

THE HOUSEHOLD SECTOR

There only two things that households do with income; they either consume it or save it. For many people, savings are what remains after consumption. One would call this a residual. Savings as a percentage of disposable personal income averages approximately 4.2%. A reasonable question arises as to whether that is too little or too much. I personally don't believe anyone has the definitive answer to that question. We will look at how savings plays an important role in financing investment. First, let's examine consumption.

Consumer spending is important; it accounts for 2/3 of GDP. In other words, consumer spending drives the economy. Some aggregate indicators of spending include the level of retail sales and the consumer confidence index. The next important question is what determines the level of consumption, and what affects our consumption patterns.

Components of Consumption

What do we consume? From the data below, durable goods, which includes cars, appliances, radios, things that last longer than three years, is the least consumed of the three categories at 12.3%. It is also the most volatile, as it drops quickly as income drops. When households need to save money, they do it by postponing big ticket purchases on cars and appliances.

Next are nondurable good purchases which include food, clothing, and fuel at 30%. Finally, expenditures on services of which the largest components are health care, and housing services (utilities, insurance, etc). Service expenditures are relatively stable through business cycle fluctuations.

Components of Consumption, 1997

\$ Billions

	\$ B	%
Total Consumption	5,493.7	100.0
Durable Goods	673.0	12.3
Non Durable Goods	1,600.6	29.1
Services	3,220.1	58.6

Source: Survey of Current Business

Consumption Function & Induced Consumption Expenditure

The number one factor determining consumption is... income. You weren't surprised, were you? The more income we earn, the more we spend. We measure the additional consumption due to the additional income as the marginal propensity to consume (MPC). It can be expressed as a percentage or a decimal. What we don't consume we save so that $1 - MPC = MPS$ (Marginal Propensity to Save). If we look at total consumption divided by total income then we arrive at the Average Propensity to Consume (APC). I mention this only to show one, it is a distinctly different measure and two, it is used in some explanations of consumer behavior. Consumption that varies with income is called induced consumption.

Autonomous Consumption Expenditure

Not all consumption varies with income. That which doesn't is called autonomous consumption. Also called non-income determinants, these include:

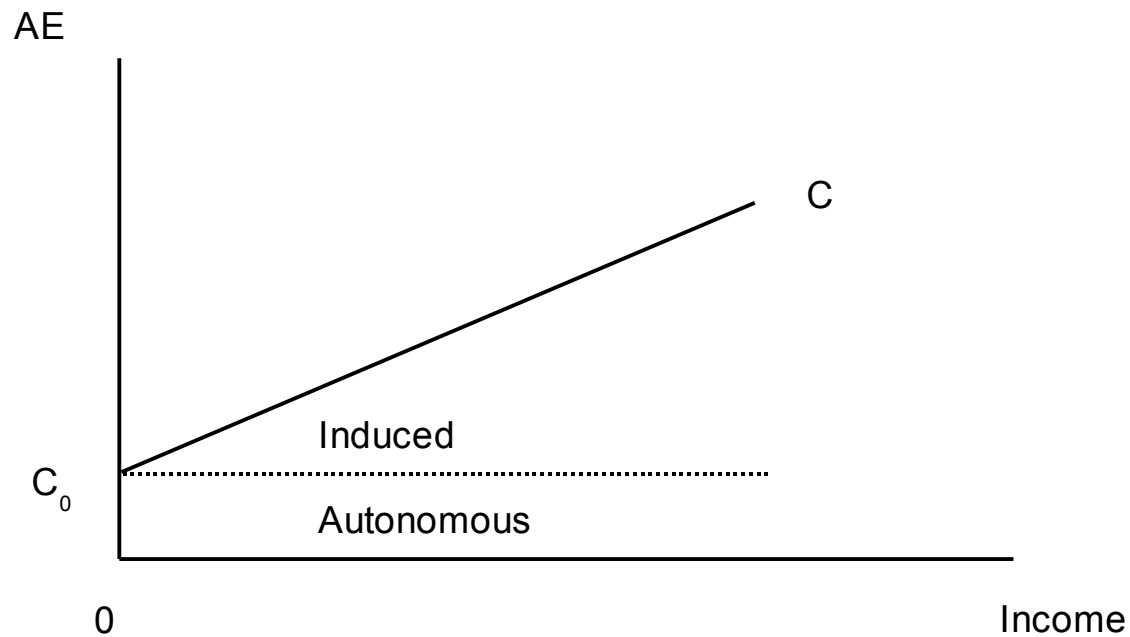
- **interest rates & debt** : although classical economists thought that higher interest rates caused

higher rates of saving, that is not thought to be true today. However higher interest rates cause higher debt service which can cause consumption to decrease.

- **savings** : thrifty people save more and consume less. Society's attitudes toward thrift do shift over time, particularly as the population ages.
- **wealth** : people tend to save a larger percentage of their income if they have a higher level of assets.

Consider the case where income is zero. One has to consume to survive (hence this level of consumption has been labeled the survival level of consumption) and this is financed by using our savings (or by taking another's savings). We will consume some minimalist amount of food, shelter, transportation, etc. As income increases, we will only add to this level of consumption.

We can express the consumption function as an equation: $C = C_0 + C_1Y$. Where C_0 is the autonomous



level of consumption and vertical intercept. C_1Y is the induced level of consumption. C_1 is the MPC and the slope of the line.

In the graph, the vertical intercept indicates the level of autonomous consumption. The consumption function rises at the rate of the Marginal Propensity to Consume (MPC). In other words, the slope of this line is the MPC. In this graphic example we show a straight line implying that the MPC is constant over income. This isn't always true. People earning high incomes tend to save a larger percentage of their income.

Theories of Consumption

What determines total consumption and consumption patterns? To say that income influences consumption is not enough. Is it past income, current income, average income, expected future income...etc? The answer is that all of these have an effect. Any theory of consumption must include all of these influences. Let's pursue some of the major lines of thinking.

*Permanent Income Hypothesis

Milton Friedman proposed the permanent income hypothesis. Temporary changes in income, called transitory income, do not affect consumption. Changes in permanent income, however, affect consumption. How do you know what your permanent income will be? We generally look at past income (the recent past) and extrapolate into the future. If you feel you will have a middle class income you will consume a middle class lifestyle. This has some important implications for savings. When income is high compared to its average, savings will be high. When income is low, so is savings.

*Life Cycle Theory

This concept is expanded in the Life Cycle Theory, originally developed by Albert Ando and Franco Modigliani. People generally experience a common pattern of earnings throughout their life and of consumption. Typically starting out of college (or just plain starting out in life) expenses equal income. Given the availability of credit, expenditures can exceed income temporarily to buy a home, car, etc. In middle life (which is increasing in age with each generation) we not only earn more than we spend but we save it for the later years of retirement. In retirement, expenses usually are a little lower but income has dropped tremendously. Expenditures are financed by using savings. Both concepts explain consumption, they are not mutually exclusive.

Savings

Saving is done for a purpose. There are different levels of saving. At each level there is a different motivation for saving.

Personal Savings

Personal savings, more often than not, are a residual, what's left of income after consumption. But savings are usually acquired for a purpose. That purpose is future consumption, such as retirement, new house, car, vacation, college, etc.

Business Savings

Not only do individuals save, but businesses have savings. Businesses finance their approximately 80% of their capital needs with business savings. Business savings are simply retained earnings. More specifically, the addition to retained earnings that is made each year. Retained earnings is another way of saying retained profits, profits that are not paid out as taxes or dividends.

Government Savings

Governments also save. This includes all levels of government; local, state, and federal. Savings are the budget surpluses. Budget deficits reduce savings.

National Savings

The total of personal, business, and government savings equals national savings.

Foreign Savings

When foreign firms invest in the United States, they use foreign savings to finance what is called

foreign direct investment. When Toyota establishes a manufacturing operation in the United States, that is an example of foreign direct investment.

Foreign governments may also contribute some savings. Usually, this is accomplished through their central banks. China, Korea, and Japan purchase large quantities of US Treasury Securities.

Gross Savings (Total Savings)

The sum of national savings and foreign savings equals total savings.

Gross Saving, 1997

\$ Billions

Personal Saving	121.0
Business Saving	1,020.6
Gross Private Saving	1,141.6
Federal Saving	49.5
State and Local Saving	215.2
Gross Government Saving	264.7
Gross Saving	1,406.3
Gross Saving as a percentage of GDP	17.4

Source: Survey of Current Business

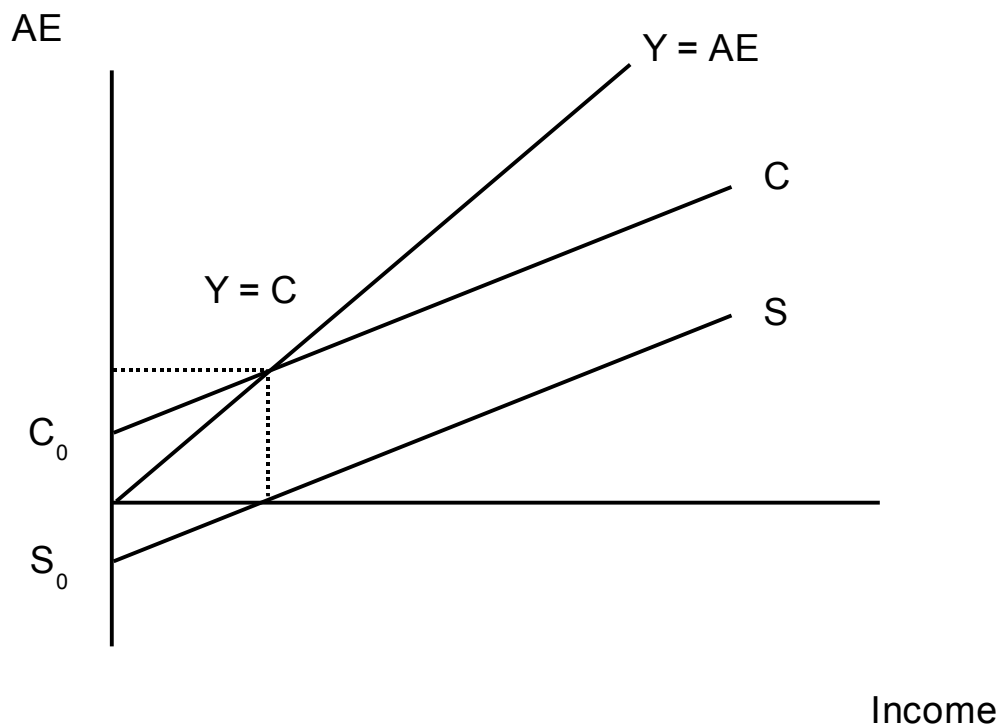
Savings Function & Graph

In the graph below, savings has been added. Similar to the consumption line, the slope of the savings line is the Marginal Propensity to Save (MPS). Since savings is an inverse image of consumption, whatever shifts consumption upward will shift savings downward. An easy way to think about this is that $Y = C + S$ so anything that increases consumption (holding income constant) has to decrease savings. Since consumption is a function of income, so is savings. As income increases, savings increase. Another way of expressing this: $1 = MPC + MPS$. Out of each dollar of additional income, a certain percentage is consumed and saved.

The Optimal Level of Savings

Can you save too much? Surprisingly, the answer is yes. To understand why, consider that by increasing savings, consumption is reduced. Consumption has utility. The tradeoff between consumption and savings is really a tradeoff between the future and the present. Savings is really future consumption. Present utility is more valuable than future utility, if only for the reason that you may not live long enough to enjoy it.

Can you have too little savings? Yes, if you do not save, you will not have funds for consumption during retirement. While this does not suggest an optimal savings rate, a range of savings that produces a satisfactory living in retirement can be calculated.



Macroeconomic Importance of Savings: Savings finances Investment

What makes savings important is what we do with our savings. Savings finance investment. The answer to the question as to whether or not we are saving enough must be answered by investment, how much of it is required. The channeling of savings into investment is accomplished by and through financial intermediaries and capital markets. Financial intermediaries will be discussed in the money market section.

Paradox of Thrift

There is one important topic to cover called the paradox of thrift. Suppose everyone feels that next year may not be a good year. It would be wise to increase savings now to prepare for tougher times. So as everyone increases her savings rate. To save more, one must consume less. As everyone consumes less, of course, sales fall, businesses cut production, and employment (either in the number of workers or the number of hours worked or both) declines. With less employment, workers earn less income. As income declines, savings decline. The paradox is as society as a whole tries to save more, in the end, everyone saves less.

This doesn't indicate that saving more is undesirable. Savings finance investment. To the extent that there is an unmet demand for capital goods, saving more may not necessarily adversely affect aggregate demand. The paradox of thrift does provide one of the mechanisms of business cycles. Consumer confidence is one leading indicator of recessions. Less confident consumers save more, triggering a paradox of thrift effect.