

Opening Remarks

Alan Greenspan

The rapid technological innovation that spurred the advancement of the “information economy” has resulted in some dramatic capital gains and losses in equity markets in recent years. These remarkable developments have attracted considerable attention from economists and from macroeconomic policymakers. At the same time, movements in the prices of some other assets in the economy—changes in house prices, for example—have been steadier, less dramatic, but perhaps no less significant.

There can be little doubt that sizable swings in the market values of business and household assets have created important challenges for policymakers. After having been relatively stable for a number of decades, the aggregate ratio of household net worth to income rose steeply during the second half of the 1990s and reached an unprecedented level by early last year. That ratio has subsequently retraced some of its earlier gains.

But we must ask whether the aggregate ratio of net worth to income is a sufficient statistic for summarizing the effect of capital gains on economic behavior or, alternatively, whether the distribution of capital gains across assets and the manner in which those gains are realized also are significant determinants of spending. To answer these questions, we need far more information than we currently possess about the nature and the sources of capital gains and the interaction of these gains with credit markets and consumer behavior.

Analysts have long factored changing asset values into models that seek to explain consumption and investment. Indeed, in recent years, household wealth variables have become increasingly important quantitatively in endeavors to track consumer spending. The importance of household balance sheet variables for explaining consumption and the possibility that not all these variables influence spending identically suggest the need for greater disaggregation than is typically employed in most models.

Observing that, during the past half century, consumer spending has amounted to about 90 percent of income, it might appear that income is largely sufficient to explain consumption. However, econometric evidence suggests that such numbers may be deceptive. Wealth by itself now appears to explain about one-fifth of the total level of consumer outlays, according to the Board's large-scale econometric model, leaving disposable income and other factors to explain only four-fifths of consumption. Indeed, if capital gains have any effect on consumption, the propensity of households to spend out of income must be less, possibly much less, than 90 percent.

If income and wealth moved tightly together over time, the distinction between them might not be meaningful for predicting the future path of consumption. And, over very long periods, capital gains on physical assets are not independent of the trends in disposable income. But the relationship of wealth to income is demonstrably not stable over time spans relevant for the conduct of policy. As a consequence, a statistical system that augments income as a determinant of consumer spending with information about wealth can significantly assist our understanding of this key economic relationship.

Conventional regression analysis suggests that a permanent \$1 increase in the level of household wealth raises the annual level of personal consumption expenditures approximately 3 to 5 cents after due consideration of lags. Arguably, it would not be important to draw distinctions among various types of wealth if all assets were engendering similar rates of capital gains. Owing to collinearity in such instances, all wealth proxies would produce similar estimates of overall wealth effects on consumer spending.

At times, however, the rates of change in key asset prices have diverged. For example, during the past year and a half, home values have appreciated, whereas equity values have contracted significantly. In such circumstances, differences in the propensities to consume out of the capital gains and losses on different types of assets could have significant implications for aggregate demand.

Assuming that the underlying propensities are, in fact, stable and given enough time-series data with sufficient variation, standard regression procedures should be able to extract reasonably robust estimates of any differential in spending propensities—for example, out of stock market wealth and home wealth. But, in practice, these circumstances do not prevail. As a consequence, we at the Federal Reserve Board are in the process of developing balance-sheet disaggregations that should help us infer the propensities to spend out of capital gains across different classes of assets.

In carrying out this analysis, we have been especially mindful of the possibility that the amount by which a capital gain affects spending may well be a function of whether or not the gain has been realized. On the buyer's side, when an asset is transferred, the acquisition cost is its new book value and, by definition, its market value. On the seller's side, the proceeds from the sale are available for asset accumulation, debt repayment, and consumption. In this way, a capital gain is realized and made liquid, with the potential to affect spending, assets, or debt. The capital gain in the process disappears as an element in the householder's balance sheet.

Unrealized gains, to be sure, can be borrowed against, and the proceeds of the loan can be spent or used for repayment of other debt. Alternatively, the unrealized gain could induce households to finance additional outlays by selling other assets or by reducing their saving out of current income. But unless, or until, this gain is realized or is extinguished by a fall in market price, it will remain on the asset side of the householder's balance sheet, exposed to price change and uncertainty.

Equity extraction through realized gains creates liquid funds with certain value. Indeed, a significant proportion of sellers do not purchase

another home. In contrast, extraction of unrealized gains does not reduce the householders' uncertainty about their net worth or their exposure to market price changes. This suggests that the propensity to spend out of realized gains is likely to be greater than the propensity to spend out of unrealized gains.

Although our asset-class analysis of detailed disaggregated data is still at an early stage, preliminary examination finds that the data are consistent with the hypothesis of differential spending propensities by asset type and by whether or not capital gains have been realized. For example, purchasers of existing homes, on average, appear to take out mortgages about twice the size of the unamortized mortgage that the typical seller cancels on sale. After accounting for closing expenses, the remaining unencumbered cash is available for debt repayment, acquisition of financial and nonfinancial assets, and spending.

We have no direct evidence, of which I am aware, on the way that such funds are used. However, we can make use of several surveys that have explored how cash-outs associated with mortgage refinancing and home equity loans are expended. Typically, these surveys indicate that households allocate so-called cash-outs—that is, the amount by which a refinanced mortgage exceeds the pre-refinanced outstanding debt—to repayment of nonmortgage debt, acquisition of financial assets, outlays for home improvement, and personal consumption expenditures in roughly equal proportions.

Our interest, of course, is primarily on spending; extracting home equity to repay debt or to purchase financial assets merely reshuffles balance sheets and, at least immediately, does little to affect economic activity. If these survey results are taken at face value and are applied to the case in which the home changes hands—as distinct from, say, a refinancing—the amount of personal consumption expenditures generated from realized capital gains on the sale of homes, financed through the mortgage market, represents approximately 10 to 15 cents on the dollar.¹

Of course, in addition to realized capital gains from the turnover of existing homes, there is a considerable amount of cash that is extracted

from home equity without a home sale, principally from refinancing cash-outs and from home equity loans. Both types of equity extraction have risen considerably in recent years, in line with the marked rise in unrealized capital gains on homes. Some preliminary calculations suggest that the total of equity extractions from unrealized capital gains on homes that is spent on consumer goods and services per dollar of capital gains is a fraction of the spending engendered by the gains realized through the sale of a home.^{2, 3} This difference occurs, to a large extent, because the net extraction of equity is much higher among homes that have turned over than among those that have not.

While data on home mortgage debt and house turnover can be used to analyze the particular channels through which capital gains on homes spur consumer outlays, the financing linkages between stock market capital gains and consumer spending are less clear. Homeowners typically own one home, which they hold, on average, for nearly a decade. Financing is almost exclusively through the mortgage market, and equity extractions for spending, accordingly, are readily identified. Stocks, in contrast, tend to be held in portfolios that have far greater rates of turnover than homes, and financing sources are much more diverse and changeable. Moreover, although gains in defined contribution plans, IRAs, and other tax-deferred accounts almost surely affect consumer spending, the complicated tax treatment and restrictions on the use of those funds make the connections between capital gains in these accounts and spending quite indirect.

Nonetheless, even setting aside all pension-type assets, household capital gains on directly held equities and mutual funds in recent years have been two to four times the size of overall gains on homes. The sheer size of such gains suggests that capital gains on equities have been a more potent factor in determining spending than gains on homes. In fact, if we accept a total net wealth effect on consumption of 3 to 5 cents on the dollar, and if further analysis supports the larger net spending propensities from capital gains on homes suggested by mortgage and survey data, then the propensity to spend out of each dollar of stock market gains would be less than the propensity to spend out of a dollar from gains on homes, but still larger in overall dollar magnitude.

Of course, these quantitative magnitudes are tentative, and a great deal of additional work will be necessary to better understand and to confirm the nature and magnitudes of the relationships between capital gains on houses and stocks—realized and unrealized—and consumer spending.

No matter how one differentiates the effects on consumer spending of capital gains on stock market and housing wealth, it is clear that the massive increase in capital values during the past five years had a profound impact on output and income. The influence of capital gains on economic behavior also is likely to be of substantial consequence for the prospective performance of the economy.

That influence also can be seen in our national income and product accounts (NIPA). By design, these accounts measure the market value of the output of goods and services and its distribution to the factors of production. As such, they exclude capital gains and losses. This exclusion is especially relevant for personal saving, where our accounting conventions result in capital gains having a large effect on the published figures. In part, the reason is that the NIPA deduct taxes paid on realized capital gains from personal income and treat them, in effect, as a transfer to the government sector, even though the capital gains that generated those taxes are excluded from income.⁴ This issue is not trivial. As best we can determine, of the 4.6 percentage point decline in the personal saving rate between 1995 and 2000, a full percentage point is attributable to the increase in federal and state capital gains taxes paid during that period.

Capital gains have also significantly influenced the measured personal saving rate as a result of the NIPA treatment of the pension fund sector. In particular, because defined-benefit pensions are considered part of the “personal sector,” employer contributions to such plans are included in disposable income, as are the interest, dividend, and rental incomes received by these plans. In contrast, benefit payments to individuals are not part of personal income because they are considered intrasectoral transfers.

Neither households nor corporations, however, are likely to view their own financial activities in that manner. Surely, for defined-benefit pensions, it is the benefit payments to retirees rather than the employer inflows into the pension sector that individuals perceive as personal income. For their part, businesses have often viewed defined-benefit pension plans, in effect, as business-sector profit centers because capital gains affect corporate defined-benefit pension contributions and, hence, earnings.

This consideration is relevant in the measurement and interpretation of the personal saving rate. In recent years, contributions to private defined-benefit plans have declined significantly as an increasing part of these plans' accrued benefit liabilities have been met through a rise in the market value of their equity holdings. Offsetting this decline, to some extent, has been an increase in dividend and other capital income.

If private and state and local defined-benefit pension plans had been separated from the personal sector, the personal saving rate would have fallen about 3/4 percentage point less from 1995 to 2000, all else being equal.

All told, if households viewed taxes on capital gains as a subtraction from those gains and not from income and, further, if households viewed benefit payments received from defined-benefit plans as income rather than their employers' contributions (as well as the investment income of the plans), perceived disposable income in 2000 would have been higher, as would the personal saving rate.

In short, roughly two-fifths of the measured decline in the personal saving rate since 1995 reflects the foregoing NIPA income-accounting conventions.

I should emphasize that any accounting adjustments made to personal saving because of changes in the definition of disposable income are exactly offset in business and government saving so that national saving is unaffected. The increment to personal saving associated with a treatment of the private defined-benefit pension sector as a business

profit center would be offset by a decline in corporate profits and business saving. In addition, a designation of taxes on capital gains as capital transfers (in a manner similar to estate and gift taxes) would raise measured personal saving and lower overall tax receipts and, hence, government saving.⁵ Thus, while total national saving would be unaffected by these specific accounting adjustments for capital gains, the distribution of NIPA saving among households, businesses, and governments would be significantly influenced.

One must recognize that no single way to array information on income, production, and capital gains is best. The particular array employed depends on the specific purposes to which the data set is to be applied. The treatment of capital gains in the NIPA, for example, is intended to allow the accounts to most accurately attribute national saving to the various sectors in the accounts. Indeed, when that is the objective, the removal of capital gains is essential. For analysis of issues related to consumer spending, though, the NIPA personal saving rate presents an incomplete picture of the financial state of the household sector in the aggregate, and an adjustment along the lines previously suggested may be informative.

In addition to the effect of income-accounting conventions, of course, we must consider the real economy influence of capital gains on the level of consumption. The estimates of the effect of household capital gains on consumer spending of 3 to 5 cents on the dollar suggest that, directly and indirectly, capital gains easily account for the remainder of the measured five-year decline in the saving rate.

Obviously, this is not to say that had asset prices been flat for an extended period the personal saving rate would have been unchanged, on net, during the past five years. If asset prices had not risen, real incomes would surely have been altered, and the vast array of secondary and tertiary effects of asset-price changes would have been different. Nonetheless, this exercise fosters additional important insights regarding the dynamics of household behavior and the relationships among asset prices, income, and consumption.

The complexity of these relationships underscores the potential usefulness of developing separate sets of accounts to track capital gains. These accounts could supplement the income and product accounts, the flow of funds accounts, and the balance of payments accounts. The last two currently exhibit, in part, the effect of capital gains and can be separated into special accounts. A supplementary set of detailed tables on capital gains exclusions from the national income and product accounts also would be a useful addition to our overall system of economic accounts.

This morning I have not endeavored to discuss the effects of capital gains, other than peripherally, on investment in plant and equipment, home improvement, tax revenues, and government surpluses, and their obvious significance in tracking international economic flows. Clearly, these also are relevant to any evaluation of macroeconomic events and warrant further study.

In closing, accounting systems are not ends in themselves. We construct them because they have a function in aiding our understanding of some particular aspect of a business operation at a company level or for an economy as a whole. As we endeavor to better understand how changes in the level and composition of wealth affect economic behavior, new accounting systems may be required to supplement those that have long served us so well. Technology has facilitated the production of information at a far faster rate than at any time in the past. But in the information economy, it remains up to us to organize and use that information in ways that improve the quality of decision-making.

Endnotes

¹ The realized capital gain on a home sale in recent years has engendered a net increase in the mortgage debt (that is, net equity extraction) on that home averaging nine-tenths of the capital gain. Of the net equity extraction, almost half has been expended on closing and related expenses. The remainder, we assume, is distributed as indicated by the consumer surveys.

² However, the consumption financed through mortgage debt extension somewhat overestimates the net influence of housing capital gains on consumption. Debt must be repaid, and presumably, consumption is reduced as a consequence of the repayment. In the absence of capital gains, borrowing merely moves up a purchase rather than augmenting total purchases through time.

However, in the presence of increased capital gains, unrealized but still perceived as permanent, debt capacity and levels are likely to rise. The consequently lowered debt repayment relative to debt extensions suggests that the rate of offset to the initial consumption expenditures at the time of repayment is also likely to be a good deal less. Our preliminary estimates, in fact, suggest that such subtractions from the gross effects on spending are modest.

³ The time sequence of the emergence of capital gains and their effect on consumer spending is a function of the channel through which equity is extracted from homes. For sales of existing homes, equity extraction is generally concurrent with a realization of a capital gain. Presumably, however, the cash extracted influences consumer spending only over time. Unrealized gains can build up over time without any obvious effect on spending. But a cash-out refinancing or a home equity loan is presumably initiated for a specific current purpose. Thus, the lags between the emergence of a capital gain and spending may be a function of the degree of gains realization and the particular mortgage vehicle employed for equity extraction. Another means of equity extraction of unrealized gains for which data are scarce outside of decennial censuses are long-term first lien mortgages on residences previously free of debt.

⁴ Capital gains, however, have not been fully stripped from personal income. The capital gains embedded in exercised stock options, for example, are included in compensation of employees (and as a charge against profits) in the NIPA. These gains are taxed as regular income.

⁵ This is not done in the NIPA owing, in part, to a desire by the Bureau of Economic Analysis (BEA) to conform with international standards for national accounts.