



Smart Phones and Budget Changes

Jeannette N. Bennett, Senior Economic Education Specialist

GLOSSARY

Budget: An itemized summary of probable income and expenses for a given period; a plan for managing income, spending, and saving during a given period.

Disposable income: The amount of a person's paycheck that is available to spend or save.

Expenditures: Money spent to buy goods and services.

Income: The payment people receive for providing resources in the marketplace. When people work, they provide human resources (labor) and in exchange receive income in the form of wages or salaries. People also earn income in the form of rent, profit, and interest.

Per capita: Per person. Determined by dividing the total quantity by the total population.

Productivity: The ratio of output per worker per unit of time.

Saving: Income not spent on current consumption or taxes. Saving involves giving up some current consumption for future consumption.

Spending: Using some or all of your income to buy things you want now.

"A wise man adapts himself to circumstances, as water shapes itself to the vessel that contains it."

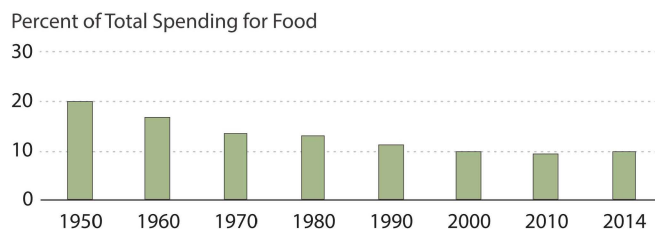
—Chinese proverb

Introduction

Everyone wants financial success, but how can it be achieved? A first step in attaining this goal is making a **budget**. This means creating a plan that ensures an effective way to balance **income**, **spending**, and **saving** during a given time. Because a budget is so valuable, it is specifically included in the *National Standards in Personal Finance*: "People can improve their economic well-being by making informed spending decisions, which entails collecting information, planning, and budgeting."¹

Yesterday's budget won't work for today. Consumer spending patterns change in response to changes in other aspects of life, such as income, workforce and educational levels, family demographics, and technology. Food expenditures is one example: The percentage of **per capita disposable income** spent on food from 1950 to 2014 changed dramatically. In 2014, consumers had about 10 percent more of their disposable income available for things other than food than consumers did in 1950. (See Figure 1.) Certainly, a budget designed in 1950 would look quite different from one created today.

Figure 1
Percent of Per Capita Disposable Income Used for Food Expenditures in the United States, 1950-2014



SOURCE: USDA, Economic Research Service, Food Expenditures Series, Table 7, Food expenditures by families and individuals as a share of disposable personal income; <https://www.ers.usda.gov/data-products/food-expenditures/>.

Phone Technology Changes Our Lives and Our Budgets

Food expenditures are not the only expenditures that affect a budget over time. Spending patterns also change because of the vast number of consumer goods and services that continue to be developed and gradually become accepted as necessities. Of course, technology has played a huge role in this change. For example, in 1900, only one out of twenty people had a telephone; at that time, telephones were not considered necessities to include in a budget.²

It's a different story today. A survey conducted in December 2016 by the National Health Interview Survey (NHIS) of the civilian noninstitutionalized U.S. population indicated approximately 97 percent of households had telephone service and 50.8 percent had only wireless phone service. That year was the first time a majority of American homes had only wireless telephones.³ Clearly, telephones have now been accepted as necessities and should be considered in a household budget.

The Government's Support for Phones

The government validated the use of and dependence on phones. As part of the 1996 Telecommunications Act, a federal government-sponsored and regulated program began to assist in the cost of landline phones. The program was designed to "ensure all Americans, including low-income consumers and those who live in rural, insular, high cost areas, shall have affordable service and help to connect eligible schools, libraries, and rural health care providers to the global telecommunications network."⁴

In 2008, this program moved into the cellular (cell) phone market. As cell phones began to increase in popularity, the program made cell phones and cell phone service free for qualifying consumers—with qualification determined by income level and/or participation in other federal or state assistance programs.

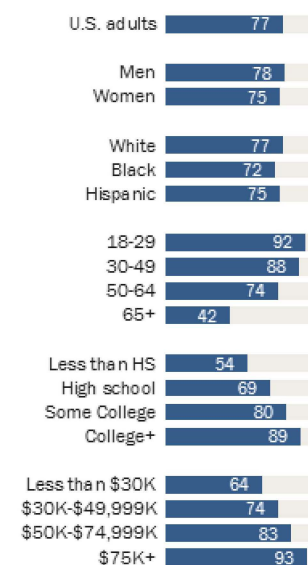
The program allows eligible consumers to choose among cell phone companies. Individual plans vary according to the company chosen and often vary from state to state. Some states offer unlimited calling, texting, and even some data allowance; other states offer lesser plans.

Although estimates vary, as many as 12 to 15 million Americans participate in the free cell phone program.⁵

Figure 2

Roughly Three-Quarters of Americans Own a Smart Phone

% of U.S. adults who say they own a smartphone



NOTE: The White and Black segments include only non-Hispanics. The survey was conducted from September 29 through November 6, 2016.

SOURCE: Reprinted with permission from the Pew Research Center.

<http://www.pewresearch.org/fact-tank/2017/06/28/10-facts-about-smartphones/>.

The Cell Phone Revolution

The mobile/cell phone revolution began in 1973. This invention brought drastic changes to communication as well as expenditures. New products with new features offered new choices for consumers, with styles and models such as the Brick phone, the Clamshell, the Candybar, and the Razr flip phone. Service providers soon promoted contracts for phone service. By 2007, Apple had created the iPhone, and the smartphone world was born.⁶

The smartphone expanded the traditional phone by providing the work and services of a computer in a very small and convenient package. American consumers were quick to adopt this technology. A 2014 survey conducted by the Pew Research Center found that 46 percent of smartphone owners said their smartphone is something "they couldn't live without."⁷ Additional research conducted by the Pew Research Center in late 2016 estimated that 77 percent of American adults owned a smartphone. This 2016 survey indicated younger adults, those with higher levels of education, and those with

A Smartphone can...

- take and send pictures and videos
- replace an alarm clock
- tell time
- send/receive emails
- send/receive text messages
- access the weather
- give directions
- make online orders
- pay bills online
- access the Internet
- provide online banking
- provide apps
- serve as a calculator
- help you look for a job
- allow you to read an e-book
- give you the latest news
- replace a flashlight

higher income levels had the highest percentages of smartphone ownership.⁸ (See Figure 2.)

But other groups have also latched on to the new technology. The survey showed that 42 percent of adults age 65 and older owned a smartphone. While this group represented the lowest ownership among all groups, it was still a fast-growing group: From 2013 to 2016, their smartphone ownership rate increased 24 percent.⁹ Clearly, seniors have also been jumping on the smartphone bandwagon.

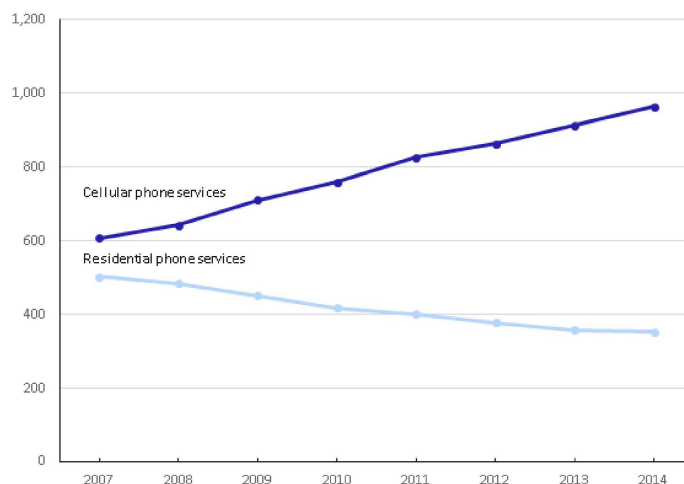
Smartphone Usage

How much time do consumers spend using their smartphones? Different reports offer different answers. For example, one 2017 report shows average usage in the United States is a little over 2½ hours per day.¹⁰ A different 2017 source says U.S. consumers now spend 5 hours per day on mobile devices.¹¹ The one definite answer is that consumers are increasingly connected to their smartphones and are seldom found “phoneless.”

Increasing Expenditures

The cost of smartphone ownership can vary depending on the phone itself, the contract, and the options pur-

Figure 3
Average Annual Expenditures in Cellular and Residential Phone Services, 2007-2014



SOURCE: USDA, Brett Creech, “Expenditures on cellular phone services have increased significantly since 2007,” *Beyond the Numbers: Prices & Spending*, Vol. 5, No. 1 (U.S. Bureau of Labor Statistics, February 2016); <https://www.bls.gov/opub/btn/volume-5/expenditures-on-cellular-phone-services-have-increased-significantly-since-2007.htm>.

Average Annual Expenditures on Cellular Phone Service Spending from 2007 to 2014 by Age Group

Age Group	Expenditure 2007	Expenditure 2014	Change in Dollars
Under 25 years	\$560	\$677	\$117
25-34 years	728	1,048	320
35-44 years	757	1,250	493
45-54 years	753	1,248	495
55-64 years	546	970	424
65 years and older	264	534	270
65-74 years	374	675	301
75 years and older	148	348	200

SOURCE: U.S. Bureau of Labor Statistics. Brett Creech, “Expenditures on cellular phone services have increased significantly since 2007,” *Beyond the Numbers: Prices & Spending*, vol. 5, no. 1 (U.S. Bureau of Labor Statistics, February 2016), Table 2. <https://www.bls.gov/opub/btn/volume-5/expenditures-on-cellular-phone-services-have-increased-significantly-since-2007.htm>.

chased. When the smartphone revolution began in 2007, expenditures for cellular phone service in the United States exceeded the amount spent on landlines, or residential lines, for the first time. Expenditures on cellular phone services continue to rise rapidly.¹² (See Figure 3.)

From 2007-14, the expenditures on cell phone service increased among all age groups. (See the table.) Of course, there are more features and advanced technology involved each time the price tag increases. Fingerprint scanners, faster-charging batteries, better cameras, and more memory are examples of technology included in the newer often-higher price tags.

Conclusion

The percent of per capita disposable income used for food expenditures over the years has decreased; the expenditures on cell phones have increased. These examples demonstrate that a budget is dynamic and requires regular adjustment.

The first mobile phones were designed only for making calls. These were replaced with an advanced cell phone, appropriately called the *smartphone*. With its capability to perform advanced technological tasks, the smartphone has been accepted for its convenience as well as its ability to increase productivity. The cell phone revolution has changed both the way we interact with our world and our spending choices. And circumstances will continue to change. Technology will continue to bring new developments that will gradually become accepted as necessities and, therefore, change spending patterns.

A deliberate adaptation to shifts in spending patterns is a step toward financial success. A recent study by U.S. Bank shows that only 41 percent of Americans use a budget.¹³ Perhaps this will change with more attention and application of the Chinese proverb: *A wise man adapts himself to circumstances, as water shapes itself to the vessel that contains it.* ■

Notes

- ¹ Council for Economic Education. "National Standards for Financial Literacy." New York, NY: 2013, p. 6. <http://councilforeconed.org/wp/wp-content/uploads/2013/02/national-standards-for-financial-literacy.pdf>.
- ² Thompson, Derek. *The Atlantic*. "How America Spends Money: 100 Years in the Life of the Family Budget." April 2012; <https://www.theatlantic.com/business/archive/2012/04/how-america-spends-money-100-years-in-the-life-of-the-family-budget/255475/>.
- ³ Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, July–December 2016. National Center for Health Statistics. May 2017. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201705.pdf>.
- ⁴ Bank, Justin. The Annenberg Public Policy Center. "The Obama Phone?" Nov. 5, 2009; <https://www.factcheck.org/2009/10/the-obama-phone/>.
- ⁵ Free Government Cell Phones. "States Providing Cell Phones from the Government to Low-Income Residents"; <https://www.freegovernmentcellphones.net/states>.
- ⁶ Nguyen, Nicole. "The Evolution of the Cell Phone—How Far It's Come!" July 4, 2014; <https://readwrite.com/2014/07/04/cell-phone-evolution-popsugar/>.
- ⁷ Rainie, Lee and Perrin, Andrew. Pew Research Center. "10 Facts about Smartphones as the iPhone Turns 10," June 28, 2017; <http://www.pewresearch.org/fact-tank/2017/06/28/10-facts-about-smartphones/>.
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ Dunn, Jeff. Business Insider. "Smartphone Addiction' Seems to Only Be Getting Stronger," May 25, 2017; <http://www.businessinsider.com/people-spending-more-time-on-smartphones-chart-2017-5>.
- ¹¹ Perez, Sarah. "U.S. consumers now spend 5 hours per day on mobile devices" March 3, 2017 <https://hackernoon.com/how-much-time-do-people-spend-on-their-mobile-phones-in-2017-e5f90a0b10a6>.
- ¹² Creech, Brett. "Expenditures on cellular phone services have increased significantly since 2007," *Beyond the Numbers: Prices & Spending*, vol. 5, no. 1 (U.S. Bureau of Labor Statistics, February 2016); <https://www.bls.gov/opub/btn/volume-5/expenditures-on-cellular-phone-services-have-increased-significantly-since-2007.htm>.
- ¹³ Backman, Maurie. CNN Money. The Motley Fool. "Nearly 3 in 5 Americans Are Making This Huge Financial Mistake," October 24, 2016; <http://money.cnn.com/2016/10/24/pf/financial-mistake-budget/index.html>.

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Federal Reserve Bank of St. Louis *Page One Economics*®:**“Smart Phones and Budget Changes”****After reading the article, select the best answer to each question.**

1. Spending on cell phone service from 2007 to 2014
 - a. increased in younger age groups and decreased in older age groups.
 - b. increased among all age groups.
 - c. decreased by a small percentage.
 - d. decreased because of more features and added technology.
2. On average, which age group spent the most on cellular phone service spending in 2014?
 - a. 75 years and older
 - b. under 25 years
 - c. between 25 and 34 years old
 - d. between 35 and 44 years old
3. Telephone expenditures have become part of household budgets because
 - a. more than 90 percent of Americans use a budget.
 - b. telephones are now accepted as necessities.
 - c. government programs do not support telephone services.
 - d. food expenses have increased.
4. On average, people in 1950 spent
 - a. the same percentage of their disposable income on food as people did in 1960.
 - b. a smaller percentage of their disposable income on food than people did in 1970.
 - c. a greater percentage of their disposable income on food than people did in 2014.
 - d. the same percentage of their disposable income on food as people did in 2000.
5. Government programs that support phone usage
 - a. provide free cell phones to all American consumers.
 - b. require consumers who are eligible for free cell phones to use the same cell phone company.
 - c. first began in 1973 because of the cell phone revolution.
 - d. were first started to help people with the cost of a landline phone.
6. The percentage of smartphone ownership in the United States
 - a. is the same among all education levels of consumers.
 - b. increases as the level of education increases.
 - c. increases as the level of education decreases.
 - d. is not affected by the level of education.

7. The smartphone
 - a. was originally designed as the first of wireless phones.
 - b. is a tool that can increase productivity.
 - c. is helpful to only high income earners.
 - d. was considered a necessity in the 1970s.
8. It is important to make regular adjustments to a household budget because
 - a. the percentage of per capita disposable income spent on food increases each year.
 - b. consumer spending patterns remain the same over the years.
 - c. adapting to shifts in spending patterns is a step toward financial success.
 - d. reports show fewer than half of Americans use a budget.
9. Since 2007, the average annual expenditures on residential phone services (landlines) have
 - a. decreased each year.
 - b. increased in all years except 2011, which showed a decrease.
 - c. remained equal to the amount spent on cellular service.
 - d. been greater than the amount spent on cellular service.
10. A budget is a plan that addresses a time period and
 - a. will probably not need adjustments since the smartphone has already been invented.
 - b. will be the same in 1950 and as it is in the current year.
 - c. is helpful to only high income earners.
 - d. helps to balance income, spending, and saving.