On Reserve: A Resource for Economic Educators from the Federal Reserve Bank of Chicago

Federal Reserve Bank of Chicago
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This document may be printed.
The Money Evolution

Sol, sucre, colon, and gourde. When asked what these words have in common, someone familiar with the French language might quickly respond that they are all French words—but the similarity ends there since their meanings are quite unrelated. (For the curious at heart, sol—in English—is ground, sucre is sugar, colon is cultivator, and a gourde is a wicker bottle.)

Someone involved with international trade or banking, on the other hand, might recognize each of these words as the name of some nation's monetary unit (sol—Peru, surce—Ecuador, colon—Costarica and El Salvador, and gourde—Haiti). In other words, they are all money.

What is money?

Money is called by a wide variety of names and appears in many physical forms. Regardless of what it looks like or is called, however, all money performs the same functions and is therefore defined in those terms. Money serves as:

(1) a medium of exchange (it must be widely accepted in exchange for goods and services)

(2) a unit of account (it is a standard or basis against which values can be measured)

(3) a store of wealth (it is a relatively convenient way to hold one's wealth).

Money in the Past

The forerunner of money was, of course, the barter system—born when our primitive ancestors found that they wanted items owned by others and could get them by exchanging one good for another. It is believed that 12,000 years ago European and Asian tribes met regularly in the Ural Mountains to barter.

Although this method of exchange worked for thousands of years, the system was not without problems—sometimes it was difficult to find someone who owned the good that was needed and who also needed the good being swapped; perishable goods sometimes "perished" before trades could be made; and some goods (a cow, for instance) were not easily divisible for "small purchases".

Commodity money developed as people realized that many of these problems could be alleviated by establishing a medium of exchange—a single item that would be generally accepted in exchange for other goods. Salt, cattle, seashells, and tobacco are among the items that have served as money. To be sure, commodity money presented its share of problems. But it was still far more convenient than barter.

Coins, in their original form, were commodity money. Forty-five centuries ago the Egyptians used precious metals shaped into rings for money and 18 centuries later the
first metal coins were struck in Lydia (western Turkey). Although coin was the most popular medium of exchange for many centuries, the inconvenience and danger of carrying large quantities gave rise to the use of paper money. During the Middle Ages people started leaving their coins with goldsmiths, obtaining receipts for their deposits. Initially, when depositors wanted to make payments, they redeemed their receipts for coin. The coin was then used to pay the creditor, who, more often than not, redeposited it with the same or another goldsmith. In time, this cumbersome process was circumvented as payments were made by simply transferring the receipts.

Although the use of goldsmiths' receipts for money represented important progress in the money evolution, nations began to find that commodity-based specie did not work all that well. Coins tended to be hoarded for their intrinsic worth. But more importantly, the money supply, when tied to a nation's gold holdings, could not expand and contract in response to business conditions.

Through time, "fiat" money developed as people discovered that the items that functioned best as money were those that could be easily carried, saved or stored, and divided for small purchases, and had little intrinsic worth. The currency and coins we use today are fiat money. That is, they are money because the government says they are and because we accept them as such. Our pennies, nickels, quarters, etc., have negligible metallic value, and our dollars are not redeemable in gold or any other commodity. The value, then, of fiat money is not determined by the availability of some precious metal, but by its purchasing power.

**Money in the Present**

There are basically three forms of money in the United States today—coins, currency, and transaction account balances (funds in checking, share draft, and NOW accounts.) Coins and currency don't seem to be evolving much anymore—except perhaps in their metallic composition. Today's money evolution is occurring in the development of new and more efficient ways to transfer the funds held in these transaction accounts to pay for goods and services.

The most common instrument used to transfer funds held on deposit is the check. Checks came into widespread use in this nation when deposit banking was established after the Revolutionary War. Less than 100 years later, the amount of "checkbook money" had surpassed currency. Today, balances in transaction accounts comprise more than 70 percent of the money supply.

During the last decade the number of checks written has risen by about 6 percent each year until last year Americans wrote over 35 billion checks. Although the check collection mechanism is constantly being improved and updated, the annual increases in check volume continue to present a challenge.

It is extremely expensive and time-consuming to handle so many pieces of paper. And as these costs increase, financial institutions are passing the added expense along to their customers. In the search for less costly, more efficient ways to move money, electronic funds transfers (EFT) are receiving a lot of attention. At the same time, our traditional ideas of what money is (or looks like) are necessarily changing.

* debiting the account of the financial institution on which the check is drawn and crediting the account of the institution in which it was deposited
What is EFT?

Electronic funds transfer (EFT) systems enable consumers to move funds in transaction accounts using an electronic signal instead of paper. Let's take a look at how electronic terminals, telephones, and computers can be used to instruct financial institutions to debit or credit customers' accounts.

More and more people today are using debit cards when paying for things. Although debit cards generally look identical to credit cards, there is one all-important difference. While credit cards commit money that will be earned in the future, debit cards transfer money that has already been earned and deposited. Debit cards help speed up the payments process by providing immediate (or end-of-business day) transfer of funds from one account to another when used in automated teller machines (ATMs) or point of sale (POS) terminals.

ATMs allow consumers to get cash, make deposits, pay bills, or transfer funds from one account to another without the assistance of a teller. Therefore, a consumer can conduct such transactions whenever it's convenient—even if the depository institution isn't open.

Point of sale terminals, already in use at a number of retail stores and supermarkets, let customers pay for purchases by inserting a card and punching in the amount to be paid. That amount is subtracted from the consumer's account and added to the merchant's account electronically.

Another form of EFT currently in use is the preauthorized payment, which provides the automatic withdrawal or deposit of funds to an individual account, under authority given to the financial institution by the account holder. Direct deposit of wages is the most common example of a preauthorized deposit while the automatic payment of regular, recurring bills such as mortgage and insurance payments is the most common type of preauthorized withdrawal.

Did you know that you can also conduct financial transactions from the comfort of your own home? All you need is a telephone. Many financial institutions allow customers to transfer funds from one account to another (provided, of course, they both belong to the customer) or to pay bills by phone.

Pilot projects are currently underway that would allow consumers to make financial transactions using home computers and television sets that are wired for interactive communication. To many of us such utilization of technology seems futuristic. Nonetheless, it is here.

Money in the Future

Several years ago the phrase "cashless, checkless society" was extremely fashionable. To some it suggested the almost effortless control of one's personal funds, while to others it threatened a loss of control. Is the money evolution moving us toward a future of paperless financial transactions?

Consumers will ultimately determine the answer to this question since any form of money must meet the test of acceptability. As the costs of handling all forms of paper money increase, as technological advances are made, as the world continues to change, so will the form of money.
Additional Reading Materials

(For information about how to order these materials, consult the Federal Reserve System Public Information Materials catalog in your school or write or call the Public Information Center at the Chicago Fed.)

Alice in Debitland, Board of Governors, 1980/16pp.

Audiovisual Materials

Checking Out Checks. 1976. 6 min; filmstrip/cassette. Explains how to write a check, how checks move money, and how to balance a checkbook. Includes thirty-five 22-page cartoon style booklets, four duplicating activity masters, and a teacher's guide. Available only from the New York Fed. ($12.50)

EFT at Your Service, 1979, 14 min; 16 mm; color. Explains how to bank, save, and pay electronically and outlines the protections established by the Federal Reserve's Regulation E. Includes a teacher's guide. (free-loan)

Instructional Units

Teaching Activities

1. Use the "Exchange Escapade" game from the Minneapolis Fed's instructional unit (listed above) to demonstrate one of the main problems associated with the barter system—that of finding someone who possesses the item you want and also wants the item you're offering.

2.a. Have students select a nation (other than the U.S.) and describe its monetary system, as in the following example:

   country - United States  
   monetary unit - dollar  
   symbol - $  
   subdivision - cent  
   highest denomination - $100 (bill)  
   lowest denomination - 1¢ (coin)

   b. Ask students to use the current exchange rate for the monetary unit they described in part (a) above to figure how much of that money would equal $50 in U.S. dollars.

3. Ask students to:
   a. survey financial institutions in the area to find out what types of electronic funds transfers are available to consumers. Interview the institution's management about the future of EFT.
   b. survey businesses (supermarkets, department stores) to see if they have point of sale terminals. If not, try to interview management about the feasibility of providing them.
   c. try to find out more about research or pilot projects currently underway that seek to provide new ways to transfer money electronically. For each type of transfer identified, what are the advantages and disadvantages to consumers?

Regional news

(News of economic education programs and activities contained in this section is submitted by the sponsoring organization. Reporting of this information does not necessarily constitute endorsement by the Federal Reserve Bank of Chicago or the Board of Governors.)

ILLINOIS

The Illinois Council on Economic Education and the Illinois State Center for Economic Education will present a two-week workshop on the economics of energy at Illinois State University in Normal, Illinois July 26-August 6. The workshop, sponsored by the Amoco Foundation, will focus on the economic aspects of utilizing energy resources efficiently and developing new sources of energy to meet energy needs. For more information about the workshop and application procedures contact Dr. Bernard McCarney, Center for Economic Education, Department of Economics, ISU, Normal, IL 61761.
The 1982 Summer Institute in Economic Education, offered by the Illinois Council and Northwestern University, will be held at the University’s Evanston campus June 21-July 9. Designed to prepare educators to teach economics more effectively, the institute will be conducted by Dr. Dennis J. Weidenaar, Professor of Economic Education at Purdue University. For more information about the workshop and application procedures contact Dr. John L. Lewis, Illinois Council on Economic Education, Northern Illinois University, DeKalb, IL 60115.

INDIANA

The Indiana Council for Economic Education will hold its third annual workshop on "Money, Banking, and Economic Stabilization Policies" June 13-19 at Hanover College, Hanover, Indiana. Indiana secondary teachers with an interest in social studies, economics, consumer economics, or business education can find out more about the workshop by contacting Dr. Paul Blume, Box 376, Hanover, IN 47243.

MICHIGAN

The Central Michigan University Center for Economic Education will offer a graduate level tuition subsidized course in economic education for interested persons holding teaching certificates. For more information about the course to be held August 2-13 on the CMU campus, contact Don Kilbourn, Center for Economic Education, Central Michigan University, Mount Pleasant, MI 48859.

Dr. Paul Natke, assistant professor of economics at Central Michigan University, will assume the full-time directorship of the CMU Center for Economic Education this summer. Future inquiries about center activities may be directed to Dr. Natke at the address listed above.

WISCONSIN

The Centers for Economic Education in Eau Claire, Green Bay, Milwaukee, Oshkosh, Platteville, and Whitewater are offering summer workshops for educators. For more information contact Bill Hill, Wisconsin State Council on Economic Education, 200 N. Jefferson Street, Milwaukee, WI 53202.

Announcing ...

Credit Guide presents general information about using consumer credit by means of a "road map" that leads the reader along the road to "credit-ability." Free copies of this pamphlet, appropriate for high school students and adults, may be obtained by writing the Public Information Center, Federal Reserve Bank of Chicago, Box 834, Chicago, IL 60690. Published by the Federal Reserve Bank of Chicago.

A 1981 study sponsored by the U.S. Department of Education resulted in the recommendation that the consumer education curriculum integrate basic economics education. Compiled by the Joint Council on Economic Education, the report includes a suggested "hierarchy" of concepts for consumer education along with methods for working within existing curriculum patterns. Copies of the report are available at a cost of $5 from the Joint Council on Economic Education, 1212 Avenue of the Americas, New York, NY 10036.
Focusing on the Fed, a teacher package (for junior and senior high school teachers) designed to accompany the film The Fed: Our Central Bank, examines the operational and money management functions of the Federal Reserve System: the tools of monetary policy: and the interactive effects of monetary, fiscal, and regulatory policies on inflation. A teacher's guide, wall chart, and four (spirit master) activity sheets are included. A free copy of Focusing on the Fed is sent automatically when you order the film which is available on a free-loan basis from the Federal Reserve Bank of Chicago at the address listed above. Film reservations for Michigan residents are handled by the Detroit Branch of the Federal Reserve Bank of Chicago, 160 West Fort Street, Detroit, MI 48231. Published by the Board of Governors.

Teaching About Credit: Activities for Secondary Classes transforms an array of complex information about consumer credit and consumer credit protection laws into eight easy-to-use classroom lessons. Using a hypothetical couple's experiences as the primary teaching vehicle, Teaching About Credit involves students in credit decisions, applications, payments, problems, and solutions. Copies may be obtained by sending $1.00 to the Bank and Public Relations Department, Federal Reserve Bank of St. Louis, Box 442. St. Louis, MO 63166. Published by the St. Louis Fed.

Note: The next issue of On Reserve is the Fall edition which will be published in November. Meanwhile don't forget to send us news from your classroom—creative instructional ideas that you would like to share with other teachers.

Editor: Sandra D Mayfield Graphics: Roger Thryselius

On Reserve is published each Fall, Winter, and Spring by the Federal Reserve Bank of Chicago as a public service to teachers of economics and consumer education curricula. We welcome your comments about this newsletter and suggestions for its improvement. To be placed on the mailing list for future editions, write On Reserve, Federal Reserve of Chicago. Public Information Center. Box 834. Chicago. Illinois 60690. or call (312) 322-5112.
Credit: Is how you rate in the cards?
Credit: Is how you rate in the cards?

"Credit...is the only enduring testimony to man's confidence in man."  James Blish

Credit may be a testimony to man's confidence in man, but it also can be a source of contention. For example, an issue that simmered during the 1980s, and finally came to boil late in 1991, was credit card interest rates. Despite significant decreases in key interest rates during recent years, credit card interest remained virtually flat, much to the chagrin of business and consumer advocates alike. The controversy became so heated that some suggested legislating an interest-rate cap on credit cards.

This issue of On Reserve will examine the economics behind credit card rates, using supply and demand concepts to analyze credit cards as credit instruments. By looking at various factors in the pricing equation, this article will provide an economic understanding of credit card interest rates and how credit cards might be affected by the various "reform" proposals.

Why the Interest in Credit Card Rates?

The credit cards that seem to be grabbing the most attention are the bank-issued "universal" cards such as Visa and Mastercard. These cards are called "universal" because of their wide acceptance at all types of establishments in contrast to retailer-issued cards and travel and entertainment cards. But the distinctions are starting to blur. Bank credit cards are facing competition from new players. Cards issued by retailers, such as Sears, and by corporations, such as AT&T, intended to compete with universal cards, have made inroads on banks' turf.

Prior to the 1970s, credit cards were issued by retailers or travel and entertainment companies. There were a few bank credit cards in existence, but most were tied to a specific bank network and lacked the "universal" aspect we take for granted today. The rapid expansion of Bank of America's program (today's Visa) and the Interbank group's program (MasterCard) in the early 1970s established the foundation for today's industry. As these programs began aggressively marketing their cards, first to banks and then to consumers and retailers, the industry took off.

Because of the nature of the service being extended, with issuing banks receiving only a very small percentage of each purchase amount charged, both bank systems realized that a wide customer base was highly desirable. The only way to cover costs was through a huge volume of customers and transactions. But widening the customer base and bringing more and more people who otherwise would not have qualified for cards into the credit pool increased risks to the banks and necessitated a higher interest rate on unpaid balances.

As the 1980s approached, the maturing baby-boomers sought higher credit lines and more consumer protection. And issuers responded. But this trend also presented higher risks for the issuing banks. Higher credit lines meant that if a customer defaulted, the bank's loss could be larger. Increased protection from fraudulent use meant the bank, not the consumer, might suffer losses for illegally used credit cards.
The early 1980s also saw inflation rise with a vengeance. Inflationary expectations affect interest rates for any credit instrument, cards included. Because today's loans are paid with tomorrow's dollars, both borrowers and lenders include an inflation premium in the interest rate. You will not see this premium as a separate figure in the calculation of the interest rate on a loan contract. It is a normal function of the market in pricing any credit instrument. By definition, the difference between the nominal or named interest rate for a given instrument and the "real" interest rate is the inflation rate. A simple formula would be \( i_r + \text{the expected rate of inflation} = i_n \). Banks are often more sensitive to this issue than are individual retailers.

As inflation rates reached into the teens, the corresponding nominal cost of credit during the 1980s often surpassed the maximum legal rate of interest in many states. As a result, some banks were losing money on their credit card operations by effectively lending funds at around 18% and paying rates very near that to attract those funds. A few banks got out of the credit card business, and others relocated to states with higher interest; rate caps or no cap. But, the potential for profit grew because of increased credit card use. Even when inflation eased and the cost of funds dipped below the rates charged, banks found that the percentage of customers that financed a balance had remained relatively stable, and that the average outstanding balance had actually doubled. Credit card use had a relatively inelastic demand at the time. This meant that many banks would find credit cards to be a significant profit source through most of the 1980s. It was during this period that the seeds for the current discussion were sown.

Each Card Has Two Sides

When looking at a controversial issue like credit card rates, it is easy to forget that a credit transaction is voluntary, and that both parties perceive a benefit when it takes place. It may seem that the borrower or the lender has an advantage. But this is not generally so.

In every transaction, there is a producer and a purchaser, a supply side and a demand side. In the credit card transaction, supply comes from the issuing bank. In general, producers are willing to supply more at higher prices. Producers want prices to exceed their cost of production, which for credit card transactions is predominantly what the bank must pay to secure funds to lend. There are additional overhead and transaction costs as well. With the increasing use of cards for smaller purchases the bank receives less revenue per transaction because small transactions cost the same as larger purchases to process. But, in the simplest textbook treatment, the cost of funds to banks is estimated as the rate they are paying depositors or to borrow funds in the open market (usually quoted as the Treasury bill rate or the fed funds rate). Regardless of the measure used, the rates paid to secure funds have decreased over the past few years, in line with the declining rate of inflation. One other cost that affects supply occurs because approximately one-third of customers pay off their balances within the "grace period" each month. Thus, many card users receive a benefit at no direct cost (unless an annual fee is levied, but banks are increasingly eliminating such fees). This "free" service raises costs for credit card issuers and can affect supply.
The risk factor to the bank also affects the supply side. A loan represented by cards is unsecured (not backed by any collateral). Unlike mortgages and auto loans, the bank retains no lien against the property purchased. Without the leverage offered by the collateral, the loan is generally believed to be at greater risk of default and loss. Because risk and price are traditionally directly linked, a riskier loan demands higher interest rates. However, most statistics indicate that the level of default tends to fluctuate within a fairly narrow range over time. Therefore, it appears there is little on the supply side of the equation to explain the persistence of high interest rates. On the demand side of the equation, we see more interesting behaviors.

One of these behaviors is the apparent "brand loyalty" of consumers regarding credit cards. This is particularly interesting because Americans display less brand loyalty concerning most products they use. But a survey by the American Bankers Association showed that a large number of consumers will hold the first credit card they received, almost regardless of price (interest rate and/or annual fee). A related aspect of this loyalty is an affinity for cards issued by the "big name" banks. In general, the credit itself is no different whether offered by a large money-center bank or a small town independent bank, but consumers may have a perception that having a card issued by a large bank is an indication of creditworthiness.

One of the main factors affecting demand for bank issued credit cards and the seemingly impervious attitude toward price may be the consumer's self-perception. One hypothesis states that many individuals don't worry about interest rates in selecting a card because they do not intend to carry a balance. But, the reality is that we are more likely than we think to carry a balance and thus pay interest. More than one study has noted that more consumers see themselves as convenience borrowers (charging and paying off the entire balance) than really exhibit that behavior—in one study almost twice as many. Thus, if a credit card has no annual fee for even a limited period, the consumer may see the credit as "free." And it is, until a charge is not paid within the billing cycle.

**Figure 1 Supply Curve**

**How Does One Define Competition?**

Although there seems to be a number of reasons for the "non-competitiveness" in credit card rates, we need to examine competition itself. It is very common for
economics students to think of competition purely in terms of price, with one supplier lowering price to gain a market advantage, and subsequently forcing other suppliers to do likewise or lose market share. But another method of competing is to improve the quality of the product. That is, to keep the price constant but to provide more to the consumer.

If we follow this line of reasoning, it is possible that credit cards are more competitive than otherwise thought. Early on, credit card issuers saw quality as a way to provide more service to the customer. Among features which were rapidly introduced as technology advanced were cash advances, which allowed customers to borrow cash without going through a formal loan process—in essence, a personal credit line. The last decade has also seen a proliferation of services attached to credit cards. Added services include "buyer protection," which allows for free replacement should the purchased item be defective or stolen; and random refunds of credit card purchases. Other perks include "frequent" anything promotions, whether it's mileage for an airline, points for hotel stays, or cash back on purchases. An interesting spin-off on this trend is the affiliation card, in which a universal card is tied to a charitable organization. In many cases, the organization receives a fee for each member signing up for the card and may receive a percentage of the total charges on the card. Thus, an individual could support a favorite organization through card use.

All of these services add to the perceived "quality" of the product and all of them involve some, albeit small, cost to the supplier. In cases in which these costs are not passed on to the customer, institutions have chosen to compete by improving quality rather than lowering price. But the question still remains, why are these institutions competing in this way, rather than through the price mechanism?

The Cost of Cheaper Credit

Unfortunately, understanding the cost factors and consumer behaviors that can explain credit pricing still does not change the fact that many individuals perceive interest rates as "unwarranted." Additionally, there seems to be disagreement on whether the credit card market is truly competitive. Despite the large number of issuing banks, ten institutions account for more than half of the cards in the U.S. So the question remains, can the price of credit be regulated to provide relief to consumers? Yes, but not all consumers will benefit. What will it cost and who will it benefit? That depends on how or if the pricing structure is changed.

To understand the impact of limiting the price of credit, one need only look at the simple supply curve (Figure 1). If $P_s$ represents the interest rate at which a given amount of credit is offered, one need only move down along the supply curve to $P_n$ which represents a new, limited price to see that there will be less credit. With less total credit available, a rationing system must be adopted. The efficient option would be to extend credit only to less risky borrowers. This basically means less credit for individuals who have fewer options for borrowing, and ample credit for individuals who probably already have many options. The alternative is to continue to provide credit to the same individuals who received it before, but to reduce the overall credit line for each individual. However, this may reduce the utility of the credit card as larger purchases will no longer be possible. Suppose credit applications and bank loans
were necessary for some purchases that are handled without that hassle, like buying a stereo system, refrigerator or dishwasher. Another significant disadvantage of reduced supply is that those denied credit might be forced to find it from other sources such as loan sharks, pawn shops, or other high interest outlets.

Figure 2 Demand Curve

![Demand Curve](image)

The problem becomes more complicated if we look beyond supply to the impact that a legislatively reduced price would have on demand (Figure 2). Again, if \( P_o \) represents the interest rate at which a given amount of credit is used, one need only move downwards along the demand curve to \( P_n \) which represents a new, limited price to see that the demand for credit will increase. The resultant shortfall of available credit at a given price could itself necessitate further market intervention, leading to further problems.

Figure 3 Supply & Demand Curve

![Supply & Demand Curve](image)

Upon superimposing the two curves, we see a resulting gap between supply \((Q_{ns})\) and demand \((Q_{nd})\) at the new, mandated price \( P_n \) (Figure 3). This is called a credit gap or "crunch." Thus, forced market intervention by government would result in market effects that many would see as detrimental. These effects include decreased access to credit, probably falling hardest on those who most need the credit; increased cost in developing other credit options to substitute for lost credit; and/or reduced credit accessibility for those who currently have credit lines available. It is highly unlikely that
these are the intended results of those who seek to place limits on the price of credit cards.

A better approach would be improving information and awareness. Information is power in the marketplace, and an informed consumer has the ability to make better choices. As competition increases within the credit card market, consumers will have more choices. If all parties to the credit contract understand their options, the market will be better able to allocate credit via various forms of competition, including price and quality. There is something to be gained by understanding that, intentions to the contrary, the likelihood of running a balance and paying interest is perhaps greater than one envisions. Likewise, services and perks are not of value to all customers. The consumer needs to match the card to the use and choose accordingly. The "invisible hand" of the marketplace can thereby ensure that the credit card market meets the needs of borrowers and lenders alike.

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<th>Information on Credit Card Rates</th>
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<tr>
<td>The Board of Governors of the Federal Reserve System publishes an extensive listing of bank credit card terms on a semi-annual basis. Information provided includes interest rates, annual fees (if any), grace periods, geographic limitations, and other pertinent information for making an informed consumer choice. A telephone number for contacting the institution (usually an &quot;800&quot; number) is also included. The twice-yearly listing can be subscribed to by sending a check for $5, payable to the &quot;BGFRS&quot; to: Publications Services, Stop 138, Board of Governors of the Federal Reserve System, Washington, DC 20551. Please request the Terms of Credit Card Plans statistical release.</td>
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The risks of the safety net

"There's no such thing as a free lunch."
—Anonymous

The line of depositors began at the first light of dawn and stretched for three blocks by the time the Milwaukee Avenue State Bank in Chicago opened for business on August 7, 1906. It was not an unknown sight in the early 1900s: a bank run. Reporting on the event, The Chicago Tribune noted that "men and women knelt and prayed in the streets that their money might be returned to them." These depositors were victims of the periods of instability that marked the banking system throughout the 19th and early 20th century. And while reforms in the early 1900s helped smooth these disruptions, it was a run on deposits in 1933 that touched off the total collapse of the banking system during the Great Depression.

These problems in the banking system resulted in some significant costs, although their magnitude is a matter of ongoing debate among economists. Certainly, some depositors lost their life savings. And many feel the flaws in the banking system contributed to the problems of the U.S. economy, which tended to lurch erratically from boom to bust in the late 1800s and early 1900s.

The U.S. government responded by implementing a federal "safety net" to give depositors an extra measure of protection from loss and to shield the economy from some of the worst effects of instability in banking. The two main elements of the safety net are deposit insurance and the Federal Reserve's discount window. Ironically, while the safety net has achieved its goal of increased stability it may have contributed to the nation's most costly financial problem ever—the savings and loan crisis. The unintended effects of the safety net illustrate the remarkable power of market forces. Despite the best of intentions, the remedy for one problem may set off forces that help cause another equally painful crisis. This tendency for actions to have effects that are almost directly opposite those intended led one observer to characterize financial regulation as an attempt "to tape gravy to the wall." Given the hidden costs that sometimes emerge from seemingly benign attempts to shape market forces, an old adage in economics might also apply: There's no such thing as a free lunch.

The safety net's benefits...
The first component of the safety net—the discount window—was established after Congress passed the Federal Reserve Act in 1913. In a fractional reserve banking system, banks can meet a general run on deposits only if there is some external source of reserves. Prior to 1913, there was no such source of reserves, and during periodic panics banks were forced to close or suspend payments. Responding to the problem, Congress gave the Federal Reserve the power to act as a "lender of last resort." If a bank was experiencing a run on its deposits, it could turn to the Fed to borrow money from the discount window. The discount window was designed to cushion shocks to the banking system by giving solvent institutions an opportunity to borrow on their good, though illiquid, assets.
The discount window, however, was not suited to meeting the massive withdrawals that occurred during the widespread bank failures of the Great Depression. The Fed was overwhelmed by the speed and the magnitude of the currency drains of that period. To prevent future runs, and to help assure small depositors that their money was safe, Congress established deposit insurance in 1933. To finance the insurance fund, Congress stipulated that each bank pay an annual assessment based on its total domestic deposits. A key factor in bolstering depositors' confidence was the U.S. government's implicit guarantee that insured deposits were safe. The Federal Deposit Insurance Corporation (FDIC) was created to oversee and administer the insurance fund for banks. One year later, Congress created the Federal Savings and Loan Insurance corporation (FSLIC) to insure S&L deposits in the same way. Interestingly, bankers generally opposed deposit insurance and President Franklin D. Roosevelt warned that it would "put a premium on unsound banking in the future."

But these misgivings were soon forgotten as the bank panics that frightened depositors in the Great Depression became an anachronism. Due in large part to the combination of deposit insurance and the discount window, the U.S. has not suffered a financial panic or a "systemic" run that spreads throughout the banking system in more than 50 years. Today the safety net is an ingrained part of the banking system, and it is generally agreed that the increased stability provided by the federal safety net is a real benefit that cannot be ignored.

...and costs

The safety net, however, also imposes costs on the economy by distorting the decisions of financial institutions. In a textbook model of a commercial bank in a market economy, an institution raises funds from stockholders and depositors and lends these funds to businesses, households, and government. As the intermediaries between depositors and borrowers, banks apply their specialized knowledge and informed credit judgment to the process of transforming savings into investments. In this way, banks play a key role in the economy.
But even when they are profitable, textbook banks are not without risk. In order to attract funds, they are forced to maintain substantial capital or to hold a certain percentage of liquid assets. This is not the choice of the textbook banker, but is the result of market pressures to assure depositors that banks can live up to their side of the agreement.

The safety net alters the market discipline that influences a bank. In the case of the discount window, an institution can hold a less liquid—and potentially more profitable—portfolio because it can turn to the Fed for a loan. Similarly, the government’s implicit guarantee that insured deposits are safe allows banks to hold larger and riskier investments and to operate with lower capital. Without this government guarantee, depositors would require a higher interest rate to compensate them for the increased risk. With the safety net, the government assumes some of the risk. In effect, the government is providing a subsidy to banks, although the subsidy does come with some burdensome costs such as additional regulation.

Changes in the extent of deposit insurance in the past five decades have expanded the amount of that subsidy. Insurance no longer protects only small depositors as it did in 1933. Today, depositors are protected up to $100,000 per account. In addition, depositors can hold a number of accounts and are insured as long as each account is under the limit. In actual practice the government’s subsidy has expanded even beyond the $100,000 limit. In an effort to reduce costs to the insurance fund, the FDIC provides financial assistance to healthy banks that purchase failing institutions. As a result, the FDIC provides de facto coverage to most depositors, even those with more than $100,000 in a single bank. A factor that has further extended the government’s implicit subsidy is the practice of considering some banks to be “too big to fail.” In the past two decades, there have been several instances when federal regulators prevented a large bank from failing to avoid unusual disruptions to the financial system and the economy. Although shareholders and management were not protected in these cases, depositors—even those with uninsured funds—did not lose their money. And while there is much debate about the costs and benefits of this practice, it is clear that it reduces market discipline.

The subsidy inherent in the safety net does not necessarily result in substantially higher bank profits. Through competition, the lower rates are shared with customers. Also, the regulatory burden that banks assume adds to their costs. But the safety net does distort how banks allocate resources in our economy. Because of this distortion, it is easier for riskier borrowers to obtain credit than it would be in a world of textbook banks. Overall, the safety net tends to benefit speculative and riskier ventures at the expense of sounder ones.

**Moral hazard**

In the best of circumstances, then, the safety net causes distortions in the economy. Combined with other problems, it can result in a disaster such as the S&L crisis. While factors such as fraud have received abundant publicity, the role of some broader economic forces in causing the S&L problem is not as well known. One of these forces—the incentives built into our banking system that encourage excessive risk-taking—is known as moral hazard.

The roots of the S&L problem can be traced back several decades. For many years, S&Ls enjoyed special tax advantages if they specialized in residential mortgage lending. Essentially this lending involved long-term, fixed-rate loans because S&Ls were prohibited, until recently, from making variable-rate mortgage loans. This practice
was fine for several decades as the U.S. enjoyed an extended period of relatively low and steady interest rates. These were prosperous years for S&Ls, and their share of total deposits rose fairly steadily between 1946 and 1978. But the S&L industry, in the words of one economist, "was a time bomb waiting to go off."

The explosion occurred in the late 1970s and early 1980s as thrifts were rocked by volatile and high interest rates. Because S&Ls were saddled with long-term, fixed-rate mortgages, their loan revenue stayed the same. But the cost of their funds, which were largely short-term deposits, rose sharply. S&Ls suffered huge losses. By 1982, some two-thirds of the thrift industry was insolvent in market-value terms, and the aggregate negative net worth of S&Ls totaled $100 billion.

As losses mounted in the early 1980s, Congress passed legislation that gave S&Ls additional powers. Deregulation gave thrifts the ability to compete effectively, but the move away from government regulation meant that market regulation was more important than ever. And market regulation, due in part to the distortions of the safety net, was lacking. In addition, at a time when supervision was crucial, the industry’s regulator—the Federal Home Loan Bank Board (FHLBB)—did not have the resources to meet the challenges posed by deregulation.

A key factor in the S&L crisis was the practice of forbearance—postponing the closure of insolvent thrifts. Many such institutions were allowed to continue to operate in the hope that they would generate enough revenue to become profitable. Of course, these S&Ls could also accumulate even more red ink. Forbearance was endemic in the 1980s. According to a study by the FHLBB, 45 percent of the thrifts that were insolvent in 1988 had been in that condition for four or more years.

One reason for forbearance was the lack of discipline from depositors. Because their money was insured, depositors did not force an insolvent institution to close by running on it. Instead, the only market influence was exerted by shareholders that had already lost their stake in the institution once it was insolvent. Thus shareholders—like management—had nothing to lose and everything to gain by keeping an insolvent institution open as long as possible.

Further complicating the problem were advances in telecommunication and computer technology, which permitted instantaneous transfers of funds across great distances. As a result, even weak S&Ls could attract unlimited funds from anywhere in the country by offering high interest rates on deposits.

Thus, thrifts had the means and the motive to create a disaster. Basically, many S&Ls had nothing to lose. If their riskier activities failed—and chances were that they would—the S&L was not any worse off. And if the riskier activities succeeded, the S&L would be saved. The result was a classic case of moral hazard—there were strong incentives for S&Ls to try to increase their profits by taking additional risks. The insolvent institutions kept open through forbearance were particularly susceptible to the temptations of moral hazard because the owners had so little of their own money at risk. If a risky venture succeeded, the institution kept the gain. If it failed, the FSLIC assumed the loss.

Is there a solution?

As a result of the S&L crisis, there is increased public debate regarding the safety net and how best to strike a balance between providing stability and imposing market discipline on bankers and depositors. While most people agree that the safety net should be retained because of its overall benefits, there is also general agreement that it must be changed to incorporate market discipline. For example, many have called
for some form of risk-based deposit insurance in which premiums would vary depending on the riskiness of the activities being covered. Currently institutions pay the same rate for insurance regardless of their risk profile.

In 1988, the Federal Reserve Bank of Chicago released a proposal for financial restructuring that addressed many of the issues associated with the safety net. The Chicago Fed recommended a number of measures, including: risk-based insurance; safeguards to insulate banks from the risks of other affiliates of the same bank holding company; and a requirement that banks issue a form of subordinated debt. The investors that purchased this debt would be relatively sophisticated and would have a strong incentive to exert influence on the bank to restrain risky activities. Because the debt holders would lose all of their investment before any government funds were used to pay off depositors in the event of a failure, this provision would help shift risk from taxpayers to a fairly sophisticated and informed segment of the private sector.

**Greenspan on the safety net**

Federal Reserve Board Chairman Alan Greenspan discussed many of the implications of the safety net in May 1990 at the Chicago Fed's Conference on Bank Structure and Competition. Greenspan noted that a complicating factor in discussing the safety net is the need for banks to have additional powers to compete effectively. He observed that if banks do not obtain additional powers the banking system is likely to shrink. This would not necessarily hurt consumers in the long run as other institutions would take over banks' role in the economy. But, according to Greenspan, the result would probably be an expanding nonbank financial system that is not covered by a safety net, leading back to the original problem of assuring financial stability. On the other hand, if banks gain additional powers, then the distortions of the safety net may creep into a larger portion of the economy.

So what can be done to alleviate the costs of the safety net? Greenspan listed a number of possibilities, including: more frequent supervision of banks; some form of risk-based insurance; and closing down institutions immediately when they become insolvent rather than following a policy of forbearance. Greenspan added that "we might also consider the desirability of returning to (higher) capital requirements that more closely simulate those that the market dictated in a world without a safety net." (After his comments at the May conference, Greenspan testified before Congress in July that the Federal Reserve is working on a proposal to increase the required capital levels for banks.) But Greenspan also pointed out that rules and regulation and supervision cannot substitute for the market, they can only filter the worst missignals that suggest to bankers that unusual risk taking is permissible, if not desirable.

"What is becoming increasingly clear," Greenspan noted, "is that deposit insurance...and the liquification services of the central bank are not free lunches. They provide more macro stability, but they misprice risk." So what is the single best solution? There probably isn't one, Greenspan observed. Instead, a basic economic concept will come into play. "As in all policy reviews," he concluded, "a series of trade-offs will be necessary."

—Jim Holland
Learning activity—Making economic choices

Purpose: To illustrate how the rules of the economic system influence individual incentives and choices.

Step 1 — Ask the class to read the scenarios for the two companies and the description of the available investments. Split the class into two groups, with one-half acting as Company ABC and the other half acting as Company XYZ. Ask them to determine how they would invest their $100,000 among the four possibilities, given the limited choices and information in the scenarios. Explain that they can use the $100,000 to fund all or just a portion of any of the investments.

Step 2 — Ask the students to explain why they made the choices they did. Assuming that the XYZ section picked a safer portfolio, they should mention that the decision was largely based on the pressure from depositors. Assuming that the ABC section selected a riskier portfolio, they should indicate that the decision was based on several factors: the need to have a lot of money within the next year to prevent the company from closing; the fact that the president had already lost all his own money and had nothing to lose but his job; and, importantly, the lack of pressure from depositors to avoid further losses through risky loans. Explain that their decisions are an example of economic reasoning. Note that people generally choose purposefully among alternatives, with an objective in mind and with some sense of the costs and benefits of the choices. Also note that individual incentives and choices are influenced by the actions of others and by the rules of the economic system. Each time a rule or law is changed, expanding or limiting alternatives or consequences, the incentives are changed.

Step 3 — Briefly review the circumstances that led to the current S&L crisis (see the "Moral Hazard" section of this issue of ON RESERVE). Ask students if they see any parallels between their decisions and those made by some S&Ls.

ABC Investment Company — You are president of an investment company in a small town. Due to changes in the economy that were beyond your control, your company has lost a tremendous amount of money in the past few years. In fact, your company is broke—you have more debts than assets. You have already lost your own money that you invested in the company. You need to earn a sizable amount of income employees will lose their jobs. Fortunately, the money that people gave to you to invest is insured by a special fund. The town government has supported the insurance fund and has announced that it will pay back anyone who loses money at one of the town’s investment companies. Therefore, you are not worried that your customers will try to take their money out of your company. But your own job is on the line. Today, you have to decide how to invest $100,000.

XYZ Investment Company — You are president of an investment company in a small town. Your company has had steady, but not spectacular, earnings in the past few years. Your performance has been adequate as the economy has been weak recently. You are thinking of making some slightly more risky investments in an attempt to increase your profits, but some of the people that have their money in your company
are concerned about the shaky economy. Because your town has not adopted an insurance fund to cover losses of investment companies, some of your customers are nervous that they will lose their money. In fact, a few have already taken their money out of your company. Mr. Greenback, the richest man in town and your biggest customer, has asked you several times whether you are making safe investments with his money. Yesterday, you saw him talking to the president of your main competitor, which has a strong reputation for making safe and steady investments. Today, you have to decide how to invest $100,000.

**Investment 1 — EZ Money Oil Company**
This company is digging oil wells in Texas. It needs $100,000 to continue operations. If it hits an oil field in the next year, it will provide a huge return on the investment. But if it doesn't hit an oil field, it will probably go broke. Your loan officer estimates that there is a 20 percent chance that EZ Money will hit a gusher.

**Investment 2 — Reliable Auto Parts Store**
The mechanic at the town's gas station needs $75,000 to open an auto parts store. Currently people have to travel to another town to get auto parts. Because of the bad economy, people are keeping their cars longer and making more repairs. Your loan officer estimates that the store would lose a little money in the first year, but that there is an 80 percent chance that it would eventually provide a reliable return on your investment.

**Investment 3 — Florida Sinkhole Corporation**
A real estate company in Florida needs $100,000 to complete the construction of a condominium. Currently there is strong demand for housing in Florida, so there is potential for a large return on this investment within the next year. But if demand decreases by the time the condo is built, there is also potential for huge losses. You loan officer estimates that there is a 40 percent chance that this venture will succeed.

**Investment 4 — Delicious Doughnut Bakery Shop**
The cook at the local restaurant needs $80,000 to open a bakery. The cook's doughnuts are so popular at the restaurant that townspeople formed a club called "The Doughnut Society" to discuss the merits of the chocolate versus the sugar doughnut. Accompanying the loan application from the cook are a dozen jelly doughnuts and a petition from the Doughnut Society. However, the cook insists on using very expensive ingredients and will probably make only a small profit for several years. Your loan officer estimates that there is a 75 percent chance that the business will earn a healthy profit after two to three years.

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**ON RESERVE,**
Federal Reserve Bank of Chicago,
Public Information Center, P.O. Box 834,
Chicago. IL. 60690,
or call (312) 322-5111.
**The Fed in brief**

Are you looking for a publication that provides a quick review of the Fed’s structure and functions and is appropriate for high school students? You might be interested in a new pamphlet from the Chicago Reserve Bank, The Fed: Our Central Bank. The brochure provides a short and easy-to-read summary of the Federal Reserve and its role as the government's bank, as a bank for banks, as a supervisor and regulator, and as the nation's money manager. The 11-page publication is appropriate for high school students and other general audiences. Copies are available free of charge by contacting the: Public Information Center, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, IL 60690-0834, (312) 322-5111.

**Additional Readings**


*Discount rates (Fed points 30)*, Federal Reserve Bank of New York, 4 pp.


For information about how to order these materials, consult the Federal Reserve System Public Information Materials catalog in your school library or call the Chicago Fed's Public Information Center at (312) 322-5111.
For the Public Good: Evolution of the FOMC

"There have been three great inventions since the beginning of time: fire, the wheel, and central banking."

—Will Rogers

The Federal Reserve System is seventy-five years old this year. On December 23, 1913, Woodrow Wilson signed the Federal Reserve Act, creating a system of twelve regional Banks across the country, and a central Board in Washington, D.C. The purpose of the System was to provide for a safer and more flexible banking and monetary system.

To celebrate the Fed's birthday, this edition of ON RESERVE looks at one major change in the structure of the System—the development of the FOMC.

Every person in the country is affected by decisions of the Federal Open Market Committee (FOMC). Our ability to find a job, or buy a house, a car, or even a can of pop, and the prices we pay for everything we buy are influenced by this important committee of the Federal Reserve System.

The FOMC exerts its influence by authorizing the purchase or sale of billions of dollars worth of government securities. These transactions, called open market operations, affect financial markets and eventually the economy.

While the mechanics of the FOMC's securities trading are quite complex, the purpose that underlies these transactions can be simply stated: to promote a healthy U.S. economy—one that fosters high employment, rising incomes, and stable domestic prices. Decisions of the FOMC are made not to promote a narrow private interest, nor to help only one group or region, but rather to promote the economy of the entire nation and the broad public welfare.

However, this public purpose for trading securities was not always the Fed's purpose, and the FOMC, with all its importance, was originally not even a part of the Federal Reserve System.

Over a period of several decades, the FOMC evolved into the Fed's chief tool for affecting the flow of money and credit, that is, its chief monetary policy decision-making Committee. This evolution highlights not only the growing importance of open market operations and monetary policy, but also the dual nature of the Federal Reserve System, one of its unique features.

A Public and Private Central Bank

In 1913 Congress passed the Federal Reserve Act, creating the Federal Reserve System. The Act was a compromise between those who wanted a central bank under the control of bankers, those who wanted it under the control of government, and those who feared control by both bankers and politicians. As a result of compromise, the System has characteristics of both a private corporation and a public, that is, governmental, agency.

The System consists of twelve Reserve Banks throughout the country and a central Board of Governors, called the Federal Reserve Board until 1935.
The Board of Governors, the public component of the System, consists of seven members who are appointed by the President of the United States and confirmed by the United States Senate. Thus, the members of the Board are government appointees performing a governmental task, and ultimately are answerable to the people.

The twelve Federal Reserve Banks, on the other hand, represented the private component of the System. Each Reserve Bank has "stockholders," private commercial banks that are members of the Federal Reserve System. This arrangement, however, does not carry with it the usual rights of stock ownership since owning stock is simply an obligation of membership. Member banks do not control the Reserve Banks, cannot transfer the stock or pledge it as security, and cannot participate in Reserve Bank earnings beyond a 6 percent annual dividend from the Reserve Bank. If a Reserve Bank were to close, the federal government, not the member banks, would receive all surplus funds after debts were paid.

In addition to this limited "stockholder" organization, each Bank has its own board of directors, the majority of whom are selected by the private member banks. Six directors are elected by the "stockholders" with large, medium and small banks each electing one banker and one nonbanker. The other three directors are nonbankers appointed by the Board of Governors.

Even though these "private" components of the Reserve Banks are clearly limited by law, the Banks' structure and ties to the private sector give them a different characteristic from the Board's. The Banks historically defined their roles narrowly, seeing the System as a Bank for banks, with the principal responsibility of protecting the financial system. The Board took a broader view, seeing a responsibility to the whole economy, not just the financial system.

Early in the Fed's history, when the Reserve Banks began buying and selling government securities, these different points of view created some difficulties.

Buying Securities to Earn Income

In the original Federal Reserve charter, Congress gave the Reserve Banks the right to buy and sell securities in the open market, that is, to make investments, as a means of earning income for the individual Banks. At first, the volume of Reserve Bank purchases was so small that it had little impact on financial markets and the economy.

Then, in World War I when the government needed to borrow large sums of money to help finance the war, Congress instructed the U.S. Treasury to increase the sale of government securities. The Reserve Banks bought so many of these securities as investments that within a few years the Banks' holdings of government securities increased from about $20 million in early 1917 to about $2 billion at the end of the war. With more extensive use of open market trading, the Banks found that a purchase by one Bank sometimes offset a sale by another.

While most of the Banks were looking at how these transactions were helping their individual earnings, the Board noted that the Reserve Bank trading was affecting government securities markets and the total supply of money and credit in the economy. As a result, the Board saw these transactions as an important tool for influencing the economy.

Controlling Open Market Operations

As these open market operations grew in importance so did the question of who should control the transactions, the government-appointed Board or the "private citizens" representing the Federal Reserve Banks.
The Banks were the first to act. In 1922, five Reserve Bank presidents (then called governors) formed a committee to coordinate the securities transactions for all the Reserve Banks. They tried to avoid market disruptions in the purchases or sales ordered by individual Reserve Banks. This committee did not make policy, but merely coordinated transactions.

Originally, the Federal Reserve Board approved this arrangement but soon saw the need to supervise the committee and shift the purpose of open market operations from providing earnings for the Banks to influencing general credit conditions for the good of the economy. In 1923 it disbanded the committee and established the Federal Open Market Investment Committee (FOMIC). The membership of this new committee was the same as the old, but now the Board actively supervised it.

Unlike the old committee, the FOMIC recommended plans for open market operations by the Banks based on the effect of the transactions on commerce, business, and general credit conditions. In others words, individual Reserve Bank profits would no longer be considered when purchasing or selling securities. Open market operations from this time on were to be conducted to improve general monetary conditions, not to increase the earnings of individual Reserve Banks.

Under FOMIC arrangements, however, the individual Banks maintained their independence in that they could decide whether or not to follow the Committee's recommendations. The FOMIC operated for several years trying to reconcile those different points of view.

Public Officials

Then the depression hit. The country's severe economic problems demanded change and Congress responded. In the Banking Act of 1933, it created the Federal Open Market Committee (FOMC) which consisted only of representatives (generally governors) of the Reserve Banks. This law made several important changes from the previous committees.

The most significant change was that the Bank governors were required to take the same oath of office as the members of the Board. This change, in essence, made the representatives public officials when they were sitting on the Committee, even though they had not been appointed by an elected governmental official.

Under this law the FOMC made recommendations to the Board regarding open market operations. The Banks needed Board approval to make actual open market transactions, but each Reserve Bank could still decline to participate in operations recommended and approved by the Board.

Congress made clear that the underlying purpose of open market operations should not be to increase earnings for the Reserve Banks, but rather to foster a healthy economy.

The structure of the original FOMC, however, soon proved too cumbersome. Committee recommendations needed direct Board approval, and, even when they were approved, the Reserve Banks could choose not to implement them. Further refinement was needed.

The Banking Act of 1935: Public Character and Independence

The Banking Act of 1935 made these refinements and created the FOMC that we have today.

The Act kept the twelve-member Committee, but changed the composition to include all seven members of the newly-named Board of Governors and only five Reserve
Bank representatives (now called presidents), with all twelve Banks being represented on a rotating basis.

It made the FOMC a decision-making body, rather than just a coordinating or advisory committee. As a result, the Reserve Banks could not buy and sell securities on their own, nor could they decide not to follow the FOMC directives.

The Act loosened the tie between the Fed and other governmental agencies by removing the Secretary of the Treasury and the Comptroller of the Currency from the Board of Governors. Members of these two offices from the executive branch had been on the Federal Reserve Board since the beginning of the System.

The FOMC that emerged from the Banking Act of 1935 was independent within government, with a clear public responsibility and authority to influence the monetary conditions for the benefit of the economy.

**Insulated Policy**

Open market operations, which began with individual Reserve Banks trading securities for their own earnings, evolved into today's strong, important tool of monetary policy used for the public good, and controlled by a committee, the majority of which are government appointees answerable to the people.

Throughout this evolution, the Fed and Congress saw the importance of insulating open market decisions from direct political control. Rather than removing the FOMC from public responsibility, this insulation enhanced the FOMC's ability to formulate policy that will serve the broad public interest without the threat of short-term political pressure.

**LEARNING ACTIVITY: For the Private or Public Good**

Purpose: To demonstrate that the goals of the Federal Reserve's open market operations, that is, the buying and selling of government securities, differ from the goals of most private investors.

1. Have students read "For the Public Good: Evolution of the FOMC."
2. Explain that the goal of the Fed's open market operations is to help promote maximum economic activity and growth without inflation. It tries to accomplish this goal by increasing or decreasing the money supply. It increases the money supply when it buys government securities. To pay for the purchase, it creates new money, out of thin air. This new money increases the money supply. It decreases the money supply when it sells government securities. As payment for the securities, the Fed receives money from the purchaser, decreasing the money supply. Like any other holder of securities, the Fed earns interest on these holdings, but the earnings are not the purpose for buying and selling them. Other institutions, including individuals, commercial banks, insurance companies, and other financial institutions, also buy and sell securities, but the purpose of these investments is to provide increased earnings for the holders. When private investors buy securities, there is no change in the money supply. The existing money is simply transferred, creating a reallocation of the money supply.
3. Explain that because the Fed has a different purpose for buying and selling securities, its decisions of when and how many securities to buy and sell are quite different from private investors.
4. To illustrate, have students respond to the following scenarios first as investors, trying to increase their earnings, and then as monetary policymakers, trying to
provide the necessary amount of money to help promote economic activity without inflation:

Scenario 1
Consumers and businesses are convinced that the economy is expanding. Many businesses are adding to their existing plants and opening new plants. There are signs that this growth may accelerate, and the economy may be approaching full capacity.

Scenario 2
Consumers and businesses are convinced that the economy is slowing. Unemployment is increasing; many plants are closing, and few are increasing their capacity or buying new equipment.

ANSWERS
Scenario 1 In this scenario the economy is growing, but maybe too quickly. Businesses, viewing the economy as strong, want to expand capacity and borrow more from banks. Increased demand for money pushes up all interest rates, and investors tend to buy government securities to take advantage of higher rates. The monetary policymaker, however, sees the economy heating up and in order to avoid inflationary pressures may sell securities in an attempt to reduce the money supply.

Scenario 2 In this scenario the economy seems to be heading for a recession. In such a situation businesses are unwilling to borrow. Demand for funds slakens, pushing down all interest rates, encouraging investors to sell securities. To avoid a recessionary environment, the Federal Reserve would tend to buy securities in an effort to stimulate the economy by trying to increase the money supply.

5. Point out to students that in both scenarios the Fed's response tends to be different from that of the private investors. For this reason the Fed's actions have been called countercyclical, or "leaning against the wind." That is, when the economy is heating up, the Fed tries to cool it down; and when the economy is slowing, the Fed tries to stimulate it. It is not concerned with holding securities to earn interest, as private investors are, but rather to try to foster a healthy economy. The Fed and private investors are both purchasing securities, but for very different reasons.
$$$ Money Facts $$$
How much do you really know about your money? Test your dollar savvy with the quiz below. Information in the quiz is used in the Federal Reserve Bank of Chicago’s tour program. Answers follow the questions.

1) True or False: The special paper used to make U.S. currency contains no wood pulp.

2) The average lifespan of a $1 bill is
   a) 1-3 months.
   b) 8-18 months.
   c) 24-36 months.
   d) 5 years.

3) The largest denomination of United States currency ever printed was
   a) $100.
   b) $1,000.
   c) $10,000.
   d) $50,000.
   e) $100,000.

4) The largest denomination of United States currency printed today is
   a) $100.
   b) $1,000.
   c) $10,000.
   d) $50,000.
   e) $100,000.

5) The Federal Reserve Bank of Chicago finds ______________ counterfeits daily. All counterfeit bills are turned over to the Secret Service for investigation.
   a) 1-5
   b) 5-10
   c) 10-20
   d) 20-30

6) True or False: The motto "In God We Trust" has always appeared on paper currency.

7) The Federal Reserve Bank of Chicago destroys billions of dollars every year. Approximately $____________________ is shredded daily.
   a) $5-10 million
   b) $10-20 million
   c) $20-30 million
8) After it is shredded, unfit currency is compressed into sausage-like chunks. The average money "sausage" is 5 inches long and contains approximately _____ bills.
   a) 100
   b) 500
   c) 1,000
   d) 2,000

9) Shredded money may not be
   a) recycled into paper.
   b) made into containers that will hold food or liquids for human consumption.
   c) used in the production of fire logs.
   d) All of the above

10) The Federal Reserve Bank of Chicago shreds enough money every year to
    a) fill 28 Olympic-sized swimming pools.
    b) cover a football field 3 1/2 feet deep.
    c) fill 3,873 telephone booths.
    d) All of the above

ANSWERS:
1) True. The special paper used to make U.S. currency is a combination of cotton, linen, and ragbond.

2) b. The average lifespan of a $1 bill is 8-18 months.

3) e. The largest denomination ever printed was the $100,000 bill. A portrait of President Woodrow Wilson appeared on its face. Never circulated to the general public, these bills were exchanged only between Federal Reserve Banks.

4) a. The $100 bill is the largest denomination printed today.

5) d. Currently, the Federal Reserve Bank of Chicago finds 20-30 counterfeits daily.

6) False. "In God We Trust" first appeared on paper currency in 1957. All denominations of both paper money and coin now being issued bear this motto.

7) b. Approximately $10-20 million of worn-out money is shredded every day.

8) c. The average money "sausage" contains approximately 1,000 bills.

9) d. All of the above. Shredded money may not be recycled into paper of any kind, made into containers that will hold food or liquids for human consumption, or used to produce fire logs.

10) d. All of the above. The Federal Reserve Bank of Chicago generates approximately 6,275 cubic yards of shredded currency a year!

—Katya Orloff
We would like to thank Larry Mote, Thomas Gittings, and Charles Calomiris from our Research Department and Nancy Hahn from Public Information for their valuable contributions to this article.

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**Additional Readings**

For information about how to order these materials, consult the *Federal Reserve System Public Information Materials* catalog in your school, or contact the Public Information Center at the Chicago Fed.


Monetary Policy: Formulation and Implementation

In recent years rampant inflation, record-high interest rates, and climbing unemployment have captured America's attention. Emphasis, particularly through the media, on controversies surrounding the basic features of President Reagan's economic recovery program and their effects on state and local economies, together with the continuing dramatic changes in financial markets, have sharpened public focus on the U.S. economy and how it works.

The Federal Reserve System and its role in the nation's economy have also attracted a good deal of media attention in the past few years. The Fed's current "tight" money policy, intended to bring inflation under control, has received mixed reviews: some reports praise and encourage the policy while others denounce it as the major cause of this country's economic ills.

The Federal Reserve is charged with responsibility for monetary policy in the United States—that is, influencing the supply of money and credit in the national economy in order to promote the nation's well being. Few people quibble with the Fed's commitment to the goal of controlling inflation or with the other objectives given consideration in policy decisions—steady and sustainable economic growth, high levels of employment, and a relatively stable international value of the dollar. Rather, the main source of conflict arises from questions concerning which mix of Federal Reserve policies should be followed to achieve the needed results over time.

This issue of On Reserve explores the decision-making process behind the formulation and implementation of monetary policy in an effort to understand how the Fed determines which policy course will be followed in an effort to achieve those national economic goals.

The FOMC

Monetary policy is formulated by the Federal Open Market Committee (FOMC) which meets every 6-8 weeks at the Federal Reserve Board in Washington, D.C. Voting members of the Committee include the seven members of the Federal Reserve's Board of Governors, the president of the Federal Reserve Bank of New York, and four presidents of the other Reserve Banks who serve one-year terms on a rotating basis. Regardless of their voting status, all Reserve Bank Presidents attend FOMC meetings and actively participate in policy deliberations.

Preparations for Committee meetings are continuous and involve the staffs of the 12 Federal Reserve Banks and the Board of Governors. Let's go back to the Federal Reserve Bank of Chicago (profiled in the first edition of On Reserve) to observe monetary policy in the making, beginning at the "grass roots" level.

Chicago: "grass roots"

On the Thursday preceding a regularly scheduled FOMC meeting, which is usually held on Tuesday, President Silas Keehn of the Chicago Fed (and his counterparts at the other Reserve Banks) receives two reports: the "Green Book", which is prepared by the Board staff to provide information on current and projected national economic trends, and the "Red Book", which contains evaluations of district economic trends submitted by the Reserve Banks.
The following day Keehn meets with senior members of the research staff to discuss and compare district and national trends in depth. Up-to-the-minute developments in general business conditions, agriculture, international trade, and the banking and financial industries are analyzed, giving special attention to those aspects most pertinent to the Seventh District economy. Employment, business loan demand, the outlook for crops, and the performance of foreign economies are examples of the wide variety of factors that are examined.

The day before the Committee meets, Keehn and the other Bank Presidents receive the "Blue Book" in which the Board's staff reviews financial conditions, growth in monetary aggregates, and the degree to which targets and strategies that were set at the last FOMC meeting have been achieved. In addition, alternative growth paths for achieving long-term aggregate targets—and their projected implications—are outlined. Key economists at the Chicago Fed meet to evaluate these projections and provide final recommendations for Keehn's use at the FOMC meeting in Washington.

**Washington, D.C: a directive**

At the FOMC meeting Keehn presents his assessment of the economic outlook for the Seventh District and the nation. Proceeding in order around the table, each President and Governor provides essential information based on thousands of hours of research and mounds of statistical data gleaned from financial institutions, government and regulatory agencies, and private news services.

Discussion of the major issues follows, led by Chairman Paul Volcker. Then there is a final go-around to get each President's and Governor's recommendations as to the appropriate course monetary policy should take until the next meeting of the Committee. Once a consensus is reached, the Chairman calls for a vote on the directive that best reflects the Committee's intentions.

The Committee's directive provides guidelines for implementing monetary policy by establishing target growth paths for money that will support achievement of the broader policy objectives. The directive also describes changes in accompanying financial market conditions that will be tolerated as these growth targets are pursued. If changes exceed these limits, it may be necessary to convene the Federal Open Market Committee via conference call to reassess the guidelines set forth in the directive.

The directive then becomes the basis for implementing policy by affecting the money supply through open market operations—the direct purchase and sale of government securities by the Federal Reserve System in the financial markets. System open market operations are conducted by the Fed's Trading Desk for the System Open Market Account which is located at the Federal Reserve Bank of New York.

**New York: the desk**

Peter Sternlight, a senior official at the New York Fed and manager of domestic operations of the System Open Market Account, has responsibility for overseeing the day-to-day operations of the Desk. Sternlight's mornings are spent leafing through stacks of financial press clippings, staring into a video monitor that shows short-term interest rates, and conferring with staff and securities dealers to acquire up-to-the-minute knowledge of financial
conditions and market developments. That information, together with data on the previous day's bank reserve positions and familiarity with seasonal trends, guides Sternlight and his staff in estimating the amount of reserves that banks will be holding that day. (Reserves are estimated independently by the Board staff. The Desk and Board staffs then determine the basis for any differences in their projections and make necessary adjustments.)

On the basis of these projections the Desk will determine the dollar amount of securities that should be bought or sold in order to keep monetary growth in line with the Committee's objective. Before entering the market, however, Sternlight must get concurrence for this action. A conference call joins senior staff at the Board of Governors and one of the Reserve Bank Presidents with System Open Market Account staff to discuss and finalize the day's operations.*

System purchase or sale orders are then executed by the Desk in New York which maintains direct phone communications with more than two dozen securities dealers across the nation. For about 45 minutes there is a buzz of activity as phone consoles light up and traders and dealers exchange bids and offers until finally millions of dollars have been injected into or withdrawn from the economy.

Initially, Desk activities affect the supply and cost of bank reserves: Federal Reserve purchases of securities add reserves to the banking system and sales withdraw them. Changes in the cost of reserves, in turn, affect banks' willingness to make additional loans and investments which then affects the supply of money and credit obtainable by businesses and the public in general and influences interest rates in financial markets. After time lags of varying lengths, these changes in financial conditions ultimately impact spending, output, employment, and prices.

**Long-term targets, short-term strategies**

While monetary policy formulation is a continuing process that carries through consecutive FOMC meetings, two meetings each year, usually February and July, are devoted to determining long-term monetary and credit aggregate growth targets that will contribute to the achievement of the goals of controlling inflation and promoting economic growth, high levels of employment, and a stable exchange rate for the dollar.

At the other meetings the FOMC reconsiders these long-term targets to determine whether they are still appropriate to monetary conditions, but the focus is mainly on the development of short-term strategies or growth paths for getting or staying within the long-term target ranges. How much should money grow during the months of April-June in order to achieve the annual objective? If first quarter money growth exceeded targets, should we move sharply back on path or amble back slowly? Should money growth in the second quarter be at the target level or should we attempt to offset the excessive expansion by moving growth below targets?

A record of each FOMC meeting, released to the public a few days after the next regularly scheduled Committee meeting, captures the flavor of these policy issues. The report provides a digest of the Committee's assessment of the country's economic and financial position at the time of the meeting, the consensus regarding the

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* Reserve Bank Presidents who are current FOMC voting members serve "on the call" on a rotating basis. Chicago Fed President Keehn served, for example, from the December FOMC meeting through the February meeting.
appropriate policy course, the adopted directive, and the votes of the individual Committee members, including reasons for any dissenting votes.

**Monetary policy + fiscal policy = economic policy**

Monetary policy can contribute to the achievement of national economic goals, but is by no means the whole story. The complementary interaction of monetary and fiscal policies is integral to successful national economic policy. Fed Chairman Paul Volcker, as well as the other Governors, spends a lot of time conferring with congressional committees and leaders, White House staff, and the President to provide insight into the objectives and rationale guiding monetary policy and to get a feeling for the fiscal policy climate on the Hill and within the Administration. Twice each year, following the February and July FOMC meetings in which annual policy objectives are formulated and monetary growth ranges are adopted. Chairman Volcker makes formal presentations to the Congress. Mandated by law under the Humphrey-Hawkins Act, these reports outline current monetary policy and how it relates to the Administration’s goals and fiscal policy.

**Fighting inflation**

The Federal Open Market Committee is, at present, committed to the goal of lowering the rate of inflation. It has concluded, through its deliberations over a period of years, that a stable, growing economy cannot be achieved in the long-term without monetary restraint. Unfortunately, such restraint is necessarily accompanied by some short-term hardships to be endured by many sectors of the economy. For example, while at the present time inflation is indeed moderating, the economy is slowing and the unemployment rate is rising. The FOMC feels, however, that to forego monetary restraint now would cause even harder times in the long run.

At its February meeting the FOMC again took a long hard look at current economic conditions, reviewed policy objectives, and set long-term aggregate growth targets. At the March meeting, they will be reconsidering their decisions. Some progress has been made on the inflation front, but in some circles there is a lot of pressure to give up the fight, at least temporarily. If it was your decision, what would you do?

**Glossary**

*bank reserves*—funds held by depository institutions as deposits at a Federal Reserve Bank or as cash in the vault to meet reserve requirements.

*directive*—written instructions by the FOMC to the manager of the System Open Market Account to guide the conduct of open market operations.

*Federal Open Market Committee (FOMC)*—the most important policy-making arm of the Federal Reserve System whose voting membership consists of the seven Governors of the Federal Reserve Board, the President of the New York Fed, and four of the other Reserve Bank Presidents, and whose purpose it is to formulate monetary policy and to supervise its implementation.
**Teaching Activity #1**
"Class Auction"

*Purpose:* To demonstrate one of the causes of inflation—that is, an increased amount of money chasing a fixed amount of goods.

*Needed:* Two sets of items (same items in each set) for a class auction.
- Play money. ($100 bills)

**Round 1:** Distribute ten $100 bills to each student in your class. Auction off the first set of items, one at a time, allowing students to pool money if they wish. Record the price paid for each item.

**Round 2:** Distribute ten additional $100 bills to each student in your class. Auction off the second set of items, again allowing students to pool money. Record the price paid for each of these items.

Compare the prices paid for identical items in Rounds 1 and 2. What happened in Round 2? Why? How does this simulation equate to the "real world"? What can be done to avoid such a rise in prices? Discuss other causes of inflation.

**Teaching Activity #2**
"Policy-making Simulation"

*Purpose:* To simulate the information-gathering and decision-making processes behind monetary policy in order to promote better understanding of the U.S. economy, the interrelationships of market factors, the Federal Reserve System, and monetary policy.

1. Have students form task groups to investigate the following:
   - current levels, causes, and effects of unemployment, inflation, short and long-term interest rates and economic growth
   - present conditions as they relate to industry, fiscal policy, crops, and retail sales
   - other countries' economies—how they affect and are affected by the U.S. economy
   - stability of the dollar in foreign exchange markets
   - the structure of the Federal Reserve System—the location of each Reserve Bank and its President's name, the names of the Governors of the Federal Reserve Board, etc.

2. Have each group submit a written report of its findings, copies of which will be readily available for other students' use. Highlights of each report should be presented orally by that group's spokesperson.

3. Ask for volunteers from the class to participate in a simulation of a Federal Open Market Committee meeting by representing the Chairman of the Federal Reserve Board, the six other Governors, and the twelve Reserve Bank Presidents; the rest of the class should represent support staff to provide additional information as needed. Each of the 19 FOMC representatives should prepare to take a position concerning whether a restrictive or expansive money growth policy will be most effective in achieving the goals (controlling the rate of inflation and promoting economic growth,
high levels of employment, and a stable exchange rate for the dollar) or national economic policy.

4. After each Governor and Reserve Bank President has expressed an opinion concerning the question at hand, the Chairman should lead discussion until a consensus can be reached, then place before the voting members a motion that best reflects the Committee’s intentions. The 12 voting members will finally determine which policy course should be followed in the coming year.

Regional news

(News of economic education programs and activities contained in this section is submitted by the sponsoring organization. Reporting of this information does not necessarily constitute endorsement by the Federal Reserve Bank of Chicago or the Board of Governors.)

ILLINOIS

"Weathering the Changes of the Eighties" was the theme of the 13th Statewide Conference on Consumer Education held February 25-27 at the Continental Regency Hotel in Peoria. Sponsored by the Illinois Consumer Education Association, the program included interest sessions led by qualified individuals from various areas of consumer education and the exhibition of new and different educational materials for all teaching levels. Featured speakers were Roland Burris, Comptroller for the State of Illinois, and Louise Cook of the Associated Press. Over 200 consumer educators from schools, businesses, and government attended.

A total of seventy-two teachers from the Chicago area attended two fall workshops presented by the Federal Reserve Bank of Chicago in cooperation with the Illinois Council on Economic Education. Workshop activities included examination of the Federal Reserve System’s purposes and functions, discussion of the inflation-fighting roles of current monetary and fiscal policies, a tour of the Bank, and a "hands on" inspection of instructional materials that are available from the Fed. Such workshops are held periodically at the Bank.

INDIANA

The Indiana Council for Economic Education will sponsor 15 full-tuition workshops for Indiana teachers this summer. For information about workshops in your area, contact the Indiana Council for Economic Education, Krannert Graduate School of Management, Purdue University, West Lafayette, Indiana 47907. Tel. (312) 494-8545.

money—anything that serves as a generally accepted medium of exchange, a standard of value, and a means to save or store purchasing power.

monetary aggregates—measures of the money stock which group and define financial assets according to certain characteristics (for example, $M_1$ totals currency and coin in circulation, plus checkable deposits; $M_2$ includes $M_1$, plus savings and small denomination time deposits, overnight repurchase agreements at commercial banks, overnight Eurodollars held by U.S. residents at Caribbean branches of member banks, and money market mutual fund shares; etc.)
monetary policy—Federal Reserve actions to influence the cost and supply of money and credit, as a means of influencing the rate of change of the price level, the level of employment, the rate of economic growth, and the international value of the dollar.

open market operations—purchases and sales of government securities by the Federal Reserve in the financial markets in order to influence the supply of money and credit through reserves.

Additional Reading Materials
(For information on how to order these materials, consult the Federal Reserve System Public Information Materials catalog in your school or write or call the Public Information Center at the Chicago Fed.)

Dealing with inflation: Obstacles and Opportunities, Board of Governors, 1981/8 pp.

Instructional Units

Making Money in Middlevillage, 1981. Describes the money creation process. Available only from the New York Fed. (free)


Audiovisual Materials

The Fed: Our Central Bank, 1978, 19 min; 16 mm; color. Provides an overview of the U.S. central banking system. Accompanying teaching package provides spirit masters, poster, and suggestions for classroom activities. (free-loan)

Inflation ... Taxing the American Dream, 1980, two-part filmstrip/cassette. (13 and 14 min.) Probes the causes, effects, and policy problems of inflation. Includes teacher's manual, a copy of Federal Reserve Readings on Inflation, and 35 copies of The Story of Inflation cartoon booklet. Available for purchase from the New York Fed. ($37.50)


Announcing ...

Charting Mortgages identifies, in convenient chart form, the basic characteristics of various types of mortgages currently on the market and the kinds of interest rates, maturities, and payments that are associated with each. Free copies of this
pamphlet, appropriate for high school and adult audiences, may be obtained by writing the Public Information Department, Federal Reserve Bank of Philadelphia, P.O. Box 66, Philadelphia, Pennsylvania 19105. Published by the Philadelphia Fed.

Editor: Sandra D. Mayfield
Graphics: Roger Thrysellius

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Public Debt: Private Credit

Many recent news stories have spotlighted the federal debt and the Gramm-Rudman-Hollings law, which is aimed at reducing future federal budget deficits. To provide a better understanding of these important issues, this article discusses the nature of debt, its relation to deficits, the way the government borrows money, and the economic burdens of large federal deficits.

For the first time in our nation's history, on April 1, 1986 (no fooling!), the federal debt surpassed the $2 trillion mark. Helping to push the debt to this new height was a record federal budget deficit for fiscal 1985, when the government spent $212 billion more than it took in. Each time the government's budget is in the red, it adds to the total public debt outstanding.

Our federal debt now amounts to almost 40% of our national income, measured by gross national product (GNP). Just five years ago, it was only about 25% of GNP. (See the graph on page 2.)

Just as we might be concerned if our personal indebtedness were growing faster than our income, many economists are becoming concerned about the rise in the public debt and the size of recent deficits. While some economists feel that federal debt is not necessarily bad, others argue that large federal budget deficits place substantial burdens on the economy.

To understand these concerns and the burdens of large deficits, we need first to understand the nature of debt itself and just how and from whom the government borrows money.

Debt as an Asset

We all know what debt is when it is our own—we owe money to someone else. On the other hand, it may not be so easy to understand that many of our financial assets are someone else's debts. For example, to us a savings account at a bank is an asset. However, to the bank it is a debt.

The bank owes us the money that is in our account. We let the bank hold it for us because it promises to pay us back with interest. The bank then uses our money to make loans and to invest in other debt, including the government's.

Like the savings account, most of us think of the $25 savings bond we received from grandma as a financial asset. However, it is also a debt our government owes us. Just as there must be a buyer for every seller in a sales transaction, for every debt incurred, someone acquires a financial asset of equal value. Debt, then, is both a part of the assets of the creditor, and a claim on the assets and earnings of the debtor.

In terms of the national debt—every dollar of the government's debt is someone's asset. Corporations, brokerage houses, bond-trading firms, and individuals, both here and abroad, all are willing to loan money to the U.S. government, viewing the loan as an investment, an asset that increases their wealth.
**Government Debt Instruments**

When the federal government spends in excess of its revenues, it finances its deficit by selling debt instruments that compete for investors’ money with instruments of other issuers of debt. The instruments the government sells are called Treasury securities. For many people, the most familiar of these securities are savings bonds, like the one from grandma. They are nonmarketable, meaning that the owner cannot sell them to anyone. Of course, savings bonds can be liquidated before maturity by redeeming them at a prescribed price.

Despite their familiarity, however, savings bonds do not account for most of the government's debt. That distinction goes to marketable Treasury securities: Treasury bills (T-bills), Treasury notes (T-notes), and Treasury bonds (T-bonds, not to be confused with savings bonds).

These marketable securities are distinguished from each other by their length of maturity and denominations. T-bills are issued with 3-, 6-, or 12-month maturities, and a minimum denomination of $10,000. T-notes have maturities from two to ten years, and minimum denominations of $5,000 for 2- and 3-year notes and $1,000 for longer maturities. T-bonds mature in more than ten years and have a minimum denomination of $1,000. (See the table on page 3.)

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**The Government in the Market**

Although the U.S. government is only one of many debt issuers, it plays a significant role in our financial markets for several reasons.

First, it is significant simply because it issues so much debt. For example, in fiscal 1985, the Treasury issued over $3.1 trillion in debt, not only to finance the deficit but also to redeem close to $2.9 trillion in maturing debt. Principally because of such volume, it can structure the maturities, denominations, and interest payments on its debt instruments to provide something for everyone, as indicated in the table on page 3.

Second, most Treasury securities, unlike savings bonds, are marketable. Marketability means that after the government originally issues the securities, investors can turn around and sell them quickly and easily in the open market even before they mature. In fact, Treasury securities can be converted into money so easily that they are
called "near money." Since people do not know when they may need cash, marketability is a desirable feature.

Third, because the United States government has never defaulted on its debt and because it has the power to tax, people are confident that the government will repay the loan with interest. In fact, public confidence in the government's ability and willingness to repay is so high that loans to the government are considered to be free from default risk, and as such carry a lower rate of return than securities of other issuers.

**The Auction**

In seeking to pay the lowest possible interest rate, the government sells its marketable securities at auctions conducted through Federal Reserve Banks and their branches. Since auctions of T-bills, T-notes, and T-bonds are similar, let's look at the most frequent Treasury borrowing—the weekly auctions of 3- and 6-month T-bills.

Buyers of T-bills (lenders to the government) range from large financial institutions and government securities dealers, to individuals seeking a safe investment. To accommodate these different types of buyers, the Treasury permits two kinds of bids, or offers to purchase, called competitive and noncompetitive tenders.

Some buyers/investors want T-bills only if the investment produces a certain yield (interest rate) because at a different yield, they prefer to invest in some other security. These bidders, usually the professional dealers, submit competitive bids stating the interest rate they wish to receive. Competitive bidders who seek too high a rate will be underbid and will not receive a T-bill.

Other buyers/investors who want a guarantee of receiving a T-bill can submit noncompetitive bids. These people are almost always nonprofessional investors. The rate they receive is the average determined by the competitive bidders. (For the computation of yields, see Learning Activity below.)

Bids are accepted until 12:00 noon Central time, 1 p.m. Eastern time, every Monday of an auction. Each Federal Reserve Bank then ranks the competitive bids they receive by order of yield from the lowest to the highest. By 1:45 p.m. Central time the bids are sent by teletypewriter to the Bureau of Public Debt, a division of the Department of the Treasury, in Washington, D.C., where the Federal Reserve listings are combined with bids received by the Treasury.

All noncompetitive bids are accepted first. Then the competitive bids with the lowest interest rate are accepted, followed by the next lowest, and so on until the Treasury has sold the amount of bills it wants to issue that week.

Since each noncompetitive bid is limited in size, there is little likelihood that the total amount wanted by noncompetitive bidders would be more than what the government wants to sell. In a typical weekly auction of 3- and 6-month T-bills, noncompetitive bids amount to only about 5% of the total dollar value. In the unlikely event that noncompetitive bids should exceed the amount the government wants to issue, the Bureau of Public Debt would simply accept enough competitive bids to establish a yield.

T-bills are sold on a discount basis, meaning that they are issued at less than face value, the amount the investor will receive at maturity. When submitting their bids, individual investors submit payment to the government for the full face value of the T-bill, but then the Treasury mails refund checks, called discount checks, to the successful bidders on the issue date, the Thursday following the Monday auction for 3-
and 6-month T-bills. The amount of the checks, determined by the auction process, represents interest on the bill. (In contrast, buyers of T-notes and T-bonds receive semiannual interest payments.)

All T-bills are held in book-entry form, meaning ownership is recorded on a computerized ledger with the buyers receiving a receipt rather than a certificate as evidence of the purchase. Beginning in July of this year all T-notes and T-bonds will also be issued in book-entry form only. This method protects buyers against loss, theft, and counterfeiting. The accounts are maintained for the Treasury by the Federal Reserve.

**The Burdens of Deficits**

The government's method of financing its increasing debt through these auctions is clearly a smooth and efficient process. Nevertheless, many economists feel that the debt has grown so much in relation to GNP that it is placing severe burdens on the economy.

One of the burdens they cite is that large deficits tend to "crowd out" private investment. The federal government is competing for funds with private industries, state and local governments, and other borrowers. Despite this competition, the federal government has no difficulty borrowing as much as it needs, partially because it offers securities free from default risk, but principally because it is not constrained by interest rates. If Congress chooses to spend more than its revenues, the Treasury must make up the difference regardless of cost.

Therefore, as the government needs to borrow more and more, it tends to push up interest rates, while at the same time it takes a larger and larger portion of available investment funds.

To attract lenders, then, private industries are forced to offer securities at a higher rate of interest. This means higher costs to build new plants, buy new equipment, and develop new technologies. Because of these higher costs, some companies may decide to delay improvements or not make them at all. In effect, by raising interest rates, the federal government "crowds out" private borrowing which, in the long run, tends to restrict economic growth.

As the government's heavy demands on available funds causes interest rates to rise, pressures can be placed on the Federal Reserve to reduce interest rates by increasing the money supply. Since the Federal Reserve expands the money supply by purchasing government debt securities in the open market, the process is referred to as "monetizing the debt."

This poses another potential burden— inflation. If the rate of money growth is greater than the economy's ability to produce additional goods and services, the result is inflation, too much money chasing too few goods. While in the short term more rapid rates of money growth could possibly reduce interest rates, the net long-term effect would be to foster higher rather than lower rates.

Another burden imposed by deficit spending is the increasing interest payments. As the government borrows more and more money, it is obligated to pay more and more interest. These interest payments are becoming an increasing percentage of total government spending, which in turn becomes harder to reduce. In 1980, for example, total interest payments amounted to 12.7% of government spending while in 1985 they increased to 18.9%.
In addition, many of these interest payments are being sent to foreign investors. In recent years, U.S. interest rates have been high compared to rates in other countries, partially because of extensive U.S. government borrowing. Many foreigners have been attracted to U.S. investments, including Treasury securities.

As a result, we are sending substantial funds overseas. When we send principal and interest payments to foreign holders of our debt, we are transferring wealth away from this country. The net result is a reduction in our own standard of living.

Since Treasury securities can only be purchased with U.S. dollars, foreign demand for these securities increases the demand for dollars, raising the value of the dollar in foreign exchange markets. This more highly valued dollar places further burdens on the economy, particularly for domestic producers who compete with foreign producers for sales both here and abroad. (See ON RESERVE, Number 8, "The Dollar Out of Balance.")

### Marketable Treasury Securities

<table>
<thead>
<tr>
<th></th>
<th>T-bills</th>
<th>T-notes</th>
<th>T-bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>denomination</td>
<td>$10,000 minimum; thereafter in multiples of $5,000</td>
<td>$1,000, $5,000, $10,000, $100,000, and $1 million</td>
<td>$1,000, $5,000, $10,000, $100,000, and $1 million</td>
</tr>
<tr>
<td>maturity</td>
<td>3 months; 6 months; 1 year</td>
<td>2-10 years; over 10 years</td>
<td>2-10 years; over 10 years</td>
</tr>
<tr>
<td>interest</td>
<td>The price and the interest rate are not known prior to the auction since they are determined by competitive bidding. Paid at time of purchase as discount from face value</td>
<td>Paid semi-annually</td>
<td>Paid semi-annually</td>
</tr>
<tr>
<td>payment</td>
<td>Individuals must submit payment of face value with tender; payment can be made in U.S. currency, matured Treasury security, or certified check. Personal checks are not accepted.</td>
<td>Individuals must submit payment of face value with tender; payment can be made in U.S. currency, matured Treasury security, personal, or certified check.</td>
<td>Individuals must submit payment of face value with tender; payment can be made in U.S. currency, matured Treasury security, personal, or certified check.</td>
</tr>
<tr>
<td>taxes</td>
<td>The interest on all Treasury securities is exempt from state and local taxes, and subject to federal taxes.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Balanced Budget Act**

Recognizing these burdens, Congress and the President have resolved to reduce future federal budget deficits by passing the "Balanced Budget and Emergency Deficit Control Act of 1985," known as the Gramm-Rudman-Hollings Act. This law establishes procedures to reduce government spending, thereby reducing future deficits.

Because the federal debt grows with each additional deficit, it will continue to climb even if future deficits are reduced. Only the rate of growth will be slowed. Nevertheless, Gramm-Rudman-Hollings is seen as one of the major contributing factors in the recent reduction in interest rates and increased confidence in the strength of the economy.

While economists do not totally agree on the need for a balanced federal budget, many have become concerned about the sharp increase in the growth of the debt. They feel that if its growth can be brought more in line with the growth of GNP, the economy should be in a better position to sustain long-term growth.

**LEARNING ACTIVITY: T-Bill Yields Right Away**

Purpose: To compute interest rates on Treasury securities, using both discount and bond equivalent formulas.

1. Explain that for investors to compare the values of Treasury securities with other possible investments, the interest rates must be expressed in the same terms. The accepted convention is to use annualized rates. To make computations easier, investors use $100 for the face values of Treasury securities even though actual face values are higher.

2. For a quick estimation of the annual rate on a T-bill, investors use the following discount formula. (Be sure to explain that this formula gives only an estimation of the rate, not the actual rate.)

\[
\text{discount} \times \frac{360}{\text{face value} \times \text{days to maturity}}
\]

where discount is the amount of the refund check from the Treasury, and days to maturity is the number of days before the security matures. The left expression gives the rate of interest on the security, while the right expression converts it to an annual rate.

3. Demonstrate the use of the formula with a 6-month T-bill for $100 (actually the minimum is $10,000) and a discount of $4.43 (actually it would be $443).

\[
\frac{4.43}{100} \times \frac{360}{180} = \frac{4.43 \times 360}{100 \times 180} = 8.86\%
\]

The interest rate is 8.86%.
4. Have students compute interest rates using the following amounts:

   a. 3-month T-bill, discount at $5.08. Use 90 days. (answer: 20.32%)
   b. 6-month T-bill, discount at $5.08. (answer: 10.16%)
   c. 1 year T-bill, discount at $5.08. (answer: 5.08%)

   Why are the rates different, even with the same discount? (The bills cover different
   periods of time, and the rates are computed on an annual basis.)

5. Explain that while this computation is comparatively easy, it does not give true rates
   because there are not 360 days in a year, and the buyer is actually lending the
   government less than the face value of the bill.

6. To arrive at a more accurate rate for comparison to rates on other possible
   investments, investors use the bond equivalent formula:

   \[
   \frac{\text{discount}}{\text{purchase price}} \times \frac{365}{\text{days to maturity}}
   \]

7. To illustrate, use the same example as in 3 above: 6-month T-bill discounted at
   $4.43.
   a. First compute the purchase price:
      $100 - $4.43 = $95.57
   b. Then use the bond equivalent formula:
      $4.43/$95.57 \times 365/182

      The bond equivalent rate is 9.28%.

8. Compute the rates on the same T-bill offerings as in 4 above. Answers are:
   a. 21.45%
   b. 10.75%
   c. 5.35%

9. Why is the bond equivalent rate always greater than the discount rate? (Because
   the bond equivalent rate assumes that the buyer is lending less money for a shorter
   period of time, while receiving the same dollar amount in interest.)

10. Why is there an inverse relationship between bond prices and interest rates on
      bonds? (Because of the mathematics of the bond equivalent formula. In the first
      term, as the price rises, the denominator increases, and the numerator decreases,
      reducing the value of the fraction. It is this fraction that determines the interest rate.)

**Additional Reading Materials**


To Our Readers:

Thank you for your enthusiastic response to the readership survey in our last issue. The new look of this issue is in response to your suggestions.

Since many of you indicated that the articles on economic principles and concepts were so useful, we are expanding this feature and using your good ideas for subjects. In fact, this letter on federal budget deficits is a result of your suggestions.

We hope that you continue to find ON RESERVE to be a useful teaching tool.

ON RESERVE is written by Keith Feiler and published by the Federal Reserve Bank of Chicago as a public service to educators in order to promote the teaching of economics at the high school level. We welcome your comments and suggestions. To be placed on the mailing list for future editions, write ON RESERVE, Public Information Center, P.O. Box 834, Chicago, Il. 60690, or call (312) 322-5111.
Measuring the Goals

The Congress declares that it is the continuing responsibility of the federal government to ... promote maximum employment, production, and purchasing power.

Employment Act of 1946

If you don't know where you're going, you'll probably wind up someplace else.

Anonymous

A growing economy with stable prices and full employment—that's the ideal, our nation's ultimate economic goals, identified by Congress in the Employment Act of 1946 and more recently in the Full Employment and Balanced Growth Act of 1978.

However, as noble as these goals are, they are meaningless if we cannot measure our economy's production, the dollar's general purchasing power, and the level of employment.

The most widely reported measures of these goals are, respectively, the Gross National Product (GNP), the Consumer Price Index (CPI), and the unemployment rate. GNP is compiled by the Bureau of Economic Analysis (BEA), in the U.S. Department of Commerce. The unemployment rate and the CPI are compiled by the Bureau of Labor Statistics (BLS), in the U.S. Department of Labor.

The public and press look to these three measures to evaluate our economy and our economic policies. However, by reducing our complex economy to three simple numbers, we tend to overlook the tremendous effort involved in collecting the information. At the same time, we can fail to realize the limitations of these numbers as indicators of our performance.

To understand these measures and limitations better, let's look behind the numbers and examine how they are derived.

To measure economic growth we look at changes in our gross national product (GNP), the total of all goods and services our economy produces in a particular time period. By comparing output in one time period with output from the previous period, we can see if the economy is growing and at what rate.
In addition to the enormous task of gathering all this information, BEA is confronted with several problems. First, since it cannot directly add the number of apples grown, houses built, banking services provided, and all the other goods and services produced in the economy, it uses market value measured in dollars as the unit of account. BEA multiplies the price and quantity of the goods and services produced in a given period, adds them together, and compares the dollar amount to a previous period.

While the use of prices solves one problem, it raises another—inflation distorting GNP totals. In an inflationary period when goods and services are being sold at higher and higher prices, GNP would appear to be rising even if no more output were being produced. To adjust for this distortion, economists deflate current-dollar GNP, called nominal GNP, into constant-dollar GNP based on output in a given year.

Another major problem in preparing GNP totals is determining which products to include. Generally speaking, goods and services produced for final sale and legally sold for money in the marketplace are included.

Excluded from this group is labor performed by family members as part stocks, bonds, and houses. To measure price changes for homeowners, BLS uses a method known as "rental equivalence." It estimates a rental value of all homeowners in the housing survey, using actual rents on similar nearby houses that are rented.

Occasionally the market basket is modified to reflect changes in styles of living, but as a fixed-weighted index, the CPI is not updated from month to month for changes in buying habits. For example, if the price for certain cuts of beef rises rapidly while the price of chicken does not, consumers may buy more poultry and less beef. The CPI does not take this sort of consumer behavior into account.

In calculating the CPI-U, BLS averages prices for the various items in each location using weights that represent their importance in the spending of urban consumers. Local data are then combined to obtain CPIs by size of city, and a U.S. city average. Separate indexes are published showing cross-classifications by regions and population sizes.
The index measures price changes from a designated reference, or base period, currently 1967. In January 1988, the base period will change to 1982-1984. In an index the measure for the base period is set at 100.0. If prices increase 203 percent from the base period, for example, the CPI would be 303.0. In other words, the price of the market basket of goods and services in the CPI rose from, say, $10.00 in 1967 to $30.30.

By comparing the percentage changes in the CPI, we can use this index as one measure of inflation, changes in purchasing power at the retail level. (For an explanation of how inflation rates are computed from CPI information, see LEARNING ACTIVITY, "Measuring Inflation with CPI.")

The CPI measures inflation only on the retail level. Other indexes are needed to measure inflation elsewhere. For example, the Producer Price Index measures price changes in the wholesale level, and the GNP deflator measures price changes for the economy as a whole. For this reason, many economists, prefer to use the CPI in conjunction with other measures of inflation.

Early each month, BLS announces the total number of employed and unemployed workers in the United States for the previous month. These numbers come from the Current Population Survey, a sample of about 60,000 households across the country. BLS selects these households from cities and counties representing urban and rural areas, different types of industrial and farming activities, and the major geographic divisions of the country in the same proportion as they occur in the nation as a whole. Each month one-fourth of the households in the sample are replaced so that no family is interviewed more than four consecutive months. This practice avoids placing too heavy a burden on the families selected. After a household is interviewed for four months, it is dropped for eight months and then interviewed for four more months before being dropped from the sample for good.

The unemployment rate is based on only those people in the labor force, that is, all people 16 years of age and older who have a job or are actively looking for one.

To be considered employed, people must have:

a) performed some work for pay or profit during the survey week;
b) performed at least 15 hours of unpaid work in a family-operated business; or
c) been temporarily absent from their regular job because of illness, vacation, bad weather, a labor strike or lockout, or various personal reasons.
People are considered unemployed but in the labor force if they did not have a job during the survey week, but:

a) made a specific effort to find a job during the past four weeks;
b) were waiting to be called back to a job from which they had been laid off; or
c) were waiting to report to a new job within 30 days.

People who are waiting to be recalled from a layoff, or to start a new job within 30 days are counted as unemployed even though at the time they are not looking for a job. In all other cases, except temporary illness, the individual must be currently available for work.

To be considered looking for work, people must have registered at a public or private employment office; met with prospective employers; checked with friends or relatives; placed or answered advertisements; written letters of application; or been on a union or professional register.

All those who have no job and are not looking for one are not considered in the labor force and, therefore, do not affect the unemployment rate. These may include people who are in school, keeping house, unable to work, or retired.

Also not in the labor force are those who may want to work only at certain times of the year, may believe that no employment is available for workers with their training or experience, or may be financially independent and have no interest in a job.

The unemployment rate, the percentage of the labor force without a job, can be deceiving. In a growing economy new jobs are constantly being created and filled by more and more people entering the labor force. However, all these newly employed people may not reduce the unemployment rate. For example, in 1986 there were over 2 million more people employed than there were in 1985, but the unemployment rate remained relatively unchanged, moving from 7.2 percent in 1985 to 7.0 percent in 1986. The unemployment rate did not decline more sharply because 2.4 million people entered the labor force in 1986.

The unemployment rate is also distorted by another problem, underemployment. BLS makes little attempt to qualify employment. Even if a person is employed in a job that does not use all of the person’s skills and training, the worker is counted as employed. In an attempt to address this problem, BLS publishes figures on people working part-time because they could find only part-time work. Nevertheless, underemployment remains a difficult problem to quantify.

Portions of this article have been adapted from The Ledger, a newsletter published by the Federal Reserve Bank of Boston.

We would like to thank Anne Marie Gonczy, Philip Cummins, and William Strauss, economists from our research staff, for their valuable contributions to this article.

ON RESERVE is written by Keith Feiler and published by the Federal Reserve Bank of Chicago as a public service to educators in order to promote the teaching of economics at the high school level. We welcome your comments and suggestions. To be placed on the mailing list for future editions, write ON RESERVE. Federal Reserve Bank of Chicago, Public Information Center, P.O. Box 834. Chicago. IL 60690. or call (312) 322-5111.
Trade implies two flows
"What protection teaches us is to do to ourselves in time of peace what enemies seek to do to us in time of war." - Henry George

Increasingly, our economic well-being is affected by the economic actions of people in other countries. But globalization has also been the subject of increasing controversy. International trade, for example, has often been surrounded by debate, despite its benefits. And because of its international nature, it remains a confusing issue for many.

With the recent weakness of the economy, the trade debate has become even more heated in the U.S. For some, the issue involves protecting "the working man and the middle class" from nations portrayed as predatory. To others, growing world trade offers hope for long-term prosperity. But amid the discussion, there is a tendency to look at trade as isolated from other economic factors.

This issue of On Reserve examines the trade issue, discusses how markets function and the effects of market barriers, and shows that trade always has two flows and that these flows are the result of economic factors affecting our decision-making.

**The Motive Is the Same**

Many of us forget that international trade has the same foundation as individual exchange. It is voluntary and perceived by both parties to be beneficial. Without this basis, exchange will not take place. When countries trade, they also do so because a benefit is perceived. One country or citizen wants something that can be produced with relative ease elsewhere. That is, one country’s resource endowments (land, labor, and capital) are such that there is a lower opportunity cost if goods/services are provided by another country. In this respect, international trade is similar to individual exchange.

Because of these shared roots, the market mechanism also exhibits certain similarities at both levels. The market mechanism acts as a messenger to potential buyers and sellers. When a product does not meet the needs/wants of buyers, or is priced in such a way that few buyers are willing to sacrifice other resources for it; the message is to change the product or the price. Conversely, if a product does meet the needs/wants of buyers and is priced so buyers see the good as more valuable than what they have to offer in trade, the message is to produce more and/or charge more.

If one has the talents or resources to produce goods that others want, conditions are amenable for exchange. Indeed, we educate individuals to help them cultivate skills and talents to exchange in the marketplace. But, the international marketplace is perceived differently. Some feel that international trade must "balance," regardless of the fact that it almost never does. Or they see trade as a win/lose proposition, with the winner and loser clearly identified. The message seems to be that competition is only good if we can win. But in trade, both the buyer and seller win.
Money Isn’t Real, Wealth Is

As is the case in most economic transactions, there are *two* flows when nations trade. The real flow is comprised of the goods and/or services that go in one direction and are provided in exchange for a payment. The funds traveling in the other direction comprise the monetary or nominal flow. Unfortunately, too many people focus on the monetary flow and treat the real flow only secondarily. Many believe that as the flow of money out of the country continues, we grow poorer. Yet, it is the real flow that defines wealth and that ultimately can create more wealth.

The monetary flow usually is measured in the purchasing country's money. Say, for example, the U.S. is purchasing Japanese goods with U.S. dollars. Dollars are not a medium of exchange within Japan. To purchase goods and services in Japan, one needs to convert dollars to yen. Because of this lack of functionality, the seller will usually be willing to exchange more dollars for fewer yen. As this activity is repeated, the value of the yen rises, making U.S. goods more attractive, and contributing to a rise in U.S. exports to Japan. At the same time, the value of the dollar drops, and Japanese goods are less attractive as dollar prices rise.

Japan may keep the dollars rather than convert them to yen. This is usually done to facilitate the purchase of goods or services from the U.S., or to make an investment in the U.S. for which Japan needs dollars.

But, what about the real flow in the transaction? As economists often note, money is not the same as wealth. Real wealth is what money will buy. This purchasing power gives money its value. Therefore, the benefit of international trade must also include what was purchased, not just what was spent. A discussion of the trade issue must focus on both flows, not just one, because there is a larger picture.

International trade decisions, whether by individuals, firms or nations, are made in the midst of a changing economic landscape, not in a vacuum. Increasingly, these decisions involve evaluations of both flows. There are concerns about whether the value of the real flow exceeds the value of the monetary flow and how these flows might change in the future. These concerns introduce a number of questions. Will the resource endowments of the nations involved in trade remain fixed, or will relative positions change? Will inflation of one currency make future purchases more difficult? Or do certain markets offer an improved chance for expansion and better use of existing resources and comparative advantage? Can the sale of products secure access to a currency needed for other purchases and investments? And will investment offer access to other opportunities that can enhance domestic productivity?

Productivity enhancement is a key benefit of trade. Investments in human capital and technology through shared knowledge result in innovation and, ultimately, increase growth. This innovation is spread through trade, and the improved productivity that accompanies trade can increase the income ability of existing resources.

But trade has other benefits. Because no one can do everything, trade is a necessity. No person, firm, or country has everything it needs, much less everything it wants. As a
result, trade increases our access to goods and services. This variety itself is a benefit, but it also brings about competition. There is direct competition, as exists with computers or automobiles; and the competition of alternative products and substitutes through new and improved technology, such as exists in telecommunications or home entertainment. This competition leads to higher quality and lower prices, due to further innovation. This then contributes to a higher standard of living and rising real incomes.

Who's Protecting Whom?

Despite the benefits associated with trade, there is a persistent call to protect certain U.S. industries. Some of this reasoning is couched in terms and theories that arise from the mercantilist school that predated our War for Independence, a school that was shown to be in error by Adam Smith in his text, *The Wealth of Nations*.

Numerous arguments are given for protecting sectors of the economy. The issue of national defense was used during the Cold War, but now may be harder to justify. Other arguments note how international trade has resulted in dislocations. But some studies indicate this case may not be as simple as once thought. There are indications that lower trade barriers result in a net gain of jobs, but this may not be immediately true in the communities or sectors most directly affected. The additional jobs are distributed to trade-related sectors, as well as other areas of the economy. Whether net wages are increased depends on which sectors are affected by increased competition. It is indeed possible for total jobs to increase, while aggregate wages could fall.

However, the increased competition does result in lower consumer prices. There is a tendency to paint displaced workers as “the average person on the street.” However, the American consumer also fits that description. A number of questions then arise:
who's being protected, who benefits in trade, and how do we help individuals displaced by market decisions?

In discussing these questions, it is important to understand the long-term effects of trade barriers, regardless of the form they take. One consumer effect is that prices rise on many products, and real consumer income declines. But barriers also affect capital and labor flows. In labor markets, free trade will shift labor resources to the higher wage country (Country A) from the lower wage country (Country B). (See graph #1.) This results in lower wages in Country A, and higher wages in Country B, until a comparative equilibrium ($W_e$) is reached. It would seem that barriers then can protect jobs at the expense of lower wages in Country A. However, if barriers are introduced, the capital/investment flows go from the higher wage country to the lower wage country. (see graph #2.) This happens when the differences in wages and prices in the high-wage country offset the cost of new investment, training, and other costs in the low-wage country. The result is fewer jobs and lower wages in Country A, and more jobs and higher wages in Country B. Whether or not barriers are present, in the long run, the market will adjust to allocate resources.

Changing Messages or Messengers?

The market mechanism acts as a messenger regarding prices and preferences for goods and services. But even if one is not happy with the message, there’s no reason to do away with the messenger.

The issue of international trade ultimately is one of the uneven distribution of costs and benefits, and is not easily resolved. On one side of the market mechanism is the consumer who seeks low prices and high quality, and demands productivity and efficiency from the provider of goods and services. The businesses and workers who
provide products have common interests as producers. They seek a fair return for the
resources they bring to the marketplace, either in the production process or in the form
of the final product.

To hinder the price mechanism in the international market provides false information
to all parties to the transaction, inhibits change, and protects one party at the expense
of the other. An attempt to change the market may, in the long term, not help the
individuals or sectors that would be displaced, but only provide a temporary delay.
Given these factors, questions arise. Do you slow change at the expense of many, to
protect a few? Or do you accept change, and assist anyone who may be displaced by
reallocations in the market? There is no perfect answer. With any economic policy
question, opportunity cost always exists. And the cost cannot be transferred to
someone else; ultimately, it must be borne by everyone in the system.

Lesson Plans

A world silhloos/history

Myths and Reality of International Trade. The hillin of Hemml

Objective: Students will examine six myths about International Trade and try to offer
logical explanations supporting the myths. Students will then examine six opposing
realities, and using historical data, show how the realities differ(ed) from the myths.

Activities: Have students examine the two lists which follow. One is titled Myths of
International Trade, the other is Economic Realities of International Trade. For each
myth, have students formulate a logical explanation supporting this statement. For
each economic reality, have students use resource data to find the supporting data.
Have students then offer suggestions as to how economic reality was changed to
myth, and why.

Myths of International Trade
1. The Japanese are going to drive us out of business.
2. Somebody might be able to drive us out of business if they get efficient enough.
3. Comparative advantage is fine in theory, but it doesn't work in practice.
4. Comparative advantage applies only to free trade that is also fair trade.
5. Cheap foreign labor always costs us jobs.
6. Tariffs and quotas save U.S. jobs.

Economic Realities of International Trade
1. No country can drive another out of business—it is comparative advantage that
   matters, not absolute advantage.
2. See #1.
3. No theory is valid if it doesn't work in practice.
4. Voluntary trade creates wealth. When trade is subsidized by one trading partner, it
   still creates wealth for the other trading partner.
5. Relatively abundant labor encourages a country to specialize in labor-intensive
   industries at the expense of capital intensive production.
6. Tariffs save some U.S. jobs at the expense of others.

*The Sun Also Sets* Bill Emmott, Touchstone Press

*Japan: Opposing Viewpoints* William Dudley, editor, Greenhaven Press

*Japan’s Economic Development* Hiro Matsu Takeshi, International Society for Educational Information

*New Ideas from Dead Economists* Todd Bucholz, New American Library

*Japan’s Unequal Trade* The Brookings Institute


Related Articles and Materials.

(Consult the Federal Reserve Public Information Materials catalog to obtain copies of the following publications.)

The Internationalization of Uncle Sam Jack Hervey, Economic Perspectives Federal Reserve Bank of Chicago May/June, 1986


The Effect of Imports on U.S. Manufacturing Wages David A. Brauer, Quarterly Review, Federal Reserve Bank of New York, Spring, 1991

The Shifting Composition of U.S. Manufactured Trade Goods Susan Hickock, Quarterly Review Federal Reserve Bank of New York, Spring, 1991

U.S. Trade Remedy Laws: Do They Facilitate or Hinder Free Trade? Cletus C. Coughlin, Review, Federal Reserve Bank of St. Louis, July/August, 1991


Should We Attempt to Eliminate the U.S.-Japan Trade Deficit? Alison Butler, International Economic Conditions, Federal Reserve Bank of St. Louis, February, 1992


* Not available through the catalog. Call (312) 322-5109 to obtain a copy.
**Economics**

Compare how the recent Structural Impediments Initiative (SII) proposals will address the trade imbalance between the U.S. and Japan.

**Environment vs. Heredity**

**Objective:** Students will examine a recent trade agreement (unratified) and look at perceptions of how the U.S. and Japanese economic systems need to change to correct current trade imbalances. The students will then determine whether each proposal addresses economic factors, economic incentives, or perceptions.

**Activities:** Tell students that the SII was an unusual treaty in that it examined domestic policies contributing to the trade imbalance existing between the U.S. and Japan. Additionally, the treaty addressed fundamental economic factors rather than specific sectors.

However, a more interesting aspect is how the two countries choose to deal with the imbalance. An interesting parallel might be the old "environment vs. heredity" debate in child development, regarding which was a more important factor in determining what kind of adult a child would become.

Duplicate the summary/worksheet of the SII agreement and distribute to students. Ask them to determine whether each proposal addresses a basic economic factor (land, labor, capital), basic economic incentive, or basic perception of how people in that nation view the role of the economy. (It is possible that a given proposal may do more than one.)

**Summary of the SII Agreement - Japan**

1. Expand investment in infrastructure (water supply, sewers, housing, parks, transportation network, ports and airports, cargo and customs facilities).

2. Review land use policies (taxation, restrictions and zoning) to more fully utilize public lands.

3. Review standards, testing and certification requirements in administrative guidance, operation of industry advisory groups, and government study groups to allow greater flexibility.

4. Improve import procedures and relax laws that impede foreign direct investment/restrict entry by large retailers, liquor stores, truck operators, and pharmacies.

5. Examine and revise as necessary government policies toward premium offers, advertisements, and vertical business practices affecting consumer goods (e.g. "suggested retail price," exclusive dealerships or territories, rebates, and returns).
Summary of the SII Agreement - U.S.
1. Reaffirm goals to reduce budget deficit.
2. Encourage private saving and reduce consumer debt by tightened access to credit cards.
3. Reduce cost of capital for corporations through mechanism such as lower capital gains tax.
4. Reduce U.S. export controls and liberalize import restrictions such as the voluntary export restraints on steel and machine tools.
5. Increase funding for research, development, and spending on education (particularly foreign languages, mathematics, and science).

Alison Butler, Federal Reserve Bank of St. Louis, and Robert Harris, Center for Economic Education at Indiana Purdue University at Indianapolis, provided data and ideas for this issue’s lesson plans.

Thanks to Jack Hervey of the Research Department of the Federal Reserve Bank of Chicago, and Paul Ballew of the Detroit Branch, for reviewing the main article and helping with content. Thanks also to Jim Flannery, Gina Burch-Scowins and Jim Holland of Public Affairs for helping with corrections, clarifications and editing. On Reserve is written by Tim Schilling and published by the Federal Reserve Bank of Chicago as a public service to educators to promote the teaching of economics. To be added to the mailing list, contact

On Reserve, Public Affairs Department, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, IL 60690-0834, or call (312) 322-5111.

Interested in Getting Your Ideas Published? We need lesson plans in Economics or American/State History on the subject of economic growth. Two lesson plans will be printed in On Reserve #24. Lesson plans must be submitted by October 15, 1992 for consideration. For further information, call Tim Schilling at (312) 322-5109.

Around Seven

Workshops for Economic Educators in the Seventh District

ILLINOIS

Center for Economic Education at Bradley University

Center for Economic Education at Governors State University

Center for Economic Education at DePaul University
Center for Economic Education at Western Illinois University

Center for Economic Education at Illinois State University
"Economic Issues in the 1992 Election," Joliet/Lockport, September 22, 29, October 6, 13, 20; Normal/Bloomington, September 24, October 1, 8, 15, 22; LaSalle/Peru, September 23, 30, October 7, 14, 21. Graduate credit is available. (309) 438-2106.

INDIANA

Center for Economic Education at Ball State University,

Center for Economic Education at Indiana/Purdue University at Fort Wayne,

WISCONSIN

Center for Economic Education at University of Wisconsin - Milwaukee,

Center for Economic Education at University of Wisconsin - Oshkosh,
"Economics Across the Curriculum," Oshkosh, beginning October 7; Neenah, beginning September 23; Fond du Lac, beginning October 1. Graduate credit available. (414) 424-2441.

The Centers for Economic Education at University of Wisconsin - Oshkosh, Milwaukee, Green Bay, Stevens Point, Eau Claire, LaCrosse, Whitewater, and Edgewater College in Madison, will be hosting a teleconference on "The Economics of Health Care," September 25, 1992. For further information, call your local Center for Economic Education.

Bibliography for Teachers

A Summary of Recent Articles from Around the Federal Reserve System

Is Household Debt Inhibiting the Recovery?
David Altig, Susan M. Byrne and Katherine A. Smolyk Economic Commentary Federal Reserve Bank of Cleveland February 1, 1992
An interesting companion piece for the discussion on whether Americans borrow too much, this article examines various household debt measures through the post-WW II period. There are some surprising as well as disturbing results, depending on how one embraces the Keynesian perspective. The piece opens the door for more detailed study of the composition of debt, as well as debt's place in the national economy. Particularly interesting in light of recent economic data. Free.

Research Department, Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, OH 44101.

**Savings and Demographics: Some International Comparisons**  

Another view of the topic of whether we spend/save too much or too little. This article examines financial data from the U.S., West Germany, and Japan and examines spending/saving patterns for three key age groups, 0-19, 45-64, and 65+. This is a valuable piece for any group or individual examining the "life-cycle" hypothesis as an explanation for U.S. saving/spending patterns. Free.

Public Affairs Department, Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, OH 44101.

**Monetary vs. Fiscal Policy: New Evidence on an Old Debate**  
Peter Kretzmer *Economic Review* Federal Reserve Bank of Kansas City, Second Quarter, 1992

This article re-examines the Keynesian-Monetarist debate regarding the relative effectiveness of policy tools. In examining the issue, Kretzmer revisits the traditional (and unresolved) debate and provides insights into the effects of fiscal and monetary policy on an economic system that is significantly altered from that which framed the original debate of the '60s and '70s. His conclusions provide interesting points for use in classes where students may question the importance of each in the policy mix. Free.

Public Affairs Department, Federal Reserve Bank of Kansas City, 925 Grand Avenue, Kansas City, MO 64198-0001.
Transformation: Changing the U.S. Economy
"Without development there is no profit, without profit no development...."
- Joseph Schumpeter

If the preceding quote strikes you as a "chicken or egg" proposition, don't be concerned. The topic of economic development, or growth, is one that tends to generate more questions than answers. It's undoubtedly an issue that concerns many. During the recent election, economic growth was a key topic of debate. All of the major presidential candidates stressed the importance of stimulating growth in the American economy, and recent polls indicate that the public at large also considers economic growth to be an important issue. Much of this concern centers on one important question: What can the United States, as a society, do to encourage sustainable long-term economic growth?

This issue of On Reserve examines a few of the key factors that affect productivity and, ultimately, long-term growth in the Midwest and the nation.

**Measure for Measure**

To examine growth, an acceptable measure is needed. The most commonly used measure is the change in total Gross Domestic Product (GDP), which is the dollar value of all domestically produced final goods and services in a given period. Another useful measure is per capita GDP, that is, total production divided by the total number of people in the economy. Each of these measures has advantages and disadvantages, but what they have in common is a focus on production as the measure of growth. That is, an increase in the amount of final goods and services produced suggests that the economy, and its members, are better off. This is especially true if we accept what is, in economics, a basic axiom: total production is equal to total income.

Having identified a suitable measure of growth, the next issue is how growth occurs. Production is based, in part, on the factors of labor, land, and capital. If these are nurtured and cultivated, economic growth can occur much more easily than if they are ignored. Moreover, in today's competitive global economy, all of these factors need to be revitalized in order to stimulate growth.
Education: A Key to Labor Productivity

There is consensus that a more productive labor force is important to economic growth. There also appears to be agreement that our young people need a better education to be more productive. Unfortunately, the consensus seems to melt away on how to accomplish this.

The dispute seems to relate to two areas, control and content. The control debate pits a nationally determined standard of achievement against local authority. Should the federal government or even the states set minimum standards, or should that be left to local school boards? In support of centrally mandated standards is the need for uniformity and widely recognized standards, such that a high school diploma in Port Huron, Michigan means the same elsewhere in the state, or even in places such as Peoria, Illinois, or Pella, Iowa. On the other hand, one can assert that too much centralization may mean the loss of certain qualities, and a region’s competitive position in the global economy is driven by local advantages.

The content discussion revolves around whether the skills taught to students should focus on a job/career, or on general problem-solving and communication skills, or on a mixture of the two. Vocational oriented education makes sense only if the vocation will not shrink significantly within a few years. Conversely, to teach without a sense of the "real world" increasingly misses the mark in motivating the student. General skills are more difficult for potential employers to assess, but do offer a wider range of applications, if properly taught.

Given today's intense global competition, the need for a better-trained U.S. labor force is urgent, but it must be noted that the issue does not lie exclusively in the domain of the schools. Over 70 percent of the projected labor force for the year 2001 has already entered the market. As a result, on-site training by firms themselves, along with continuing education and professional development programs outside the firm, are becoming more important. The need for competent, highly skilled workers, who are able to function as part of a team, is widespread. Despite today's relatively high unemployment, workers with improved skills—whether technical, problem solving, or communication—are required in most parts of the country.

Back to the Land

Just as education relates to labor productivity, infrastructure helps to determine land and capital productivity. Infrastructure has been defined as the "public stock of social and economic overhead capital." More specifically, it is property and improvements that exist in the common wealth which support productive enterprise and activities or improve the quality of life. More and more, there is a growing need for infrastructure investment to support economic activity, particularly in the areas of transportation and communication. Infrastructure propels the movement of not only goods, services, and resources but, importantly, information, capital, and ideas.

Developing transportation infrastructure is complex. Investing wisely requires significant analysis and planning. After all, building bridges and highways to nowhere
provides no long-term benefit. And, attaining top effectiveness in the global economy may demand abandoning old notions of transport in favor of new hybrids. Are the Great Lakes waterways an underused highway or just an important source of fresh water? Can the same job be done more efficiently by piggy-backing truck and rail? Can we use rail to move people between major metropolitan areas instead of highways? How do we deal with crowded, deregulated skyways? Is there a way to keep the national system of highways in good repair?

In today's manufacturing and retailing environment, producers are increasingly dependent upon "just-in-time" inventory. And as U.S. [illegible text] nimble and productive foreign competitors, the ability to deliver quickly parts and products on short notice becomes a more important factor of productivity enhancement and survival. It's one thing to have the desired part or product on hand; it's something else to have it delivered on time and to the right location.

Similarly, communication infrastructure plays a critical role in economic development. In our modern economy, the transfer of information is vital for production decisions. As banks branch across state lines, as resources become more mobile, as just-in-time is applied to both retailing and manufacturing, up-to-date information on customer preferences and easy access to funds becomes more important. And as people and firms use an increasing mixture of voice and data, the dependence on older communication technology threatens to clog data transmission channels, limiting growth in the economy. However, to update an entire communication grid is an immense and expensive undertaking.

For the Midwest, investment in infrastructure presents a different challenge than it does for other parts of the country. Economically, the Midwest is an extremely diverse region. That's not to say other regions are not, but the Midwest has an unique blend of economic sectors: manufacturing (both consumer and producer goods), agriculture, financial and information services, retailing, and transportation. Each of these sectors lends much to the others and so a very diverse, yet interdependent, structure exists. Because of this diversity, the methods to enhance growth through investment in infrastructure call for a different mix than is needed for other parts of the country.
Money Talks...

As Schumpeter’s quote suggests, any development depends on money. The question then is, “Where will the finances for these investments come from?” In good economic times, the private sector provides some of the capital for certain types of development. However, because of the public nature of many goods and services, and the difficulties in measuring and pricing externalities, the balance is provided through the public sector. Traditionally, in slower economic times, as the private sector may back away from new infrastructure investment, the government takes the role of "investor of last resort," both to fulfill a need for capital and in an attempt to stimulate the economy.

But what if government also faces a budget stretched to the limit, as it now does? Where do policy leaders find the resources for investment and development?

For those parts of the economy normally funded through the public sector (education and many aspects of the transportation infrastructure), one alternative for additional funding, aside from making government more efficient, is higher taxes. More revenue has to be generated to cover existing services as demands on them increase and to cover new investment. Other alternatives include the transfer of existing funding from current services to new investment; or else the privatization of these services where savings can be realized. But, even though privatization removes the responsibility for operation from government, it does not remove the responsibility for payment. None of these options are easy choices, and none of them will make anyone politically popular.

Although the private sector cannot be expected to meet such needs as building roads, private investment can play a vital role in stimulating growth, provided there is an incentive to do so.

How does one provide the incentive for private investment? Tax cuts may not be enough. The 1982 changes in the federal tax code taught us that, barring other institutional changes, tax cuts don’t necessarily translate into saving or investment. Saving is influenced by a number of things, not just the tax rate. Allowing taxpayers to keep a larger share of the proceeds of their own investments may stimulate investment somewhat. But more is needed than investment tax credits or capital gains relief. It is also important to develop a climate that fosters risk and entrepreneurship, rewards ownership, and strengthens cooperation among all economic sections, including labor and government. This may include reducing the financial burdens on newer industries or firms, and providing support for economic development beyond the usual tax credits and deductions. But once again, these actions may involve social costs or government expenditures.

Without the private sector, the burden falls entirely on government to provide the investment. And that may not be possible in the current climate of fiscal austerity, to say nothing of the fact that many scholars question the value of a high degree of central government involvement in the economy.
Questions Without Answers?

A discussion of growth and change in the U.S. economy, or in the Midwest economy, presents many questions and few answers. There are no quick ways to permanently enhance growth. The key to growth is investment in labor, infrastructure and technology—all of which take considerable time. Such investments also call for material sacrifice. And for such sacrifice to occur, a belief in the future must supplant our focus on the here and now.

Thanks to Bill Testa of the Research Department of the Federal Reserve Bank of Chicago, and Paul Ballew of the Detroit Branch, for reviewing the main article and helping with content. Thanks also to Jim Holland of Public Affairs for helping with corrections, clarifications, and editing.

On Reserve is written by Tim Schilling and published by the Federal Reserve Bank of Chicago as a public service to educators to promote the teaching of economics. To be added to the mailing list, contact On Reserve, Public Affairs Department, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, IL 60690-0834, or call (312) 322-5111.

Interested in Getting Your Ideas Published?
We need lesson plans in Economics or Consumer Economics on the subject of saving and spending. Two lesson plans will be printed in On Reserve #25. Lesson plans must be submitted by February 15, 1993 for consideration. For further information, call Tim Schilling at (312) 322-5109.

Related Articles and Materials

(Consult the Federal Reserve Public Information Materials catalog to obtain copies of the following publications.)

Changes in the Structure of Wages: A Regional Comparison

Is There a Shortfall in Public Capital Investment?

Hog Butchers No Longer: Twenty Years of Employment Change in Metropolitan Chicago
Philip Israelevich and Ramamohan Mahidhara, Economic Perspectives, Federal Reserve Bank of Chicago, March/April, 1991

Americans Need to Focus on Long-Term Growth Strategies
Robert P. Forrestal, Economic Update, Federal Reserve Bank of Atlanta, January/March, 1992
Are Regional Per Capita Earnings Diverging?

Is the Rust Belt's Revival Real?

Highway Capacity and Economic Growth

Chicago's Economic Transformation from 1970 to 2000

The State of the Region: Demographic and Economic Trends in the Northeast and Midwest
Linda Aguilar, Matt Kane and Bill Testa, Northeast-Midwest Institute, 1992

The Great Lakes Economy: Looking North and South
Federal Reserve Bank of Chicago and the Great Lakes Institute, 1991

*Not a Federal Reserve publication. Please contact: Center for Regional Policy 218 D Street Southeast Washington DC 20003 $28.00*
Excise Taxes: Positive or Negative Growth Factors?

Concepts: Role of government  Fiscal policy  Economic growth
               Economic stability  Trade barriers

Objective: Students will examine excise taxes as a revenue source and a policy instrument, and the impact they can have creating an environment for economic growth.

Activities:
1) Explain what an excise tax is. Provide some historical as well as current examples.
2) Using the table at the right, have students compare the excise tax on cigarettes to the tax in their own state (if not listed) and answer the questions which follow.
a) Which state(s) can raise the most tax revenue for each pack of cigarettes sold? If your state is not mentioned, how does it compare to those listed?
b) Considering the concerns linking cigarette smoking to general health, how might revenues from cigarette excise taxes be allocated in the state and local budgets? Check with your state legislator to find out if and how the excise taxes on cigarettes are earmarked in the state budget.
c) Considering the concerns linking cigarette smoking to general health, can the argument be made that the excise taxes can have an effect on the economic environment of given states (labor force health, health care costs, etc.)?
d) Which states would likely have more tobacco farmers than others? Could there be a connection between economic development, promotion of indigenous industry, and tax policy? Can you think of similar connections in your state where excise tax rates may be linked to key economic sectors?
e) Are there economic incentives promoting consumption patterns and behaviors as a result of the differing excise tax levels?

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(*) The City of Chicago levies additional excise taxes, raising the total to 56 cents.
b Economics
Robert B. Harris, Director, IUPUI Center for Economic Education, Indianapolis, IN, and Robert Catus, Arsenal Technical High School, Indianapolis, IN

Why Trade Technology? What are the Effects on Economic Growth?

Concepts: Economic growth Marginal social cost Comparative advantage
Marginal social benefit Trade barriers Technology Public goods

Background: Technology is the science of production of goods and services. The transfer of and investment in technology has occurred since ancient times, but expanding global communication is now causing the transfers to accelerate geometrically. The rapidness of the transfer has caused many people to ask the question: Should there be free and open trade of technology in the global marketplace?

Adam Smith wrote that "Consumption is the sole end and purpose of production and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer." If technology transfers and investment promote Smith’s goal of improving the welfare of the consumer, it follows that there should be free and open trade on those activities.

According to economic theory, production results from the combining of land (natural resources), labor, and capital (technology). Each nation tends to specialize in what it does best and imports other goods and services for which its advantage is less. This can mean that the application of technology from other areas (geographical or industrial) can make our production more efficient. The gains from such exchange expand the production and consumption possibilities of all trading partners.

Technological improvement tends to increase productivity—that is, output per unit of input. Sharing technology means raising economic productivity. Not only can countries or firms specialize in developing technology where they have a comparative advantage, but they can trade that technology for other goods and services without giving up the use of that technology themselves. In that sense, technology is a public good. In other words, its consumption by one group does not diminish its consumption by others.

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Around Seven

Workshops for Economic Educators in the Seventh District

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The Center for Economic Education at Northern Illinois University

The Center for Economic Education at Governors State University
INDIANA
The Center for Economic Education at Ball State University

The Center for Economic Education at Indiana University-East
"Business Seminar," Richmond, Date to be determined; "Economics for the Clergy," Richmond, Date to be determined. (317) 973-8347.

MICHIGAN
The Center for Economic Education at Central Michigan University

The Center for Economic Education at University of Detroit-Mercy

Michigan Association of Economic Educators

WISCONSIN
The Center for Economic Education at University of Wisconsin - LaCrosse

The Center for Economic Education at University of Wisconsin-Oshkosh

The Center for Economic Education at University of Wisconsin-Stevens Point
"Teaching Economic Concepts," Schofield, Date to be determined. (715) 346-3310.

Bibliography for Teachers

A Summary of Recent Articles from Around the Federal Reserve System

The Recent Rise in the Value of Education: Market Forces at Work
Erica L. Groshen and Colin Drozdowski, Economic Commentary, Federal Reserve Bank of Cleveland, August 15, 1992

Groshen and Drozdowski present a powerful argument that the financial value of education has risen significantly during the 1980s, and an equally powerful explanation as to why it rose in the 1980s as opposed to dropping, as it did in the 1970s. However, the explanations may surprise many because they are not all demand related. More significantly, the potential policy and wage implications will not
favor those who choose to stop educating themselves, relying on seniority to keep their wage levels steady. Finally, the relative wealth of an area will continue to rely on its commitment to education and the policies local leaders implement to support it. Free.

Research Department, Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, OH 44101

The North American Free Trade Agreement: The Ties That Bind

This article focuses on specific aspects of the North American Free Trade Agreement (NAFTA), namely labor issues, job retraining, and rules of origin (domestic content). These issues are explored because of the strong economic linkage the Seventh Federal Reserve District has with Mexico in terms of manufactured goods exported south, and the concerns of labor leaders regarding wage differentials and job flight. The article puts the issues into a clear focus and reveals some positive gains which will help the Seventh District in dealing with the problems raised. The conclusion emphasizes the necessity of examining the costs and benefits in order to analyze and perhaps ratify the Agreement. Free.

Public Information Center, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, IL 60690-0834

Alan Barkema, Economic Review, Federal Reserve Bank of Kansas City, Third Quarter, 1992

Barkema presents a fairly comprehensive study of a key aspect of the NAFTA. The article includes not only an overview of the agreement, but an examination of the major restrictions that currently exist in agricultural trade between the U.S. and Mexico; an evaluation of the impact the agreement will have on U.S. farm exports; and, most interestingly, speculation on the impact the NAFTA can have on total agricultural reform on the North American continent in light of the current problems of the Uruguay round of the GATT talks. An interesting Appendix on farm policy in Mexico also adds to the article's interest. Free.

Public Affairs Department, Federal Reserve Bank of Kansas City, 925 Grand Avenue, Kansas City, MO 64198-0001

Companies trade technology with the following expectations:

■ Increased demand for products.
■ Development and production of new products.
■ Improved quality and performance of products.
■ Reduced production costs.
■ Lowered consumption of energy or raw materials.
■ Maximized utilization of local resources.
Increased product exports.
Improved environmental protection.
Improved management techniques.
Improved advancement of levels of science and technology.
In short, increased profits.

The diagram below shows the outward shift in production possibilities that results from technological change. Sharing technology can shift production possibilities outward in several countries simultaneously. Continuing growth in technology can increase our economic growth rate, evidenced by expanding production possibilities over time, while also expanding economic growth in other countries.

Just like other trade barriers, attempts to restrict transfers of technology interfere with mutually beneficial exchanges, thereby reducing possible trade, production, and employment. On the production possibilities diagram below, this takes the form of a slowing in the rightward shift of the curve over time. Without the sharing of new technology, the production possibilities of both parties involved, whether nations or firms, are reduced below their potential, resulting in slower economic growth.

The downside of such technology transfers is that when producers share technology, some will lose monopoly positions. In addition, some technology transfers and investments intended for peacetime use, notably in the areas of computers and electronics, may also have military applications that entail a national security risk when shared.

Given that there are always tradeoffs in making choices, should barriers be imposed on the trade or transfer of technologies? Should technologies that could be used to develop chemical, biological, or nuclear weapons be restricted? Do U.S. citizens benefit even if technology transfers and investments cost jobs in certain industries—automobiles and electronics, for example? Some U.S. manufacturers may lose competitiveness because their original technology is improved upon by foreign firms. How can the U.S. remain competitive if it licenses its technology to foreign competitors?

The diagram below shows the marginal costs and benefits to the U.S. from technology transfer.

As is true with other decisions, the marginal, or incremental, cost increases with quantity, and the marginal benefit decreases with quantity. We make the low cost and the high benefit transfers first. At some point, the last transfer or investment make is just
worth the incremental cost. This optimal level occurs at \( Q' \), where marginal costs and benefits are equal. Anything beyond \( Q' \) involves incremental costs that exceed the benefits. Conversely, technology transfer or investment less than \( Q' \) means that we have foregone opportunities with marginal benefits in excess of the costs. Essentially, to reach the optimal level of technology transfer, the U.S. has to balance the marginal gains from additional trade against the political and economic costs.

**Activity:** Divide students into at least two companies. If the class is large enough, there can be several companies, each with three or four students. They are to negotiate agreements transferring or developing technology to license the production of goods and services in the customer's country. Students should propose contracts for the transfer of or investment in technology selected from the following areas:
- Improved agricultural varieties, including plants and fine breeds of animals through genetic engineering and other technologies;
- New vaccines for HIV and hepatitis, and improved antibiotics for human and agricultural use;
- More efficient production and use of natural gas, coal and petroleum;
- Advanced plastics engineering;
- Automatic control in industrial processes and telecommunications, such as shortwave, and fiber optics; and
- Computer software for games.

Have the companies give reports on the costs and benefits of their agreements.
Are We Saving Enough?
"...part of the explanation [of why saving behavior changes over time] relates to how well members of a society, both individually and collectively, assess their future needs and take action in the present to meet them."
Alan Greenspan, Testimony before the Committee on Finance of the United States Senate, May 16, 1991

Many economists have expressed concerns about the low rate of saving in the U.S. The issues range from the lack of adequate incentive to save to the impact continued low saving rates could have on future economic growth, job creation, real income, and our standard of living.

To address these topics, this issue of On Reserve will discuss the role of saving and investment in the economy. As we discuss the issue of saving, we need to be aware that consumption and saving come from the same pool of resources, namely income. By examining the linkages among income, saving, and investment, we can see how these relationships are changed by economic conditions and policy. And finally, we need to understand how these changing relationships enter into the individual's decision making process.

The basic economic framework used to analyze saving is the model of national income determination. This model provides the basis for the National Income and Product Accounts (NIPA) used to measure economic activity in the United States. In its simplest form, the model assumes a closed economy and ignores government deficits and surpluses. The saving concept of this simple model helps illustrate the key role that personal saving plays in the economy. One of the basic identities of the model, saving equals investment or \( S=I \), provides the title for this issue of On Reserve.

The Source of Capital

Although the model of national income determination shows saving and investment being equal, we often see the two actions performed by different sectors within the economy. According to economists, saving is unspent income and is undertaken primarily by households with some additions by businesses (retained earnings) and government (when it runs a surplus). On the other hand, investment is done by the business sector when it purchases capital (plant, equipment, and inventory) to further production. Although you and I may think we are "investing" when we purchase stocks or bonds, the fact is we are transferring our saving through the financial markets to firms that will actually use the funds.

Therefore, saving provides the funds for investment, and enables the capital stock and productive capacity of the country to grow. This, in turn, leads to improvement in the standard of living.

Blame It on Good Times

Recognizing the linkage between saving and investment led many to be concerned about the drop in the personal saving rate in the late 1980s. The personal saving rate
(personal saving as a percent of disposable personal income) averaged 7.3 percent from 1960 through 1986, ranging from a low of 5.7 percent in 1960 to a high of 9 percent in 1973. In 1987, the personal saving rate dropped significantly to 4.3 percent, and has been between 4 percent and 4.8 percent since then. As we see in figure 1, disposable personal income and the saving rate moved in different directions for most of the last half of the 1980s. Since the denominator used in calculating the saving rate is disposable personal income, it was clear that personal saving was growing less rapidly than disposable personal income. A number of factors contributed to the decline in the saving rate, but two merit our inspection: income and age.

![Graph showing Disposable Personal Income and the Personal Saving Rate, 1975-1991](image)

The income explanation is one that influences short-term movements in the saving rate. The hypothesis suggests that individuals perceive a lifetime income and expenditure level and plan accordingly. If the value of their net assets rises more rapidly than their income during some period, however, these individuals can spend more and save less out of current income than had been budgeted. This explanation would seem to have some merit if one compares the levels of tangible and financial wealth (which combined equal household net wealth) to the personal saving rate during the 1980s, as we see in figure 2.

![Graph showing Tangible and Financial Wealth versus the Personal Saving Rate, 1975-1991](image)

During the 1980s, the household net wealth in various forms (stocks, mutual funds, real estate, and pensions) saw values increase rapidly. Some of the increase was nominal, pushed higher by inflation. But, apart from the price appreciation, real wealth
did grow. Because the average person does not always differentiate between wealth growth and income growth, the result was increased consumption relative to income. In essence, we thought we had more income, and spent like we did. Consumption rose as a percent of current income, and saving, as a percentage of income, dropped.

The age factor corresponds to what is sometimes referred to as the life-cycle hypothesis. Its influence on the saving rate is more long-term in orientation than the income explanation, as it relates to saving patterns over a generation and more.

The life-cycle hypothesis states that our spending/saving behavior correlates to the stage of life we occupy. In youth, each of us is a net borrower in the economy. That is, as young people we tend to consume other people’s incomes (usually the income of parents or guardians). In early adulthood, the income we earn is often still insufficient for all our consumption related to starting a family, purchasing a home, getting started on a career, and completing an education. Thus, in early adulthood, we are still net borrowers. Upon reaching middle age, with our own children educated and out of the home, we become net savers. As we begin to contemplate retirement, we cut consumption and begin to amass assets to allow us to consume at a relatively stable level for that period when we will no longer be working and getting a paycheck. And in retirement, we begin to draw down the savings we have gathered.

Statistically speaking, our nation is getting older. That is, the mean and median ages for the population are increasing. This is due to (a) the baby boomers aging, (b) the longer life spans achievable by all individuals due to improvements in health care, and (c) the "baby bust," or the smaller percentage of the population currently in school, as can be seen in figure 3. What the U.S. has faced during the past decade is a situation where a large part of the population has been in a "dissaving" period. The baby boomers have been busy getting careers and households off to a start and have been "dissaving." As the boomers now enter middle age, they are ready to do a significant amount of saving of their own, as they finish raising families and begin to look towards retirement. Upon entering retirement, the boomers will need their accumulated saving (if they have any) to support consumption.
If they do not have sufficient wealth at retirement, they will create additional demands on a smaller pool of saving generated by the population group following them, sometimes referred to as the "baby bust." Add to this, another baby boomlet may be developing as we speak, creating further demands on the income/saving potential of the "baby bust" group.

Thus, we see the income and age explanations can provide some clues to understanding the saving rate decline. But, they are still just part of the story.

The Equation in Question Although they may seem cryptic, the basic equations in the simple model of national income determination are easily explained. National income \( Y \) is comprised of consumption \( C \) and saving \( S \). That is, all income is either spent or saved; therefore, \( Y = C + S \). National product \( X \) is comprised of either consumption \( C \) or investment \( I \). That is, all goods and services produced are either consumed or used to further production, so \( X = C + I \). Because each dollar of income is the result of goods and services produced, national income equals national product, \( Y = X \). By substitution, then \( C + S = C + I \), and by cancellation, \( S = I \).
Lesson Plans

High School Economics Classes

Objective: Students will examine selected economic data sets and suggest explanations regarding possible relationships between various sets of data. Students will also examine demographic statistics as they relate to information presented. Students will be expected to manipulate and read data presented on line and bar graphs.

Activities: Enlarge the graphs included with the text of this issue and create transparencies or dittos. Care should be taken to enlarge figures 1 and 2 by the same amounts to facilitate overlaying on an overhead projector. Then, explain the basic points of the saving debate as presented in the article. Make sure to stress the linkage between saving and investment, and the two theories put forth regarding the reduction in personal saving rates, income and age.

1. Examine figure 1 (Disposable Personal Income and the Saving Rate) first. Answer the following questions:
   a. During the period represented on the graph, how consistent is the growth in disposable personal income? (fairly consistent) Estimate a percentage of growth for the period. (just under 50%, 3600 - 2400 = 1200. 1200/2400 = .5 or 50%)
   b. Are there any times during the period in question, when disposable personal income seems to level off or grow more slowly? (1979 -early 1980s, 1987-91) What might be some explanations for this? (Inflation, recession, baby boomlet)
   c. At what points do the biggest drops in the personal saving rate take place? (mid-1970s, early 1980s, mid-1980s) What might be some explanations for this? (rise in gas prices, recession of early 1980s, income effect)

2. Examine figure 2 (Tangible and Financial Wealth vs the Personal Saving Rate). Answer the following questions:
   a. How does growth in tangible and financial wealth compare for the period? (financial wealth grows more)
   b. Since most tangible wealth of households is represented by homes, does that help explain the steeper growth of tangible wealth in the late 1970s? (possibly, inflation rapidly increased the value of many homes)
   c. Why did financial wealth grow more quickly later in the period? (financial wealth is mostly stocks, bonds, etc. and that increase was partially the result of the bull market of the 1980s)
   d. Which gains, those in tangible or financial wealth, would appear to be more directly linked to the reduced savings rate? (financial, because it was during the rapid growth that the greatest reduction in personal saving rates occurred)

3. EXTRA CREDIT: Secure a copy of the Economic report to the President, 1993, from a library. Using the data tables in the back of the book, draw similar graphs using real (constant 1987 dollars) per capita data and see if the data is similar to the trends presented in this issue. Also look for personal saving data in constant 1987 dollars and graph that data to see if there are similarities.
4. Overlay the figures 1 and 2 so that the personal saving rate lines match up and answer the following questions:
   a. How does the disposable personal income line compare with tangible and financial wealth during the period? (it seems to closely match the financial wealth chart)
   b. Would this information seem to support the theory of income effect explained in the article?

5. Examine figure 3 (Population Mix by Age Categories) and answer the following questions:
   a. When do the charts indicate the first major decrease in the 25-34 category? 35-44 category? How old are those people now? (2000, 2010, 18-27)
   b. What is happening to the 55-64 age category during this period? (steady growth)
   c. What about the 75 and over category? (steady growth)
Around Seven Summer Workshops


Center for Economic Education at Northern Michigan University

WISCONSIN

Center for Economic Education at University of Wisconsin - Stevens Point

Center for Economic Education at University of Wisconsin - LaCrosse

Center for Economic Education at University of Wisconsin - Milwaukee

Center for Economic Education at University of Wisconsin - Eau Claire
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<td>Fed Facts, 1981</td>
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<td>2</td>
<td>Monetary Policy: Formulation and Implementation, 1982</td>
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<td>Usury Ceilings: Controls and Controversy, 1983</td>
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<td>The Dollar Out of Balance, 1985</td>
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<td>The Free Market of Adam Smith, 1986</td>
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<td>Public Debt: Private Credit, 1986</td>
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<td>Levels of Interest, 1986</td>
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<td>For the Public Good: Evolution of the FOMC, 1988</td>
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<td>20</td>
<td>Why Cheap Money Won't Buy Expensive Oil, 1991</td>
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<td>Credit: Is How You Rate in the Cards?, 1992</td>
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Center for Economic Education at Indiana State University

Center for Economic Education at Indiana University - Northwest

Center for Economic Education at Indiana/Purdue University at Fort Wayne
Form Without Substance?

Some of the newer research findings can provide some light as well as deepen the shadows on this somewhat gloomy picture. The bad news is that some studies indicate that there may not be a significant increase in saving to be realized from the aging boomers. This may be due to the fact that many, if not most, people expect increasing income and an improving lifestyle throughout their lifetime. This may increase consumption. Additionally, many boomers have delayed child-rearing and the dissaving effect will drag longer into their peak earning years than it did for their parents. There are also lingering questions regarding the apparently slowing rate of real income growth.

The good news is that the propensity to consume or save is not immutable. Indeed the current tendencies are a result, at least in part, of policies designed to encourage spending. But even this silver lining has its own dark cloud. Just because the propensity to save/spend can be changed, does not mean it will change, or that it will change in favor of increased saving.

To Save or Spend

The final issue ultimately comes down to this: should we enact policies that will make saving "fashionable" and recognize the need for capital, particularly in an economy where the demographic burden-shifting may be so large? Among possible "saving-friendly" policies that have been proposed by some would be to make income derived from saving tax exempt to some degree. Others have suggested a consumption tax (a national sales tax, for example). The fact remains that any moves to change the saving rate will also have an impact on other economic activities, some positively and others negatively.

Economists will debate the issues of saving and spending into the next century. How we resolve the debate through our spending/saving decisions, and the economic policies that shape saving and capital formation, may well impact on the quality of life and the availability of capital for the next generation of families.

Related Articles and Materials

(Consult the Federal Reserve Public Information Materials catalog to obtain copies of the following publications.)
The Influence of Housing and Durables on Personal Saving  

Explaining the Postwar Pattern of Personal Saving  

Is Household Debt Inhibiting the Recovery?  
David Altig, Susan M. Byrne, and Katherine A. Samolyk, *Economic Commentary*, Federal Reserve Bank of Cleveland, February 15, 1992

Saving and Demographics: Some International Comparisons  

Changes in Family Finances from 1983 to 1989: Evidence from the Survey of Consumer Finances  

Is Saving Too Low in the United States?  

Household Spending and Saving: Measurement, Trends and Analysis  

Don't Worry, We'll Grow Out of It: An Analysis of Demographics, Consumer Spending, and Foreign Debt  
Michael F. Bryan and Susan M. Byrne, *Economic Commentary*, Federal Reserve Bank of Cleveland, October 1, 1990

Thanks to Anne Marie Gonczy and Tom Gittings of the Research Department of the Federal Reserve Bank of Chicago and Paul Ballew of the Detroit Branch for reviewing the main article and helping with content and suggestions. Any errors or omissions are strictly the responsibility of the author.

*On Reserve* is written by Tim Schilling and published by the Federal Reserve Bank of Chicago as a public service to educators to promote the teaching of economics. The views expressed are those of the author and are not necessarily those of the Federal Reserve Bank of Chicago or the Federal Reserve System.

**So you want to photocopy On Reserve?**  
Here is a helpful tip for photocopying *On Reserve*. When the paper is fully opened up to 22"x17", notice how the fold lines divide the articles, lesson plans, etc. into four sections of 8 1/2"x11". Simply use those fold lines as your guide while folding back the paper to expose each section for copying at its original size. We designed it that way for the ease of copying, as well as to maximize the printing space to allow us to give you more comprehensive articles.
Interested in getting your ideas published?

We need lesson plans in Economics or American Government/History on banking legislation and its effect on the economy. Two lesson plans will be printed in *On Reserve* #26; others will be considered for inclusion in future Chicago Fed publications on the subject. Lesson plans must be submitted by July 15, 1993 for consideration. For further information, call Tim Schilling at (312) 322-5109.
Objective: Students will examine basic issues related to saving. Students will examine attitudes toward saving and explain factors related to decisions on where, why, and how much to save. Students will also calculate the impact saving can have on personal financial health, as well as the impact of taxes on saving.

Activities

Attitude Inventory: Have students examine the following three statements. For each statement, students should tell whether they agree or disagree and offer an explanation for their answer.

1. It is more important to spend on various goods and services so that I “fit in” with a certain group than it is to save for a goal that is five or more years in my future.
2. It is more important for my parents/guardians to save for my education, wedding, or graduation, and for their retirement, than it is for me to save for the same items.
3. Due to social security and employee pension plans, saving is no longer necessary to achieve financial security in retirement.

Topics for Discussion:

1. Discuss the relationship between individual saving habits and a nation's economic growth.
2. Discuss reasons why interest rates on U.S. EE Savings Bonds were lowered to 4% in March of 1993. What effect will this change have on your personal savings plan? Your college savings plan?
3. Consider the statement, "Millions of American consumers place their savings in low or no-interest bearing checking accounts." List places where consumer savings can be placed in your community. Discuss factors that should be considered when selecting savings places. (Yield, liquidity, safety, minimum deposit, convenience, service charges, other services.)

Community Activity. Have students gather information on different kinds of savings plans offered in your community’s financial institutions. Have students compare interest rates, safety, convenience, fees and services, and explain why they would choose one savings place over the others.

Debate Topic. Separate the class into two teams. Have teams deal with questions which must be answered if the proposition is to be resolved. Allow equal time for both sides of the debate. Conduct a debriefing session after the debate.

Resolved: Taxes on unearned income (interest, dividends, capital gains) should be lowered or eliminated in order to encourage personal saving.

Resolved: Citizens who develop and enter a comprehensive saving/investing plan to provide for retirement, should be allowed to “buy out” of the social security system by forfeiting all contributions to date as well as claims on
benefits, or in the case of those not yet contributing, paying off a $25,000 contribution out of future earnings.

**Topics for Student Research**

1. How do the household savings patterns of Americans compare to those of Canadians, Japanese, British, Germans, and Hungarians?
2. How do U.S., state and local taxes apply to income earned in the following categories: saving accounts and certificates of deposit, EE U.S. savings bonds, profit from selling a house, proceeds from sale of stock or mutual fund shares, interest payments on municipal or state bonds, interest payments or dividends on corporate bonds or stock? Which of these are effectively encouraged or discouraged by various government units?
3. What consumer protection is provided by the various banking regulatory bodies (Federal Reserve System, Office of the Comptroller of the Currency, Office of Thrift Supervision, National Credit Union Association, and Federal Deposit Insurance Corporation)? How should this affect consumer decisions to save?
4. What information disclosures are now required of depository institutions (banks, credit unions, thrifts) under the Truth in Savings Act (Regulation DD)?

**Additional Resources** In addition to the publications and research listed at the end of the article, you may wish to examine these publications:


*U.S. Savings Bonds for Education*, Consumer Information Center 3-A, P.O. Box 100, Pueblo, CO 81002. Cost 50 cents.
FEDERAL RESERVE BANK OF CHICAGO

Growth and Change in the Midwest Economy
A summary of the proceedings of the 1992 Regional Economic Education Conference, held at the Federal Reserve Bank of Chicago. The conference explored the transformation taking place in the economy of the Midwest/Great Lakes region, and the implications for residents of the Seventh District. The book contains data and charts developed by the Research Department of the Federal Reserve Bank of Chicago, and questions for the classroom developed by economic education professionals from around the district. *Single copies free.*

Strong Dollar, Weak Dollar
A revision of a popular pamphlet, this publication examines the mechanics of foreign exchange and the trade and price implications of relative strength or weakness of the dollar. The publication shows how foreign exchange affects us as consumers and producers. *Free.*

Public Debt, Private Asset
Another revision of a pamphlet (formerly *Public Debt, Private Credit*), this revision explains how the debt of the U.S. government is bought and sold, and the important role U.S. debt plays in the financial markets. *Free - available in quantity.*

ABCs of Figuring Interest
A new version of a previous publication, this booklet explains the various ways that interest charges are calculated, and the effect this can have on the debtor's ability to repay a loan. An important publication for basic consumer awareness and education. *Free - available in quantity.*

AND FROM ELSEWHERE

The Bank Panic of 1907
This publication was designed with the American history student and teacher in mind. The Bank Panic of 1907 is described very well as both an important event in American history, as well as the precipitating event that brought about the formation of the Federal Reserve System. A complete chronology is included, as well as some "human interest" stories from newspapers of the time. *Free - Available in quantity.* Public Services Department, Federal Reserve Bank of Boston, P.O. Box 2076, Boston, MA 02106-2076

Economic Study Guide
The new economic education newsletter by the Federal Reserve Bank of Dallas. The premier issue deals extensively with international trade in general and the North American Free Trade Agreement specifically. Included are an award winning essay by an Eleventh District student on America's economic leadership. *Free.* Public Affairs Department, Federal Reserve Bank of Dallas, Station K, Dallas, TX 75222
A Summary of Recent Articles from around the Federal Reserve System

Diamonds and Water: A Paradox Revisited

In teaching the difference between free and economic goods, the question of the value and pricing of water often arises. The author takes a look at this classic paradox and presents an intriguing way of explaining the difference between pricing water and diamonds, using Marshall's marginal value approach. Aside from being an excellent explanation to a paradox, the article introduces students to the marginal cost analysis that underscores much of modern economics. Free.

Public Information Department P.O. Box 7702 San Francisco, CA 94120

NAFTA: A Review of the Issues
Linda Aguilar, Economic Perspectives Federal Reserve Bank of Chicago January/February, 1993

This article provides a valuable summary of the Free Trade Agreement, and shows the importance of increased trade for the United States and Mexico. Issues discussed by Aguilar include early trade initiatives by Mexico and the impact the Agreement could have on the states in the Seventh Federal Reserve District. Labor and environmental issues are also discussed, the former with significant detail. Also of interest are a brief overview of the Agreement itself and the process that led to it, as well as discussion of the maquiladora program. Free.

Public Affairs Department P.O. Box 834 Chicago, IL 60690-0834

How Big is the Deficit, Really?

A basic question of great interest to everyone in light of the administration's deficit reduction plan is answered in Cox's article. The treatment includes how social security, state and local budget deficits/surpluses, interest, and inflation impact the budget. It also provides some insight for separating capital and operating budget figures for the proper mix. Finally, some explanations regarding how the budget deficit gets to be "too big" are included. The article is well written, easily understood, and includes important statistics. Free.

Public Affairs Department P.O. Box 655906 Dallas, TX 75265-9644

New Next Time
Do you or your students have questions about the Federal Reserve or the economy? Send them to On Reserve and selected questions will be printed with answers in the future issues.
"There is only one way business can earn a profit, and that is to make a product a consumer wants to buy, produce it efficiently, provide good service, and treat the customer honestly and fairly." James M. Roche

At a recent workshop, a teacher asked if there were any Federal Reserve publications that examined the broad array of financial services and could help one choose a bank (or savings and loan or credit union). There are excellent publications on various types of accounts and specific services, but a general piece comparing a broad range of services did not readily come to mind. Naturally, it would be inappropriate for the Fed to produce a piece that favors a particular institution or group of institutions, but a publication that examines basic services and provides a framework for choosing a financial institution seems to be in order.

This issue of On Reserve is an attempt to provide information to consumers, particularly to teachers and students, on the basic financial services offered by most financial institutions. In this article, we will focus on banks, savings and loans, and credit unions. To simplify matters, we will refer to all of these institutions as depositories.

Better Than Under the Bed

One of the first things most consumers look for when shopping for a depository is a place to store their money. Few people today store cash in a coffee can in the back yard or under the mattress. Most consumers prefer the safety of a depository.

To this end, people place their money in various accounts that offer differing ease of access (liquidity) and that are protected by deposit insurance through the Federal Deposit Insurance Corporation (FDIC) or another federal agency.

Although insurance levels have been reduced somewhat, each consumer with an account at a federally insured institution is still insured up to $100,000 per institution.

This level of insurance is probably sufficient for most individuals and would seem to eliminate any need for concern, but it is still advisable to check the financial condition of the institution. (Consumers can secure an annual report from the depository or consult a banking reference book at their public library.) While deposit insurance should make consumers feel secure, the possible inconvenience of having to file for a return of funds in the rare instance when an institution is closed is enough to make depositors wish they had done more homework.

Assuming they are satisfied that their funds will be safe, consumers need to examine their individual needs to ascertain the type of deposit accounts that best suit them.

One basic and liquid form of deposit account is the transaction account. Often referred to as a checking account, this type of account allows the consumer to draw against the balance via a written order commonly known as a check. By law, checking accounts pay no interest. Those transaction accounts that do pay interest are more correctly called by other names (NOWs, share-drafts, etc.) and are only available to
individuals. Interest can be paid on the amounts that exceed a minimum balance, or on all funds, although often a minimum balance is required.

A key factor to consider is how difficult it will be to maintain the minimum balance. In many cases, falling below the minimum balance not only will entail a loss of interest, but may also generate service fees for every transaction while the balance is below the minimum.

Some depositories charge monthly fees but others offer "free" transaction accounts. These often do not have minimum balance requirements or may have significantly lower minimum balances than other similar accounts, regardless of whether or not they pay interest. However, these accounts may also limit the number of transactions allowed each month. Additional transactions may result in service fees. Again, consumers need to ascertain how many transactions they may generate each month to properly assess the cost of maintaining the account.

Other deposit accounts may not offer the same liquidity or ease of access as a transaction account. However, in exchange for this reduced access, these accounts usually offer a better interest rate. The basic "passbook" or statement savings account is the simplest. These funds usually can be accessed by visiting the depository. They may also be transferred through the use of an ATM or by telephone, although there are some limitations on this type of access. In some instances, withdrawal of a large sum or balance may require prior notice and/or a visit to the institution.

A different way to save is the certificate of deposit (CD). The CD represents an agreement between the customer and the depository to keep the funds with the institution for an agreed-upon time period. In return for more restricted access, a depository will pay a higher rate of interest. The depository may also assess a penalty, such as loss of accumulated interest and/or a redemption fee, in the event of early withdrawal. Consumers interested in this form of saving should be aware of how likely they are to need the funds on short notice. They should also understand the minimum amount to be deposited, the length of time of the deposit, and any possible penalties.

Certainly an important consideration in selecting an interest-bearing account is the interest rate. Under the new Truth in Savings Act, all depositories are now required to state the return on interest-bearing deposit accounts using a common measure, called the annual percentage yield (APY). Depositories must state the APY in the contract and marketing literature to make comparison shopping easier for consumers.

Investing Through the Depository

Another advantage of all the deposit services discussed above is that they are backed by federal deposit insurance. But, there is another service that is not insured by federal banking agencies. That is investing.

Today, many depositories are offering more than just deposit accounts, providing investment services such as mutual funds. This trend offers new opportunities for consumers but also appears to have caused some confusion. According to one study, released by the Consumer Federation of America, the American Association of Retired
Persons, and the North American Securities Administrators Association, "85% of those who had actually bought bank mutual funds said their lender had given them a disclosure document; most said they had read it. Nevertheless, 52% of those who bought mutual funds from banks believed the products were insured."

Basically, some investors thought that nondeposit investment products (mutual funds, stocks, and bonds purchased at a depository or NIPs for short) were like their transaction or savings accounts. Regardless of this confusion, the fact remains that NIPs purchased through depositories are not covered by federal deposit insurance. Regular deposits are actual liabilities of the institution. That is, the money is owed to the depositor and must be repaid, under contract. Unlike deposits, investments are not liabilities. Essentially, depositories provide a service in some form, sometimes by leasing space to a salesperson, other times providing the personnel themselves. But, even in the case of the latter, the depositories are only providing a service.

With NIPs, the customer is making investment decisions and purchasing the investment in question. With regular deposits, the depositor is lending funds to the depository, which then decides whether to invest or lend the money to others. The funds must be returned to the depositor, who has legal recourse if they are not returned.

Consumers who choose to invest in NIPs through their depositories should read the disclosure statement and other information carefully and weigh the risks and benefits of the investment. They should be aware that they stand to lose their principal as well as the interest if the investment goes sour. These investments are not insured by the FDIC and are not obligations of the depository institution.

**The Other Side - Loans**

When consumers deposit funds, they provide the basis for another basic product offered by depositories—loans. Some of the more common consumer loans are student loans, auto loans, mortgages, and credit card loans. But not all depository institutions make all kinds of loans. Again, one must match the institution to specific needs.

It's always useful to check at several institutions when seeking a loan. However, not all types of depositories make all types of loans. Two of the most common types of loans are auto loans and credit card loans. Although common, some institutions do not offer one or both of these types of loans, often due to the overhead costs involved in tracking them.

Another common loan is the student loan. Many depositories are willing to make these types of loans, depending upon the availability of federal funds to insure the loan against default.

*As reported in "Consumer Groups Find Public Blind to Fund Risks," The American Banker, January 14, 1994.*
Finally, one of the largest loans most consumers will incur is the home mortgage. Although banks and savings and loans typically offer this type of credit, it is not as common at credit unions.

There are a number of factors to consider when shopping for home mortgages, most of which directly impact the pocketbook. Application and closing fees are common and can be relatively expensive. It is usually possible to find "no fee" institutions. However, those fees may be saved only to be offset by a higher interest rate, other fees, or pre-paid finance charges, often called "points." Each point equals one percent of the mortgage amount, paid to the lender in advance. Also, it is not uncommon for depositories offering "no-fee" mortgages to require larger down payments.

Another factor to consider is the term of the loan and how it compares to the interest rate to be paid. Often, lower rates can be obtained for mortgages with shorter terms, saving interest charges but resulting in higher monthly payments even given the lower rate. Consumers who can afford the higher monthly payments may opt for a shorter term, thus saving money in the long term. Adjustable rate mortgages (ARM) also may provide some relief if the consumer believes that rates will drop or at least not increase substantially over the life of the loan. However, the consumer will have to pay more interest if rates increase, although a cap on how high the ARM rate can rise can alleviate this risk.

Finally, with any loan, consumers should check the terms on prepayment. Although many loans allow early payments or extra payments without penalty—and this can be a good way to reduce interest charges over the life of the loan—some depositories have early payment penalties. This is not uncommon on shorter term loans, such as auto loans. Even some mortgages may require penalties for prepayment, especially in the early years of the loan.

**Can You Get There From Here?**

One final consideration that some studies identify as most important to many consumers is accessibility. Is it convenient to get to the depository (and funds)? Again, one must consider his or her total needs. Is the institution close to home and/or place of employment? Are there special accessibility needs? Are home or electronic banking and automated payment and deposit programs important? If an ATM card is available, how extensive is the network of machines, both proprietary (owned by the depository) and affiliated (owned by others but accessible to the card-holder)? This can be especially important if free ATM services are available only on proprietary machines.

**Before You Deposit**

In short, consumers need to know how they are using the depository and the accounts they keep. Do they need a transaction account or do they just need a place to store funds? If transactions are important, consumers need to be aware of minimum balances (high or low), transaction fees, check printing fees, and transaction limits.
When seeking a loan, consumers need to understand the types of loans and not just shop for rates. Understanding the limitations on prepayment and loan fees will help in selecting the appropriate depository institution.

And finally, how, where, and when one can access funds can be one of the most important factors in choosing a depository. In any circumstance, consumers need to match the accounts and the institutions with their needs. Even if a perfect match is not available, it is worth the trouble to find the best possible fit in financial services.

Attention High School Teachers! The Federal Reserve System has developed a new curriculum package to help you teach the topics of money, banking, and the Federal Reserve.

Included in the package:
- A VHS videocassette with four programs
- A teachers guide with 10 lesson plans and transparency masters
- A series of posters identifying myths and truths about money, banking, and the Federal Reserve

This package is free (one to a high school, additional copies of teachers guide can be ordered). A brochure providing additional information on The Federal Reserve is available by writing the Public Affairs Department of the Federal Reserve Bank of Chicago (see address elsewhere in this publication) or contacting the bank via fax at (312) 322-5515, or teachers can order the package by contacting:

Public Affairs Department
Federal Reserve Bank of Kansas City
P.O. Box 419442
Kansas City, MO 64179-0707
Objective: Using the outline below, students will compare various depository institutions in their area. Then using information provided in several scenarios, students will offer suggestions and decide which institution might be best suited for the individual in the scenario. Students will have to support their decisions.

### Depository Research Form

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Activity: Have students collect data on several depository institutions in their area. You may need to provide more specific guidelines on data collection for some services such as mortgages. Students should try to include at least one commercial bank, one savings and loan, and one credit union, if possible. They should also try to collect data on institutions in nearby communities that provide employment to family members.

Make a checklist similar to the one used and place it on the board, overhead, or LCD (Liquid Crystal Display) screen. Select students at random to enter information on at least one institution. Compile information on a minimum of five institutions (including at least one bank, savings and loan, and credit union). Have students compare the information and select a "best buy" for each of the following scenarios.

Scenario A: A high school senior, planning on attending a university in state but away from home. Is likely to need a student loan, and may need a used car. Plans to work summers at home. Will also work during the school year either at school or in the city where the university is located. Has a computer and modem and uses both extensively. Is looking for inexpensive checking, a free ATM/debit card, and some sort of liquid savings account. Has one certificate of deposit ready to mature. May use a credit card but does not feel it is necessary. Writes only about 10 checks a month.

Scenario B: A high school graduate, working in a nearby town for decent wage and anticipating a major raise in nine months. Attends evening classes at the community college. Lives at home. Is engaged and plans to get married in two years. Owns car and is saving for a down payment on house to be purchased once married. Writes few checks (usually uses money orders) and pays cash to parents for some expenses.

Scenario C: A young couple, one uses a wheelchair. They live in an apartment and are saving for their first home. Both work and earn good salaries. Have a special vehicle to accommodate the wheelchair but need to replace it. One has a job involving travel on a regular basis. No children. They have a computer and modem. Use checking services and credit card. Looking for a good investment in savings, especially certificates of deposit (CD) of varying lengths.

Scenario D: Older couple with one child in high school. Student needs financial aid to attend college. They have two cars, but will give one to student upon graduation. Mortgage is 75% paid off. They are looking toward retirement and need better returns than savings bonds can offer and would like a cheaper credit card than the one they have. Looking for flexible term CDs and are apprehensive about technology.

Scenario E: Single, travels frequently in U.S. for business. Needs access to bank/funds at all times and in numerous places. Lives in an apartment. Owns car but will replace within 18 months, probably with cash. Has a computer, laptop, and modem. Saves for vacations. Would prefer to carry as little cash as possible when traveling.

Correction
In the last issue of On Reserve, there were three errors of fact in the introductory paragraphs. The corrections are as follows:
1. The unemployment rate includes those seeking part-time employment as well as those seeking full-time employment;
2. As of December, 1993, the payroll survey is not restricted to large manufacturing firms;
3. The household survey is published by the Bureau of Labor Statistics and is conducted by the Bureau of the Census for the Bureau of Labor Statistics, not the University of Michigan.

I apologize for any problems or misunderstandings these errors may have caused.
The Center for Economic Education at Indiana State University

The Center for Economic Education at Indiana University - Northwest

The Center for Economic Education at Indiana/Purdue University at Fort Wayne

MICHIGAN
The National Institute for Consumer Education
"Consumer Economic Education," graduate credit available, Ypsilanti, June 27-July 1; "Insurance Education Seminar," graduate credit available, University Center/Saginaw, July 18; "Consumer Credit Education Conference," East Lansing, July 21-22; "Personal Finance Education," graduate credit available, Traverse City, August 8-12; "Insurance Education Seminar," graduate credit available, Traverse City, August 12-13, 1994. (313) 487-2292.

WISCONSIN
The Center for Economic Education at the University of Wisconsin - Eau Claire

The Center for Economic Education at the University of Wisconsin-La Crosse

The Center for Economic Education at Edgewood College
The Center for Economic Education at the University of Wisconsin-Stevens Point

Thanks to Paul Ballew and Larry Mote of the Research Department, and John Bergstrom, Eileen Maloney, and Bill Lossie of Supervision and Regulation, for help with the main article. Any errors or omissions are strictly the responsibility of the author.

On Reserve is written by Tim Schilling and published by the Federal Reserve Bank of Chicago as a public service to educators and to promote the teaching of economics. The views expressed are those of the author and are not necessarily those of the Federal Reserve Bank of Chicago or the Federal Reserve System.
The Structure of Unemployment
"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success than to take the lead in the introduction of a new order of things." —Niccolo Machiavelli

The persistent high level of unemployment has been a very disappointing feature of the current recovery. Despite two extensions of unemployment benefits and other aid efforts, the plight of unemployed workers remains an issue facing federal, state, and many local governments. In addition, a more difficult issue persists: what can or should be done to reduce unemployment?

Is unemployment a long-term issue? Why are layoffs still occurring if the economy is in recovery? Do current policies effectively address the causes of joblessness?

This issue of On Reserve examines unemployment: its definition, measurement, and policies meant to address it.

What's Unemployment?

By definition, the unemployed are individuals age 16 and over who are seeking full-time employment but are unable to find it. Nobody actually tries to count all the unemployed workers every month. In an economy as large as ours, that would be impractical. Instead, two alternate methods are used to measure unemployment.

The method used by the U.S. Department of Labor is to examine the payrolls of all large manufacturing firms in the U.S. Essentially, the Labor Department counts the people employed by these firms, subtracts them from the total labor force, and adjusts the numbers to allow for smaller firms and nonmanufacturing firms; the number of unemployed is the remainder. The problem with this approach, of course, is that it may overemphasize the importance of large manufacturing firms in the economy. If the assumptions are wrong, the final outcome may be flawed.

The second method is the household survey conducted by the University of Michigan. This method uses a smaller sample that statistically represents a cross section of American households. The members of the selected households are interviewed by telephone about their recent work histories. Those household members who are looking for work without success are designated "unemployed." The figure is then adjusted slightly for error.

In addition to the problems associated with estimating, one further problem is the "discouraged/encouraged worker effect." This problem arises because, as the economy rises and falls during the business cycle, the psychology of those looking for work can change. For example, once a recession is in full swing, people may get so discouraged that they quit looking for work. In essence and by definition, they drop out of the labor force and therefore are not counted as unemployed. This can cause unemployment figures to improve or at least not worsen during economic downturns. The reverse can also take place. Once an economy improves, people who had given up on finding a job may be encouraged to start looking again. This can cause a
temporary upsurge in the unemployment figures despite a steadily improving economy. But analysts can usually recognize this effect and adjust the basic numbers.

While both the payroll and household surveys may be far from perfect, they do provide a current sense of the unemployment problem. In short, these numbers are probably as good as any possible, short of an actual head count.

But knowing the number of unemployed is not enough. Policymakers also need to understand why people are unable to find jobs. As a result, analysts further divide the unemployed into four subgroups according to the cause of unemployment. These subgroups are frictional, seasonal, cyclical, and structural.

The frictionally unemployed are those who are between jobs. In good economic times, this is usually the largest of the four subgroups. Most of the people in the category are there because they have chosen to switch jobs. They may have decided to look for a more promising position with another employer, to move to another part of the country, or to leave an unpleasant work situation. While they have not yet found work, they are still looking.

The second category consists of the seasonally unemployed. People in this group may have jobs that are weather-dependent, such as construction, retail, and agricultural work.

The third type is cyclical unemployment. It occurs when the economy as a whole goes through a temporary contraction, often due to falling consumer spending or temporary adjustments in inventory and production schedules. With any luck, this type of unemployment is fleeting in nature and is corrected when an expansion begins. It also tends to be relatively easy to address through government action.

The last type, structural unemployment, is sometimes referred to as technological unemployment (although technology does not tell the whole story). It is the hardest type to explain, yet in a dynamic economy, it should be the most expected. Structural unemployment is due to the changing structure of the economy. Because the goods and services people consume change over time, and because the way those goods and services are produced also changes, the structure of the economy changes. As new technology replaces old, new skills are demanded. As new goods and services pass in and out of the product mix, different resources and production methods may be required. These changes create the jobs of the future, but may destroy the jobs of today. In fact, economist Joseph Schumpeter described economic growth as a process of "creative destruction," referring both to firms and to jobs. Put simply, if everyone used exactly the same goods and services in precisely the same mix, and if those goods and services were not produced differently from generation to generation, there would be no structural unemployment. But at the same time, the economy would never grow or change.
So, What's the Difference...Really?

If government is to establish policies in pursuit of full employment, different approaches are needed to address the different types of unemployment. Probably little or nothing can or should be done about frictional and seasonal unemployment. As long as we continue to value the basic individual freedom to sell one's labor or buy someone else's labor, frictional unemployment will always be part of our economy. Likewise, seasonal unemployment is generally outside the control of policymakers. Cyclical and structural unemployment, on the other hand, can be addressed—but not by a single policy for both.

Because cyclical unemployment is relatively temporary, the general response has been a stopgap measure such as traditional unemployment compensation programs. These responses typically include "insurance" programs, which provide relief to the unemployed and generate a minimal level of spending until other corrections work through the economic system. (This is sometimes called "automatic stabilization" because it is always in place, ready to be triggered by cyclical processes.) For example, unemployment compensation programs provide people with some portion of their previous wages for a specified period of time. Eligibility is for a limited period, on the theory that the cyclically unemployed will rejoin the workforce as the economy begins growing again and the demand for various products picks up. These programs usually gain political support because they are temporary and easy to implement. Unfortunately, the same cannot be said of the policies necessary to address structural unemployment.

As stated earlier, structural unemployment is due not to short-term cyclical fluctuations, but to fundamental changes in the way the economy functions: the ever-changing mix of goods and services produced in the economy. But unlike jobs lost to cyclical fluctuations, jobs "destroyed" by structural change rarely come back. This means that policy designed to mitigate structural unemployment must take a totally different form. Because such unemployment is more persistent in nature, and its roots lay in the labor-skill mix, the transitory solutions that are applied to cyclical job loss will provide relief but will not solve the essential problem of structural unemployment—the demand for particular labor skills is no longer there.

Policymakers have two approaches for addressing structural unemployment. One is to provide structurally displaced workers with a base income to stave off abject poverty. However, this will not create jobs for people who lack necessary skills. A second approach is to retrain workers, providing them with new skills. But this is not easy. The structurally unemployed often have had long careers in well-established industries. Their formal training may have ended 20, 30, or more years ago, and thus they may have missed not one generation of change, but two, three, or more. Additionally, whereas cyclical downturns most often affect production personnel, structural change will affect management and ownership as well. The training needs of these workers may differ considerably from those of displaced production workers, negating a "one size fits all" approach in developing instructional programs.
There’s another difference between the policies for the structurally and cyclically unemployed. Policies designed solely for income support do not encourage labor mobility; indeed, they may tie workers to a specific area. But workers who are structurally displaced not only need new skills, they often need to relocate. Thus policies that encourage labor mobility can be a plus.

In short, solving structural unemployment can require diverse, long-term approaches, which can be expensive and take longer to show results. Unfortunately, programs like that are often unattractive.

**The Problem with Policy**

Government is making efforts to address structural unemployment. But while numerous programs aim to provide job skills, they often appear uncoordinated. And many of these programs are of the income-support type, still addressing the problem of joblessness as if it were a temporary setback. This is true despite an abundance of rhetoric about the need to end cycles of hopelessness, poverty, and the like.

Important forces constrain prevailing policies. Foremost is the financial condition binding various levels of government. When revenues are hard to come by, and those funds are needed to underwrite existing programs, it is difficult to justify new spending that is unlikely to pay off any time soon.

This lack of an immediate payoff poses an additional problem. Programs that may not bear fruit within the next few terms of office don’t easily gain support from either politicians or taxpayers. Furthermore, policy bureaucrats may be reluctant to admit a policy is faulty when they must continually face the politicians who authorize funding.

**Responding to Change**

Structural unemployment, then, is a long-term problem and must be countered with policies that focus on long-term skills. Cyclical and other types of unemployment are caused by economic changes that are temporary in nature. But structural unemployment is the result of more fundamental and permanent change to the economic base. It is possible that the unemployment rate of past years is higher than it otherwise would have been, or at least that some workers may have remained unemployed longer than necessary, because existing policies were inappropriate. The notion that we should have been focusing on long-term structural issues, rather than shorter-term cyclical issues, would certainly seem to fit the pattern of layoffs we see today. But hindsight is 20/20. And shifting toward a focus on structural change is easier said than done.

A complicating factor is the accelerating pace of change. The globalization of trade, the increased application of technology to boost productivity that demands higher skill levels, and the ever-changing array of consumer preferences for products and services constantly change the structure of the U.S. economy.
Ideally, unemployment policies will help workers respond to the accelerating pace of change. The best response to change is to have a positive attitude toward acquiring education and skills. Policies that can build on and reward such attitudes will go farther toward easing the structural unemployment problem.

After all, the best defense against joblessness is not to wait to be let go, but to develop and redevelop skills to meet the changing structure of the workplace. Protecting one’s position in the job market may be comparable to an old football maxim, "the best offense is a good defense." Put another way, the best way to avoid being punched out in a tight job market is to learn how to roll with the punches.

Ask the Fed

"Is the Federal Reserve the only federal bank regulator?"
asked by a high school student on a tour of the Federal Reserve Bank of Chicago

Currently, there are a number of federal regulators overseeing banks, savings & loans, savings banks, and credit unions. Additionally, there are three separate insurance funds, administered by two federal agencies. The federal regulators include the Office of the Comptroller of the Currency, the Federal Reserve, the Office of Thrift Supervision, and the National Credit Union Administration. Insurance funds include the Bank Insurance Fund and the Savings Association Insurance Fund, each administered through the Federal Deposit Insurance Corporation. Credit unions are insured either through state insurance funds or through the National Credit Union Share Insurance Fund. However, the Federal Reserve is required to help ensure the stability of the entire banking system, a responsibility that involves all depository institutions (banks, credit unions, savings banks, and savings and loans).

Do you or your students have questions about the Federal Reserve or the economy? Send them to On Reserve, Public Affairs Department, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, IL 60690-0834. Selected questions will be printed with answers in future issues.
Box 1

*Things Are More Like They Are Today Than They've Ever Been Before - D. D. Eisenhower*

Back in 1966, Eleanor G. Gilpatrick authored *Structural Unemployment and Aggregate Demand: A Study of Employment and Unemployment in the United States, 1948-1964*. The quotes from it below would suggest an old maxim, "those who don't learn from history are condemned to repeat it."

"When technical change involves the absolute uselessness of a skill, such as the blacksmith or the railroad firemen, no amount of increase in demand or the increased supply of any other skill will provide employment for the displaced workers unless they are qualified and willing to do some other work. The less adaptable the skill endowments...the more the workers approach a condition of 'pure' structural unemployment. If for example, the new technology requires education above the high school level, those displaced who have had less education are structurally unemployed."

"The changing occupational content of employment and the direction of technological change have shifted skill requirements from those learned casually and on the job to those requiring formal training. This has raised educational standards. In the presence of skill scarcities, some employers have taken on themselves the support of special training and education as a kind of fringe employment benefit. This is a way to upgrade the internal labor force; however, these benefits accrue to those already possessing an initial educational advantage: high school graduation at least. Changes in educational requirements have been met by an upgrading of general educational levels in the labor force but those with lower levels of attainment face structural unemployment or must leave the labor force."

"The labor force's four mechanisms of adjustment—participation rates, job mobility, geographic mobility, and educational attainment—have been found to be adaptive but not adequate to eliminate what appear to be bottlenecks of labor skill scarcities at the top and superabundances of unskilled labor at the bottom of the skill hierarchy. Evidence of such dislocations has existed since 1955. These problems...would have been present even in a period of more rapid rates of output growth."
Objective: Using historical and current statistics, students will identify sectors of the economy where employment has dropped significantly as a portion of the total labor force, or has disappeared entirely. Using other statistics, students will speculate on why certain job areas are growing or shrinking more rapidly than others.

Source books:  
*Historical Statistics of the United States - Colonial Times to 1970, Part I*, U.S. Department of Commerce, Bureau of the Census. (Both of these books should be available in a local public library or your school library.)

There are a number of activities you can do with your students. Most of them involve transforming the tabular data to various types of graphs. What is important is having them look at the same data in a number of ways. Example: From the *Historical Statistics*, have students look at the data in series D 182-232 on pages 139-140. Starting with the data for both sexes, have them take totals from the four main sectors (white collar, manufacturing, service workers, and farm workers), and present them in a stacked-bar graph for each ten-year period.

Ask if there are any obvious trends. (The easiest to see will be the declining numbers of farm workers. All other sectors seem to show some growth over the period of the chart.) Then have them convert each sector’s total to a percentage of the total workforce and develop a line graph for each sector.

Ask again if there are any obvious trends. (Again, farm workers steadily decline, white collar workers steadily gain, manufacturing peaks about mid-century, and service workers show only slight improvement.) Ask how these trends might affect the structure of the economy and, in turn, structural unemployment.

Again, in *Historical Statistics*, have students refer to series D 233-682 on pages 140-145, and look for jobs for which there are no figures in the columns for 1900, 1910, or 1920. Have them speculate on why these jobs were not present in the economy. Is it because of structural or cyclical factors? Likewise, have them examine the columns for 1930-1970. Do some jobs show significant growth or decline? Can students offer explanations for these changes? How do the changes reflect cyclical vs. structural unemployment?

Finally, in the *Statistical Abstract* for 1992, have students examine table 630 on page 395 and use the low estimates for the year 2005. Among jobs that project the fastest growth, how many will likely require some high-level skills? How does this compare with jobs that are rapidly declining? Among those areas with the largest job growth, how many require higher levels of education and advanced skills? How do the numbers of jobs available in these areas compare?
Objective: Have students react to a number of quotes on the issue of structural unemployment. Students may address what impact structural unemployment can have on their future plans, how government policy should address the problem of structural unemployment, the role of the individual in dealing with structural unemployment, and why structural unemployment continues to be a problem, even though the country has dealt with it on numerous occasions.

Choose one of the three paragraphs by Eleanor Gilpatrick in Box 1. Without revealing its source, put it on the board, overhead, or on a poster. Have students write a short essay answering a question about the quote. Suggested questions follow below.

For Paragraph 1:
What does the author mean by the "uselessness" of a skill? Can you think of other examples of "useless" skills in the labor force today, as compared to 25-50 years ago?

According to the author, what alternatives do workers have if their skills become "useless"? How can workers exercise these alternatives?

For Paragraph 2: The author talks about training as a "fringe benefit" and states that this benefit accrues to those already possessing an initial education. What do you think the author means, and why would an employer offer benefits in that way?

When the author says that skills are increasingly rarely "learned casually and on the job," what do you think is meant? If this is true, what does it mean about the value of formal education for students?

For Paragraph 3:
Give examples of how the "mechanisms of adjustment" would help reduce job skill shortages in a given industry or area. Can you think of examples where this has taken place? Why might these "mechanisms" not work well enough to lessen the shortage?
A Summary of Recent Articles from Around the Federal Reserve System

The Discount Rate: The Other Tool of Monetary Policy

When teaching about monetary policy, many of us often soft-pedal the importance and strength of the discount rate as an actual tool of policy while conceding its importance as a signal to the market of a change or reaffirmation of policy direction. Furthermore, because of the important role in the discount rate process played by the boards of directors of each of the twelve Federal Reserve Banks, this tool becomes important from an analytical standpoint. This article undertakes some of that analysis. There are some interesting correlations done as to which banks propose changes the most often, which banks are the most effective leaders in proposing changes, and which banks have the most weight in helping pass proposed changes. Although it is impossible to tell which banks are proposing changes at the time of the FOMC meetings, hindsight does provide some insight to the process. Free.

Public Service Department, Federal Reserve Bank of Boston, P.O. Box 2076, Boston, MA 02106-2076. (617) 973-3459.

Assessing the Midwest Flood

This short piece provides an early assessment of the impact of the floods that plagued the upper Mississippi basin this summer. The economists look at a wide range of impacts, from infrastructure to housing to the mitigating effects of insurance. Moreover, they state the true cost may still be hard to determine as the subsequent fall and spring weather will fall on ground that is, in many places, still saturated. The key point of the article is that the damage of a flood is spread out over a much longer period than an event like Hurricane Andrew. Additionally, all weather-related disasters do provide some "silver lining" as the rebuilding efforts provide significant stimulus to the regions hardest hit. Free.

Public Information Department, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, IL 60690-0834. (312) 322-5111.

On Reserve Readership Survey Results

Just about a year ago, we enclosed a survey in all copies of On Reserve in an effort to find out what you liked and didn't like about this publication. Below is a brief summary of what we learned.
We received 331 evaluations, out of a mailing list and distribution of about 12,000. People who do these things for a living tell me that's not a bad return. From the evaluations we've developed a picture of our "average" reader.

- Chances are better than 50-50 you teach government/political science (53.5% of respondents), and/or economics (50.5% of respondents). You're less likely to teach home economics (4.5% of respondents).
- You've probably been teaching a little more than 20 years (according to the 307 of you who did respond to that question). That's a combined teaching experience in excess of 6,350 years!
- Almost three-quarters of our readers are within the five states of the Seventh Federal Reserve District (74% to be exact).

And here's what you told us about On Reserve.

- More than half of you (51.7%) read all of the publication, with another 41.1% reading more than half.
- Only 20.5% regularly share your copy of On Reserve.
- 87.6% of you use On Reserve for lecture preparation, with just under 20% of you using it for class readings. (Please note, we write this for you, not for the students. Unless you are teaching an honors or AP course, your students might find this material tough to understand.)
- 91.2% of you like the current format. For those who did not like it, the most common complaint was that the format was hard to duplicate in an 8 1/2 x 11 format. Other complaints were that it was too hard for students to understand (see above) and hard to file. The publication can be folded to 8 1/2 x 11, so it will fit on a copier or into a standard file folder.

And on a scale of 1 (not appropriate or never) to 5 (always or very appropriate), you told us that:

- On Reserve is a valuable teaching tool. (5 = 29.9%, 4 = 44.4%)
- The articles are written at the correct technical level. (5 = 31.7%, 4 = 43.2%)
- The main article is useful. (5 = 36.6%, 4 = 46.5%)
- The main article is the right length. (5 too long = 13.3%, 3 just right = 47.7%, 1 too short = 0.6%)
- The lesson plans are fairly useful. (5 = 26.3%, 4 = 34.1%)
- The article summaries are useful. (5 = 37.2%, 4 = 45.3%)
- The number of features is about right. (5 too many = 8.2%, 3 = 48.9%, 1 too few = 5.4%)

You were all about evenly split on the workshop listings, with those from out of the District overwhelmingly finding them useless or almost so (sorry about that). Feelings about the related bibliography were less than enthusiastic, so we dropped it in favor of an idea suggested by one of the readers, "Ask the Fed." (But no one seems to be asking the Fed anything. Please send your questions or your students’ questions, or we'll have to drop "Ask the Fed.")
Pollution Trading: Is It in the Cards?
**ILLINOIS**

**The Center for Economic Education at Governors State University**

**The Federal Reserve Bank of Chicago**

**The Illinois Association of School Economics Teachers**

**INDIANA**

**The Federal Reserve Bank of Chicago - Indianapolis Office**

**The Center for Economic Education at Ball State University**

**The Center for Economic Education at Indiana/Purdue University at Indianapolis**

**Northern Indiana Educational Services Center**

**The Center for Economic Education at Purdue University and the Indiana Department of Education**

**IOWA**

**The Federal Reserve Bank of Chicago**

**The Federal Reserve Bank of Chicago - Des Moines Office**
MICHIGAN

Michigan Association of Economic Educators

Center for Economic Education at University of Detroit - Mercy
Annual Public Policy Conference, Detroit, April 19, 1994. (313) 993-3391.

WISCONSIN
The Center for Economic Education at the University of Wisconsin - Eau Claire

The Federal Reserve Bank of Chicago - Milwaukee Office

The Center for Economic Education at University of Wisconsin - Oshkosh
"Basic Economic Theory," (graduate credit available), Fond du Lac, January 5 - March 2; Oshkosh, January 26 - March 23; "Economic Education Workshop," (graduate credit available), Menasha, January 13 - March 5; "Economic Education Refresher Course," Oshkosh, February 7, 14, 21, 1994; (Three separate workshops). (414) 424-2441.

The Center for Economic Education at University of Wisconsin - LaCrosse

The Center for Economic Education at University of Wisconsin - Stevens Point
"A Trip to the Fun Town of Mall: Program for Gifted and Talented Students," Stevens Point, April 8 and 22; April 15 and 29, 1994. (715) 346-3310.

Wisconsin Council on Economic Education

Thanks to Paul Ballew, Rick Mattoon, and Janice Weiss of the Research Department for help with the main article. Any errors or omissions are strictly the responsibility of the author.

On Reserve is written by Tim Schilling and published by the Federal Reserve Bank of Chicago as a public service to educators and to promote the teaching of economics. The views expressed are those of the author and are not necessarily those of the Federal Reserve Bank of Chicago or the Federal Reserve System.
The charming landscape which I saw this morning is indubitably made up of some twenty or thirty farms. Miller owns this field, Locke that, and Manning the woodland beyond. But none of them owns the landscape. There is a property in the horizon which no man has.... This is the best part of these men's farms, yet to this their land deeds give them no title.
Ralph Waldo Emerson in Nature, 1836

One of the more interesting aspects of teaching about markets is explaining why they may not work in some cases, then explaining how they often adapt to correct the same deficiency. One reason for the former is externalities—the costs or benefits arising from an economic transaction that are not entirely borne by either party (producer or consumer) to the transaction. For example, if your neighbor purchases and plants a tree that shades a portion of your yard, you may receive a benefit—a positive externality—as a result of your neighbor's action.

A classic example of a negative externality (cost) is pollution. For example, a manufacturing process that involves the inadequate disposal of waste can produce costs that are not paid by either the producer or consumer of the final product. Similarly, when smoke is discharged into the air, its negative impact is not offset by dollar charges assessed against the producer who generated it or the consumer who purchased the product that made it "necessary."

But, under certain conditions, the market can be adapted and such costs can be levied against those involved in the transaction, allowing product and service prices to more accurately reflect true costs. This issue of On Reserve examines how markets can be adapted to adjust to externalities and why a particular market solution may, in some instances, be useful in controlling the externality of air pollution in the economy.

The Cost Goes Up in Smoke

Pollution has long been used by economics teachers as an example of externalities. Air pollution in particular displays the classic characteristics of an externality. Because air is a "free good" (really a non-priced good—nothing is "free"), the participants in virtually any transaction generally do not consider the potential impact of their actions on air quality or its subsequent effect on other users. As a result, a possible "cost factor" is not considered in calculating the price.

The reason for this market failure, according to many economists, is that property rights are, for one reason or another, inadequately assigned for a good such as air. That is to say, prior to the formation of a truly efficient market, property rights must be efficiently assigned for goods traded. The more efficient the assignment of rights, the more efficient the market.

Perfect property rights have specific characteristics: universality, exclusivity, transferability, and enforceability. Universality means that the resource is privately owned and that what the owner may do with the resource is properly defined. Exclusivity means that the costs/benefits of ownership must belong solely to the owner of the property. That these rights are subject to voluntary exchange between the owner
and another party is referred to as transferability. And enforceability refers to the protection the rights have under law.

**Pollution Permits**

It would seem then that air lacks the property right characteristics to be marketable. Yet one of the newer approaches to controlling certain types of pollutants is built around a market.

This new approach—trading pollution permits—is based not on ownership of the air, but rather on ownership of the pollutants, and corresponding obligations and rights to dispose of that property. Essentially, the characteristics that air lacks—transferability, exclusivity, etc.—are not missing from certain pollutants. As a result, markets for pollutants can be made to work. Society can set supply limits on pollutants so as to ensure public health and safety. And industries that generate those substances can provide demand.

Under the permit trading plan, the market can be made to work by first setting limits on the amount of a given pollutant, for example, sulphur dioxide (SO$_2$). These limits are set by an organization like the federal Environmental Protection Agency or a group of state or regional organizations working in concert. A single total amount of pollutant deemed "acceptable" is determined (lower than current levels) and permits are issued in smaller, negotiable amounts. For example, each permit could allow the holder to release 100 tons of the named pollutant into the air. Anyone releasing pollutants without a permit, or releasing pollutants in excess of their permits, is subject to very stiff fines, and even possible shutdowns.

The permits are tradable and, within limits, bankable. This means that once purchased, a firm can sell the permit or save it for use at a later time. It is important to remember that the plan calls for the publicly "acceptable" amount of release (including unused or banked permits) to be reduced at regular intervals. As allowable emissions are further reduced, the price of permits will tend to rise, making it more economical for firms to clean up than to keep buying permits. Essentially, the nature of the permit market provides its own incentives for firms to become more efficient and to find less expensive ways to clean up the environment.

Because of these incentives, trading offers some advantages over previous methods of controlling certain emissions. First of all, permit trading can maintain a comparable level of pollution control at a lower overall cost of production. The permit trading system can accomplish this by capitalizing on the inherent advantage some firms may have over others when it comes to reducing emissions (see example in box 1).

The lower costs of production made possible by the permit system can reduce the opportunity costs of other decisions. In essence, resources saved through permit use rather than traditional methods of cleanup can be reinvested in payroll or other productive technology. And, unlike other methods, permit trading provides an incentive for firms to use the most efficient technology available both in production and cleanup.
Under traditional methods, often referred to as "command and control," specific standards exist for current production and cleanup technology. These standards may be imposed without regard to the cost to the firm, focusing only on the nominal amount of emission reduction achieved. In contrast, by using markets to set the price of polluting, firms are encouraged to adopt technology that is newer and more efficient and that will achieve needed reductions at a lower price, even to the extent that these technologies produce results that exceed current standards. Additionally, firms have incentives to find and develop their own ways to lower emissions through their own unique methods of materials handling.

Market mechanisms also allow firms with varying production schedules to minimize their costs. Firms may purchase permits now because their needs are great and still sell excess permits in the market at a later time, if necessary. A firm may have excess permits in the future because its production schedule has changed or because it has since developed cleaner production technologies. Allowing "banking" of permits is also helpful because a firm can bank its permits during a slack period in anticipation of renewed production demands.

**But Won't This Make Things Worse?**

Does trading of pollution permits condone certain behaviors that would better be discouraged? That may depend on whether you believe profits and environmental protection can coexist, or whether you believe that prohibition and punishment are the only ways to modify business behavior. The fact remains that externalities are inefficient and result in costs to the economy. If, through public policy, we can control an externality in a way that is more efficient than a regulatory fiat, it at least bears investigation. Where possible, markets in pollution permits can provide a strong incentive to make production processes cleaner by rewarding efficiency, in both the short and the long run.

**It's Not All Clear Skies**

One should note that this market method can be difficult to implement. Remember, for markets to be effective, the pollution or property in question must have the four characteristics described earlier. A market can be created more easily for a pollutant such as SO\(^2\) simply because it has fewer sources. SO\(^2\) typically results from burning high sulphur coal that is often used by utility companies, which discharge the compound at a relatively small number of sites. The exclusivity that results from the production process is an important characteristic of SO\(^2\). Therefore, if an agency restricts the supply and the firms provide the demand, a market can be developed, with supply and demand setting the prices.

But, it should further be noted that market approaches will not work on all sources of air pollution. Volatile Organic Compounds (VOCs) such as auto emissions, have far more sources and locations than can be effectively monitored by authorities; enforceability is a problem in creating a VOC market. Given the property characteristics that make for an efficient market, any emission produced in relatively small amounts by an exceedingly large number of sources (e.g., tailpipes) can make
for a more difficult, although not necessarily impossible, market. In contrast, a market
can be more readily defined and enforced for massive discharges from a relatively
small number of sources because the product (emissions) can be more easily
identified, limited, and traded.

Despite these problems, experience to date suggests that setting up markets for
emissions can be very beneficial. A recent experiment in California provides an
example.

In an effort to help improve air quality, the oil company Unocal offered a "Cash for
Clunkers" program. The goal was to remove a significant number of older automobiles
(those without catalytic converters) from the highways. With these pollution sources
eliminated or replaced by more efficient vehicles, air quality would be improved. The
program succeeded. A total of 8,376 cars were purchased at a cost of $5 million (less
than $600 per car), with an estimated reduction in pollutants of 6,500 tons. It would
have cost an estimated $150 million to realize the same reductions at Unocal's
refineries.

A similar result can be seen in communities where trash disposal requires a
combination of pay by the container and recycling. When people have to pay for
increased volumes of waste, they find ways to reduce the volume. And if recycling all
or part of the volume provides a way to reduce their costs, environmental behavior
suddenly becomes popular.

The Air That You Breathe

There is no reason to believe that market trading of pollution permits will become the
only method used to clean the air. As indicated earlier, markets may not be possible
for certain pollutants, due to their large number of sources and the small amount of
contribution per source. However, by focusing on pollutants that are generated from a
limited number of sources, and usually in larger quantities, the true value of the
offensive by-product, in essence a cost of the product, can be determined. This cost
can be passed on to producers who can most efficiently reduce emissions. Meanwhile,
others must find ways to reduce emissions as well or face spiraling costs in acquiring
permits.

This last point is worth stressing. As prices for any good or service (or permit) rise, so
does the incentive to find a viable substitute. In the case of pollution permits, the
incentive is to find a substitute for polluting. It is in the economic best interest of the firm
to find ways to reduce toxic emissions at the lowest possible cost. From society’s
standpoint, the costs of not establishing emissions trading systems where they could
be effective are high. Additional burdens on economic resources reduce the
economy’s ability to grow. As the global economy becomes increasingly competitive, it
is more important to find innovative ways to reduce the costs and improve the
efficiency of production.

Pollution permit trading is not a panacea for society's pollution problem. Rather it is
meant to be one method of addressing the problem of air quality and broader
environmental protection. There needs to be a willingness to examine a number of
approaches to improving all aspects of our environment including voluntary pollution prevention and government imposition of "green" taxes on emissions. There also needs to be a willingness to change our attitudes and behaviors as producers and consumers. Regardless of the methods used, clean up and protection require resources. This may be reflected in higher prices, lower wages, reduced investment or any combination of the three. Ideally, however, harnessing the power of the marketplace to achieve our policy goals, to whatever extent possible, will contribute to a more efficient, productive economy.

Ask the Fed

"Why was the media so interested in the appointment of the new president of the Federal Reserve Bank of New York this summer?" - asked by a teacher at a summer workshop sponsored by the Federal Reserve Bank of Chicago

The president of the Federal Reserve Bank of New York, one of twelve Federal Reserve Bank presidents, has a unique role in the Federal Reserve System and the functioning of the U.S. economy. The Federal Open Market Committee is the monetary policy body of the Federal Reserve System. It has 12 voting members, the seven governors of the Federal Reserve Board and five presidents from Federal Reserve Banks who change on an annual basis—with one exception. The president of the Federal Reserve Bank of New York always votes because the trading desk, where policy decisions are put into action through open market operations, is located at the New York Fed. Additionally, because the financial capital of the United States is in New York on Wall Street, the New York Fed has special responsibility to help monitor the financial markets within the U.S. economy.

Do you or your students have questions about the Federal Reserve or the economy? Send them to ON RESERVE, Public Affairs Department, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, IL 60690-0834. Selected questions will be printed with answers in future issues.

Box 1-How the Market Works

"Suppose 100 tons of emission reduction are needed to meet the environmental objective. Suppose plant A has a marginal abatement cost (MAC) of $300 per ton and plant B has a MAC of $500 per ton. Under a uniform rollback policy, each plant would reduce emissions 50 tons at a total cost of $40,000. However, suppose each plant is issued 50 tons of tradable emission allowances. Then plant A, which has a lower MAC, can sell its allowances to plant B for, say, $400 per ton. Plant A then reduces emissions 100 tons for $30,000, and gains $20,000 in revenue from the sale of allowances. Thus the net cost to A of the reduction in emission is $10,000. Plant B's $20,000 cost of purchasing allowances is less than the $25,000 it would have had to pay to reduce emissions by 50 tons. The total cost of the 100 ton emission reduction is $30,000—$10,000 for A and $20,000 for B—rather than the $40,000 cost for uniform rollback policy."

**Box 2-Some Primary Emission Standards**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Primary Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphur dioxide (SO₂)</td>
<td>a. 80 micrograms/cubic meter, 0.03 parts/million annual arithmetic mean(*)</td>
</tr>
<tr>
<td></td>
<td>b. 365 micrograms/cubic meter, 0.14 parts/million maximum 24 hour concentration not to be exceeded more than once per year</td>
</tr>
<tr>
<td>Carbon monoxide (CO)</td>
<td>a. 10 milligrams/cubic meter, 9 parts/million maximum 8 hour concentration not to be exceeded more than once per year(*)</td>
</tr>
<tr>
<td></td>
<td>b. 40 milligrams/cubic meter, 35 parts/million maximum 1 hour concentration not to be exceeded more than once per year</td>
</tr>
<tr>
<td>Ozone</td>
<td>235 micrograms/cubic meter, 0.12 parts/million maximum average hourly concentration not to be exceeded more than once per year</td>
</tr>
<tr>
<td>Nitrogen dioxide (NO₂)</td>
<td>100 micrograms/cubic meter, 0.05 parts/million annual arithmetic mean</td>
</tr>
</tbody>
</table>

(*)An additional secondary standard exists.
Lesson Plans

American Government/Economics

Objectives: Students will recognize and discuss the differing values various groups place on environmental issues based on personal considerations.

Activity: Tell students they are taking part in a role-playing exercise. The scenario involves testimony before the Environment Subcommittee of the Committee on Science, Space, and Technology of the U.S. House of Representatives. Being discussed is a new Unpolluted Atmosphere Act. The students will play the roles of members of Congress, individuals who will testify on behalf of various groups and organizations, and members of the press. Each student will be given a slip of paper describing who they are, their position, and something about their organization, views and/or constituency. Each person giving testimony will be allowed one minute to make an opening statement, and then will be questioned by the committee members for five minutes. At the end of the session, the floor will be opened to the press for questions.

Debriefing: At the end of the class, or as a written assignment, ask the students to identify some of the externalities that had to be addressed in establishing new standards for clean air. Have them also identify the options available for each issue. Ask them to identify the opportunity costs of each decision they made. As a result of this lesson plan, they should be more aware of the economic costs paid by society, firms, and individuals in cleaning up the atmosphere or continuing to allow waste emissions. "There's no such thing as a free lunch."

Congressperson I. Hurt - You're from a state with strong social programs. You're an advocate for health care and receive support from the American Medical Association, various insurance groups, and several patient/consumer groups. Many of your constituents are tied in some way to a large university health center and several drug research firms in your district. Secondary employers include insurance companies and waste disposal industries that specialize in health care wastes. Your primary concern with environmental issues is the cost this places on the economy in terms of lost sick days and the effects of various chemical compounds over long periods of time.

Congressperson J. Obs - You're the representative from a large urban district with a significant manufacturing base. Your district's job base has suffered from downsizing in recent years. Your constituents, mostly blue collar with a smattering of white-collar middle management, tell you the wages weren't too high, in their opinion, so it must be all the other regulations that were passed on to the firms that drove up the cost of doing business. There has been some commentary about the lack of birds in the parks and strange multi-headed fish being caught in a nearby lake, but they're on the back page of the hometown newspaper. The main stories are overwhelmingly about plant shutdowns and the high cost of doing business in your district. Also, the infrastructure seems to be falling apart. One engineer blames acid rain and snow.

Congressperson A. Gree - You are known as a consensus builder and compromise leader. Most major legislation in the past 13 years has had some input from your office.
Your district's economy is mixed, with light manufacturing, tourism, and agriculture providing the base. Your district is approximately 2 1/2 hours east of a major metropolitan area and does tend to get a certain amount of "fallout" after particularly heavy rains or snows. There has been a slight increase in birth defects and benign tumors reported in your district over the past couple of years. However, a short term study from a medical center indicates no direct provable link between the events and any environmental issues. Your district is known for having a per capita income slightly above the national average and for beautiful, pristine, scenic beauty, most of the time.

**Congressperson E. Lect** - Your district is full of dissension and unhappiness. Voters complain about the weak economy, rising cost of health care, dirty parks, an overflowing landfill, high utility rates, "that funny taste in the water," and occasional brownouts during the summer. Complaints also regularly come in about high taxes and service cutbacks. Although the constituents want economic growth, they're not interested in more highways and see public transportation as inconvenient. You, more than anyone, are aware that you're behind in the reelection polls by 15 percent.

**Congressperson U. Tility** - Your Congressional district is large geographically and diverse demographically. The distinguishing characteristic of your district is that the state's largest utility has its headquarters there. It also has a large number of generating plants in your district. There are a few hydroelectric facilities, a larger number of coal-burning facilities (using primarily high sulphur coal mined in your district and others) and one nuclear facility. There is interest in converting one or two of the coal plants to a low-sulphur coal or waste burning facilities, but the conversion would be expensive. Your constituents pay among the lowest electric rates in the country. That is an important factor in drawing new manufacturing plants and jobs to your district.

**Ima Miner** - Your family and circle of friends has mined coal for at least the past three generations. The coal is high-sulphur and few of your friends and relatives reach retirement age in good health. But the wages are fairly good compared to the rest of your state, and the jobs don't take a lot of specialized and expensive education to provide a fairly decent, if hard, living. But, the number of jobs has been shrinking. If the mines were to be closed, the entire corner of your state would be affected as most other jobs depend on the income from the mines and the workers.

**Uri Health** - You are a public health specialist at a large university. You've been studying the economic impact of respiratory ailments in large metropolitan areas. You've looked at the lost production from time off and the additional costs on the health care system from increased access by those who have these symptoms. A colleague of yours is examining the rise in skin disease in a few metropolitan areas, but results have, so far, been inconclusive. Finally, you are concerned about the ability to "get out and exercise" when the air quality is not consistently high.

**Wanda Blue Skyes** - A trained meteorologist, you are concerned with the longer term effects of excessive chemical dumping in the atmosphere. Your best selling book *You Can't Get Away from It* described your five-year study recording pollutant levels at remote sites in the mountains, deserts, and Antarctica. Additionally, you give the global
warming theories great credence and believe that even if something is done now, it will take more than a decade for weather patterns to begin to normalize.

**Eli Lectric** - A union representative for a large regional utility company, you are concerned that forced upgrades on equipment will reduce employment at your plant and ultimately replace workers with high-tech equipment, or force workers into alternative energy plants (possibly nuclear) if high-sulphur coal powered plants are closed or forced to convert to low sulphur coal.

**Emma Zeema** - A senior citizen with health problems, you’ve noticed an increasing number of respiratory alerts in the medium-sized city where you live, not far from a large industrial center. You have never smoked, but you developed respiratory problems as a young adult when you were working for a school, downwind from a chemical plant. You’ve always been an active, outdoors type of person, and to be told that you must stay inside on an increasing number of days, or must use additional medication and/or equipment, is affecting your quality of life. Your doctor has suggested you move.

**Carson Driver** - You’re a salesperson responsible for a significant territory, and as odd as it sounds, you race stock cars on the dirt track circuit on weekends. As are suit, you have several automobiles. With the expense of keeping all of them on the road, you don’t want to be saddled with any higher cleanup costs (whether they come from more expensive gasoline, more emission controls, or air pollution permits).

**Cole Steel** - An executive with a large manufacturing conglomerate, your corporation makes everything from petro-chemicals to steel to synthetic plastics. You have plants all over the world and employ thousands. But you face rising health care costs, and higher resource costs, and the last thing you need is more environmental regulations. Granted, you’d prefer the skies near your home (about 15 miles from one of your plants) to be a little cleaner and you’d like to be able to enjoy the patio more often instead of going to the mountains.

**Reporters for:**

**Market Street Journal** - a business newspaper that covers national and international issues relevant to the economy. Your paper has uncovered bad economic policy decisions and foolish market trends.

**National Popular Radio** - a listener sponsored service that depends on government support for part of your operations. Most of your audience is yuppie in nature, although you do have respectable demographics across the spectrum, except at lower income levels. You have long been a leader in covering social and environmental issues, usually with grants from major corporations.

**Bigtown Union-Ledger** - a large metropolitan newspaper that made its name uncovering political and big business corruption. Your main readership used to be the blue-collar workers of your town. Now your largest growth group is suburbanites who want to know what’s at the museum or theater.
**Feel Good Channel** - a cable channel devoted to health issues. Includes regular health updates and warnings about air quality, as well as exercise, dieting, and a regular "Health Watch" report on relevant legislative proposals.

**Energy Industry Insider** - an industry group newsletter that focuses on legal, political, and social issues of interest to executives and companies in the energy industry. Also covers news of technology issues related to energy cleanup and alternative sources.

**Environmental Essayist** - Once one of the leading ecology newsletters, now seems to focus on publishing essays, poetry, and personal reminiscences about the good old days when there was no smog, the rivers ran clean, and the only hills were natural. Very strong, devoted, loyal core group of readers, but small in number.


**Interested in getting your ideas published?**

We need lesson plans in Economics or American/World History on unemployment and structural changes in the economy. Two lesson plans will be printed in *On Reserve #27*; others will be considered for inclusion in future publications on the subject. Lesson plans must be submitted by November 10, 1993 for consideration. For further information, call Tim Schilling at (312) 322-5109.
### Workshops for Economic Educators in the Seventh District

<table>
<thead>
<tr>
<th>Location</th>
<th>Organization</th>
<th>Event Description</th>
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<td>INDIANA</td>
<td>Northern Indiana Educational Services Center</td>
<td>&quot;Choices and Changes,&quot; Ancilla College, October 11, 1993. (800) 326-5642.</td>
<td></td>
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The Lonesome Twin
Adrian Throop
*FRBSF Weekly Letter* Federal Reserve Bank of San Francisco, April 2, 1993

Throop examines the life cycles of the trade and federal budget deficits during the 1980s. He tracks the parallel growth of these twin deficits in the early 1980s, then focuses on the subsequent diminishing of the trade deficit in the latter half of the decade. The article looks at a number of possible explanations for this before Throop ties the emergence and retreat of the trade deficit to the relationship between net foreign investment and net private domestic investment. The article demonstrates the inverse association between the two as the federal budget deficit grew, and as slowed economic growth diminished net private domestic investment while increasing net foreign investment (and strengthening the balance of trade). Following past business cycle patterns, as the economy recovers, net private domestic investment has begun to increase, while net foreign investment is declining. Throop therefore sees a possible reemergence of the trade deficit, along the lines of previous recession-recovery cycles. *Free.*

Federal Reserve Independence and the Accord of 1951
Carl E. Walsh
*FRBSF Weekly Letter* Federal Reserve Bank of San Francisco, May 28, 1993

This article chronicles the events surrounding the Accord of 1951 between the Federal Reserve System and the Treasury. It focuses on the period from 1942 to 1951 when tensions between the two reached their peak. Walsh details the Treasury's reliance on the Fed to support bond prices to finance the war, which eroded the Fed's influence over the money supply. Conflict arose in the postwar period as the Fed was stymied in its attempt to control inflation. Disagreements between the Treasury and the Fed reached their boiling point in 1951 when the Fed's Mariner Eccles disavowed White House and Treasury public announcements of the Fed's continued support of bond prices. The article shows how the Accord finally separated debt management from monetary policy, which strengthened the Fed's independence, as well as its ability to reduce inflation and make policy decisions. *Free.*

Thanks to Rick Mattoon and Bill Testa of the Research Department for help with the main article, and to Harker Brautighan, Elizabeth Dykstra, and Katherine Orloff of the Public Affairs Department of the Federal Reserve Bank of Chicago for help with the lesson plan. Any errors or omissions are strictly the responsibility of the author.
On Reserve is written by Tim Schilling with assistance from Harker Brautighan and published by the Federal Reserve Bank of Chicago as a public service to educators to promote the teaching of economics. The views expressed are those of the author and are not necessarily those of the Federal Reserve Bank of Chicago or the Federal Reserve System.