The Decline in Personal Saving

The low rate of personal saving in the United States has received much attention in recent years. Though the savings data have been revised upward, current levels of the personal savings ratio in recent years are disappointing relative to past performance.[1] The personal savings rate fell sharply after the 1973-75 recession and has remained far below its postwar average. In fact, the United States savings rate ranks among the lowest of all industrialized countries (Chart 1). The savings decline has prompted a variety of explanations and has raised a number of questions. Has the rapid influx of younger and possibly less thrifty workers into the labor force caused a reduction of national saving? Might a growing underground economy distort the savings statistics? Though a full accounting of the savings slump is difficult to construct, one development —the rapid inflation of recent years—appears to be a primary cause. Faced with a rapidly rising price level, households have apparently been discouraged from accumulating financial assets.

The weakness in personal saving implies that less funds are available for business investment and accordingly most discussions focus solely on this narrow measure of the financing available for total capital formation. Household saving takes other forms, however, such as expenditures on education and investments in consumer durables. Moreover, households are not the only source of saving for the economy. The corporate sector, for example, saves in the form of retained earnings and allocates funds for research and development. More inclusive measures of saving, while not available on a year-to-year basis, help keep the role of households' accumulation of financial assets in perspective. In the area of education, for example, the United States appears to outperform most of its major trading partners. On the other hand, some sources of economic growth, such as research and development, have tended to weaken during the 1970s. The current financial savings slump, therefore, is not the only dimension of the United States savings problem.

Sources of saving in the United States

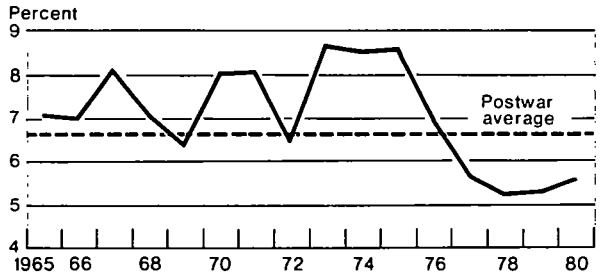
Personal saving is calculated by deducting consumer outlays from aftertax income. In 1980, households saved 5.6 percent of their aftertax income, generating saving of over $100 billion. Most of this saving took two forms—net financial investment and net purchases of housing. Financial investment includes additions to personal cash holdings, demand and time deposits, stocks and bonds, and saving in pension funds. Net financial investment is calculated by subtracting increases in household liabilities—such as home mortgages and consumer credit—from financial investment. Net housing investment includes purchases of new homes and improvements on existing homes minus the value of wear and tear on existing homes. Housing investments are counted as saving because a house yields a stream of services over a long period of time.

Housing, of course, is not the only long-lasting good purchased by households. Many other products such as autos, appliances, and furniture last for several years In fact, purchases of consumer durables are treated as saving in the flow-of-funds accounts con-

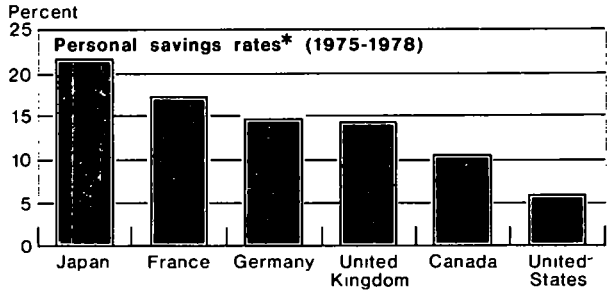
[1] See Deborah Jamroz, "Highlights of the Recent National Income and Product Account Revisions", this *Quarterly Review*, pages 18-20

Chart 1

The United States personal savings rate has fallen dramatically in recent years . . .



. . . and ranks among the lowest of all industrial countries.



*Due to discrepancies in data collection, international savings rates are not exactly comparable

Sources United States Department of Commerce, Survey of Current Business, International Trade Administration

structed by the Board of Governors of the Federal Reserve System In 1980, net purchases of consumer durables—expenditures less estimated wear and tear —totaled $33 8 billion, about 1 9 percent of aftertax income If we add these purchases to the national income estimate of personal saving, the fraction of aftertax income that Americans saved in 1980 rises from 5 6 percent to 7 5 percent

Net purchases of consumer durables and net investments in housing became important components of total household saving early in the 1976 recovery (Chart 2; table).[2] The net accumulation of consumer durables increased from 1976 to 1978, and net housing investment rose during the same period. Meanwhile, financial saving fell sharply from 1975 to 1978. Despite the weakening demand for consumer durables and housing which culminated in their sharp decline in the spring of 1980, the acquisition of these tangible assets has become a primary method of household saving in recent years (Chart 2).

In addition to households, businesses also save (Chart 3). Firms in the United States have a strong incentive to retain aftertax earnings rather than pay dividends Dividends paid to stockholders are taxed as ordinary income, whereas retained earnings are taxed only if they lead to realized capital gains.[3] Earnings not paid out as dividends can be used to finance the investment projects of a firm. Last year, corporations saved some $59 billion, or about half of their aftertax operating profits

The public sector can add to or decrease national saving as well. The government saves in the following way If tax receipts exceed total expenditures, the public sector generates a surplus In a sense, the government generates involuntary saving through this surplus On the other hand, if government tax receipts do not cover expenditures, the government is a borrower, or net dissaver, causing total national saving to decline. Due to the large deficits of the Federal Government, the public sector has been a net borrower in recent years, although in 1979 the $27 billion surplus of state and local governments offset the Federal Government's deficit of $15 billion.

The acquisition of "knowledge capital"

Many important dimensions of savings behavior tend to be overlooked in the official statistics[4] In 1978, for example, almost $150 billion was spent on education Schooling is a primary means of raising an individual's earning potential The costs of acquiring knowledge and skills can be viewed as saving and investment,

[2] For a detailed analysis of the composition of household saving and consumer balance sheets, see Carol Corrado and Charles Steindel, "Perspectives on Personal Saving", *Federal Reserve Bulletin* (August 1980), pages 613-25

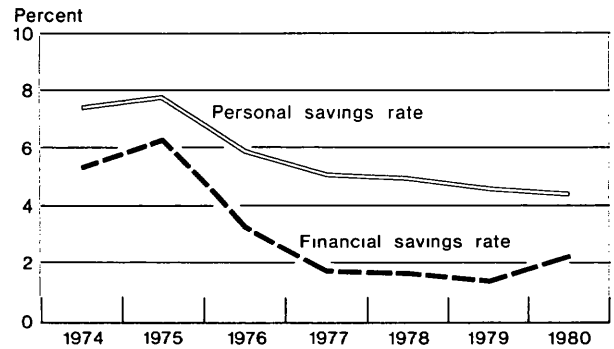
[3] Retained earnings lead to capital gains because corporate saving causes the value of the business to appreciate Even when capital gains occur, they are not taxed until the assets are sold Accrued gains, or "paper profits", are not taxed The shareholders' expected gain, therefore, is taxed at a much lower rate than ordinary income Business saving is probably a good substitute for personal saving Feldstein calculated that, if firms took a dollar of retained earnings (corporate saving) and added it to dividends, total private saving (in both the household and corporate sectors) would decline by only about 25 cents The reason for the smaller net decline is that the one dollar switch from retained earnings to dividend payments is likely to prompt an increase in personal saving of 75 cents Households appear to anticipate the lower capital gains associated with the reduction of retained earnings, so that they save more to achieve their targeted stock of wealth In other words, individuals see through the "corporate veil" and adjust their personal saving See Martin Feldstein, "Tax Incentives, Corporate Saving, and Capital Accumulation in the United States", *Journal of Public Economics* (April 1973), page 170

[4] For a full exposition of intangible types of saving, see John Kendrick, *The Formation and Stocks of Total Capital* (New York National Bureau of Economic Research, 1976), especially chapters 1 and 2

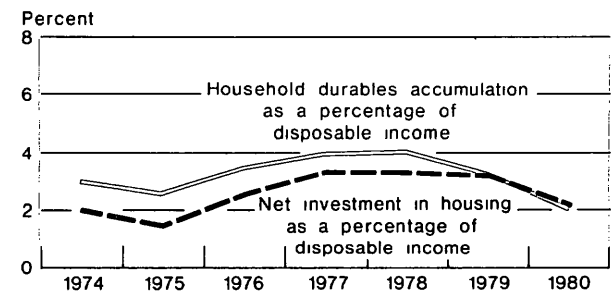
Chart 2

Household Saving as a Fraction of Disposable Income

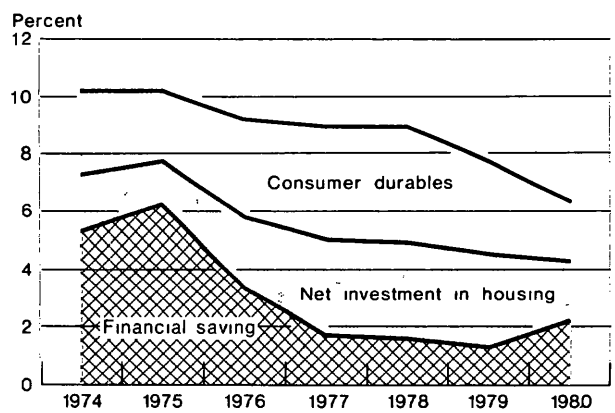
The recent falloff in the personal savings rate stemmed largely from a decline in financial saving . . .



. . . while the rate of saving in the forms of net investment in housing and durables has held fairly steady . . .



. . . so that the contribution of financial saving to the total saving of households has been sharply diminished.



Sources United States Department of Commerce, Board of Governors of the Federal Reserve System

even though they are considered consumption expenses in the national income accounts. An individual's tuition expenses, for example, are like saving because they entail the current sacrifice of other goods and services in exchange for greater future earnings Moreover, tuition expenses represent only a fraction of the cost of education. Students have fewer opportunities to earn income while they are in school, and these foregone earnings are a hidden cost of education. Further, individuals who are being trained on the job often receive a lower wage than they might earn elsewhere. This wage deduction is an indirect payment for the benefits of training and should be regarded as a form of saving

Firms, as well as individuals, invest in knowledge capital. This saving takes the form of research and development expenditures These expenditures do not appear in measures of national output, because they are treated as an input in the production of goods and services rather than as a final product. Still, these expenditures conform to the basic concept of saving Current expenditures for the advancement of scientific knowledge yield new and better products and processes later on. Outlays for research and development are fairly large; $61 billion was spent on them in 1980.

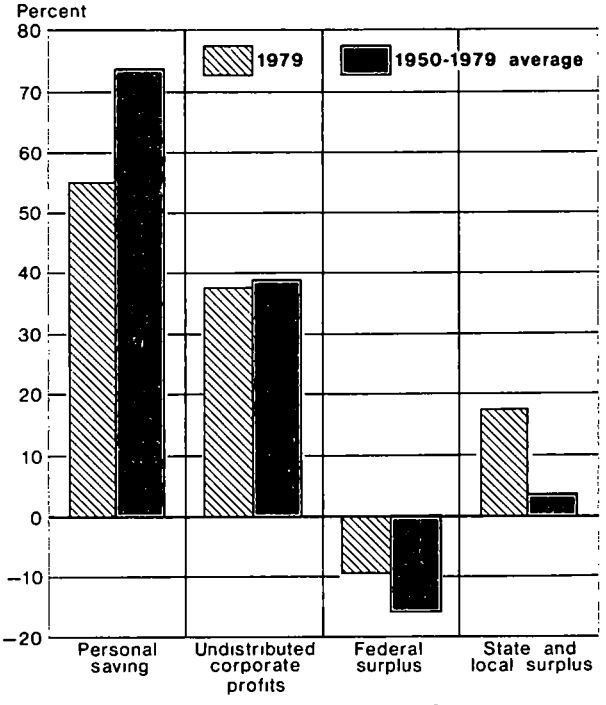
Still another type of saving which is not included in official estimates is moving expenses In seeking to improve their earnings prospects, workers are continually moving from one location or job to another. Costs are incurred in the present (*e.g.,* transportation expenses, foregone earnings) to obtain a job which is expected to be better suited to the individual's skills. This type of behavior is characteristic of a vibrant and dynamic society, yet it is ignored in conventional measures of saving.

Not only are Americans highly mobile, they are health conscious as well. Medical expenditures totaled $131 billion in 1978 A large part of these expenditures was probably undertaken in the spirit of investment spending Preventive health care expenses are like saving in that they result in higher productivity and therefore a higher standard of living in the years to come.

Two striking conclusions arise from adding these types of saving to total national saving First, the aspects of saving that are not commonly measured in conventional accounting procedures are a critical part of total capital formation. Resources saved in the form of education and training expenditures, for example, represent about half of this expanded measure of total net saving (Chart 4). Secondly, these hard-to-measure aspects of saving have grown significantly as a fraction of total capital formation. In 1948, education and training accounted for less than a third of total net saving, compared with 52 percent in 1969 Research

Chart 3

Sources of National Saving as a Percentage of Net National Saving



Source United States Department of Commerce, Bureau of Economic Analysis

and development expenditures are estimated to have grown from 2 5 percent of total net saving in 1948 to 6 8 percent in 1969

A measure of the resources devoted to the acquisition of knowledge is not available for more recent years There is some evidence, however, that, while investment in knowledge capital has continued to grow in the past decade, its rate of advance has slowed. Beginning in the late 1960s, the proportion of research and development spending to gross national product (GNP) leveled off and then fell The rapid expansion of college enrollments and educational expenditures that occurred in the 1960s did not continue into the 1970s, and the fraction of high school graduates going on to higher education declined The push for research in the sciences, which had been precipitated by Sputnik, also began to slow down Despite the apparent deceleration in the growth of knowledge capital, these intangible types of saving remain an integral part of total saving

In addition, the growth of educational attainment of the labor force in the United States appears to be proceeding at a faster pace than that of most other industrialized nations. The average annual rate of increase in the quality of the United States labor force from 1960 to 1973 was 0 8 percent, compared with 0 6 percent for Japan and 0 1 percent for Germany.[5]

The savings slowdown

Though the United States has registered respectable gains in the skills and training of its labor force, its financial saving has lagged behind that of most other industrialized nations Further, the recent declines in household saving have been sharp. Personal saving began to slide in 1976, when the savings rate fell from its 1975 average of 8.6 percent to 6 9 percent[6] The savings rate continued to drop until 1978, falling to 5 2 percent—significantly lower than the postwar average of 6 6 percent

The decline in personal saving can be traced to a steep drop-off in the financial saving of households. In 1975 the financial savings rate alone stood at 6.6 percent, but by 1978 this rate had dwindled to 1 4 percent (table) In contrast, saving in the forms of housing and consumer durables actually strengthened during the early stages of the last recovery Moreover, increases in public saving offset part of the decline in household financial saving (Chart 3) The public sector, for example, went from a slight deficit in 1978 to a surplus in 1979 Except for the buildup of precautionary saving that occurred during the 1980 recession, household financial saving was weak during the past few years What are the sources of the slowdown in this component of household saving?

Saving and inflation

Inflationary pressures have intensified since the 1973-75 recession The rate of increase in the consumer price index accelerated from about 5 percent in 1976 to 14 percent in the first half of 1980 Rapid increases in the price level have apparently caused families to turn away from financial saving and toward the purchases of real assets—housing and other durable goods—as a hedge against inflation Unlike financial assets, this type of wealth is not eroded by rapid price

[5] The average annual percentage increases in labor force quality for some other industrialized nations are the following United Kingdom, 0 6 percent, France, 0 5 percent, and Canada, 0 5 percent These data are taken from Laurits R Christensen, Diane Cummings, and Dale Jorgenson, "Economic Growth 1947-73 An International Comparison", *New Developments in Productivity Measurement and Analysis*, John Kendrick and Beatrice Vaccara, eds (Chicago University of Chicago Press, 1980), pages 639-41

[6] Saving was stronger than average in 1975 partially because of a tax cut in the second quarter, the bulk of which was probably saved

Household Saving as a Share of Disposable Income

In percent, 1952-80

Year	Personal savings rate*	Financial savings rate*	Net investment in consumer durables*	Total household savings rate†
1952-59	6 9	2 2	2.9	9 8
1960-69	6 6	3 8	3 3	9.8
1970-74	7 9	5 5	3 6	11 5
1975	8 6	6 6	2 4	11 0
1976	6 9	4 2	3 3	10 3
1977	5 6	2.1	3 8	9.5
1978	5 2	1 4	3 8	9 1
1979	5.3	1 9	3 2	8 5
1980	5 6	3 6	1 9	7 5

* Expressed as a percentage of disposable income

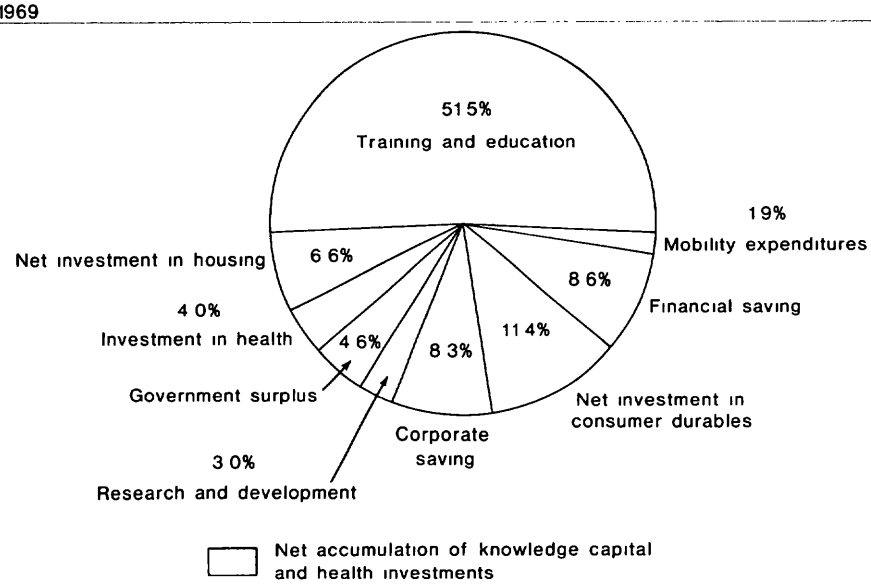
† Personal saving and net investment in consumer durables expressed as a percentage of disposabe income

Sources United States Department of Commerce, Bureau of Economic Analysis; Board of Governors of the Federal Reserve System.

Chart 4

The Role of "Knowledge Capital" in a Broader Measure of National Saving

Based on data for 1969



Sources United States Department of Commerce, Bureau of Economic Analysis, John Kendrick, The Formation and Stocks of Total Capital (New York National Bureau of Economic Research, 1976)

increases.[7] Further, an increase in all types of consumer spending—not just spending for durables—could be stimulated by inflation. When savers receive interest payments in dollars with eroded purchasing power, the return from saving is diminished. For this reason, a fall in the inflation-adjusted rate of return might encourage consumption and discourage saving. The tendency for inflation to discourage saving is reinforced by the progressive tax system. Inflation induces "bracket creep"—that is, individuals find themselves pushed into higher tax brackets even if their purchasing power has not risen. Bracket creep causes the aftertax reward for saving to fall even further because a greater proportion of the interest payments becomes subject to taxation.

A fall in financial saving due to a flare-up in inflation marks a significant departure from past behavior. In the 1960s and early 1970s, outbursts of inflation were often unexpected, prompting households to protect the purchasing power of their assets by saving more Because of the steady upward ratcheting of prices since the early 1970s, households began to manage their assets more effectively.[8] Realizing that fixed-interest payments on financial instruments failed to yield an adequate return after allowing for inflation, consumers accumulated durable goods instead of financial assets. Much of the decline in financial saving which began in 1976 was offset by a step-up in tangible forms of saving (Chart 2).

The housing boom

The attractiveness of housing as a hedge against inflation helped fuel the explosion in home prices that occurred in the late 1970s. In 1972, the average price of a single-family home was $31,000. In just seven years, the price had doubled. Just as a bull market in common stocks causes capital gains to accrue to stockholders, this dramatic increase in home prices resulted in capital gains for real estate owners. For many families, the buildup of equity in their homes is likely to be a primary source of saving Because of capital gains on housing, the typical homeowner has been made wealthier and may want to consume more and save less out of current income as a result. A particularly rapid rise in housing-related wealth coincided with the beginning of the personal savings slide.[9] Indeed, some analysts maintain that these capital gains in housing may be partly responsible for lower levels of national saving.

The relationship between housing gains and saving, however, is more complicated than it might appear at first glance.[10] McNees (1980) has argued that increases in housing equity may not affect the savings behavior of all individuals in the same way. An older homeowner who plans to sell his house to help finance retirement may begin to save less if his house appreciates at an unexpectedly rapid rate. Similarly, if an older household wants to leave something of value to heirs, an unexpectedly large increase in housing prices may fulfill the bequest objective, leaving the household free to spend out of other assets that had been earmarked for the bequest.

On the other hand, the effects of housing gains on saving are less clear-cut for individuals who are not planning to stop being homeowners. Increases in housing wealth could have little effect on spending and saving in many cases. To convert these gains into cash, funds must be borrowed against the house or the house must be sold. When the homeowner refinances or sells the house in exchange for a similar dwelling, part of the capital gain is needed each year to meet higher mortgage payments. If the house is likely to be occupied for a long time, virtually all the gains will be used up in this way, leaving very little to be spent on other goods and services. Also, the expectation of rapidly rising housing prices probably stimulates net investment (saving) in the form of housing expenditures, and this is also an offset to the other aspects of housing gains that depress saving.

All in all, these different ways of looking at savings decisions in light of housing gains point to the difficulty in trying to assess precisely the impact on saving. Nonetheless, because of the enormous stock of residential housing—about $1 trillion or almost half of GNP in 1979—the relationship between housing gains and saving could be very important. Moreover, unlike capital gains on corporate stock, which tend to be

[7] Institutional regulations have begun, however, to adapt to the current inflationary environment The gradual elimination of Regulation Q, for example, will help protect the financial wealth of small savers from depreciating in the face of rapid price level increases

[8] Early studies found that a 1 percentage point increase in the rate of inflation caused personal saving to increase by 1 8 percent in the short run See T Juster and P Wachtel, "A Note on Inflation and the Saving Rate", Brookings Papers on Economic Activity (1972,3), pages 765-78 However, estimates using more recent data suggest that the positive relationship between inflation and saving has broken down See Claudia Campbell and Jean Lovati, "Inflation and Personal Saving An Update", *The Federal Reserve Bank of St Louis Review* (August 1979), pages 3-9 The breakdown in the inflation-savings relationship indicates a turning point in consumer behavior

[9] Consumer wealth held in the form of housing increased $73 7 billion in 1976, the year in which personal saving began to decline Housing wealth had risen by only $32 7 billion in the previous year

[10] For a more extensive discussion of the relationship between housing prices and consumer behavior, see Stephen McNees, "The 1979 Consumer Spending Sector New Era or Last Gasp", *New England Economic Review* (June 1980), and David Sieders and Charles Luckett, "Household Borrowing in the Recovery", *Federal Reserve Bulletin* (March 1978), pages 153-60

concentrated in upper income groups, housing gains are distributed among a broader segment of the population. Certain households, particularly young families, would probably like to consume more but are prohibited from doing so because of the reluctance of intermediaries to offer large unsecured loans. Borrowing against housing equity to support current consumption may be an attractive alternative to other sources of funds. Some empirical studies have suggested that the appreciation of housing values reduces saving, but the estimated relationships were not so strong as to warrant a great deal of confidence.

Demographic influences on saving

During the last decade, there was an important change in the demographic composition of the United States. Persons born during the post-World War II baby boom entered the adult population in increasing numbers, causing the average age of the labor force to decline rapidly. Younger families tend to borrow heavily in order to set up new households and tend to accumulate less financial wealth. Moreover, the ranks of primary savers have been shrinking relative to other groups. Almost 54 percent of all households was headed by persons aged 35 to 64 in 1970. By 1980 this figure fell to about 48 percent

Could the rapid influx of young people into the labor force have something to do with the recent weakness in the personal savings rate? Despite the dramatic change in the composition of the population, the answer is probably not. First, these changes usually affect economic conditions very slowly, and the drop in the savings rate since the mid-1970s has been precipitous. In addition, there is evidence that demographic influences on total saving may be slight. Recent studies suggest that a relative scarcity of families in their savings years could have two roughly offsetting effects.[11] First, a decline in the proportion of primary savers depresses overall saving. At the same time, however, a smaller proportion of these families causes their incomes to rise relative to the rest of the population. When older, more experienced workers are in short supply, their salaries tend to increase. Even though there are fewer primary savers, these individuals save more because their incomes are higher. As a result of these offsetting effects, the net impact of demographic changes on aggregate saving is estimated to be negligible.

This finding does not imply that demographic changes will have no impact on business capital formation. Lieberman and Wachtel (1980) found that, although total saving is fairly unresponsive to demographic changes, its composition may change. Younger families tend to save through purchases of tangible assets like housing and consumer durables; older families tend to accumulate financial assets. Financial saving in 1985, for example, is predicted to be only about half the level implied by the age and income distribution which prevailed in 1963. Since financial saving represents the source of funds necessary to finance business investment, demographic changes could have an influence on capital formation over the long run. Still, the impact of demographic changes on year-to-year movements in financial saving is likely to be minor.

Unreported income and measured saving

Indirect evidence suggests that the total income generated from unreported and illegal activity is rising.[12] An expanding underground economy could cause official savings rates to decline because of the way in which income and consumption are measured. The bulk of wages and salaries reported in national income estimates comes from the Department of Labor wage surveys. On the other hand, consumption is mainly measured by data on physical shipments. If a growing number of persons receive unreported income but continue to purchase goods in the conventional marketplace, measured consumption rises more than measured disposable income. Consumers will appear to be spending more out of their incomes because some of their income is unreported. As a result, the measured savings rate declines and consumers appear to be less thrifty than they really are.

Most people have received some cash income at one time or another: informal payments for repair services, tips, and the like. Such payments are often not reported for tax purposes. With bracket creep increasing the incentives for tax evasion, this type of activity is probably becoming more widespread. The amount of currency in circulation—the principal means of payment for unreported activity—provides some indirect evidence about the size of the underground economy Growth of the use of currency has far outstripped that of checking accounts in the past few decades. Adjusting for inflation, total currency holdings have grown by 2 percent per year since 1960, while inflation-adjusted checking account deposits

[11] See Charles Lieberman and Paul Wachtel, "Age Structure and Personal Saving Behavior", *Social Security Versus Private Saving*, George M Von Furstenberg, ed (Cambridge, Mass Ballinger Publishing Co , 1980)

[12] A detailed discussion of the underground economy is found in Norman Bowsher, "The Demand for Currency Is the Underground Economy Undermining Monetary Policy?", *Federal Reserve Bank of St Louis Review* (January 1980), pages 11-17

have remained unchanged.[13] While by some indirect measures the underground economy appears to have grown, the possible effects on the savings figures are nearly impossible to reckon. For one thing, certain types of economic activity could disappear from both income and consumption data. Consider, for example, a lawyer who prepares his dentist's will in exchange for some new bridgework. In addition, assessments of the size of the underground economy vary widely. The Internal Revenue Service estimates that the amount of unreported income (excluding illegal activity) was between 4 and 5 percent of GNP in 1976. However, *ad hoc* estimates of the total size of the underground economy, based on currency usage, range from 10 to 22 percent of GNP. The growth of unreported activity is even more difficult to measure. Still there may be reason to believe that measurement problems stemming from the underground economy are responsible for some of the decline in measured saving.

[13] Much of the historical movement in the currency-to-deposit ratio can be explained by changes in important determinants of currency and deposit holdings: income, prices, interest rates, and personal consumption expenditures. Since 1974 the currency-to-deposit ratio has increased more sharply, but this development coincides with a number of financial innovations which would be expected to cause weakness in demand deposit growth. In particular, negotiable order of withdrawal (NOW) accounts, electronic funds transfer systems, and money market mutual funds have been substituted for demand deposits. In addition, cash management techniques of business have become increasingly effective in recent years. In light of these developments, any measurement of underground activity based on movements in currency-to-deposit ratios must be interpreted with extreme caution.

Summary

Household financial saving has declined markedly in recent years. Despite the buildup of precautionary saving which occurred in the second quarter of 1980, the personal savings rate remains well below its postwar average. Many possible explanations for the slowdown exist. Though a detailed account can only become available through the benefit of hindsight, the growth of inflationary pressures is certainly responsible for much of the savings slump. However, to focus solely on household saving as a determinant of the nation's future production capacity would be a mistake. The role of this saving in the formation of the nation's total capital stock is only part of the overall picture and should be kept in perspective. The bulk of the nation's wealth is held in the form of human resources—the skills, training, and technical expertise of its work force. Additions to the nation's total stock of wealth take place, not only in the financial markets, but in classrooms and research facilities as well. As long as technical progress continues, the acquisition of knowledge capital will play a fundamental role in national capital formation.

Donald Cox