

CASE STUDY

Money in a POW Camp

An unusual form of commodity money developed in some Nazi prisoner of war (POW) camps during World War II. The Red Cross supplied the prisoners with various goods—food, clothing, cigarettes, and so on. Yet these rations were allocated without close attention to personal preferences, so the allocations were often inefficient. One prisoner may have preferred chocolate, while another may have preferred cheese, and a third may have wanted a new shirt. The differing tastes and endowments of the prisoners led them to trade with one another.

Barter proved to be an inconvenient way to allocate these resources, however, because it required the double coincidence of wants. In other words, a barter system was not the easiest way to ensure that each prisoner received the goods he valued most. Even the limited economy of the POW camp needed some form of money to facilitate transactions.

Eventually, cigarettes became the established “currency” in which prices were quoted and with which trades were made. A shirt, for example, cost about 80 cigarettes. Services were also quoted in cigarettes: some prisoners offered to do other prisoners’ laundry for 2 cigarettes per garment. Even nonsmokers were happy to accept cigarettes in exchange, knowing they could trade the cigarettes in the future for some good they did enjoy. Within the POW camp the cigarette became the store of value, the unit of account, and the medium of exchange.¹

¹ R. A. Radford, “The Economic Organization of a POW Camp,” *Economics* (November 1945): 189–201. The use of cigarettes as money is not limited to this example. In the Soviet Union in the late 1980s, packs of Marlboros were preferred to the ruble in the large underground economy.

CASE STUDY

Money and Social Conventions on the Island of Yap

The economy of Yap, a small island in the Pacific, once had a type of money that was something between commodity and fiat money. The traditional medium of exchange in Yap was *fei*, stone wheels up to 12 feet in diameter. These stones had holes in the center so that they could be carried on poles and used for exchange.

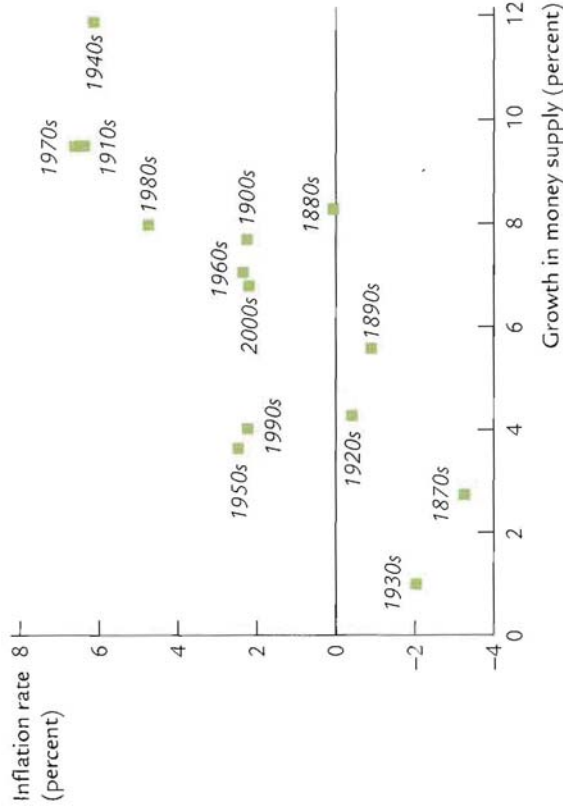
Large stone wheels are not a convenient form of money. The stones were heavy, so it took substantial effort for a new owner to take his *fei* home after completing a transaction. Although the monetary system facilitated exchange, it did so at great cost.

Eventually, it became common practice for the new owner of the *fei* not to bother to take physical possession of the stone. Instead, the new owner accepted a claim to the *fei* without moving it. In future bargains, he traded this claim for goods that he wanted. Having physical possession of the stone became less important than having legal claim to it.

This practice was put to a test when a valuable stone was lost at sea during a storm. Because the owner lost his money by accident rather than through negligence, everyone agreed that his claim to the *fei* remained valid. Even generations later, when no one alive had ever seen this stone, the claim to this *fei* was still valued in exchange.²

² Norman Angell, *The Story of Money* (New York: Frederick A. Stokes Company, 1929), 88–89.

FIGURE 4-1



Historical Data on U.S. Inflation and Money Growth In this scatterplot of money growth and inflation, each point represents a decade. The horizontal axis shows the average growth in the money supply (as measured by M2) over the decade, and the vertical axis shows the average rate of inflation (as measured by the GDP deflator). The positive correlation between money growth and inflation is evidence for the quantity theory's prediction that high money growth leads to high inflation.

Source: For the data through the 1960s: Milton Friedman and Anna J. Schwartz, *Monetary Trends in the United States and the United Kingdom: Their Relation to Income, Prices, and Interest Rates 1867-1975* (Chicago: University of Chicago Press, 1982). For recent data: U.S. Department of Commerce, Federal Reserve Board. The data point for the 2000s includes only the first half of the decade.

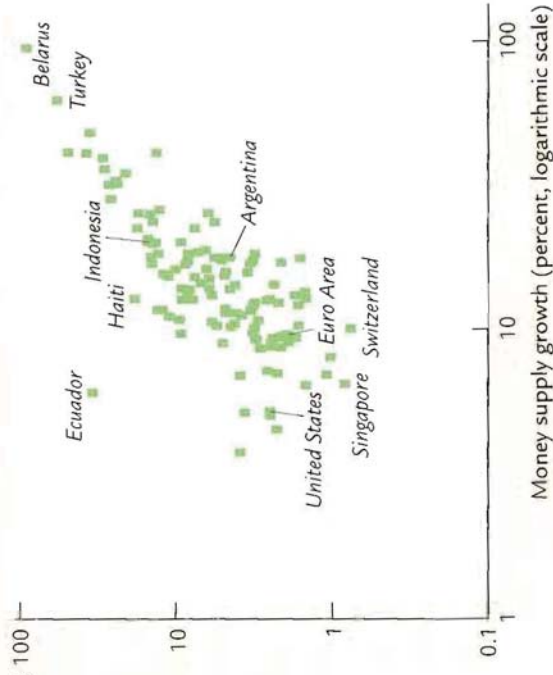
The Measures of Money

TABLE 4-1

Symbol	Assets Included	Amount in September 2005 (billions of dollars)
C	Currency	715.4
M1	Currency plus demand deposits, traveler's checks, and other checkable deposits	1363.4
M2	M1 plus retail money market mutual fund balances, saving deposits (including money market deposit accounts), and small time deposits	6587.9
M3	M2 plus large time deposits, repurchase agreements, Eurodollars, and institution-only money market mutual fund balances	9976.2

Source: Federal Reserve

FIGURE 4-2



International Data on Inflation and Money Growth In this scatterplot, each point represents a country. The horizontal axis shows the average growth in the money supply (as measured by currency plus demand deposits) during the period 1996 to 2004, and the vertical axis shows the average rate of inflation (as measured by the CPI). Once again, the positive correlation is evidence for the quantity theory's prediction that high money growth leads to high inflation.

Source: International Financial Statistics.

money growth and inflation is clear. Countries with high money growth (such as Turkey) tend to have high inflation, and countries with low money growth (such as Singapore) tend to have low inflation.

If we looked at monthly data on money growth and inflation, rather than data for ten-year periods, we would not see as close a connection between these two variables. This theory of inflation works best in the long run, not in the short run. We examine the short-run impact of changes in the quantity of money when we turn to economic fluctuations in Part Four of this book.

How Do Credit Cards and Debit Cards Fit into the Monetary System?

Many people use credit or debit cards to make purchases. Because money is the medium of exchange, one might naturally wonder how these cards fit into the measurement and analysis of money. Let's start with credit cards. Although one might guess that credit cards are part of the economy's stock of money, in fact measures of the quantity of money do not take credit cards into account. Credit cards are not really a method of payment but a method of *deferring* payment. When you buy an item with a credit card, the bank that issued the card pays the store what it is due. Later, you will have to repay the bank. When the time comes to pay your credit card bill, you will likely do so by writing a check against your checking account. The balance in this checking account is part of the economy's stock of money. The story is different with debit cards, which automatically withdraw funds from a bank

account to pay for items bought. Rather than allowing users to postpone payment for their purchases, a debit card allows users immediate access to deposits in their bank accounts. Using a debit card is similar to writing a check. The account balances that lie behind debit cards are included in measures of the quantity of money. Even though credit cards are not a form of money, they are still important for analyzing the monetary system. Because people with credit cards can pay many of their bills all at once at the end of the month, rather than sporadically as they make purchases, they may hold less money on average than people without credit cards. Thus, the increased popularity of credit cards may reduce the amount of money that people choose to hold. In other words, credit cards are not part of the supply of money, but they may affect the demand for money.

CASE STUDY

The Free Silver Movement, the Election of 1896, and the Wizard of Oz

The redistributions of wealth caused by unexpected changes in the price level are often a source of political turmoil, as evidenced by the Free Silver movement in the late nineteenth century. From 1880 to 1896 the price level in the United States fell 23 percent. This deflation was good for creditors, primarily the bankers of the Northeast, but it was bad for debtors, primarily the farmers of the South and West. One proposed solution to this problem was to replace the gold standard with a bimetallic standard, under which both gold and silver could be minted into coin. The move to a bimetallic standard would increase the money supply and stop the deflation.

The silver issue dominated the presidential election of 1896. William McKinley, the Republican nominee, campaigned on a platform of preserving the gold standard. William Jennings Bryan, the Democratic nominee, supported the bimetallic standard. In a famous speech, Bryan proclaimed, "You shall not press down upon the brow of labor this crown of thorns, you shall not crucify mankind upon a cross of gold." Not surprisingly, McKinley was the candidate of the conservative Eastern establishment, whereas Bryan was the candidate of the Southern and Western populists.

This debate over silver found its most memorable expression in a children's book, *The Wizard of Oz*. Written by a Midwestern journalist, L. Frank Baum, just after the 1896 election, it tells the story of Dorothy, a girl lost in a strange land far from her home in Kansas. Dorothy (representing traditional American values) makes three friends: a scarecrow (the farmer), a tin woodman (the industrial worker), and a lion whose roar exceeds his might (William Jennings Bryan). Together, the four of them make their way along a perilous yellow brick road (the gold standard), hoping to find the Wizard who will help Dorothy return home. Eventually they arrive in Oz (Washington), where everyone sees the world through green glasses (money). The Wizard (William McKinley) tries to be all things to all people but turns out to be a fraud. Dorothy's problem is solved only when she learns about the magical power of her silver slippers.⁹

Although the Republicans won the election of 1896 and the United States stayed on a gold standard, the Free Silver advocates got the inflation that they wanted. Around the time of the election, gold was discovered in Alaska, Australia, and South Africa. In addition, gold refiners devised the cyanide process, which facilitated the extraction of gold from ore. These developments led to increases in the money supply and in prices. From 1896 to 1910 the price level rose 35 percent.

CASE STUDY

Life During the Bolivian Hyperinflation

The following article from the *Wall Street Journal* shows what life was like during the Bolivian hyperinflation of 1985. What costs of inflation does this article emphasize?

Precarious Peso - Amid Wild Inflation, Bolivians Concentrate on Swapping Currency

LA PAZ, Bolivia—When Edgar Miranda gets his monthly teacher's pay of 25 million pesos, he hasn't a moment to lose. Every hour, pesos drop in value. So while his wife rushes to market to lay in a month's supply of rice and noodles, he is off with the rest of the pesos to change them into black-market dollars.

Mr. Miranda is practicing the First Rule of Survival amid the most out-of-control inflation in the world today. Bolivia is a case study of how runaway inflation undermines a society. Price increases are so huge that the figures build up almost beyond comprehension. In one six-month period, for example, prices soared at an annual rate of 38,000%. By official count, however, last year's inflation reached 2,000%, and this year's is expected to hit 8,000%—though other estimates range many times higher. In any event, Bolivia's rate dwarfs Brazil's 370% and Argentina's 1,100%—two other cases of severe inflation.

It is easier to comprehend what happens to the 38-year-old Mr. Miranda's pay if he doesn't quickly change it into dollars. The day he was paid 25 million pesos, a dollar cost 500,000 pesos. So he received \$50. Just days later, with the rate at 900,000 pesos, he would have received \$27.

"We think only about today and converting every peso into dollars," says Ronald MacLean, the manager of a gold-mining firm. "We have become myopic."

And intent on survival. Civil servants won't hand out a form without a bribe. Lawyers, accountants, handsters, even prostitutes have almost given up working to become money-changers in the streets. Workers stage repeated strikes and steal from their bosses. The bosses smuggle production abroad, take out phony loans, duck taxes—anything to get dollars for speculation.

The production at the state mines, for example, dropped to 12,000 tons last year from 18,000. The miners pad their wages by smuggling out the richest ore in their lunch pails, and the ore goes by a contraband network into neighboring Peru. Without a major tin mine, Peru now exports some 4,000 metric tons of tin a year.

"We don't produce anything. We are all currency speculators," a heavy-equipment dealer in La Paz says. "People don't know what's good and bad anymore. We have become an amoral society...."

It is an open secret that practically all of the black-market dollars come from the illegal cocaine trade with the U.S. Cocaine traffickers earn an estimated \$1 billion a year....

But meanwhile the country is suffering from inflation largely because the government's revenues cover a mere 15% of its expenditures and its deficit has widened to nearly 25% of the country's total annual output. The revenues are hurt by a lag in tax payments, and taxes aren't being collected largely because of widespread theft and bribery.

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