFD was a reasonable variable to consider as an intermediate target for monetary policy. It also suggested that relatively small changes in DNFD might be associated with steady growth in nominal GNP. This latter view is analogous to that of Friedman and Schwartz (1963), who built an extensive argument for a monetary target similar to the stability of the velocity of money.

Benjamin Friedman (1981) applied a variety of empirical methodologies along the lines of Friedman and Schwartz to argue an equally "persuasive" case for the importance of debt in explaining changes in nominal economic activity. Their central thrust of this case was to document and explain the relative stability of the ratio of DNFD to nominal GNP from 1953 to 1980. Overall, Friedman found that changes in DNFD explained changes in nominal GNP at least as well as alternative measures of money, including the monetary base.

While DNFD fared well in empirical comparisons with money, the relationship of DNFD to GNP lacked the same theoretical basis as the underlying models of money demand. Models for the demand for transactions balances had been developed on the principles of individual behavior. In lieu of such rigorous underpinnings for debt, Friedman sought alternative explanations for the stable pattern. Each of these explanations relates the observed stability of the DNFD-to-GNP ratio to the savings and consumption patterns of individuals.

Total consumption and savings in the economy tend to remain fairly constant in proportion to income over time because individuals like to smooth their spending over their lifetime (Pratt, 1967). This tendency to undersave their income (dissave) in their youth will tend to borrow more raises the stability of debt. Friedman argues that the increase in tangible assets would, in turn, provide additional collateral for the stage of their life where they might save more (less) when government would reduce its liabilities-owed relative to the size of the economy. This factor, in turn, undermines the stable relationship between wealth and income that was assumed in the explanations offered for the stability of DNFD/GNP.

Alternatively, the increase in business borrowing may reflect cyclical factors, a significant amount of which may be induced by tax-related incentives that may account for its longer-term upward trend. Finally, the public debt in recent years has been acquired from business for tax purposes, but no dividends. This, in effect, is an opportunity cost a consequence of the lengthening "free" debt created as this form of financing, have made corporate financial managers more likely to exploit the tax advantages of debt. While these tax incentives have existed for many years, the recent spate of mergers and leveraged buyouts reflects, in part, other bases for perceived arbitrage opportunities. Many of these takeover targets were viewed as undervalued, particularly before the recent surge in interest rates, or as possessing a competitive advantage that developments in financial markets, such as the trend toward junk bond financing, have made corporate.


Small changes in consumer behavior that do not change the amount of debt relative to income would not respond to the stability of the wealth-to-income ratio that account for the stability of the ratio. The greatest impetus in private borrowing came from the household sector, with interest rates in nonfinancial debt and a surge in consumer installment credit. The rise in household mortgage debt was not particularly large when viewed against comparable stages of the business cycle. The pace of consumer installment credit since 1980 has, on the other hand, exceeded that of any period since World War II. This appears attributable to several factors. First, households have increasingly expanded their use of credit cards for their consumption transactions, as opposed to spending in excess of their incomes. Many credit card users pay off their new balances in full each month, thereby avoiding interest charges. The additional "free" debt created as this form of usage increases is more like a transaction balance than debt, and adds nothing to the government's "true" debt, as opposed to spending in excess of their incomes. Many credit card users pay off their new balances in full each month, thereby avoiding interest charges. The additional "free" debt created as this form of usage increases is more like a transaction balance than debt, and adds nothing to the government's "true" debt. The consumption-expenditure side of the balance sheet for the government would be unaffected by an increase in the credit usage, since it is recorded as an increase in transactions and not as an increase in debt. The government would receive the profits that arise from the transaction, and the government's "true" debt would remain unchanged.

4. Warshawsky (1986) presents theoretical evidence that reducing the portion of the US government deficit that is supported by creditors' expectation of future tax payments would increase government borrowing, thereby lowering federal interest rates. The general equilibrium effects of increased government borrowing and decreased interest rates are ambiguous, but evidence suggests that increases in government borrowing may lead to increases in overall economic activity.

5. The resurgence of growth in Federal debt after 1982 can be attributed to several factors. First, government has increased its use of tax credits and other incentives to encourage business investment. Second, the government has increased its use of debt to finance the cost of government programs. Finally, the government has increased its use of debt to finance the cost of government programs.
DNFD was a reasonable variable to consider as an intermediate target for monetary policy. It also suggested that relative stability in the demand for transactions DNFD might be associated with steady growth in nominal GNP. This latter view is analogous to that of Friedman and Schwartz (1963), who built an extensive argument for monetarist policy to maintain the stability of the velocity of money. 

Benjamin Friedman (1981) applied a variety of empirical methodologies along the lines of Friedman and Schwartz to argue an analogously constant in proportion to income individuals. The steady growth in nominal GNP that has been derived from principles of individual behavior, in lieu of such rigorous underpinnings for demand, B. Friedman was careful to review alternative explanations for the stable pattern. Each of these explanations relates the observed stability of the DNFD-to-GNP ratio to the savings and consumption patterns of individuals.

Total consumption and savings in the economy tend to remain fairly constant in proportion to income over time because individuals like to have their convenience use of credit cards helps to save. Friedman suggested that explanations for the stability of DNFD-to-income ratio could be related to the stable savings ratio in different ways. His first explanation alleged that individuals "see through the shell" of both corporations and government. If corporations save more (less), individuals ad flush by saving more (less) from their wage income to keep the private saving ratio and hence the amount of net debt relative to income constant. This seems reasonable because individuals ultimately own the corporations and receive the profits that arise from corporate saving, that is, the returns (from corporate investment. Consequently, individuals could view corporate savings as their own.

The "see-through-the-shell" argument is more controversial as it applies to government debt. Essentially, it is assumed that the public in some way seeks to maintain a constant level of liabilities-owned relative to national income. The result is that it is the amount of private borrowing that adjusts to changes in government borrowing, not private saving. This hypothesis presumes individuals have a strong bequest motive. If individuals save, in part, to leave wealth for their heirs, the growth in might save more (less) when government debt rises (falls) in order to offset the effect of the increase (decrease) associated with the debt. This would affect the private savings rate in a manner that would offset federal government saving. While this latter view seems to be supported by the historical patterns of principles of individual behavior, it is nevertheless inconsistent with the relationship of the DNFD-to-income ratio and the steady growth in nominal GNP.

Friedman's second explanation argued that the stability in the debt is limited by the availability of tangible assets that provide collateral for the debt. This explanation suggests that if individuals regard government debt (which they hold in their portfolios as part of their consumptive wealth, that is, they do not associate with government debt. If the government were to reduce its debt, individuals would reschedule their portfolios, acquiring more tangibly backed debt instead of government saving. Friedman argues that the increase in tangible assets would, in turn, provide additional protection against which consumers and firms could borrow. Thus, private debt could increase at the same rate as government debt decreased.

Friedman's third explanation assumed that the public held both debt assets and nondebt assets in its portfolios, each in proportion to income. As the debt burden increased, the debt outstanding relative to income. The result is that it is the amount of private borrowing that adjusts to changes in government borrowing, not private saving. This hypothesis is in conflict with another popular hypothesis that suggests that interest rate-demands by households that money-demand hypotheses, enjoy, and none have independent empirical support in the form of demand equations. Indeed, based on other research, Friedman was careful not to suggest relying too much on DNFD for, that matter, on any one financial variable for policy purposes. This caution was well advised; after 1982, the link between DNFD and GDP no longer seemed viable.

DNFD Since 1982

As stressed above, the reported growth ranges for DNFD are for estimating government saving in an economy in which both target ranges are not selected. That is, the Federal Reserve attempts to anticipate its growth in real GDP that would not respond to movements outside the stated ranges. This is the primary monitoring experience that the acceleration of debt growth was largely unanticipated. This pattern, which has persisted since 1983, as monitor ranges were first announced, actual DNFD growth continued to fall below the upper bound of the range. This largely reflects an unanticipated disturbance to a seemingly stable relationship between debt and income. The most striking aspect of this change is that private and government debt components are related in relation to income.

The large increases in federal debt relative to the size of the economy are largely a result of the Economic Recovery Tax Act (ERTA) of 1981, a tax cut that increased the growth rate of tax revenues. Large tax cuts were instituted with the intention that they would bring about subsequent spending reductions in nonmilitary programs, as well as acceleration of economic growth. While the movement in tax incentives that has sharply reduced the size of the economy, the result is that it is the amount of private saving that adjusts to changes in government borrowing, not private saving.

The pace of consumer installment borrowing from the household sector, with interest rates in nominal debt and a surge in consumer installment credit. The rise in household mortgage debt was not particularly dramatic when viewed against comparable stages of the business cycle. The pace of consumer installment debt since 1986 has, on the other hand, exceeded that of any period since World War II. This appears to be attributable to several factors. First, households have increasingly expanded their use of credit cards for their convenience in transactions, as opposed to spending in excess of their incomes. Many credit card users pay off their balances in full each month, thereby avoiding interest charges. The additional "free" debt created as this form of usage increases is more like a transaction balance than debt, and adds nothing to the personal balance sheets of households.

However, household contributions to the acceleration in consumer debt may be a consequence of the lengthening in the maturity of debt. For example, an increasing number of new car buyers have been choosing the five-year loan that currently is the most common three-year loan, thus extending the average maturity of this debt, for example, to 5.2 years. The increase in car debt burden, the monthly interest and principle payments, has not increased as rapidly as debt because monthly payments are reduced (assuming cars last longer).

Third, demographic factors probably could also have contributed to the upward movement in consumer installment credit. The movement of baby boom generation members into the stage of their life cycle where they tend to borrow more raises the aggregate level of borrowing in the economy. This factor, in turn, undermines the stable relationship between debt and income, as assumed in the explanations offered for the stability of DNFD/GNP. Although the increase in consumer debt may reflect cyclical factors, a significant amount of the increase in consumer debt may be a consequence of demographic factors, such as changes in consumer expectations for debt burden, as assumed in the explanations offered for the stability of DNFD/GNP.

The movement of domestic credit beyond the range of the government has been consistent with the Federal Reserve's efforts to monitor debt trends. In each of the years 1983, 1985, 9.0 to 12.1, and 1986 9.0 to 11.0, debt growth exceeded that of any period since World War II. This appears to be attributable to several factors. First, households have increasingly expanded their use of credit cards for their convenience in transactions, as opposed to spending in excess of their incomes. Many credit card users pay off their balances in full each month, thereby avoiding interest charges. The additional "free" debt created as this form of usage increases is more like a transaction balance than debt, and adds nothing to the personal balance sheets of households.

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Another factor contributing to the rise of mortgage debt was not particularly dramatic when viewed against comparable stages of the business cycle. The pace of consumer installment debt since 1986 has, on the other hand, exceeded that of any period since World War II. This appears to be attributable to several factors. First, households have increasingly expanded their use of credit cards for their convenience in transactions, as opposed to spending in excess of their incomes. Many credit card users pay off their balances in full each month, thereby avoiding interest charges. The additional "free" debt created as this form of usage increases is more like a transaction balance than debt, and adds nothing to the personal balance sheets of households.

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takesover and leveraged buyouts much easier to accomplish and, therefore, may have induced an acceleration in business debt above its longer-term trend rate.

The apparent increase in debt of state and local governments since 1982 is essentially a consequence of double counting. In recent years, state and local governments have increasingly assumed the role of financial intermediaries, i.e., borrowing funds directly at tax-exempt interest rates and making the proceeds available to other borrowers (several private issuers). Late last year, the House tax bill threatened to significantly limit the incentives leading to this kind of intermediation. By law, many state and local governments came to market early to avoid missing opportunities that they thought would be taken away January 1, 1986.

Flush with additional funds, these issuers invested the surplus amounts enduringly in a wide spectrum of U.S. government and agency issues. Over $60 billion of the debt was represented were U.S. government securities. Private assets acquired through mortgage bonds and student loan bonds were sold off.

Because state and local government issuers are essentially active as financial intermediaries—buying federal debt—much of their debt should not be counted in DNFD, that is, as nonfinancial debt. Because it is, however, federal debt is counted both directly as a federal liability and indirectly as "financial" debt of state and local governments. In fact, since 1982, the buildup in state and local debt has been associated with an even greater buildup in credit market assets held by state and local governments. The nonfinancial component actually declined.

It seems evident in DNFD behavior since 1982 that the recent spate in financial innovation has not been selectively in its disruption of seemingly reliable relationships between financial measures and ultimate targets of policy. As has occurred with measures of money, DNFD has deviated significantly from its historical relationship with economic activity. The disruption of the debt relationship was probably also affected by the recent surge in federal government budget deficits.

And so the more strongly the nature of the ratio, DNFD/GNP, before 1982 is perhaps even more curious than ever before. It would appear that the insuring down of federal debt from its World War II buildup coincidentally equal the rise in private debt over the same period. This is an interesting comparison of factors that accounted (albeit more intensively) for the recent surge—such as convenience in the use of credit, tax arbitrage, etc.—also accounted for the upward trend in private debt before federal debt began to balloon.

### Policy Implications

When first announcing annual growth ranges for DNFD, the Federal Reserve made the distinction between monitoring ranges and target ranges. The growth rate for DNFD was a monitoring range, while the growth ranges for money measures had typically been target ranges. This indicated that deviations in debt from its expected path would be weighed heavily in the policymaking process compared to money measures, particularly M1. In fact, with the breakdown in the relationship between money and income, the Fed has placed less reliance on M1 as a short-term guide to policy. For much of the period since 1982, no one financial measure has proved to be reliable enough to be a sole short-term policy guide.

In retrospect, the reluctance to rely much on a credit measure as a guide for short-run policy actions appears appropriate. The monitoring range in DNFD has not been followed by as massive rapid growth in nominal GNP, as would be suggested by the simple historical relationship, linking DNFD to economic activity, and strong empirical support for the framework, it seems unlikely that DNFD will provide information about the economy that is sufficiently reliable for predicting near-term growth in real GNP.

Over a longer horizon, however, the continued trend of DNFD/GNP cannot be assumed when viewed in the context of serious economic consequences. If debt were to continue to grow around 6 percent of GNP, as it has since 1982, then sometime early next century, the public would be forced to borrow the equivalent capital of the entire gross national product simply to pay the interest on the debt. In view of the longer-term concern, it seems appropriate to continue to monitor DNFD growth, despite its limitations as a short-term policy guide.

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The Federal Reserve is required by the Federal Reserve Act of 1978 to report to Congress annually estimated changes in the broader DNFD measure, particularly M1, which historically served as the primary guide for monetary policy. Recently, however, measures of credit have received more attention by researchers.

In 1983, the Federal Reserve began reporting to Congress expected annual growth ranges for domestic nonfinancial debt (DNFD), the aggregate net indebtedness of all nonfinancial borrowers in the United States. In addition to reporting annual ranges, the Federal Reserve Bank of Cleveland. The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or the Federal Reserve System. The Federal Reserve Bank of Cleveland is an Equal Opportunity Employer.

### Domestic Nonfinancial Debt: After Three Years of Monitoring

by John Carlson

With the breakdown in the relationship of money to the economy, it would seem that credit might assume a greater role in the determination of monetary policy. However, the behavior of DNFD has also been unusual in comparison with the historical pattern. In the 30 years prior to 1982, DNFD tended to grow in proportions to nominal GNP. Since 1982, DNFD has tended to grow much more rapidly than nominal GNP.

In this Economic Commentary, we examine the recent behavior of DNFD in relation to its historical pattern. Likely factors accounting for the recent surge in debt are discussed. The implications of this large increase in the role of DNFD in the determination of monetary policy are also examined.

### Debt and Nonfinancial Economic Activity: 1946-1982

Chart 1 displays the virtually trendless pattern of total debt, relative to GNP, that has been evident in its major components. While the Federal Reserve ran budget surpluses in the late 1980s, debt was both stable and nonfinancial debt remained stable despite the disparate trends in money and nominal GNP. The Federal Reserve, therefore, did not induce policy actions with the ultimate objectives thus far. In 1983, the Federal Reserve began reporting annual ranges for DNFD, and, therefore, provide more timely information about both the state of the economy and the consistency of policy actions. The effects of monetary policy on ultimate targets have not been as fully realized as those affecting the behavior of financial measures watched by the Federal Reserve. It is widely understood in financial markets that financial innovation and deregulation, in conjunction with declining interest rates and

### Financial Variables as Intermediate Targets

One obvious advantage of an intermediate target is to provide guidance for policy action. The effects of monetary policy on ultimate targets (e.g., changes in interest rates and prices) are both slow and uncertain. While not itself an ultimate concern of policymakers, a financial variable target can usually be measured more quickly and frequently than ultimate targets. For example, a measure of short-term money market rates and, therefore, provide more timely information about both the state of the economy and the consistency of policy actions. Unlike a measure of short-term money market rates and, therefore, provide more timely information about both the state of the economy and the consistency of policy actions. Unlike a measure of short-term money market rates and, therefore, provide more timely information about both the state of the economy and the consistency of policy actions.