

Don't Worry, We'll Grow Out of It: An Analysis of Demographics, Consumer Spending, and Foreign Debt

by Michael F. Bryan and Susan M. Byrne

Mistrustful might be a more explanatory word than authoritarian, I think. Parents with this slant tend to be stern because they assume that children, if left to themselves, will be more inclined to be naughty than good.... Dr. Benjamin Spock

Over the past 20 years, the view has emerged that Americans are spending too much and saving too little, financing this spending binge, in large part, with foreign investment. In this view, we have mortgaged future increases in our standard of living to foreigners in return for a spendthrift lifestyle today. Concerned policymakers have advocated several strategies designed to force us to save more, such as consumption, gasoline, and import taxes, and other measures intended to discourage consumer spending. But before adopting any drastic proposals, we should consider carefully whether consumer spending has, in fact, been excessive.

This Economic Commentary focuses on demographic changes in the United States since the late 1960s and their implications for consumer spending, debt, and foreign investment. Using the life-cycle theory of consumption as a guide, we have calculated a simple, forward-looking measure of the lifetime earnings potential of the labor force for the years 1968 through 1989. Our estimates show that the inrush of the baby-boom generation into the workforce during the 1970s and 1980s produced a substantial increase in the aggregate lifetime earnings potential of U.S. households relative to their current labor income, which may help to explain the otherwise worrisome spending and debt patterns that developed over this period.

Furthermore, as the baby-boomers reach middle age, we should see a reversal in long-term spending and debt trends—a turnabout that our estimates suggest may already be underway.

■ We'll Gladly Pay You Tuesday... Consumer spending as a share of national income was higher in the 1980s than at any other time during the last century. In 1987, for example, consumption claimed 82 percent of U.S. national income—up from 75 percent in the late 1960s—presumably the highest spending-to-income ratio of any major industrialized nation.¹ The flip side, of course, is the personal savings rate fell from around 7 percent of national income in 1970 to an average of 4½ percent in the past five years.

While consumers were boldly spending more and saving less, so, too, was the federal government. Between 1970 and its Between the mid-1960s and early 1980s, the age distribution of the U.S. labor force was changed dramatically by the inrush of the baby-boom generation. The authors examine the implications of this shift for consumer spending, debt, and foreign investment, and conclude that, if left to themselves, consumers will simply outgrow their apparently spendthrift ways.

peak in 1986, the federal deficit rose from \$12.4 billion to \$207 billion, or from $1\frac{1}{2}$ percent to 6 percent of national income. Although the saving rates of businesses and state and local governments actually improved between those same years—from about 13 percent to $17\frac{3}{4}$ percent—the increases were insufficient to offset the drop-off that occurred in household and federal government saving rates. Over this 16year period, national saving (including households, businesses, and the government) dropped from $18\frac{1}{2}$ percent.

This decline coincided with a rise in U.S. debt accumulation, from 17 percent to 241/2 percent of national income between 1970 and 1986. The run-up in federal government debt over this period was dramatic, but house-

FIGURE 1 THE AGE/EARNINGS PROFILE: MEDIAN AVERAGE WEEKLY EARNINGS, 1968-88



SOURCE: Current Population Survey, U.S. Department of Commerce, Bureau of the Census, 1968 through 1988.

FIGURE 2 PERSONAL SAVINGS AND NET



a. As shares of national income

hold liabilities, particularly consumer installment credit, also ballooned. The ratio of consumer installment debt to national income rose from about $12\frac{1}{2}$ percent in the early 1970s to $16\frac{3}{4}$ percent by 1986.

It follows that an individual who borrows more is probably also one who saves less. Yet, how is it that a nation can borrow more and at the same time save less? Where do the funds come from for borrowers to borrow? Enter foreign savers. In the early 1980s, the United States ran a large and growing trade deficit, the result of which was a huge inflow of foreign capital. But ultimately, all debts, foreign or otherwise, must be repaid, and therein lies the problem. High levels of consumer spending and a corresponding reduction in personal saving suggest an investment trend that is insufficient to satisfy these debts.

The long-term repercussions of foreign indebtedness depend, in part, on how

these borrowed funds are used. Previous analysis by this bank indicates that roughly half of the inflow of foreign capital during the current expansion financed higher levels of investment—namely, business spending on physical capital and consumer spending on durable goods and education. These expenditures bode well for future U.S. living standards.²

Nevertheless, a significant share of foreign investment seems to have financed what we consider to be "pure" consumption, that is, consumer spending on nondurable goods and services.³

■ ... for a Hamburger Today.

A common interpretation of U.S. spending and debt trends is that a multitude of Americans are being naughty in their spending habits, the upshot of which will be financial hardship at some future date. In this scenario, spendthrift consumers do not fully appreciate the longterm implications of their actions. If they did, they would surely act in a more fiscally responsible way.

We prefer an alternative explanation one that assumes that individuals' actions are based on a reasonable understanding of their current and expected future financial condition. This explanation employs the life-cycle theory of consumer spending, where consumption is not bridled by current income but is instead based on an individual's expected lifetime earnings.⁴

Consider the average U.S. life cycle. Workers by and large enter the labor market between the ages of 18 and 22 and retire from regular employment in their mid-60s, over which time their average earnings vary dramatically (figure 1). Weekly earnings soar during the first 10 years of an individual's work life, such that workers in their mid-30s earn roughly twice as much per week as those in their early 20s. Weekly earnings remain relatively constant until workers enter their 60s, at which time their attachment to the labor market weakens and they increasingly rely on accumulated wealth as a source of income.⁵ A commonly accepted expla-

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

FIGURE 3 AGE DISTRIBUTION OF WORKERS, 1965 vs. 1980



SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.

nation for the age/earnings profile depicted in figure 1 is that the experience workers gain during the first 10 years of their working lives substantially increases their productivity and, hence, their income.

We see, then, that a worker's lifetime earnings potential, or life-cycle earnings, depends crucially upon age. Young workers have a large lifetime earnings potential relative to their current earnings-first, because they have a long expected worklife, and second, because they expect substantial wage increases as their experience in the workplace grows. However, spending patterns do not typically follow the earnings stream, as consumers attempt to maintain a more even standard of living relative to their income over time. They do this by borrowing against their expected future earnings from persons who are in a later stage of the life cycle.

Because of these different patterns of income and spending over the course of a life cycle, younger workers tend to have high levels of spending and debt relative to their current income, while middle-aged workers are inclined toward relatively low levels of spending and indebtedness. An extreme shift in the composition of the labor force toward young workers should induce an increase in a nation's desired consumption and debt relative to its income, as the younger workers attempt to borrow and spend against their expected future earnings.

As long as a balance exists between youthful borrowers and middle-aged savers, harmony in national credit markets will prevail. But if the level of desired borrowing exceeds the level of desired saving (which should have occurred when the baby-boom generation entered the workforce), upward pressure on interest rates will result.

Without an external source of funds, the rise in interest rates would serve to ration relatively scarce credit; some individuals would be prevented from achieving their preferred lifetime consumption path, and some would "crowd out" other borrowers—namely, business investors. However, in a global setting, the rise in domestic interest rates relative to foreign rates produced by a credit shortfall encourages an inflow of investment from abroad, thus allowing a nation to simultaneously save less and borrow more. Indeed, the trends in personal savings and net foreign investment have been strikingly similar since 1973 (figure 2).

Therefore, a major shift in the age composition of the labor force (not occurring simultaneously in other countries) can produce changes in international debt and trade flows, as nations with relatively younger workers borrow from nations with relatively older workers.⁶ Consequently, long-term consumer spending and debt patterns can be misleading if the age distribution of the labor force is not considered.

Magical Mystery Tour

Over the 15-year period between 1965 and 1980, the age distribution of the U.S. labor force shifted dramatically as the baby-boomers charged into the labor market (figure 3). In 1965, about 34 percent of all adult workers were under the age of 34, compared with almost 47 percent by 1980. Meanwhile, the share of the middle-aged workforce (between 35 years and 59 years) shrank from about 60 percent to 49 percent. To measure the influence of the babyboom generation on the growth of lifetime earnings potential relative to current income, we constructed an estimate of the lifetime income potential of the labor force using annual survey data for the years 1968 through 1989.7 The lifetime earnings potential of an employed 24-year-old is estimated as the current earnings of a 24-year-old, plus the present value of the current earnings of a 25-year-old adjusted for one year of productivity growth, plus the present value of the current earnings of a 26year-old adjusted for two years of productivity growth, and so on, until that worker retires at an assumed age of 65 years.⁸ To find the lifetime earnings potential of the labor force in any particular year, we multipy the lifetime earnings potential of each age group in that year by the number of workers currently in that age group, and then sum over all age groups.

We make several simplifying assumptions in the construction of these estiimates. For example, workers who are temporarily out of the labor market during the annual survey are not included in our lifetime earnings calculations. Consequently, the data are more sensitive to the national business cycle than they should be. We also assume that workers currently in the labor force expect to remain there, without interruption, until age 65. That is, we neither allow for periods of unemployment (planned or unplanned) nor for the possibility of death prior to the age of retirement.⁹

Further, our methodology makes no adjustment for taxation. We acknowledge that permanent changes in either income taxation or social security payments that are perceived as permanent taxation could lower the lifetime earnings estimate as it applies to pure consumption. However, despite these simplifications, we believe that this series captures the broad impact of a major influx of young workers on the potential earnings stream of the labor force.

Figure 4 shows the lifetime earnings potential of the labor force relative to its current income for the years 1968

FIGURE 4 LIFETIME EARNINGS POTENTIAL AND NONDURABLES AND SERVICES CONSUMPTION



a. As a share of current income.

b. As a share of national income

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; and the Federal Reserve Bank of Cleveland.



FIGURE 5 LIFETIME EARNINGS POTENTIAL^a

a. As a share of current income. SOURCE: The Federal Reserve Bank of Cleveland.

through 1989.¹⁰ Potential lifetime earnings rose at a rate of $1\frac{1}{4}$ percent more per year than current income between 1968 and 1984, and the ratio of potential lifetime earnings to current income rose from about $24\frac{1}{2}$ to 29. That is, by virtue of its relatively youthful standing, the labor force in 1984 expected an additional 18 percent—or $4\frac{1}{2}$ years —of earnings relative to that expected by the labor force in 1968. Potential lifetime earnings peaked in the mid-1980s and, according to our estimates,

began to decline relative to current income in 1986.

Trends in the ratio of lifetime earnings potential to current earnings correspond roughly with trends in the share of national income spent on consumer nondurable goods and services, or "pure" consumption (figure 4). Indeed, pure consumer spending as a share of national income peaked at roughly 71½ percent in 1983, and since 1987, this percentage has been declining.

They Grow Up So Fast, Don't They?

In 1986, the oldest members of the baby-boom generation celebrated their 40th birthdays. Since then, the lifetime earnings potential of the labor force has fallen abruptly relative to current income. This reflects a labor force near the peak of its age/earnings profile, with an average age that has been rising. Consistent with these trends, the rate of personal saving has escalated, and we have begun to reduce our dependence on foreign capital.

The U.S. labor force is expected to begin aging rapidly. According to the U.S. Census Bureau, the 20- to 34-yearold age group is projected to fall from about 43 percent of the working-age population to around 35 percent over the next 10 years.¹¹ As a result, we project that the ratio of lifetime earnings potential to current income will dip from 28 percent to less than 26 percent between the years 1990 and 2000 (figure 5). This trend will likely exert upward pressure on personal saving rates and downward pressure on real U.S. interest rates, discouraging foreign capital inflows in the process.

We believe that a compelling case can be made for the importance of age demographics on the determination of the aggregate consumption appetite of U.S. households.¹³ We recognize, however, that several important events have combined to produce the movements in personal spending and saving and in foreign debt exhibited over the past 20 years.¹⁴ Such is always the case in a large and dynamic economy.

There can never be perfect assurance that our future living standards are secure. Fortunately, foreigners have been willing to bet on U.S. investments—investments that are secured only by the belief that long-term economic prospects in the United States are bright. Circumstantially, at least, our evidence suggests that relatively high levels of consumer spending and debt are simply a phase that we're going through. Don't worry, we'll grow out of it.

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Footnotes

1. International comparisons are usually made in terms of gross product. In 1986, the ratio of private consumption to gross product (GNP) for the United States was 66 percent, compared with 62 percent for the United Kingdom (GNP), 60 percent for France (GDP), 58 percent for Japan (GNP), and 55 percent for West Germany (GNP).

2. See Anderson and Bryan (1989).

3. This type of spending is not exactly "pure," since investment qualities certainly are associated with some nondurable goods and services. Moreover, the flow of services from durable goods, which we exclude, should rightfully be considered as consumption, as should many components of government spending. However, we believe that trends in nondurable goods and services spending are a reasonably good proxy for trends in pure consumption. This assumption is not uncommon in the consumption literature. See Hatl (1978), for example.

4. This theory was pioneered by Modigliani and Brumberg (1954) and Friedman (1957), and later refined by Modigliani and Ando (1960). The life-cycle theory of consumption is the foundation of much of the consumer behavior analysis of the past 30 years, and for possibly no better reasons than the theory's basic intuitive appeal and the fact that consumption patterns seem to be smoother than income patterns. Despite its popularity in economic literature, evidence on the existence of life-cycle consumption behavior is mixed. We direct the reader to two persuasive but opposing views: Hall (1978) uses time-series data to show that consumption patterns are unrelated to current or recent income patterns, and Carroll and Summers (1989) use cross-country and crosssectional data to demonstrate just the opposite. The generally contradictory nature of the life-cycle evidence may be explained by Campbell and Mankiw (1989), who show that roughly half of all households appear to fit the life-cycle profile, while the other half consumes on the basis of current income.

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5. The age/earnings profile is dependent on many factors, important among them the education, sex, and racial distribution of the workforce. For a thorough discussion of these issues, see Mincer (1974). Freeman (1979) suggests that the age/earnings profile is also affected significantly by the age composition of the labor force, particularly for male workers.

6. Simulations by Hill (1989) show that the magnitude of the age shift that occurred in U.S. labor markets during the 1970s and 1980s was capable of producing a large relative rise in national spending and inducing an enormous inflow of foreign capital.

7. Current Population Survey, U.S. Department of Commerce, Bureau of the Census.

8. The expected long-run rate of productivity growth is approximately equal to the discount rate implied by the expected longrun real interest rate. Therefore, the influences of these values tend to cancel one another. Although we experimented with a range of values, these assumptions had little overall influence on the patterns outlined here. For purposes of this study, we assumed that the expected rate of productivity growth equals the discount rate. 9. However, the influence of transitory movements into and out of the labor force is lessened when our potential lifetime earnings estimates are presented as a share of current income.

10. Current income data, calculated as the sum of the product of current earnings and employment for all age groups, are taken from *Current Population Survey*.

11. From "Projections of the Population of the United States, by Age, Sex, and Race; 1988 to 2080." Current Population Reports. Population Estimates and Projections. Series P-25, No. 1018, U.S. Department of Commerce, Bureau of the Census, 1989. We assume that nominal earnings will rise by 4 percent each year, and that there is a constant employment-to-population ratio for each age group over time.

12. This impression is supported by Hill (1989), who shows that the aging of the U.S. labor force could produce a trade-balance surplus sometime during the next three or four years, and projects a positive trade position that will continue to grow well into the next century.

13. Some researchers are likely to disagree with our conclusions. See, for example, Auerbach and Kotlikoff (1989), Brinner (1989), or Kennickell (1990).

14. Prominent among these are measurement problems, changes in social security and other pension coverage, and wealth gains.



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