

# Money and Its Creation

## The Federal Reserve System (Central Banks), Interest Rates, and Commodity Indexation

**T**his chapter is about money and, in particular, its use to help the economic growth and prosperity of the community through providing credit. The question is how to reward those who own, in order to entice them to invest within the community. Chapter 2 concluded that the Judeo-Christian-Islamic tradition and lifestyle prohibits the charging of a rate or fee for the use of money (i.e., usury, which is now called interest). It also concluded that if money is given for helping the poor and the needy, there must not be any increase when it is paid back. In Chapter 3, we discussed how Shari'aa (Judeo-Christian-Islamic Law) requires that when pricing a service or an item, we should use the concepts of *commodity indexing* (using precious metals or food staples as references) and *marking to market* (gauging the value of properties and services according to values on the local market).

Any discussion of the riba-free (RF) banking and finance system, as compared to the riba-based system, should be based on a clear understanding of money and how the U.S. dollar monetary policies are handled. This chapter is a must for everyone who is interested in understanding the way money is created and is interested in popularizing the new way of living using the RF style of Judeo-Christian-Islamic living.

### **THOSE WHO "MAKE" MONEY AND OTHERS WHO "EARN" MONEY**

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Money is an important factor in our lives. Many of us say that we work in order to "make" money. We try to save money in order to buy the things

that bring comfort and pleasure to us. Others spend money to seek personal satisfaction—perhaps through impressing others, by showing off an expensive new car or watch. Money has become so important that people fight over it, and hate and love because of it; unfortunately, some would be willing to kill for it. It is amazing to witness all this respect and admiration for a piece of paper that may be green, red, blue, or even have an impressive array of colors and designs. This piece of paper may only be recognized and honored in the place it was printed and issued. Not all currencies in the world are as well-known as the major currencies, which represent important world currencies in great demand, such as the U.S. dollar, the euro, the Japanese yen, or the British pound. Money cannot reproduce in the way that “money experts” have been leading us to believe. If one seals one’s money in a jar for two years and returns to open the jar, one will find the same pieces of paper—except in most cases the paper will buy you less than it did two years before. It is also fundamental to understand clearly that we cannot eat or drink these pieces of paper called money. However, we can use the money to buy food from those who produce it, so that they can take that money and buy their needs—which may include clothes and medicine in addition to the items needed to produce more of that food. Money is not anything but a medium of exchange—a measuring device.

To realize the American dream of buying a house for which one has insufficient capital, one can go to a banker to seek financing. The applicant fills out an application and passes a few due diligence checking procedures. After appraising the value of the house based on the price at which the most recent sales in the neighborhood were concluded, the banker will arrange for the applicant to get the money. The bank draws a loan agreement that essentially states that it is renting you the money at a rental rate called the *interest rate*, to be paid back in installments over an agreed-upon number of years. As we learned in Chapter 2, interest rate is the cost of (the price paid for) renting the money from the bank. The bank does this mechanically, regardless of whether the deal of buying the house makes economic sense. A buyer might have expected the banker to advise him/her as to whether he/she should proceed to buy a house because it makes economic sense or rent a similar house or apartment because of a prevalent real estate bubble being experienced in the community. That does not happen, because the banker is interested in getting the customer to rent that money in order to make money for the bank. We realize that this scenario does not happen in most cases, because the world is full of honest and decent bankers and wonderful people. Unfortunately, at some time or another all of us can be blinded by the prevailing culture without stopping to think.

As to the “culture of making money,” many have forgotten that there is only one entity that can make (i.e., manufacture, print, or coin) money: the

government. That is why we should rethink this concept. Money can only be earned when one offers a service. That is why it is important to ask ourselves every night before we go to bed how much money we earned for the services we have offered. It is also important to respect that earned money, which represents time—which is life. As is said in some proverbs, “Money respects and stays with those who respect it.” Money is earned when we offer a product or a service that is needed or when it is invested in a productive project that will make an economic difference in our communities by increasing production, creating job opportunities and economic prosperity. If we discipline ourselves to think this way, we will enjoy a new lifestyle that is more productive and less consumptive. We will enjoy living within our means without a heavy burden of debt. This lifestyle is the lifestyle described at length in Chapter 2; the *riba/ribit*-free lifestyle.

Another important aspect of money over the years has been its purchasing power and how much that power changes over the years. We all have heard our grandparents tell us how cheap things once were. Members of my generation remember that a gallon of gasoline in Texas in 1971 was 20 cents, compared to \$2.50 in 2009. This is the same gallon, of the same gas, in the same country, using the very same currency.

The question is, what is money? Is the money revealed in the original Judeo-Christian-Islamic value system and described in Chapter 2 the same as the money we use today? This chapter will focus on this very important issue. This chapter will try, in the simplest terms, to familiarize the reader with money, how it is printed, who decides how much should be printed, and what parameters influence that decision.

### **What Is Money?**

Money is the medium used for the exchange of goods and services. Money is used as a measuring device for the success or failure of a venture that may involve trading, manufacturing, servicing, or construction. The success or failure of the investment is measured in terms of the return reaped at the end of a certain period of time, which is called the *return on investment*. Operators, traders, and investors evaluate the success of their venture by the return on investment. The level of return on investment differs from one locality to another; it is a function of many parameters. A return on investment of 5 percent may be considered a great return in a country with no inflation; however, a return on investment of 15 percent would be marginal in a country that suffers from 25 percent inflation. *Riba*-banks lend (rent) money to entities at a rental rate called interest. If the interest rate charged on the money is higher than the income generated from the project, to the extent that the borrower cannot pay both the interest and the principal back, then

the project is a failure, and it should not have borrowed money anyway. Conceptually, one can look at interest rate as a red line that defines which projects should be financed. If the projected rate of return of a project is higher than the red line, then it makes sense to finance it; if it is lower, financing the project does not make sense. The government sets the foundation of that interest rate by deciding on and adjusting the rate of printing of the money. If the government wants to allow only high-return projects to be financed, it will increase rates. As a result, there will be very few projects that make economic sense. Conversely, if the government wanted to stimulate the economy, it will lower the rates so that less profitable projects can qualify.

The invention of money was one of the important human developments in history. Money has helped develop markets in small villages that attracted many traders and merchants, eventually turning these small villages into small towns, cities, large metropolitan areas, states, and countries. The real value of the idea of money is that it can be transported from one place to another. It can be divided into different denominations, and it can be recognized and accepted by others in other countries, depending on the country or locality that issued it.

### **The History of Money<sup>1</sup>**

Perhaps one of the earliest forms of money was barter: the exchange of one specific good or service for another specific good or service, such as a bag of rice for a bag of beans. Difficulties with this system arose when the bartering parties could not agree what something was worth in exchange, or when one party did not want what the other person had. To solve that problem, *commodity money* was introduced. In the past, salt, tea, tobacco, cattle, and seeds have all been used as money, because of their importance to local economies. As the world developed it was discovered that using commodities as money presented new challenges. Carrying bags of salt and other commodities was difficult. In addition, commodities might have a short shelf life, after which they perished. Around 5000 B.C.E., metal objects were introduced as money because metal was readily available, easy to work with, and could be recycled. Other countries were soon minting their own coins with specific values. Metals such as iron, copper, silver, and gold were used to make coins. The problem moneymakers had was that some metals change as they rust. Only silver and gold kept their condition; these prevailed as the two main metals used for currencies in the world. The demand for gold and silver was driven not only by their practical use, but also by their role as investments and a store of value. The Roman Empire used gold currency called the denarius (or dinar), while the Persian Empire used silver and called it dirham (or drachma). The Muslim state used the gold dinar

and the silver dirham as the official Islamic currency beginning with the Second Caliph Omar Ibn Al-Khattab (634–644 C.E.). The dinar was defined as the weight of 22-karat gold equivalent to 4.3 grams, and the dirham as the weight of silver equivalent to 3.0 grams. At that time the caliph established the well-known standard relationship—seven dinars must be equivalent to ten dirham.

### **Fiat (Paper) Money**

Fiat money is money that has nothing of substance behind it. According to Webster's New World Dictionary, fiat money is "currency made legal tender by fiat (sanction) and neither backed by, nor necessarily convertible into, gold or silver." It is a promise to repay nothing, over an unspecified period. This inconvertible paper currency system gives the central bank the power to issue and circulate paper money, which has no intrinsic value except the full faith and credit of the government of a country that has an economic base to rely on. The government adds its full faith and credit to the currency so its citizens and other governments in the world will accept it. This concept of fiat money also allows the government to create (print) new money at will to pay off government debts, pay government employees, and use the printed money for any other government expenditure.

The first to introduce the idea of offering money at a less-than-pure gold or silver base were the kings of England, who introduced an idea they branded as the *debasement* of money. Debasement is the lowering of the precious metal content of the currency. Debasements were achieved by *re-coinage*. In England during the 12th century, one pound of silver was minted into 240 silver pennies; during 1666, one pound of silver was minted into some 700 silver pennies, a decline in the value content of almost 292 percent. By means of their debasements, the kings had created what is known today as fiat money. Fiat money is a token of value . . . its intrinsic value is less than its exchange value. Its exchange value is given to it by *fiat* (order) of the king or the government involved.

Today, precious metal coins are no longer used, and the world deals only with fiat money. The early English bankers produced something of no value (a piece of paper) and gave it the name *one pound*. Some of the earliest known paper money dates to China's Tang Dynasty (618–907 C.E.). During the Ming Dynasty in 1300 C.E., the Chinese placed the Emperor's seal and signatures of the treasury on a crude paper made from mulberry bark.

From the time of America's discovery in 1492 until the California gold rush in 1848, silver dominated in common circulation in America and Europe, while gold came into dominance after the discovery of gold in California and Australia.<sup>2</sup> Under the rule of the British Empire, the British

pound sterling and the gold standard were adopted around the world. In 1913, the gold cover for Federal Reserve notes was set by 1913 law to be 40 percent. In 1945, the gold reserves against Federal Reserve notes were reduced to 25 percent, and to continue the inflation spiral, this figure (the 25 percent) had to be reduced to zero. Toward the end of World War II, the U.S. dollar and gold became the principal international reserve assets under the Bretton Woods Agreement. The U.S. dollar became the world reserve currency, and it was treated as if it were gold, because the agreement defined its value to be \$35 per ounce of gold.

### **American Currency Before the Federal Reserve System<sup>3</sup>**

The First Bank of the United States (1791) and Second Bank of the United States (1816) were the two precursor banks to the Federal Reserve System in the United States. They were responsible for issuing the small quantity of paper currency that circulated in the early years of the United States. After the Second Bank of the United States closed in 1836, the dominant form of currency became private bank notes issued by state-chartered commercial banks (normally redeemable on demand for gold or silver). The United States did not have a uniform national currency. The system of state-bank issuing of currency notes was confusing and inefficient. By the 1860s, as many as 8,000 different issues of state bank notes were circulating in the United States. With the vast distances to be covered and the lack of efficient means of transportation, banks rarely accepted—at face value—notes issued by banks unknown to them.

During the American Civil War, national bank notes were issued to finance the war and other needs of the different states. Until 1913, these formed the bulk of the nation's paper currency. National bank notes were currency the government gave to nationally chartered commercial banks for them to issue as their own. National bank notes grew out of the government's need to raise money to finance the Union army. Faced with a depleted treasury, and reluctant to raise taxes on northern industry, President Lincoln reluctantly agreed to a plan formulated by his Secretary of Treasury, Salmon P. Chase. Under Chase's plan, the federal government would offer a new type of banking license—a federal, or national, charter. A bank with a national charter would have the power to issue a new form of currency: national bank notes. However, for each note issued, the bank would have to hold a somewhat larger dollar value of government securities as collateral (called a *backing requirement*). The banks could purchase government securities directly from the U.S. Treasury for gold and silver, which were universally accepted money at that time. In effect, the government

would receive gold and silver in return for its liabilities (government securities). Chase's plan was embodied in the National Banking Act of 1863. To enhance the prospect that national bank notes would be successful, and to eliminate the competition from notes issued by state banks, Chase also developed a tax that Congress gradually increased until the state bank practice of issuing currency ended. Because national bank notes had to be fully collateralized government securities, the nation's supply of paper currency effectively depended on the government's debt.

The supply of currency expanded and contracted in direct response to changes in the value of government securities in the nation's bond markets, not in response to the needs of the economy. When the government began repaying its Civil War debt, redeeming and retiring securities issued in earlier years, the supply of collateral available in the banking system for note issuance shrank. Currency was inelastic (incapable of adjusting to the public's changing needs and demands), and this led to the money panics<sup>4</sup> that periodically plagued the economy of the United States.

### **THE FEDERAL RESERVE BOARD OF THE UNITED STATES OF AMERICA<sup>5,6</sup>**

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The Federal Reserve's power is derived from the Constitution of the United States (Article I, Section 8). The article states: "Congress shall have power . . . to coin money (and) regulate the value thereof . . ." The Federal Reserve Act of 1913 established the Federal Reserve to realize the following objectives:

- Furnish an elastic currency that would respond to the economic needs of the nation
- Serve as a last resort to defend against any run on the banking system of the nation
- Establish a more effective and responsive system to supervise banks
- Improve the efficiency of the national payment mechanism

The 1946 Employment Act established a number of national goals that must be achieved by the Federal Reserve. These goals were expanded in 1978, when the Congress passed the Full Employment and Balanced Growth Act. Following are the expanded goals:

- Full employment
- Increased real income(net of inflation)
- Balanced economic growth

- Balanced federal budget
- Growth in productivity
- Improved balance of trade
- Price stability

The Act also required the Federal Reserve to report to the Congress twice a year on its monetary policies as they related to the goals outlined in the 1978 Full Employment and Balanced Growth Acts.

### **Function of the Federal Reserve**

The three basic functions of the Federal Reserve are:

1. *Implementation of monetary policy:* This is done through the use of three primary control devices:
  - a. Setting the reserve requirements of the banks
  - b. Setting the discount rate at which the Federal Reserve lends the member banks
  - c. Setting the monetary growth or contraction through the activities of the Federal Open Market Committee (FOMC); monetary expansion or contraction is done through the purchase or selling, respectively, of government securities
2. *Providing payment services for the depositories:* These services include loans, check collections, currency insurance, wire transfers, and account settlements.
3. *Serving as a bank for the federal government:*
  - a. Supervising and regulating banks
  - b. Maintaining the U.S. federal government's checking account
  - c. Selling and redeeming interest payments on U.S. government securities
  - d. Establishing relations with foreign central banks and foreign exchange trading worldwide

The Federal Reserve was created as a branch independent of the politics of governing. Its shares are owned by participating member banks in proportion to their size. U.S. monetary policy, which includes adjusting interest rates and money supply, is designed and implemented without any political interference from the President or Congress. In such a unique setup, the monetary policy would be implemented for the interest of the nation, and not to promote a certain political party, the Congress, or the President. On the other hand, the President of the United States and the Congress decide on the fiscal policy of the government, which includes the federal budget, taxes, and government spending. The Federal Reserve's structure as an

independent central bank is unique among the world's central banks. This adds to the power of the Federal Reserve to influence the U.S. economy and to bring creditability to the U.S. dollar worldwide.

### **Structure of the Federal Reserve Board (America's Central Bank)<sup>7</sup>**

The structure of the Federal Reserve Bank is also unique among the world's central banks. It consists of the following:

- A presidentially appointed Board of Governors with general responsibilities for oversight
- Twelve Regional Federal Reserve Banks that are private institutions nominally owned by their stockholders (commercial banks that are members of the Federal Reserve System)
- The Federal Open Market Committee (FOMC), a 12-member policy-making committee of the Federal Reserve. The 12 members consist of 7 governors appointed by the President and 5 regional reserve bank presidents

The nation's monetary policy is decided at the monthly meetings of the FOMC. To understand how the FOMC operates, let us imagine that people in a community one day find themselves with more paper currency than they wish to hold—for example, when the main Christmas shopping season has ended. If the paper currency is physically convertible (for one ounce of silver, let us suppose), people will return the unwanted paper currency to the bank in exchange for silver, but the bank could head off this demand for silver by selling some of its own bonds to the public in exchange for its own paper currency. For example, if the community has 100 units of unwanted paper money, and if people intend to redeem the unwanted 100 units for silver at the bank, the bank could simply sell 100 units worth of bonds or other assets in exchange for 100 units of its own paper currency. This will soak up the unwanted paper and head off people's desire to redeem the 100 units for silver.

Thus, by conducting this type of open market operation—selling bonds (to take dollars out of circulation) when there is excess currency, and buying bonds (to put dollars in circulation) when there is too little—the bank can maintain the value of the paper currency at one ounce of silver without ever redeeming any paper currency for silver. In fact, this is essentially what all modern central banks do, and the fact that their currencies might be physically inconvertible is made irrelevant by the maintenance of financial convertibility. Please note that financial convertibility cannot be maintained unless the bank has sufficient assets to back the currency it has issued.

The Federal Reserve banks are directed by nine-member boards of directors. Congress also stipulated a unique structure for those boards to ensure that the selection process does not favor bankers and allow them to become a majority on any given Federal Reserve Bank board. The Congress, in doing so, wanted to ensure that the views and concerns of all economic interest groups would be expressed and heard during the development of monetary policy.

The nine-member board of directors of a Federal Reserve Bank is elected as follows:

- Member commercial banks elect three members from the banking community and three members from agricultural, commercial, industrial, services, labor, and consumer communities
- The Federal Reserve Board of Governors appoints three directors on its own (it also appoints the Reserve Banks' presidents)

For a detailed description of the operation of the Federal Reserve and the process used to adjust and manage interest rates, please read David H. Friedman, *Essential of Banking* (American Banking Associations, 1989).<sup>8</sup>

The above discussion clearly indicates that interest rates, especially related to the U.S. dollar, are reflections of the way the Federal Reserve Board manages its monetary policy in response to many other factors.

### **Who Owns the Federal Reserve Bank?**

All national banks in the United States own shares in the Federal Reserve Bank in proportion to their capital. In addition, other financial institutions, like some state chartered banks and other major financial institutions, can own shares in the Federal Reserve Bank if their boards decide to become members of the Federal Reserve System. This way, the bankers in the system can have a voice in the process of developing the monetary policy of the country. Chapter 7 includes more details on this subject.

### **Credit Creation in the Modern Banking System<sup>9</sup>**

*T-accounts* are abstracts of a bank's balance sheet that show only the changes in the bank's assets and liabilities.

For the sake of simplicity, assume, in this T-account example, that:

- All the deposits created by banks stay in the banking system
- Demand deposits are the only form in which newly created funds are held
- Banks lend out every available dollar

These assumptions do not by any means reflect reality. Some deposits created by banks leak out of the banking system into non-bank financial institutions and money market instruments. Consumers and businesses typically convert some newly acquired demand deposits into cash.

Banks do not usually lend (or invest) every available dollar—not because they do not want to, but because the pace with which deposits flow in and out of banks on any given day is often so rapid, the volume so large, and the net effect of check collections so uncertain, that only at the end of the day do banks know just how much they have in net funds to support new loans.

Nonetheless, these simplistic assumptions do not distort the fundamental process by which banks create deposits, which take place in the following sequence of steps:

1. Assume that Bank A receives a cash deposit of \$10,000 from a customer for credit to the customer's transaction account. Under Federal Reserve requirements, the bank must hold an amount of reserves—vault cash or deposit balances at a Federal Reserve Bank—equal to a fixed percentage of its deposits (assume 10 percent). Thus, Bank A must hold \$1,000 in required reserves against its new \$10,000 deposit, and has \$9,000 in excess reserves. These excess reserves can support a new \$9,000 loan and the creation of \$9,000 in demand deposits entailed by such a loan. See Exhibit 5.1.
2. When Bank A makes the loan, both its assets and its liabilities will temporarily increase to \$19,000, reflecting the addition of the loan to its earning assets portfolio and the addition of the newly created demand deposit to its total liabilities. However, as soon as the borrower uses the newly created funds, Bank A's assets and liabilities will decline to their pre-loan level as an inevitable result of the check collection process.
3. Assume that the borrower writes a check for the loan amount to a manufacturing company that has an account at Bank B. When the borrower's \$9,000 check clears, Bank A will have to transfer \$9,000 of its cash

**EXHIBIT 5.1** Assets and liabilities of Bank A

	Assets		Liabilities
Cash Assets	\$10,000*	Demand Deposits:	\$10,000
New Loans	\$9,000	Demand Deposits	

*(Created for borrowing)* \$9,000

\*Required reserves \$1,000 (10 percent of deposits).

**EXHIBIT 5.2** Assets and Liabilities for Banks A and B

Bank A	Assets		Liabilities	Bank B	Assets		Liabilities
Cash	\$1,000	Demand	\$10,000	Cash	\$9,000	Demand	\$9,000
Assets		Deposit		Assets*		Deposit	
Loan	\$9,000						

\*Required reserves \$900—excess over reserves \$8,100.

assets in payment for the check to the presenting bank (Bank B). Bank A will also strike the \$9,000 demand deposit liability carried for the borrower from its books. Thus, after check clearance, Bank A has \$10,000 in assets and \$10,000 in liabilities. Note, however, that the composition of its assets has changed. Before the loan, it had \$10,000 in cash assets; now it has \$1,000 in cash assets and \$9,000 in loan assets. The \$1,000 in cash assets meets the assumed 10 percent reserve requirement ratio against transaction account liabilities. See Exhibit 5.2.

4. The \$9,000 in deposit created by Bank A is now a demand deposit on the books of Bank B, increasing that bank's liabilities. Bank B also received a transfer of \$9,000 in cash assets when it received payment for the check deposited by the manufacturing company. Bank B, subject to the same 10 percent reserve requirement as Bank A, must keep \$900 (10 percent) against the deposit, but can use the remaining \$8,100 to support a new loan and the creation of a new \$8,100 deposit.
5. When Bank B makes the \$8,100 loan, its assets and liabilities will increase initially and then decline to their pre-loan level in response to the collection of the borrower's check. Assume that the borrower writes a check for the loan amount to pay for a corporate service and that the corporation deposits the check in its account in Bank C. Bank B's newly created \$8,100.00 will now reside as a liability in Bank C, together with the \$8,100 in cash assets Bank B had to transfer in payment for the check. (See Exhibit 5.3.)

**EXHIBIT 5.3** Assets and Liabilities of Banks B and C

Bank B	Assets		Liabilities	Bank C	Assets		Liabilities
Cash	\$9,000	Demand	\$9,000	Cash	\$8,100	Demand	\$9,000
Assets		Deposit		Assets*		Deposit	
Loan	\$8,100						

\*Required reserves \$810—excess over reserves \$ 7,290.

6. Bank C, in turn, will now be able to create demand deposits equal to 90 percent of its new cash assets. If it does so, it will give still another bank the ability to create new deposits.

In theory, this process of bank deposit creation can continue through hundreds of banks, generating, in this example, a total amount of deposits on all banks' books 10 times greater than the \$10,000 in cash deposits that started the process. The *multiplier*, or expansion coefficient, is the reciprocal of the reserve requirement ratio. In this example, because the reserve requirement ratio is 10 percent, the multiplier is 10. This simple multiplier is valid only in the context of this example. In the real world of banking, there are separate reserve requirements for different types and amounts of liabilities. This multiple expansion of bank-created deposits is characteristic of banking systems, but not of individual banks. No bank can create deposits in any amount greater than its excess reserves. If it did, it would find itself in a reserve deficiency as soon as the borrower's check cleared. This act violates the Federal Reserve rules, and the bank would be subject to several federal stipulations, controls, and penalties.

## **THE DOLLAR MADE AS GOLD! WHAT A WONDERFUL PLACE TO BE!**

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### **A Brief History of the Bretton Woods Agreement, Which Changed the World of Money<sup>10</sup>**

By 1944, the political leaders of the West knew that somehow trade protectionism and currency warfare had crippled the world economy in the 1930s and helped bring on WWII. The British government called upon Lord Keynes to help design a structure of international finance that would help avert WWII. The Bretton Woods agreement was the design of Lord Keynes and the undersecretary of the U.S. Treasury, Harry Dexter White. Keynes wanted a world bank, as if there were one world government. Participating nations would have their own currencies, but they would be fully convertible to one another through this world bank, which Keynes called a Clearing Union. The bank would issue its own currency, the *Unitas*, and would maintain its value not by tying it to gold, but by the "wisdom" of its directors. The Keynesian notion of a world bank that could expand credit without the restraint of a gold standard was rejected. The opposite argument by Undersecretary Harry Dexter White, who believed in the "hard money" approach using the gold standard rather than the "soft money" approach of Lord Keynes, was accepted because the United States owned \$24 billion in

gold; the United States got its preferred hard money currency. The Bretton Woods Agreement and U.S. economic might after WWII gave the United States and the U.S. dollar undisputed dominance.

The system would work perfectly as long as the Federal Reserve Board of the United States enforced sound monetary operations by stopping the printing of dollars when people showed up with dollars demanding gold. The U.S. monetary and Federal Reserve authorities naturally would not be able to accommodate a huge run on U.S. gold; however, if such a circumstance was handled promptly and wisely, and if the U.S. authorities could convince the world of the United States' sound policies, then a crisis could be averted. The world economy would always have precisely the right amount of money.

In 1953, when President Eisenhower tried to boost the U.S. economy out of recession, instead of cutting tax rates, he leaned on the Fed to print dollars. Because all currencies were fixed together, the surplus flowed around the world. The printed dollars reduced the U.S. gold reserve by the same amount.

The system did break down. To run a dollar standard, the United States certainly did not need \$24 billion in gold bullion, for the value of gold is not as a medium of exchange, which requires tonnage, but merely as an error signal to alert administrators when too many dollars are being printed. By 1965, the United States had depleted Fort Knox of approximately \$12 billion of its gold tonnage, mainly to the Europeans and, in particular, France. A media story of the time reported that the weight of the gold accumulating on the second floor of the London Metal Exchange building was so heavy that the floor gave way.

In the spring of 1971, as the Fed tried desperately to expand the U.S. economy by flooding it with dollars, the rest of the world came demanding gold. On August 15, 1971, President Richard Nixon ordered the gold window closed, ending the international currency's link to gold.

An attempt to rebuild Bretton Woods around gold at \$38 per ounce instead of \$35 was made with the Smithsonian Agreement. Later, the gold-dollar window was shut permanently, and what Keynes suggested in 1944 became a reality. Economists around the world projected a dramatic increase in the price of oil and other commodities; another interesting twist in the accepted folklore that claims that oil prices increased because of the 1973 Arab-Israeli War. It is important to note that inflation of the 1970s was not caused by the Organization of the Petroleum Exporting Countries (OPEC) but rather was caused by the breakdown of Bretton Woods. No country could escape the impact of inflation. Commodity prices skyrocketed between 1966 and the spring of 1974. Here are some examples:

- Oil prices rose 344 percent, from \$2.9 to \$10 per barrel
- The price of rice climbed 375 percent, from \$8 per cwt to \$30 per cwt
- Wheat prices rose 322 percent, to \$5.80 from \$1.80 a bushel
- Lead went up by 233 percent, from \$12 per cwt to \$28 per cwt

After President Nixon closed the gold window and currencies started to float, the world changed. Companies with costs in one currency and revenues in another needed to hedge exchange rate risk. In 1972, a former lawyer named Leo Melamed<sup>11</sup> was clever enough to see a business in this; he launched currency futures on the Chicago Mercantile Exchange. Futures in commodities had existed for more than a century, enabling farmers to insure themselves against lower crop prices. But Mr. Melamed saw that financial futures would one day be far larger than the commodities market. Today's complex derivatives are direct descendants of those early currency trades.

This same scenario with different players has repeated itself ever since. The Soviet Union was disassembled in the early 1990s. Iraq invaded Kuwait, and the United States subsequently liberated Kuwait. A heinous terrorist attack on American soil occurred on September 11, 2001. The United States invaded Afghanistan to fight terrorism and simultaneously invaded Iraq to change the regime. In 2008–2009, the financial markets in the United States and the world suddenly collapsed, supposedly because of reckless lending and banking practices. There was a subsequent stock and credit market collapse in October 2008, which led to the U.S. government's rescue of Bear Stearns and AIG Insurance by pumping almost \$110 billion dollars into them. It also led to the bankruptcy of Lehman Brothers, an icon of investment banking in the United States and the world. Lehman Brothers's collapse took with it the capital of many countries and individuals who had trusted the government to have supervised these banks properly. For the first time in the history of the capitalist world, there was a massive government effort to rescue banks by owning them outright (which happened in Britain) or owning a minority share (which happened in the United States and all European countries). Additionally, the United States approved a \$700 billion rescue plan for its financial system. After all was said and done, more than \$1.2 trillion was allocated to rescue the system. And, of course, we do not yet know what more will come upon us.

All we know is that the only way to come up with the needed amount of huge rescue money is simply to create it by "printing it." In other words, the Fed will increase the money supply in the system, as discussed earlier. If the Fed uses—as an example—wheat, rice, or gold as money, there is no way the Fed can produce that wheat, because it takes time and effort to produce it. The same applies to rice and gold. In fact, there is a limit to what we can

do to increase the production of agricultural commodities, let alone prospecting, finding, and mining gold. However, it takes almost no time at all to print a lot of money. That has spelled a lot of trouble in the past, because this conceptually means that the price of reference commodities (gold, silver, rice, wheat, and others) will have to go up in paper money (dollars) because there are more dollars in the system compared to the limited production and supply of the commodities. That spells big trouble down the road. That trouble is called inflation, as we saw in the 1960s and 1970s.

### **The Fed Fund Interest Rates Setting Regime**

**The Taylor Rule**<sup>12,13,14,15</sup> This section attempts to summarize how the U.S. Federal Reserve Board decides on a suitable level for the Fed Fund interest rates (the interest rate charged by banks to each other for overnight borrowing to balance their books, which is set by the Fed). The Fed Fund rate is one of the important tools used by the Fed to decide on interest rates, which set the policy of money supply in order to influence U.S. monetary and economic policy. It is important that RF bankers understand the foundations upon which these decisions are made and the mechanical procedures followed. This information reveals that the Fed Fund rate set by the Federal Reserve is a tool by which the monetary authorities manage the money supply; it is different from the usury or interest prohibited by the injunctions of Judeo-Christian-Islamic Law, or Shari'aa.

Professor John Taylor of Stanford University in California formally introduced the Taylor Rule in 1994 to model the process by which the Federal Reserve System sets a suitable Fed Fund rate. He suggested that the two primary factors that drive the model are the gross domestic product (GDP) gap and the inflation gap.

Intuitively, these two factors have economic bases. This policy rule states that if the economy is growing beyond its potential, or if the inflation rate is greater than the Fed's assumed target of (say) 2 percent, the Fed will increase the Fed Funds. Professor John Taylor argued that the Federal Reserve Board can be viewed as setting the target for the Federal Fund rate at a level that is close to, say, 2 to 2.5 percent, with a level corrector mechanism. He recommended that two correctors are added. These are:

1. An *inflation corrector*; called the *inflation gap*. It equals current inflation rates minus the inflation rate targeted by the Fed.
2. An *economic growth corrector*, called the *output gap* (GDP<sup>16</sup> corrector), which is equal to current GDP minus potential GDP.

He also suggested assuming a most likely scenario that the impact of numbers 1 and 2 above is equally weighted, at 50 percent each. Another

scenario might call for a different weighting—such as, for example, the allocation of 70 percent for inflation and 30 percent for GDP, or vice versa. This will depend on the situation, the country involved, and the strategic options available to the central bankers. It is important to clarify further that the interest rate component of the equation is a mere rate or percentage; it is conceptually and materially different from the usury (price charged for using money) or interest (the price for renting money). In this context, this rate is in fact a percentage rate that influences the rate at which fiat—money—should be grown (by printing more) or shrunk (by selling government bonds at high rates to absorb the excess liquidity, or by increasing the reserve requirements of the banks). The equation suggested can be written as follows:

Target Short – Term Fed Funds Interest Rate = Rate of Inflation as measured by GDP deflator + Equilibrium Real Interest Rate (defined approximately as prevailing interest rate minus inflation) + an Inflation Contribution + an Economic Growth Rate (Economic Output) Contribution

Please see the definitions of the components of the Taylor formula.

*Rate of Inflation:* As defined by a basket of products and services in the economy.

*Equilibrium Real Interest Rate:* Interest rate charged by banks and financial institutions minus inflation rate (approximately).

The interest rate charged by banks and financial institutions to their customers is in fact the *riba* we are talking about; it is prohibited in the Judeo-Christian-Islamic value system because it conceptually represents paying a price for the use or rental of money. This rate, as we discussed in Chapter 3 and will discuss in more detail later, should be obtained using the mark-to-market rule, not the rental rate of money.

*Inflation Contribution:* A percentage of the *inflation gap*, defined as Current Inflation Rate minus Target Inflation Rate, as defined by policymakers. Taylor suggested that we give it a 50 percent weight. However, one can give it a different weight depending on monetary policy goals and strategies.

In the case of the United States Federal Reserve System, the policy targets mentioned above are discussed and agreed on in a special committee, the Federal Open Market Committee (FOMC). The committee discusses the tradeoff between the Fed's goal of price stability through achieving a low inflation rate and the need to maintain maximum economic growth and output, as well as the highest employment possible. To achieve low inflation, Fed Fund rates need to be raised. On the other hand, if the committee wanted the highest employment and economic output, they would adopt a policy that reduces the Fed Fund interest rate. The committee's most important challenge is to decide the most suitable and optimum course of action regarding the Fed Fund rate. In addition, Taylor's equation above shows that the Fed Fund interest rate decided by the Fed is needed to adjust the monetary policy in a fiat (paper) money regime, and is far different from the charging of interest prohibited by Shari'aa, as discussed in Chapter 2. The Fed Fund rate is a percentage sign used to influence policy and to decide how much money to print or withdraw from the system in a world run on fiat money. In the case of the Judeo-Christian-Islamic value system there is a world of difference between the renting of real money (as discussed in the six commodity indexes) and the Fed Fund rate as described clearly by the Taylor Rule.

**Real and Nominal Interest Rate** As we read in Chapter 2, the contemporary position of the Roman Catholic Church regarding interest and the time value of money coincides with the position of modern economics and finance. In economics and finance, an individual who lends money for repayment at a later point in time expects to be compensated for the time value of money, or not having the ability to use that money (perhaps more productively) while it is lent, and particularly if it is not returned on time. In addition, owners of capital will want to be compensated for the risks of having less purchasing power when the loan is repaid. These risks are:

- *Systemic Risks:* This includes the possibility that the borrower will default or will be unable to pay on the originally agreed-upon terms, or that collateral backing the loan will prove to be less valuable than estimated.
- *Regulatory Risks:* This includes taxation and changes in the law, which would prevent the lender from collecting on a loan or having to pay more in taxes on the amount repaid than originally estimated.
- *Inflation Risks:* This takes into account that the money repaid may not have as much buying power from the perspective of the lender as the money originally lent, and may include fluctuations in the value of the currencies involved.

*Nominal interest rates* include all three risk factors, plus the time value of the money itself. *Real interest rates* include only the systemic and regulatory risks and are meant to measure the time value of money. The *real rate* is equal to the *nominal rate* minus *inflation* and minus *currency adjustment*.

The *real interest rate* in an economy is often the rate of return on a risk-free investment, such as U.S. Treasury notes, minus an index of inflation, such as the *Consumer Price Index* (CPI) or *Gross Domestic Products Deflator* (GDP Deflator). This is what we can call the interest rate decided by the Fed, as explained earlier, to run its fiat money policy to the best of its ability. It must be stated that no specific money system is being advocated here, because that is not the subject of this book nor of the RF banking and finance system presented here. All we want to achieve is to familiarize the reader with the fact that the interest rate set by the Fed is in fact a policy tool and it is, in simple layman's terms, a mechanism by which the government decides how much money to print or to withdraw from the market in order to achieve its policy goals about inflation, prices, and employment levels.

As suggested by the equation, if all is kept constant and the FOMC wanted to increase the economic production, they would reduce the short-term interest rate on Fed Funds, and increase the rate if the opposite were true. Of course, real life situations are more sophisticated and involve many other scenarios, permutations, and parameters. However, the fact remains that the interest rate that the Feds use is different from the one prohibited in Shari'aa. It is a calibration tool that adjusts the flow of money in or out of the fiat paper money system.

All those who believe in Judeo-Christian-Islamic values should focus on two important factors in our development of the RF banking and finance system. These factors are:

- The use of the *commodity indexation rule* and approach to ensure fair market pricing, as was discussed earlier and will be further developed later in the book.
- The use of the *marking-to-market* concept to make certain that we are renting tangible and rentable assets, and not money, in order to ensure that we are investing prudently.

### **Fiat (Paper) Money and the Cyclical Nature of the Fiat Money Economy**

Professor Ahmad Kamal Meera<sup>17</sup> authored an interesting book on the economics of fiat money, bank fractional reserves, and interest, in which he concluded that the fiat money interest-based system causes asset bubbles, particularly after the potential GDP levels of an economy have been

reached. He described a five-stage process to the creation of cycles in a fiat money-based economy. It is important to state here that the purpose of this discussion is not to criticize the system or advocate changing it—that is not our goal—but rather to throw more light on how the system works, in order to allow for it while operating the RF banking and finance system. It is believed that this can be done to a high degree of success (as experienced in our operations at LARIBA and the Bank of Whittier) by applying the screens of the commodity indexation rule and the mark-to-market rule. If we know the way the system works, we definitely can, to a better extent, identify the formation of a bubble and hopefully have the signals and the decision tools that will allow us to avoid or to leave the bubble before it bursts and causes everyone in the RF banking and finance system great loss of assets, reputation, and credibility.

Following are the five phases:

1. A *Period of Money Creation* without significant inflation. In this period, the Central Bank or the Feds would allow the creation of more money through the tools at its disposal—such as, for example, lowering interest rates (the Fed Fund rate) and/or reducing the statutory reserve requirements at the banks. As money becomes available, people begin borrowing money and buying things. This situation creates a period of economic prosperity without inflation, because the excess capacity goes into an absorption process.
2. An *Inflationary Period* of excess money supply with cheap (low interest rate) funds. This stage follows the drying up of supply of inexpensive products, services, homes, and commercial real estate. People still can borrow at low interest rates, which causes demand to rise and outpace supply. This situation causes a period of inflation of prices. Excess money in the hands of the public begins going into higher salaries, which means more excess cash in the hands of the public, more savings for retirement, and, in the end, excess cash pouring into the stock market, causing it to heat up and rise sharply. Of course, those in the money market and stock market will always give the impression that there is no end in sight for this spectacular growth. It is the responsibility of a wise Central Bank or Federal Reserve Board to arrest the money creation machine at this stage to avoid the growth of the bubble.
3. A *Period of Destruction of Money Supply*, causing an economic downturn with financial distress and bankruptcies. Here, prices keep rising, but prudent investors start looking at their positions and discover that the price-to-earnings ratio of certain stocks is too high to be real and the price of real estate is so high that the debt service is much higher than the potential rent. This is where applying the commodity indexation

rules and the mark-to-market rules will be extremely useful to those who believe in and apply the rules of Shari'aa. They decide to go to cash. This reduces demand and increases supply, causing prices to decline and, in most cases, sharply signaling the bursting of the bubble. In most cases, the price of a real estate property, for example, may be lower than the loan the owners obtained to finance it—as many experienced during the 2008 economic meltdown. In most cases, especially in today's culture, that prompts many to declare bankruptcy to run away from debt, and the banks repossess the properties. Because banks are required to sell these properties as soon as possible, prices decline further in a process of capital destruction. The same process happened on the stock market, especially with portfolios that use *margin* financing (borrowing money against the value of the stock portfolio). Market losses in the Dow Jones Industrial Average—in one day—can reach more than \$1 trillion (that is \$1,000 billion). During this process, we are witnessing the destruction of the fiat money created at the printing press!

4. *A Period of Transfer of Crisis from the Financial Sector (Wall Street) to the Real Sector (Main Street)*. As the recession sets in, businesses, in their pursuit to cut expenses and overhead, resort to reducing employment and begin laying off employees and reducing production (in industries such as home construction and auto manufacturing), with a resulting deep impact on local economies. This process results in massive economic dislocations and price reductions.
5. *A Period of Recovery that Takes the Economy Back to the First Period* described in number 1, above. At this stage, the government starts a recovery program with the help of monetary authorities, and we head back toward the first stage; money creation begins anew.

The five-stage process that ends with the bursting of the bubble has been witnessed during the inflation of the stock market from 1987 to the year 2000 and from 2003 to 2008. The reduction in interest rates that followed the September 11 attacks caused inflation of real estate prices for a long time, resulting in the 2008 meltdown and the near-collapse of the financial system, not only in the United States but also in the whole world.

It is important to note here that one of the responsibilities of the Central Bankers of the world—including the Federal Reserve of the United States—is to try their best to timely stop the “bubblization” of assets by bursting these bubbles before they become so large that they create a heavy burden on the economy and the whole population when they collapse. It is interesting to note that former Fed Chairman Alan Greenspan preferred to allow the housing bubbles in the United States to fester for a long time. They

eventually burst after his retirement, causing the huge damage of financial markets worldwide. Unfortunately, in the 2008 experience we have seen that such a *laissez-faire* approach invites corruption and fraud (witness the persistent regulatory and legal violations of many of the investment bankers and mortgage bankers). The outcome can be devastating in depth and extent, as we saw in 2008.

The big question is, how can an average citizen or an RF financial institution avoid participating in this bubble behavior? The answer is that the bubble can be avoided by applying the following two important RF finance rules:

1. Use commodity indexation
2. Apply the mark-to-market concept

These RF finance rules make certain that we are investing prudently and not participating in a bubble. True, we may be premature in quitting a certain market, and we do not participate in some spectacular speculative (gambling) returns, but as RF bankers we are certain that we deliver the most important value of RF banking to our customers: the preservation of capital and the realizing of prudent returns that, in the long run, will be much higher than such “bubble” and gambling-based returns.

## **THE PROHIBITION OF RIBA/RIBIT: RULINGS ON RIBA IN FIQH, THE SCIENCE OF SHARI'AA**

There are two types or classes of riba:

1. *Riba al nasee'ah* is defined as the increase over the original value of capital given, usually by putting a condition in the loan agreement indicating that the lender would be entitled to an increase over the original value if the borrower asks for an extension of the term of the credit. This type of riba is prohibited by the Qur'aan, the Sunnah (tradition of Prophet Muhammad [pp]), and all scholars, without exception.
2. *Riba al fadl* is defined as selling [real] money for [real] money, commodity for commodity (e.g., food for food) with an increase over the original value except under special rules as will be explained later. This practice is also prohibited by all sources (the Qur'aan, the Sunnah, and all the scholars), because it can lead to riba al nasee'aah. It is given the label of riba as a way to attach it to the real reason for prohibiting it, because it leads to riba al nasee'ah. Prophet Muhammad (pp) said<sup>18</sup>:

*. . . do not sell the [silver] dirham (a prevailing currency then) for two [silver] dirhams because I am afraid that you indulge in [the prohibited] Riba.*

3. The *Hadeeth* (sayings or pronouncements) of Prophet Muhammad (pp) specifically prohibited practicing riba in six items: gold, silver, wheat, barley, dates, and salt. It was reported that the Prophet (pp) said<sup>19</sup>:

*. . . gold for gold, silver for silver, barley for barley and salt for salt hand to hand [in an on-the-spot transaction without delay] those who increase in buying or selling these items they are considered practicing Riba. This applies to those who take the increased amount and those who agree to give it.*

In another narration by Muslim (one of the compiler of the sayings of Prophet Muhammad [pp]), it was added:

*. . . should the kinds [of commodities] differ, then exchange as you wish, provided that the exchange is hand to hand [on-the-spot].*

### **Reason for Prohibition**

The reason for prohibiting riba in dealing with these six commodities is that they represented—at the time—the basic necessities of the citizens; without such basic commodities, they could not live comfortably. Gold and silver, at the time of Prophet Muhammad (pp), were the basic currencies used to buy and sell and to define prices in the market to settle transactions. They were called *tathmeen*: the two commodities used to establish prices in the market.

If riba were practiced in dealing with these items, it would have hurt the interests of the citizens and would lead to a breakdown in the fabric of the society. Shari'aa prohibited such dealing as a mercy to mankind and to protect the interests of the citizens.

From the above discussion, one can conclude that the reason for prohibiting riba in gold and silver was because gold and silver were used to price things, and riba was prohibited on the other four food items because they were food staples. If these qualifications are found to apply on other items, the rule applies. Such items are used as reference commodities in the commodity indexation approach discussed earlier.

Based on this determination, the rule can be extended using the discipline of analogy (*qiyas*). The rule can be stated in general as:

1. If the two items transacted are from the same material and are used for the same purpose (e.g., gold for gold, or wheat for wheat), then both

riba al nasse'ah and riba al fadl are prohibited. The following conditions must be satisfied in order for a like-for-like transaction to be ruled riba-free:

- a. The quantity on the buy and sell side must be equal, regardless of quality.<sup>20</sup>
- b. The buy and sell must be done on the spot (e.g., hand to hand, as the Prophet [pp] said).

If the two items to be transacted differ in their material but are used for the same application, then the rules of riba al fadl can be invoked on the condition that riba al nasse'ah is not used. Gold can be sold for silver or wheat can be sold for barley, and the transaction must be done on the spot (hand-to-hand), but the quantities do not have to be equal. It was reported that the Prophet (pp) said<sup>21</sup>:

*. . . it is acceptable to sell wheat for barley and you can get more barley but it has to be hand to hand [an on-the-spot transaction].*

If the two items to be transacted are different in material and in purpose of use, there are no restrictions in applying time in the riba al nasse'ah and excess over the original amount in riba al fadl. For example, food can be sold for silver, and one dress for two dresses, or two cups for one cup. In summary, riba al fadl can be practiced on any item, aside from the two metals (gold and silver) and the food staples (wheat, barley, dates, and salt). The Prophet (pp) emphasized this concept when a companion brought to him an excellent type of dates from Khaiber (a city in what is now Saudi Arabia). The Prophet (pp) asked, "Are all the dates of Khaiber like this?" The man said no, but we barter one volume (a volume measuring unit that was used at that time, called *saa*) of this dates for two volumes (*saa*) of ours (they were lower quality, smaller dates). The Prophet said: "Do not do that, because that is exactly Riba and it is forbidden." The way to do it according to RF rules is to sell your dates for money (silver dirham, gold dinar, or another reference staple commodity except for the same commodity—i.e., not other dates), and buy the good dates with the proceeds.<sup>22</sup> By this rule, one can buy 10 bushels of wheat (food) for 1 ounce of gold on-the-spot [cash price] or deferred at 2 ounces of gold after 2 years. Because the gold is a metal and the wheat is a food, this transaction is halal (divinely allowed). Also, buying seven bushels of wheat for ten bushels of barley is allowed on-the-spot, but increasing the price

to seven bushels of wheat for fifteen bushels of barley to be paid (delivered) after one year is haram (divinely prohibited) because both are food items. As a more modern example, if one wants to buy heating oil by exchanging two gallons of fuel oil for one gallon of gasoline, it is not allowed by Shari'aa, because both are used as a source of energy and al fadl can only be applied on two items with different uses. In this case, one can offer to exchange the heating oil for another medium (currency), such as gold or silver, or for food such as wheat or rice. Then one can take the proceeds and buy the gasoline with it at market price. This is what we call in this book the commodity indexation and mark-to-market rules.

When the Islamic state expanded beyond Arabia, many of the jurists were exposed to different environments, economies, monetary systems, and cultures that used essential commodities that were not known in Arabia. To deal with the intricacies of concluding whether such practices were acceptable to Shari'aa, the jurists used the system of analogy (qiyas, as explained in Chapter 3). For example, this analysis allowed them to add other commodities to the six reference commodities identified by the Prophet (pp). Muslims continued for centuries to apply these rulings in their dealings.

### **Application of Shari'aa using the Commodity Indexation Rule**

As discussed earlier, Shari'aa requires that commodities be priced in terms of another reference commodity before being traded for a higher quantity, volume, or weight of the same type of commodity. For example, one cannot trade 100 bushels of good quality wheat for 500 bushels of lower quality wheat, because it constitutes ribit/riba. However, one can sell the 100 bushels for another commodity (e.g., gold or silver) and use the proceeds to buy the lower quality wheat. This way, the markets would be kept in stable condition and in equilibrium. A transparent ribit/riba-free market system is free from both ribit/riba and *gharar* (deception and misrepresentation).

Please note that when it is suggested that one use gold or silver it is not meant nor intended to enter into a discussion of going back to the system of the gold standards. What is strongly recommended here to preserve Shari'aa is to use the commodity indexation rule, which requires that we test the price of things in the economy (e.g., oil, houses, food items) by the use of one of the two types of reference commodities (e.g., precious metals—gold or silver—or food staples—such as wheat, barley, and rice). It is interesting to note that in 1987, then-Secretary of the United States Treasury James A. Baker III told world financial leaders during the 1987 fall meeting of the

International Monetary Fund (IMF)<sup>23</sup> that the Reagan Administration “is prepared to consider” using the price of gold in trying to steer its own and the world’s economies. Gold, Mr. Baker explained, could be used in a specially designed index, along with other commodities, to help governments discern inflation and then adjust their policies—by using interest rates or taxes, for example. Professor Robert A. Mundell, a Columbia University economist and proponent of the concept, stated that “this is far from a gold standard.” On May 20, 1999, soon after the United Kingdom announced its decision to sell part of its gold reserves, Alan Greenspan, then chairman of the U.S. Federal Reserve, said: “Gold still represents the ultimate form of payment in the world.” Dr. Mahathir Mohamad, the former prime minister of Malaysia, also made some very interesting comments in one of his speeches<sup>24</sup> in response to the Asian currency crisis, which resulted from massive hedge fund speculations in Asian currencies. The speculation caused massive devaluation of local currencies in Thailand, South Korea, Indonesia, Malaysia, Hong Kong, Indonesia, and many other countries. Dr. Mohamad discovered that even many of his senior central bankers<sup>25</sup> were not aware of the mechanics of currency speculation—or the way to stop such speculation. The solution offered by many senior finance officers and ministers of finance of these countries was to support the local currencies by selling hard currencies like the U.S. dollar, the Japanese yen, and the euro, and buying the local currencies to create demand for the local currencies to attempt to keep the exchange rate intact. The problem was the huge volume of currencies needed. Many of the countries lost a major portion of their reserves without causing a dent in the exchange rate. The following is a snapshot of what happened to some currencies in a very short span of time. The decline of exchange rates relative to the U.S. dollar on February 16, 1998 compared to June 30, 1998 is shown in Exhibit 5.4.

One interesting but sad and painful case was that of Turkey. The Turkish lira’s exchange rate was 108,340 lira for each U.S. dollar in January 1997; it declined by 93 percent to exchange at 1,474,525 lira per U.S. dollar in January 2002. Such massive declines obviously resulted in a reduction in

**EXHIBIT 5.4** Decline of exchange rates in Asian currencies relative to the U.S. dollar

Country	Decline
Indonesia	75%
Malaysia	36%
Thailand	48%
Philippines	36%
South Korea	47%

the values of salaries, peoples' savings, pensions, and the price of goods and services. Imagine what a poor farmer in the Philippines would do when the cost of rice in his local currency—the only currency he knows about and is using—increases significantly. Such a sudden reduction in the value of local currencies raised the value of short-term debt of the country involved, usually denominated in U.S. dollars or in euros, and increased debt service. As if this was not enough, the sudden currency devaluation reduced the credit rating of the country involved, which resulted in an increase in the cost of borrowing on the international markets. All these unfortunate results reduced the country's economic activity, resulting in massive increases in unemployment and poverty.

In an effort to test the valuation of different commodities in terms of one another in order to conduct sales and trading at a higher price, as stipulated by Shari'aa, we attempted to price different commodities in terms of gold and other reference commodities. What was intended in this research was to detect the historic trend of pricing a commodity, say oil, in terms of gold or another staple commodity, using the commodity indexation concept, by asking the question: How many barrels of oil can one buy for every ounce of gold, or how many ounces of gold are necessary to buy a home using average home prices in the United States? We have done the same for commodities such as natural gas, wheat, corn, rice, and soybeans.

The exhibits on the following pages are charts depicting the prices from 1967 until the time of preparing this book for publication in 2009. In this approach, we disengaged and tried to neutralize the effects of the use of fiat money, and instead used a reference commodity as stipulated in the Judeo-Christian-Islamic Commodity Indexation Rule detailed earlier. It will be made clear that if we refer the value of each of the commodities to another reference commodity or index commodity, we shall find that the price or market value would be more stable, less volatile, moving within a narrow band, and fair. Exceptions to this general finding are cases that involve changes in production processes, technological developments, political factors, or significant change in lifestyle. The charts also show that regardless of how the price of a commodity changes in terms of fiat (paper) currencies, like the U.S. dollar, the value in terms of a reference commodity are more representative, and that a bubble can be detected whenever the band of price fluctuation is penetrated to the higher or lower side. In doing so, the reader is encouraged to consider using this approach to indexing their own products and services to a reference commodity, in order to avoid participating in an economic bubble like those we have witnessed throughout history—from the tulips in 17th century Holland to the stock market dot-com technology bubble in the 20th century United States to the housing bubble in the beginning of this century, which resulted in the 2008 global financial meltdown.



**EXHIBIT 5.5** Average U.S. home prices.

## **HOMES IN AMERICA<sup>26,27</sup>**

As shown in Exhibit 5.5, the average U.S. home prices in terms of the U.S. dollar kept rising and have either stabilized, as they did in the early 1980s, declined slightly, as in the early 1990s, or declined significantly, as happened starting in 2006 to 2009.

Looking at this chart in 2005, one can quickly reach the erroneous conclusion that home prices in America must keep on rising. However, in terms of gold<sup>28</sup> (how many ounces of gold are needed to buy an average priced home), Exhibit 5.6 shows the true fluctuation in house prices.

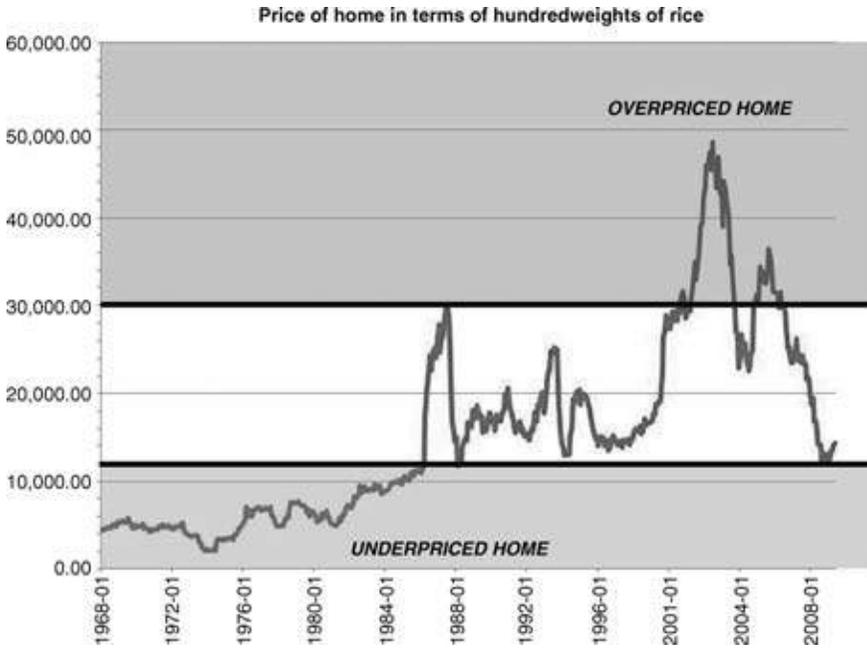
The chart shows that prices are more stable when expressed in terms of gold. The chart shows the average house price fluctuating between 200 and 400 ounces of gold. Whenever the price penetrates the lower level of the envelope, it signals that homes are underpriced; this can be considered a good indicator for investing in homes. If the price penetrates the upper boundary of the envelope, it has signaled over the years that homes are entering a price bubble, and we should be careful in our investments as well as in our financing decisions for homes. The chart also shows that houses in the United States began getting pricy around the late 1990s and peaked in



**EXHIBIT 5.6** Price of U.S. homes in gold.

2003 to 2004. It also shows that house prices started to decline after the end of 2005 to reach a bottom, or close to a bottom, in 2008–2009, signaling a good market. It is also important to note that it takes about seven to ten years for home prices to start climbing and for a home's owners to reap a good profit on the sale. In general, 2009 home prices in terms of gold indicate that it is a good time to start buying homes and financing the housing industry. Of course, this data is based on general nationwide data. It is recommended that specific data in specific markets should be used.

The same correlation can be depicted by looking at the price of a home if we were to pay for it in terms of rice or wheat<sup>29</sup> (if the only product of a community were rice or wheat). We will find that the same correlation applies. The reader must be warned that these charts (Exhibits 5.7 and 5.8) are presented here as a directional tool; they are meant to be used by decision makers to gauge the direction of trends in order to avoid participating in a bubble that may result in significant loss of their investments. It is also important to state that it is hoped that a full research effort be conducted along these lines to refine the analysis which is admittedly presented here in the form of the Art of Islamic Finance. One of the questions that needs to be answered is: Why did the prices decline drastically, especially the price of



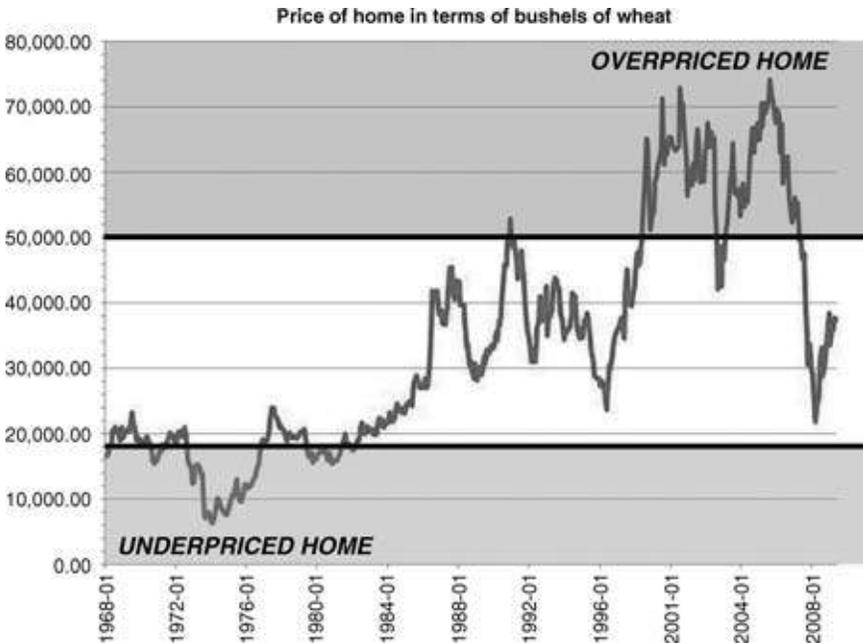
**EXHIBIT 5.7** Price of homes in rice.

agricultural commodities, from their pre-1971 levels when the Bretton Woods dollar-gold parity of \$35 dollars per ounce of gold parity was discontinued?

## **PRICE OF COAL**

Coal has been used as a source of energy for years. Its production infrastructure, transportation and distribution routes, markets, and uses have matured and are well-developed around the world. That is why we see that the relationship between the price of coal (as a basic energy commodity in the matrix of needs of consumers) and the price of other commodities, such as gold, rice or wheat, fluctuates in a narrower band than that of oil. Please see Exhibits 5.9 and 5.10.

Based on Exhibit 5.10, the price of coal, which kept rising in dollar denomination, went down in real value—in terms of gold—after 1971, and kept fluctuating in a range of 0.06 to 0.1 ounces of gold for every ton of bituminous coal.



**EXHIBIT 5.8** Price of homes in wheat.

## **PRICE OF CRUDE OIL**

The oil market followed the same pattern that we saw in the coal market. Crude oil and the refined products markets have also developed and matured over the years. That is why, as we found in the case of coal, we can safely look at oil price gyrations in the market to try to learn the relationship between the price of oil and that of other commodities. The chart in Exhibit 5.11 is intriguing. It shows that despite the large rise in oil prices in terms of U.S. dollars, in normal times the price of oil in terms of gold is stable, ranging from 0.06 to 0.12 ounces of gold per barrel of oil (10–20 barrels of oil for every ounce of gold), with an average price of 0.085 ounces of gold per barrel of oil (12–13 barrels of oil per ounce of gold). In fact, based on my 14-year experience in the oil industry—ten of these years were with a major United States-based oil company—we considered 10–13 barrels of oil per ounce of gold a fair value. This “technical analysis” was shared by some of the distinguished “technical analysts” at Smith Barney/Citigroup in 1999, and they started using it as an important indicator for oil price trends.

We can see from Exhibit 5.11 that if the value of oil in terms of gold increases and penetrates the upper boundary of 0.12 ounces of gold per barrel

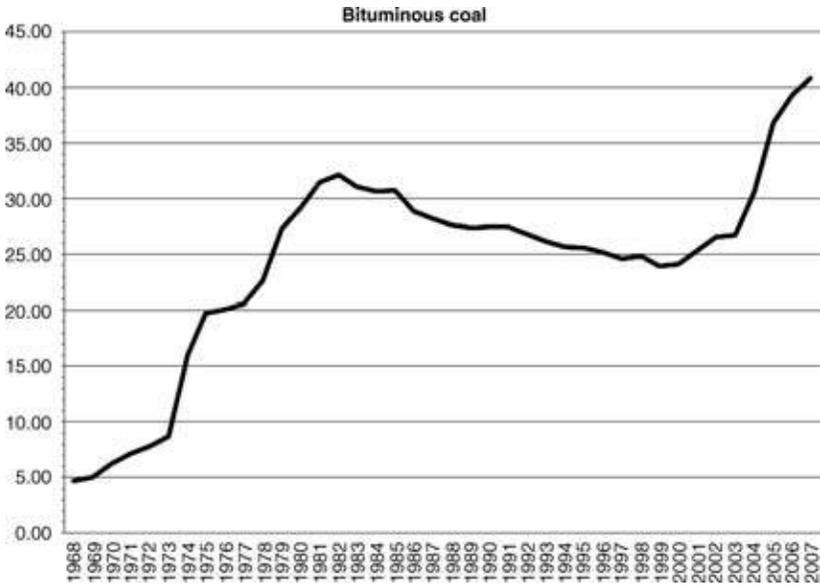


EXHIBIT 5.9 Coal prices, 1968–2007

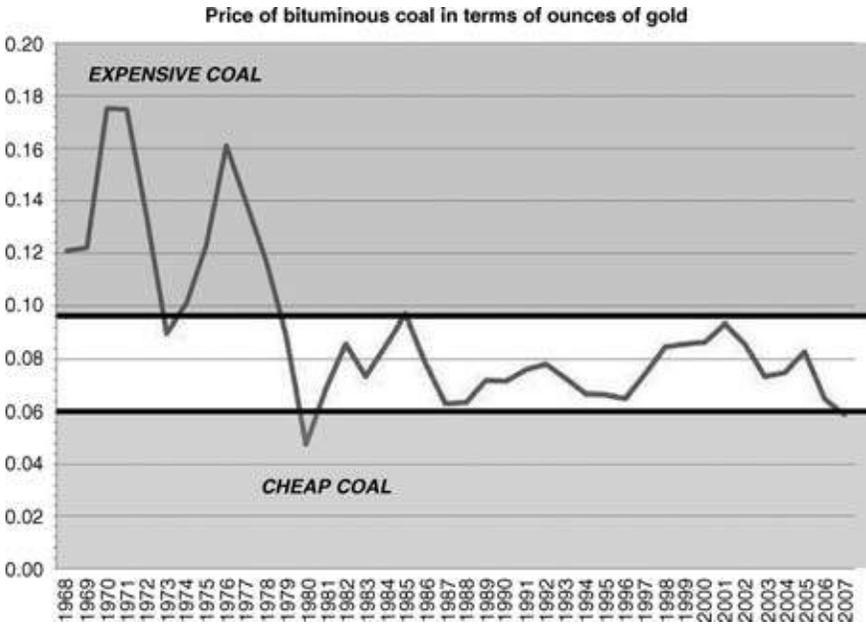
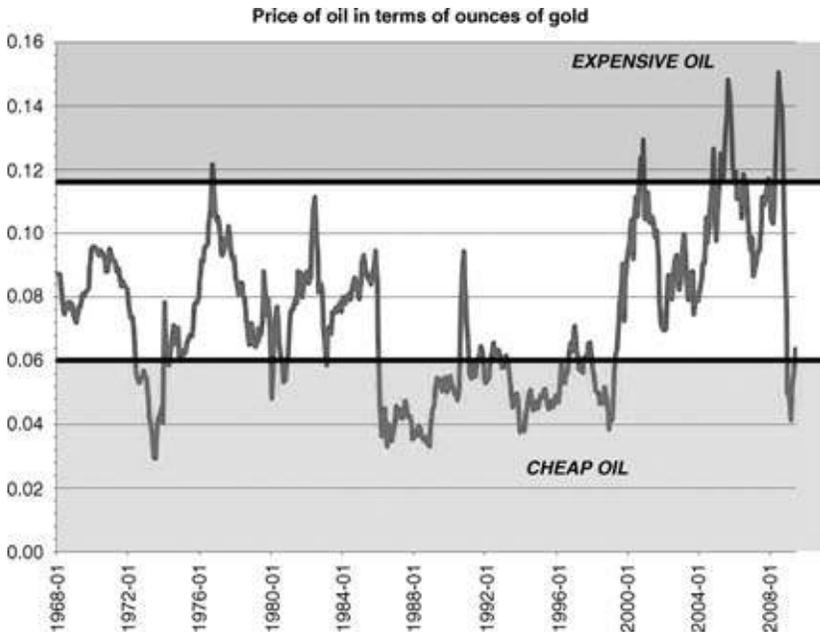


EXHIBIT 5.10 Price of coal in ounces of gold



**EXHIBIT 5.11** Price of oil in ounces of gold.

of oil (e.g., eight barrels of oil per ounce of gold), oil is overpriced and it is an indicator to sell the oil to avoid participating in a bubble. On the other hand, if the price of oil is low and pierces the lower level of the envelope at 0.06 ounces of gold per barrel of oil (e.g., 17 barrels of oil per ounce of gold), it is an indicator to buy (go long on) oil. It is very interesting to note that spikes in the oil price in terms of gold reflect political and economic changes that occurred over the course of history. For example, before the first oil shock in 1973, the value of oil spiked from 10 barrels per ounce of gold to approximately 35 barrels per ounce of gold, creating hugely undervalued oil and prompting higher demand—which later created a great supply shortfall, leading to the increase in oil price from \$2.50 per barrel to approximately \$12 per barrel. Looking into the history of this period, one sees that this was the time when most of the oil-producing countries were renegotiating their oil production participation agreements to increase their share of the production and hence reduce the share that would go to the oil companies. This situation created the incentive, on the part of the producing oil companies, to produce as much oil as possible in the shortest time available, flooding the markets with oil and later creating a supply shortfall that nudged oil prices higher. It is interesting to note the clear indication of a bubble during major world events.

At the time of writing this book, the oil price had reached a level of approximately \$135 per barrel, while gold has reached approximately \$885 per ounce. That is, the value of oil is approximately 6.6 barrels per ounce of gold. Based on commodity indexation discussed above, the price of oil is very high and is overvalued compared to an equilibrium market price. Based on our previous analysis, one expects that this ratio should go back to at least 10 barrels of oil per ounce of gold. At a gold price of \$885 per ounce, that would translate to an oil price of \$88.50 per barrel. At a gold price of \$750 per ounce, and with a most likely oil price index of 10 to 13 barrels per ounce of gold, then one can expect fair value for the oil price to reach \$58 to \$75 per barrel.

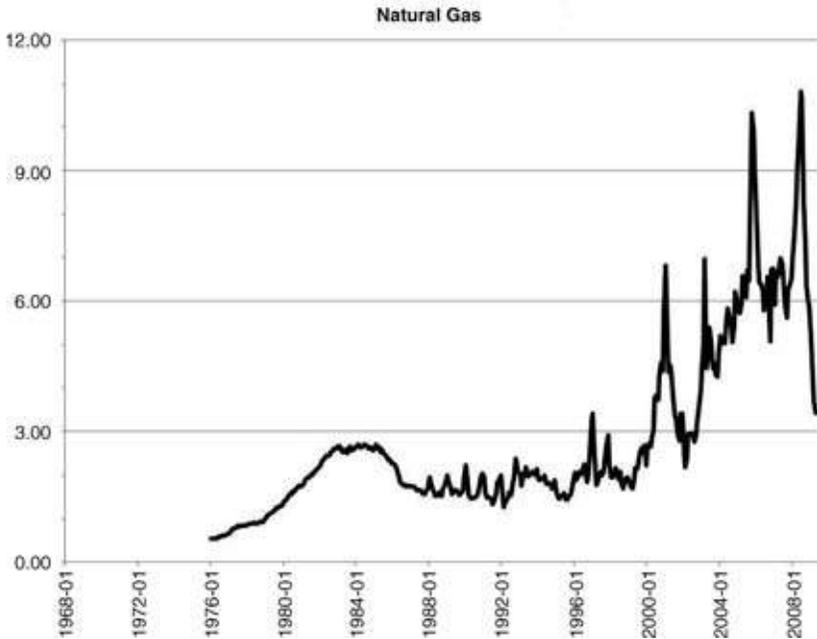
As this book went into printing, the world oil price declined to as low as \$35 per barrel and stabilized at about \$50 per barrel. This fluctuation depends on the U.S. dollar's value on the international markets; the price of commodities that underlie the U.S. economy (because it is the largest importer of crude oil in the world); and the U.S. government's and Federal Reserve Board's policies regarding the dollar, interest rate, and economic policy (both in the United States and in the major economies in Canada, Europe, and the United Kingdom). Other important factors are the speculative activities of the futures and options markets in the oil, gold, and dollar markets. It is interesting to note the cyclical nature of very high oil prices (overpriced oil) followed by another period of very low prices (underpriced oil). Students of history may find a relationship between capital accumulations by the major oil companies during the overpriced stage followed by an intensive record of negotiating new oil exploration contracts in new areas, coinciding with much lower prices.

The prices of some other commodities are charted in the following sections to give the reader a full scope of the validity of the commodity indexation concept. It is sincerely hoped that a group of researchers will take it upon themselves to research these relationships, not only in terms of relative prices but also in terms of mechanistic analysis, such as determining how much energy is consumed to produce an ounce of gold and how this impacts oil prices. This will not only include the cost of fuel, but also the amount of human energy consumed in exploring for gold, refining it, making it into standardized ingots, transporting it, and storing it.

## **PRICE OF NATURAL GAS<sup>30</sup>**

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Natural gas is believed to be the emerging energy source of the future. Its markets, production, and transportation infrastructure are still developing and are not mature yet. There are huge natural gas reserves in the United

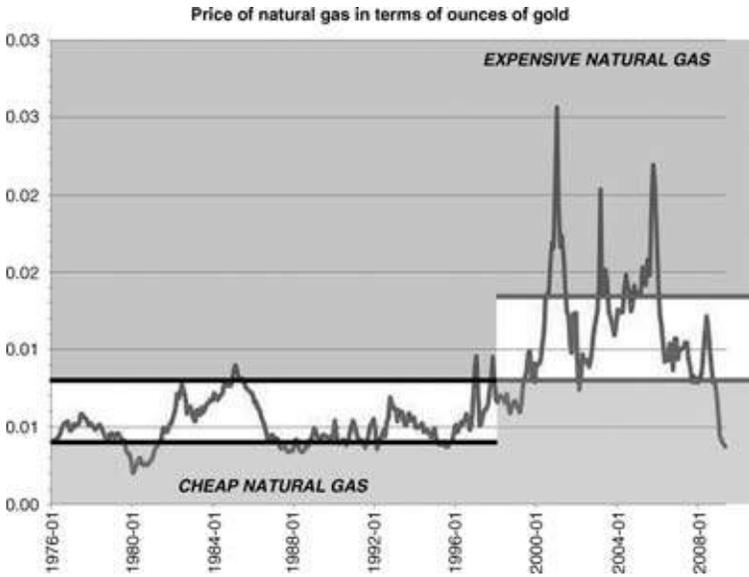


**EXHIBIT 5.12** Natural gas prices, 1976–2008.

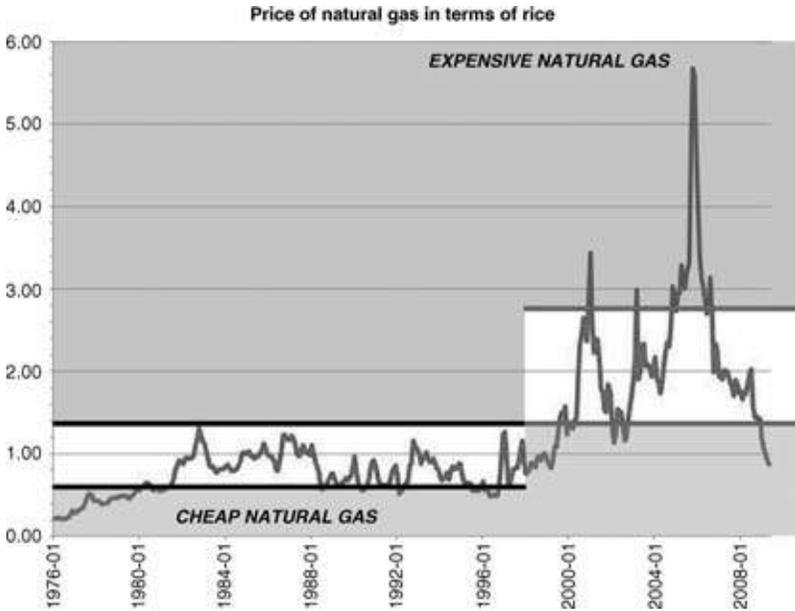
States, Canada, and the rest of the world, but these are not fully developed. In addition, there is tremendous market potential for substituting natural gas as a fuel for trucks and automobiles. Huge investments in the production, liquefaction, transportation, and distribution infrastructure are still in formation. The chart in Exhibit 5.12 shows the price of natural gas in U.S. dollars; it is volatile, and tends to reach unbelievable peaks mainly due to efforts by speculators to corner the market (as was done by Enron in the late 20th century). However, if we apply the commodities indexation rule, a different picture emerges. For example, the price of natural gas in terms of gold or corn is more stable as shown in Exhibits 5.13 and 5.14. In addition, one finds that the natural gas price has been stepping up every time there is more development in the infrastructure and hence an increase in demand for natural gas.

## **PRICE OF RICE<sup>31</sup>**

Rice is an important staple food in the diet of all Asian countries and most African countries. Exhibit 5.15 shows the history of the price of rice in



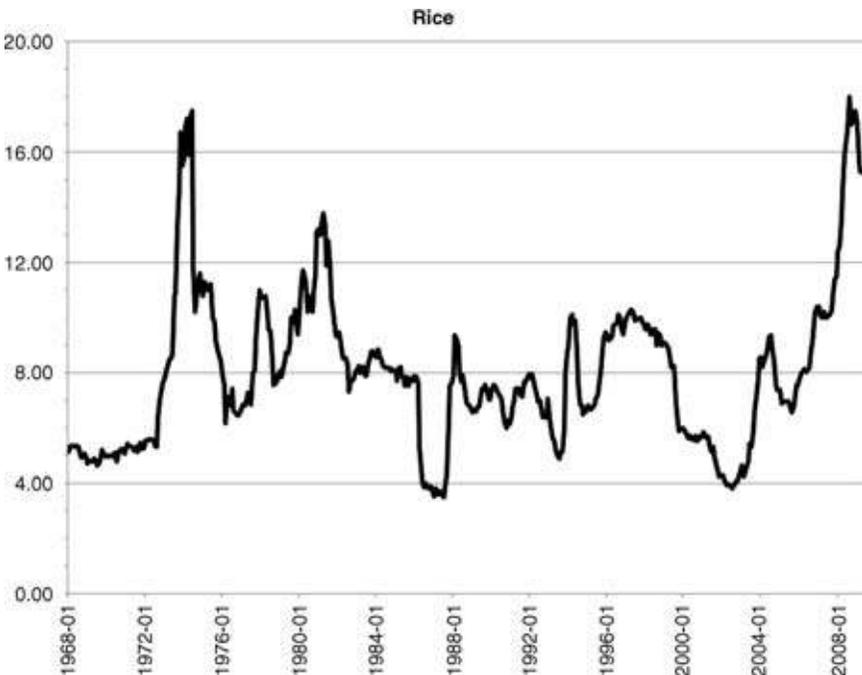
**EXHIBIT 5.13** Price of natural gas in ounces of gold—one ounce of gold per MSCF.\*  
\*MSCF = one thousand standard cubic feet



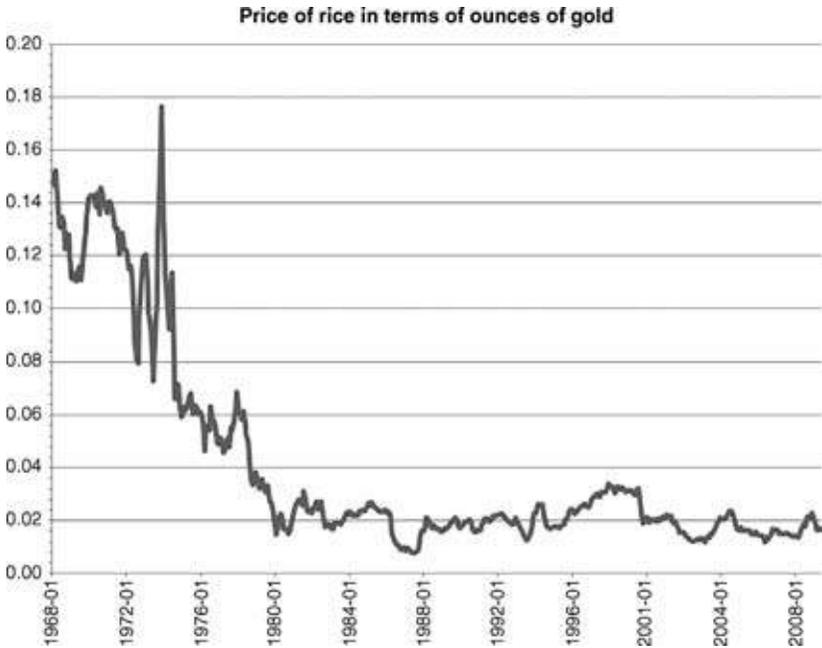
**EXHIBIT 5.14** Price of natural gas in rice—one cwt of rice per MSCF.\*  
\*MSCF = one thousand standard cubic feet

U.S. dollars. It is observed that the price in U.S. dollars fluctuated around a mean of about \$8 per hundredweight before it rose sharply in 2008. Most of the rice is produced and consumed in Asia. If rice is priced in terms of gold, one would find that the real price of rice declined drastically from its 1969 highs to its lows in the 1980s, and has stayed relatively flat from the 1980s until today—even with the much-advertised commodity price increases of 2007. The real prices of agricultural commodities in the world have been declining. This, coupled with the less expensive agricultural products—mainly wheat—available from the larger developed exporting countries such as the United States and France, has made it less attractive for farmers in the world to produce basic foods such as wheat and rice. Instead, they prefer crops that will provide more cash, such as the farmers in Afghanistan who preferred to cultivate opium over food. Please see Exhibits 5.15 and 5.16.

On the other hand, if we price rice in terms of wheat, we find that the wheat/rice price ratio has been declining. Wheat is mostly produced in Western developed economies, but it is consumed by foreign developing countries. It is recommended that more research be conducted to find out why. Please see Exhibits 5.16 and 5.17 for a comparison.



**EXHIBIT 5.15** Rice prices, 1968–2008.



**EXHIBIT 5.16** Rice versus gold.

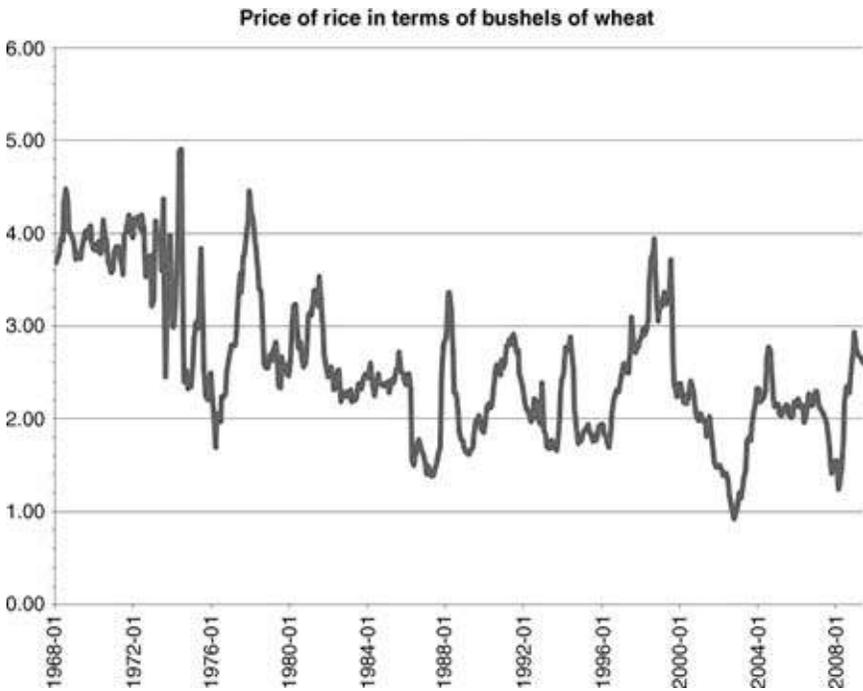
The charts in Exhibit 5.17 displaying price of rice in terms of gold and rice in terms of wheat respectively show how the holders of hard currency in developing nations—in this case, the U.S. dollar—feel the real level of prices of such commodities. The users of wheat and rice in many of the developing countries in Asia and Africa see the real escalation and prohibitive high prices of the staple foods on which their lives depend because they use their local currencies which are pegged or indexed to the dollar and not to the gold. This is not the case in the developed economies because their currencies and prices are tied to the value of gold.

It is sincerely hoped that this discussion will generate enough interest among world leaders as well as international economists and traders to set up a fair pricing system, using the RF commodity indexation principles introduced in this book.

### **GOLD: THAT AMAZING METAL**

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Gold is an important metal that has been used over the years as a reference currency and a store of value. This book is not promoting a return to the gold standard; it means to familiarize the reader with the gold market and



**EXHIBIT 5.17** Price of rice in terms of cwt rice per bushel of wheat.

how gold prices are fixed and, in some cases, “stabilized” if not manipulated, by speculators and traders. This brief study should shed more light and give the reader the background necessary to fully understand the RF commodity indexation rule. It is sincerely hoped that a new pricing system for world trade will be established, one that is fair to all the citizens of the world. As we have seen, rice farmers in Asia and other countries were in fact paid less (in terms of gold) for their rice in 2000 than in 1970 despite the fact that they collected more dollars (local currency), and the same is true for farmers of many other agricultural products. This situation makes it difficult to promote farming and food production, especially in many of the developing third-world nations.

Gold was the reserve reference currency of the world before the well-known Bretton Woods agreement set the U.S. dollar as the world reserve currency, in the ratio of 35 dollars to each ounce of gold. Gold has been used as a store of value over the years by central banks as well as by husbands showing their love to their wives, and it is used as a precious metal in industrial applications for its superior conductivity and other physical

characteristics. It is well-known that every government's central bank, including the International Monetary Fund (IMF), keeps a certain number of tons in gold reserves. Efforts to exert controls on leading economies in the world to keep inflation under control and to manage their money-printing presses have all pointed toward the use of gold (and possibly other commodities). It is interesting also to note that in 1999, at the IMF/World Bank Annual Meeting, a historic five-point agreement was reached. Fifteen European central banks, including the ECB (European Central Bank), declared their allegiance to the idea of the role of gold in the economy. Willem Duisenberg, president of the ECB at that time, stated that their agreement consisted of the following items:

1. Gold will remain an important element of global monetary reserves.
2. The 15 institutions will not enter the market as sellers of gold, with the exception of already decided sales.
3. Gold sales that were already decided would be achieved through a concerted program of sales over the next five years. Annual sales would not exceed 400 tons, and total sales would not exceed 2,000 tons.
4. The signatories to the agreement agreed not to expand their gold leasing and their use of gold futures and options during this period.
5. The agreement would be reviewed after five years.

### **Gold Reserves in the World<sup>32</sup>**

Analysis of the official gold reserves reveals very interesting results, which are detailed here to familiarize the reader of the amounts of gold that different countries in the world have set aside as reserves. In addition to these gold reserves, many countries add foreign currency reserves. The following is a summary of some observations about the per capita gold reserves<sup>33</sup> of central banks around the world:

1. Switzerland has the highest per capita gold reserve (1040 tonnes), at 4.6 ounces of gold for every Swiss citizen, followed by Lebanon at 2.19 ounces of gold per person. This is followed by the following groups:
  - a. The Eurozone countries: 1.16 ounces of gold per citizen (total reserves of 10,866 tonnes)
  - b. The United States: 0.86 ounce of gold per citizen(8133.5 tonnes)
  - c. Japan: 0.19 ounce per citizen (765 tonnes)
  - d. Russia: 0.11 ounce of gold per citizen (523 tonnes)
  - e. China: 0.02 ounce per citizen(1054 tonnes)
2. Both Canada and Mexico have negligible official gold reserves per capita (each has 3.4 tonnes)

3. The oil-rich Gulf countries' reserves range from 0.84 ounce of gold per citizen (Kuwait—79 tonnes) to 0.28 (Qatar—12.4 tonnes) and 0.18 (both Saudi Arabia—143 tonnes, and Bahrain—4.7 tonnes)
4. In many of the countries with a growing Islamic banking presence, we find the following reserves in tonnes and in ounces of gold per capita:

	Tonnes of Gold	Approximate per Capita Oz/Citizen
a. Lebanon	286.8	2.19
b. Algeria	173.6	0.16
c. Iran	302.3	0.14
d. Jordan	14.8	0.08
e. Turkey	116.0	0.05
f. Malaysia	36.4	0.04
g. Egypt	75.5	0.03
h. Indonesia	73.1	0.01
i. Pakistan	65.4	0.01
j. Bangladesh	3.5	Negligible

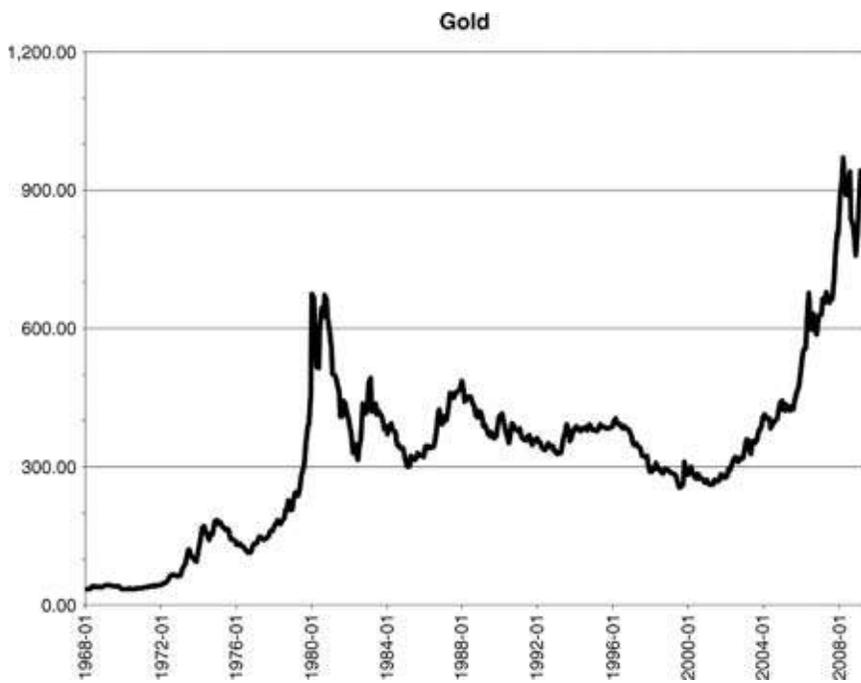
Does the official per capita gold reserve reflect—along with other currency reserves—the economic affluence of a country? This is a question that should be researched in terms of many factors, such as the countries' monetary policies, the contents of the reserves in foreign currency, and the nominal gross domestic product of the countries in terms of their local currencies and how they relate to the exchange rates.

It is believed that the solution is not returning to the gold standard, as some may advocate, but to reflect on the purchasing value of the convenient fiat money in each of the local economies by using the Shari'aa-based commodity indexation rule presented in this book.

### **The History of Gold Markets and Prices**

It is interesting to note that the gold futures market is one of the smallest volume markets in the world. Because it is so small, it can be extremely volatile when exposed to massive short-sale activities. The short position in gold, via derivatives, is the one of the larger positions in the world.

As shown in the gold price chart in Exhibit 5.18, the price of gold stayed relatively stable (and in some periods declined) between the early 1980s and 2005. This has been mainly due to the central banks of many of the world's countries selling their gold on paper, and using many commodity-trading



**EXHIBIT 5.18** Gold prices, 1968–2008.

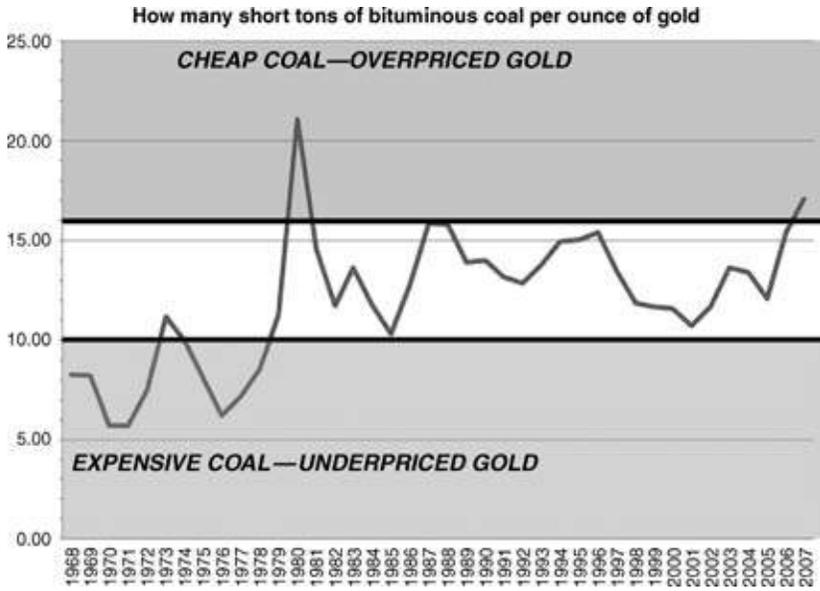
techniques. In one of these techniques, called *gold carry*, gold is borrowed (on paper and not physically) from the central banks (of mostly third-world countries) at a low interest rate and is used to flood the market to keep the price down or short gold and make money both ways.

Major players have included hedge funds and central banks of major industrial countries and some oil-producing countries, in addition to investment banks and other private banks. As the chart shows, gold prices stayed at \$35 per ounce before August 15, 1971 when the official convertibility of gold into dollars was in force. Exhibits 5.19 through 5.22 also indicate that gold is currently overpriced in terms of coal, oil, rice, and wheat.

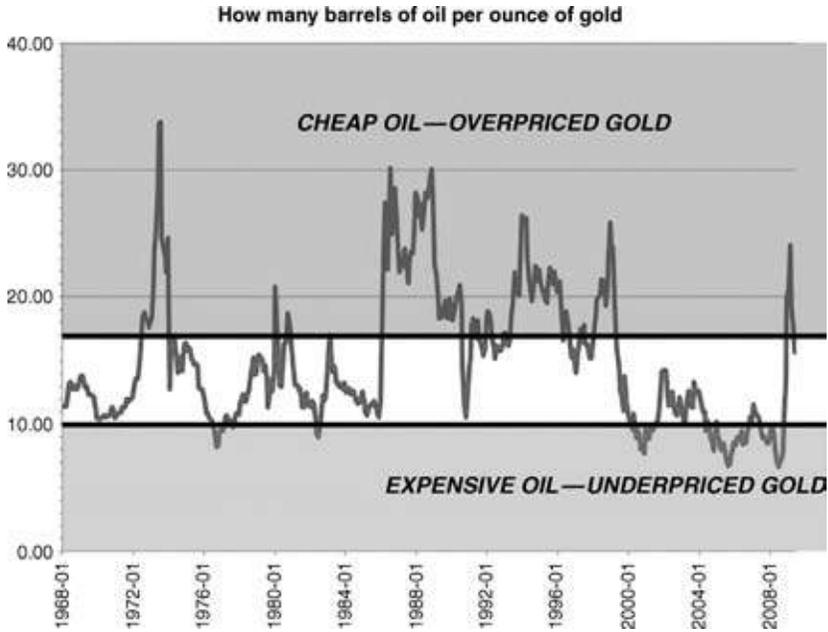
### **Gold Price Fixing**

The world center of gold trading is London at the London Bullion Market, operated by the London Bullion Market Association (LBMA).

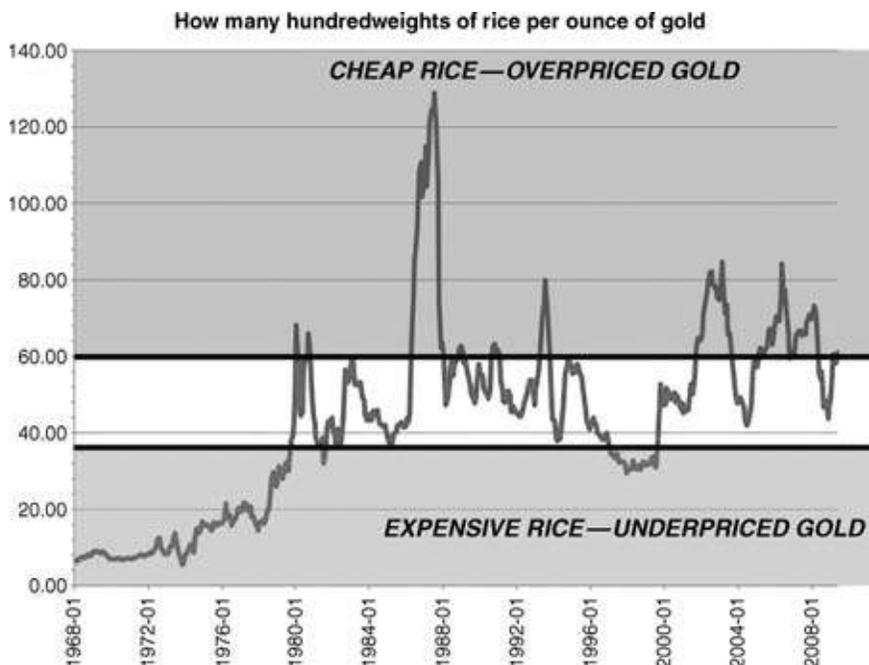
The practice of fixing gold prices began in 1919. It continued until 1939, when the London gold market was closed as a result of World War II. The market was reopened in 1954. When the central bank gold pool began officially in 1961, the Bank of England (as agent of the pool) maintained an open phone line with N. M. Rothschild during the morning fixing (there was



**EXHIBIT 5.19** Price of gold in terms of tons of coal.



**EXHIBIT 5.20** Price of gold in terms of oil.

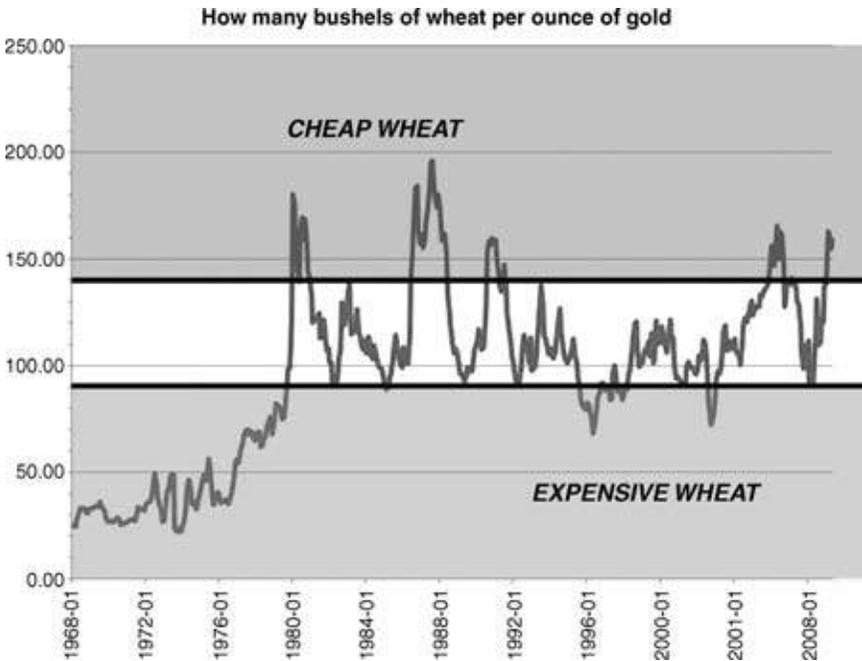


**EXHIBIT 5.21** Price of gold in terms of rice.

as yet no afternoon fixing). The objective was to fix the price around the \$35/ounce price (as per the Bretton Woods agreement) within a 1-percent band. In its current form, the London gold price fixing takes place twice each business day, at 10:30 A.M. and 3:00 P.M., in the Fixing Room. Five individuals representing each of the following banks sit at the fixing table:

- Scotia-Mocatta—successor to Mocatta & Goldsmid and part of Bank of Nova Scotia
- Barclays Capital—Replaced N. M. Rothschild & Sons when they abdicated
- Deutsche Bank—Owner of Sharps Pixley, itself the merger of Sharps Wilkins with Pixley & Abell
- HSBC—Owner of Samuel Montagu & Co.
- Société Générale

Price fixing is based on balancing supply and demand. Usually, the fixing takes less than 15 minutes. In 1979, when the Islamic Revolution of Iran erupted, the afternoon fixing lasted an hour and 39 minutes, due to price volatility.



**EXHIBIT 5.22** Price of gold in terms of wheat.

## **MARKING THE INVESTMENT TO THE MARKET**

The RF banking and finance discipline, in an effort to neutralize the effects of the prevailing fiat currency in the local markets, requires that we first apply the commodity indexation rule to check on the existence of a bubble in the business that we are considering to finance. This process is followed by a mark-to-market approach, evaluating the economic prudence by calculating the real return on investing in this item, using its actual real market rental value. This way, it is affirmed that money is not rented using the prohibited *riba*—and that the rent is that of the market rent of the facility in the market place. For example, in the case of:

- *A car*: The value for which this car is leased in the market (dollars per day), as obtained from actual operating leasing companies.
- *A house*: The actual market rental or lease rate (dollars per square foot) of a similar house in the same neighborhood. It is important to make sure that this house has essentially the same specifications as those researched. These rates can be obtained live from real estate agents.

- *A commercial building*: The actual market lease rate of the space.
- *A piece of equipment*: The market rental value, in dollars per day.
- *A business*: The lease rate an owner is willing to lease it for in the market.

This rate is used to calculate the rate of return on investment, because RF bankers *do not rent money*—in fact, they invest with and in the customer. If the rate of return is higher than the target return for the institution (which is the return expected in the market from shareholders and depositors), then it makes sense to finance/invest with the customer. If the return is lower, then it does not make sense to finance/invest, and the application is declined. This rejection is applied even if the customer has fulfilled all standard banking requirements from the creditworthiness test, the appraisal test, and the capacity for servicing the financing obligation. We will discuss this process in more detail in Chapters 10 and 13, and examples will be given.

## NOTES

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2. J. Laurence, *The History of Bimetallism in the United States*, Chap. 8, D. Appleton and Company, 1901.
3. David H. Friedman, *Essentials of Banking*, American Bankers Association, 1989.
4. These are episodes of irrational public hoarding and runs on banks.
5. Based on David H. Friedman, *Essentials of Banking*, American Bankers Association, 1989.
6. Yahia Abdul-Rahman, *LARIBA Bank, Islamic Banking, Foundation for a United and Prosperous Community*, 1994. Published by the author.
7. *Ibid.*
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10. This section is based on a comprehensive review of history as outlined by Jude Wanniski, *The Way the World Works*, Touchstone/Simon and Schuster, 1978.
11. A short history of modern finance, *The Economist*, October 16, 2008, pp. 79–81.
12. Professor John Taylor, Stanford University. Please Visit Professor Taylor's Personal Home Page <http://www.stanford.edu/~johntayl/>.
13. Richard A. Brealey and Steward C. Meyer, *Principles of Corporate Finance*, 6th ed. Irwin McGraw-Hill, London, 2000, p. 49.

14. R. Charles Moyer, James R. McGuigan, and William J. Kretlow, *Contemporary Financial Management*, Thomson One—Business School Edition and Infotrac, pg. 163.
15. For a detailed outline of the many papers, books, and analyses on the Taylor Rule, please visit [www.stanford.edu/~johntayl/PolRulLink.htm](http://www.stanford.edu/~johntayl/PolRulLink.htm).
16. GDP (gross domestic product) is a measurement of the national income and output for a given country. It is a measurement of the total value (in local currency or in dollars) of all final goods and services produced in that economy in a given year.
17. Ahmad Kamal Mydin Meera, *The Islamic Gold Dinar*, Pelanduk Publications, Malaysia, 2002.
18. Narrated by Abu Sa'eed Al Khidry.
19. Ibid. Also reported and authenticated by Imam Ahmad and Imam Bukhary.
20. Muslim; the scholar in Hadeeth reported that a person came to the Prophet (pp) to gift him with dates. The Prophet (pp) asked him how he could afford these high-quality, large-size dates and said: "this is not our type of dates." The person said "Oh Prophet Muhammad (pp), we sold two containers of our dates for one container of the better-quality large dates." The Prophet (pp) said: "This is what Riba is!" He proceeded to tell the person: "Return these dates. Then sell it [our dates] in the market for [real] money and use the money to buy the other dates." In another story reported by the scholar Abu Dawood: A person brought the Prophet (pp) a gold bracelet which had beads woven in it, which he had purchased for nine or seven dinars [gold currency at that time]. The Prophet (pp) said: "This transaction must be conducted by separating the gold from the beads. Return it. And price each separately." And the scholar Muslim further reported orders to separate the gold from the beads, and said that the gold should be exchanged for the same weight of gold.
21. By the Hadeeth scholar Abu Dawood.
22. Narrated by Bukhari, one the recognized authorities on the compiling of the Prophet's Hadeeth.
23. Peter Kilborn, "Baker Hints at Gold As Guide on Policy," *The New York Times*, October 1, 1987.
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27. National Association of Home Builders (NAHB): [www.nahb.org/page.aspx/category/sectionID=131](http://www.nahb.org/page.aspx/category/sectionID=131).
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29. The United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS): [www.nass.usda.gov/QuickStats/Create\\_Federal\\_All.jsp](http://www.nass.usda.gov/QuickStats/Create_Federal_All.jsp).
30. The United States Department of Energy (DOE), Energy Information Administration (EIA) [http://tonto.eia.doe.gov/dnav/ng/ng\\_pri\\_sum\\_dcu\\_nus\\_m.htm](http://tonto.eia.doe.gov/dnav/ng/ng_pri_sum_dcu_nus_m.htm).

31. The United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS): [www.nass.usda.gov/QuickStats/Create\\_Federal\\_All.jsp](http://www.nass.usda.gov/QuickStats/Create_Federal_All.jsp).
32. Gold sales cost Europe's central banks \$40bn - By Javier Blas in London, Published: May 6 2009 23:FT.com, May 6, 2009.
33. World Gold Council; Gold Research and Statistics web site: [http://www.research.gold.org/reserve\\_asset/](http://www.research.gold.org/reserve_asset/).