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# The saving decline: Macro-facts, micro-behavior

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#### ABSTRACT

The macro-saving rate is decomposed into micro-components and a procedure developed to calculate household saving rates using income and expenditure shares, found with survey data for 1950, 1961, 1972 and 1980 to 2005. Low, middle and high income saving rates are calculated under alternative conditions: with income and expenditure shares alone, with changes in assets and liabilities added, with constant aggregate income, and for age-income groups. Problems of apparently excessive dissaving rates are considered. Overall, despite stable high income saving, collapsing middle income saving and increasing low income dissaving precipitated the decline in aggregate saving.

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#### 1. Introduction

Between 1952 and 1984 the aggregate personal saving rate as calculated from National Income and Product Account (NIPA) data by the Bureau of Economic Analysis (BEA) averaged 9.0 percent, ranging between 7.0 and 11.2 percent. These figures are about two percentage points lower than those found by the Federal Reserve using flow of funds (FFA) data where the aggregate rate averaged 10.9 percent, ranging between 8.7 and 13.6 percent. However, after 1984 the personal saving rate collapsed as the BEA rate fell nine percentage points, from 9.0 to -0.5 percent in 2005 while the FFA rate declined 11 percentage points, from 9.6 to -2.0 percent (BEA, 2006).

Reasons for this rise and fall remain controversial. While relatively steady saving rates facilitated development of "permanent" spending theories during the 1950s and 1960s (Modigliani and Brumberg, 1954; Friedman, 1957), these theories have been unable to explain shifts in saving behavior in the 1980s and the collapse in saving rates thereafter. After reviewing a number of largely wealth, behavioral and institutional explanations, Browning and Lusardi (1996, p. 1819) concluded that "the variety of proposed explanations is per se an indication that there exists little consensus on what underlies the decline in saving rates." Parker (1999, p. 8–13, 32, 33) added to the list of potential explanations but reached a similar conclusion. Studies of subgroups or cohorts of savers organized by age or income also have been unsuccessful (Browning and Lusardi, 1996; Attanasio, 1998; Parker, 1999; Lusardi et al., 2001).

The significance of the decline has been questioned. While a lower personal saving rate creates concerns about future productivity growth and the ability of an aging population to fund its retirement and related healthcare needs (Lansing, 2005; Marquis, 2002), after 20 years the sky has not yet fallen. Measurement issues have been raised, but Reinsdorf (2004,

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p. 25) found that no "single alternative measure of personal saving differs from the NIPA measure sufficiently to be able to account on its own for most of the change in the NIPA measure." (see also Perozek and Reinsdorf, 2002). Recently Garner (2006, p. 17, 24) noted that ongoing NIPA data and methodological revisions usually produce higher saving rates, although "exceptionally large revisions would be needed to eliminate the current downward trend." Further, the declining rate could be a rational response to expected future income increases in that "American households have correctly anticipated future gains in productivity and labor income and incorporated these expectations into their spending plans." However, evidence regarding these anticipations is limited and controversial.

Perhaps the most widely accepted explanation is based on a "wealth effect" whereby the real increase in net worth from \$18 trillion in 1990 to \$47 trillion in 2005 encouraged households to increase spending from income as lifetime saving targets were realized (Juster et al., 2004; Maki and Palumbo, 2001). However, no evidence has been presented showing significant declines in the average saving propensities of wealth holders. Bosworth and Bell (2005, p. 4–5) raise timing issues, pointing out that the "rise in the wealth ratio is concentrated in the years after 1994," about 10 years after the saving rate began to decline, implying that "wealth changes do not appear to be a reasonable explanation for the decline prior to 1995." Steindel (2005, p. 6) indicates that since the "bulk of U.S. wealth is owned by a small part of the population,... wealth changes directly impacting so few people can not reasonably be expected to affect spending by the population at large." Also, expected effects have not been found. The predicted decline in the personal saving rate from the 1994–1999 runup in wealth was in the order of 6 percentage points, yet the actual decline "was in the vicinity of 2 percentage points" while "real capital losses" between 2000 and 2003 should have pushed "up the personal saving rate several points; instead the saving rate was flat to down over these years (Steindel, 2005, p. 9).

Reflecting on the cornucopia of proposed resolutions, a Government Accounting Office report concluded that despite "a great deal of study economists have found no single reason that convincingly explains the decline in the personal saving rate (GAO, 2001, p. 10)," a view reiterated in a recent St. Louis Federal Reserve Bank paper. Asking "is it a puzzle?", the paper reviewed several contemporary explanations: wealth effects, changes in permanent income, financial innovations, social insurance and macro-stability effects, demographic changes, Ricardian equivalences and corporate shareholder compensation changes with the conclusion that "sometimes on logical grounds, in other occasions on an empirical level such theories remain insufficient to explain the. . . recent transformation of the United States into a nation of spendthrifts" (Guidolin and La Jeunesse, 2007, pp. 508–512).

Since conventional macroeconomic efforts to explain the saving decline have not proved fruitful, perhaps an explanation can be found at the micro-level in terms of changes in the distribution of income and expenditures. Although usually ignored, distributional issues are implicit in the saving problem. Long ago, when responding to allegations that he had neglected "variations in the distribution of incomes when defining (my) 'propensity to consume function'," Keynes responded that "it naturally follows that the collective propensity for a community as a whole may depend... on the distribution of incomes within it (Keynes, 1939, p. 129)." More recently Bosworth and Bell (2005, p. 16) made the same point: "Without direct information on the behavior of individual households or socioeconomic groups, it is doubtful that we will ever provide a convincing explanation of why saving has declined."

However, at the onset, the role of distributional influences in explaining the saving decline should be made clear. Distributional issues involve both the distribution of income and expenditures. When household shares of each as well as the average propensity to consume (APC) are known, the aggregate propensity to save (APS) can be determined. Consequently, any APS is consistent with a wide range of income and expenditure distributions. Information about distribution is useful because it can be used to describe the saving behavior of groups in the economy such as the poor or rich, young or old, which, in turn, might suggest new hypotheses regarding the saving problem. In effect, this procedure is simply a formalization and expansion of the current practice of attributing aggregate saving changes to changes in the saving propensities of particular groups such as homeowners, shareholders, the rich, or the retired.

The paper begins by decomposing the aggregate saving rate into micro-components and showing how shares and the APC can be used to determine household saving rates. Determination of income and expenditure shares is then discussed, followed by calculation of low, middle and high income saving rates under alternative conditions. Rates are determined based on income and expenditures alone, with changes in assets and liabilities added, when aggregate income and the APC are constant and for age-income groups. Problems of apparently excessive dissaving rates are considered. The overall conclusion is that despite stable or increasing high income saving, a collapse in middle income saving and increasing low income dissaving apparently precipitated the decline in both aggregate saving and the aggregate saving rate.

#### 2. Aggregate personal saving rate

Aggregate personal saving,  $S_t$ , measures the saving and income of all m consumer units<sup>1</sup> in the economy:

$$S_t = s_1 + s_2 + \ldots + s_m = \sum s_i.$$
 (1)

<sup>&</sup>lt;sup>1</sup> The appropriate behavioral unit depends on data source. Census data is based on families, two or more people related by blood or marriage, while BLS data is derived from household consumer units, families plus others contributing to the maintenance of the living unit. In 2005 there were 77 million Census families and 117 million BLS households, a difference largely explained by the inclusion of single person households by the BLS.

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