THE TRUTH IN MONEY BOOK

BY
THEODORE R.THOREN
AND
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"The privilege of creating and issuing money is not only the supreme prerogative of government, but it is the government's greatest creative opportunity."

Abraham Lincoln

Why has the United States strayed from Lincoln's wisdom and allowed a non-government body to assume the power to create money?

Why are there so many theories, half-truths and crazy notions about the cause of inflation?

Why can't experts agree on its cause?

Why does President after President request studies on inflation and still prices continue to skyrocket?

Why is your money becoming worth less faster while the experts debate and the government does nothing?

If you want to know the answers you need to read this book.

The Truth in Money Book is based on facts. These facts are shocking but lead directly to the solution of our money problem. This solution has been hidden by ignorance of a simple mathematical principal.

Intriguing? Yes! The authors' discovery of the gross errors in the money system were made and confirmed after years of careful research. The scientific understanding of money represents a phenomenal breakthrough. This is the most important book on money you will ever read.

Dedication

This textbook is dedicated to Peter Cook. His 40 years of research and analysis of fractional reserve deposit expansion money systems, together with the objective reports of his findings and his discovery of Monetary Science, inspired the authors to write this book.

We are indebted to Peter Cook for his unselfishness in making his library available to us and for his infinite patience as a teacher of the truths that are vital to monetary justice and the survival of free enterprise.

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Foreword

From the beginning of civilization, monetary instability has persisted as the predominating cause of human want and woe. This booklet examines the problem of monetary instability using simply inductive reasoning - the scientific method of looking from effect back to cause.

This study of the cause of monetary instability has led the authors down a revolutionary path where conventional economic thought had to be overturned to allow simple truths to operate. The solution to our monetary troubles lies not in some complex economic formula but in the application of honesty and common sense to finance. This booklet describes how it can be done, and why the effect will be stability and prosperity for all mankind.

An impossible task? No, not at all. Let's look at the problem through the eyes of a young friend of ours who asked us one day, 'Why is it that prices keep going up?' Here is our answer.

The Authors

"Prices keep going up-up-up," Ed complained to me. "Joans little shoes cost more today than my own number twelves did five years ago. And now I need a new car. My 1976 Chevy is all rusted out. Do you know that the price tag on a Chevrolet is more than it was on a small Cadillac ten years ago? Why is this, John? Is most of it in the cost of labor?"

Ed didn't give me time to answer. He continued, "I'm working at an extra night time job too. We're not extravagant, but I can hardly make enough to pay my bills. A pay raise doesn't solve my problem for very long. I need a raise every six months just to keep even with the increased cost of everything. And now they've raised my real estate taxes 30% out there in Maple County! There's something seriously wrong, John, but I simply can't figure out what it is! Can you?"

"Ed," I said, "Have you ever considered..."

Ed broke in impatiently, "I read the newspapers but they are of no help! Sometimes I think they are more confused than I am. I'm not lazy. I'm not greedy. We are good people trying to make a good honest living. Why are we failing at it?"

I had never seen Ed in such a serious mood as he went on, "I'm thinking that there's something 'fishy' going on in this country. You've been around a lot longer than I have. If you know what's wrong I wish you'd tell me, then maybe I could do something to protect myself and my family."

Ed looked searchingly at me and I thought to myself, where shall I begin to answer his questions? These were the very same questions I had asked myself five years ago. A short answer wouldn't satisfy him since I knew how long it had taken me to discover the true but amazing reason for

inflation. I hadn't believed the true reason myself at first. Would he?

Finally I said, "I know your feelings of frustration. I've been through that stage myself. Being semi-retired now I have taken the time to study this problem in depth for several years. If you and Martha would come over to our home some evening - bring a few friends if you wish - I'll explain in simple language, by means of some charts, the precise reason why all of us have serious money problems today."

Ed seemed eager to accept, saying "I'd love to come if it will help me to solve this problem."

And so he and Martha and their good friends Earl and Nancy did come over, and this is what I told them.

CHAPTER ONE

THE FIRST EVENING WITH OUR YOUNG FRIENDS

Asking why was the first step

"I became interested in studying inflation when I simply asked myself why it seemed to be that intelligent people could suffer so from money troubles which were not of their own making.

"In 1974 a group of my friends who are businessmen were drawn together, one by one, as a consequence of the studies each had begun independently. They wanted to understand why it was that inflation was continuing and in fact accelerating in spite of the reported efforts of politicians and economists to stop it.

"The group met informally about twice a month to exchange ideas, data and reading references. Perhaps the most important benefit of those exchanges was the challenge to keep our studies and thinking strictly on-target namely, to discover precisely the fundamental cause of inflation!

"We formed a special study group which now consists of four professional engineers and the president of an advertising, marketing and public relations firm. Each one of us has had at least twenty years of experience in big business, in responsible positions. Our stock-in-trade is the ability to solve problems, engineering problems, accounting problems, financial problems, organization problems.

"It was natural for us to use the scientific method in our efforts to understand the cause of inflation. We have adhered rigorously to the objective of discovering the precise truth about what has been happening economically

to the people of the United States in recent years, in fact, for decades!

"The results of our concentrated diagnosis of inflation can be summarized in one simple sentence:

INFLATION IS CAUSED BY GROSS ERRORS IN THE DESIGN OF OUR MONETARY SYSTEM

"Okay that's obvious," Ed said, "but what are they?"

"Well, very simply, the problem lies in the so-called Federal Reserve System which is neither a Federal, that is a government agency, nor is it a Reserve of real money!

"The gross errors in the monetary system are inherent, that is, they were designed into the system; whether by accident or intent is not relevant at this point.

"We choose to call these gross errors 'design errors' because they can be corrected by a change in the 'system design.' If the thermostat in your home heating system continued to activate the furnace for more heat when the temperature in the living room is 100°F., you would take steps to correct the heating system, because there is either a design error or a system malfunction!

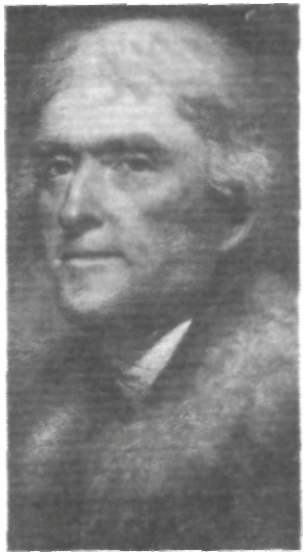
"In the Federal Reserve System the overheating or inflation is caused by design errors, which we will identify, and which have existed in the system since the Federal Reserve Act was approved by the Congress on December 23rd 1913. The United States is now reaping the cumulative effect of that faulty design. On the other hand a properly designed monetary system is stable -- that is, self-correcting.

"The design errors in the Federal Reserve System are subtle but unmistakably identifiable and correctable by a simple act of Congress."

Earl had been sitting quietly attentive up to this point

but now he broke in, "Is it premature to ask you to name iust one of those 'design errors'?"

"This is just the right place to name the most important design error," I replied, "it is this: most of our money and credit comes into existence as debt which must ultimately be repaid with interest to the private Federal Reserve and commercial banks.[1] Thomas Jefferson had the key to the solution 200 years ago, and he expressed it this way:



If the American People ever allow the banks to control the issuance of their currency, first by inflation and then by deflation, the banks and corporations that will grow up around them will deprive the people of all property until their children will wake up homeless on the continent their fathers occupied. The issuing power of money should be taken from the banks and restored to Congress and the people to whom it belongs, I sincerely believe the banking institutions having the issuing power of money are more dangerous to liberty than standing armies.[2]

THOMAS JEFFERSON

"The subject of money is disposed of by the United States Constitution with extreme brevity:

Article 1, Section 8, Clause 5: The Congress shall have the power...to coin Money (and) regulate the value thereof...'

"The framers of the Constitution understood the importance of delegating this Power to the Congress. Listen to

Benjamin Franklin on 'Prime Cause of Revolutionary War'

The refusal of King George to allow the colonies to operate on an honest, colonial money system, which freed the ordinary man from the clutches of the manipulators, was probably the prime cause of the Revolution.

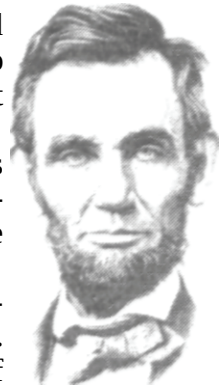
If you do not exclude them from these United States, in this Constitution, in less than 200 years our descendants will be working in the fields to furnish them substance while they will be in the counting houses rubbing their hands.

I warn you gentlemen, if you do not exclude them (from Government) for all time, your children will curse you in your graves.[3]

BENJAMIN FRANKLIN

"These are strong words. Franklin's 200-year deadline has now passed. What we will be talking about in our discussions on inflation will help us to discover whether he was right or not. Have the 'manipulators' been excluded? Are the American people working for their creditors?

"In more modern times, Abraham Lincoln was the president who most clearly understood the importance of debt-free government financing and the imperative necessity for the government to spend money into circulation rather than to borrow it into circulation."



The Government should create, issue, and circulate all the currency and credit needed to satisfy the spending power of the Government and the buying power of consumers.

The privilege of creating and issuing money is not only the supreme prerogative of Government, hut it is the Government's greatest creative opportunity.

By the adoption of these principles, the long-felt want for a uniform medium will be satisfied. The taxpayers will be saved immense sums of interest. The financing of all public enterprises, the maintenance of stable government and ordered progress, and the conduct of the Treasury will become matters of practical administration. Money will cease to be master and become the servant of humanity.[4]

ABRAHAM LINCOLN

"These three men said that there is an important relationship between an individual's freedom and the money in his pocket.

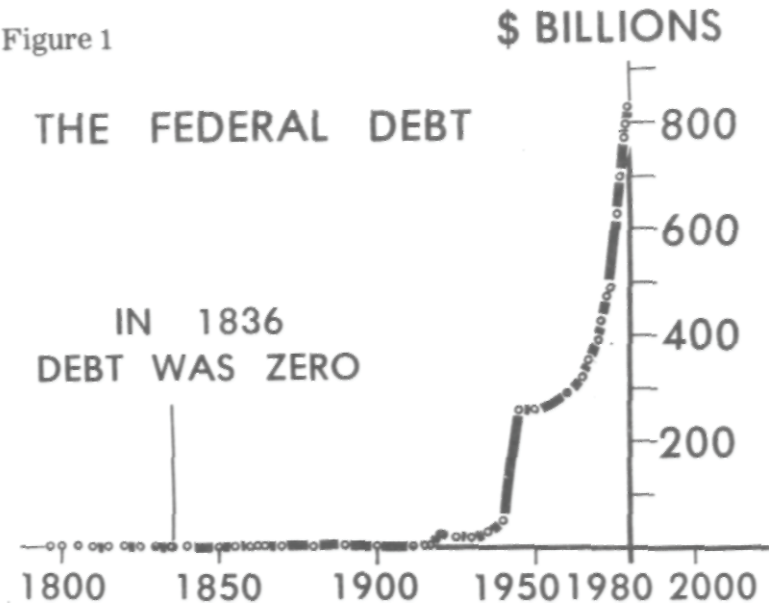
"But even they weren't saying anything that is particularly new. In Proverbs we read that 'The borrower is servant to the lender'. It's a simple truth. I'm sure all of us in this room have had experiences when our plans and activities have been restricted by some financial responsibility to a lender — maybe a relative or a credit card company or a savings and loan company. When these obligations become greater than our income we're in serious trouble and all of our activities become limited because of our debts."

"I know one organization that doesn't ever seem threatened by overspending and debt: that's the government," Nancy said, "When it wants to spend more money it just votes for a bigger federal debt. I would love to be able to manage my household by that kind of rule!"

"I'm glad you've mentioned the federal debt. It really is a serious problem," I said, "do you suppose there could be some connection between the federal debt and inflation? Let's take a look at the growth in the federal debt since the First Congress convened in 1789 as shown in Figure 1 and then maybe we'll be able to see if it has any effect on our own finances."[5]

"In September 1979 the debt was $834 billion and rising steeply. In 1836 the debt was zero. This was during Andrew Jackson's administration. The first major increase to $25 billion was in 1916-1919 (World War I). Then from 1940 to 1946 (during World War II) the debt jumped to $269 billion.

Figure 1



It has been rising steeply ever since, even in time of 'peace'. "People sometimes ask, 'Why worry about the federal debt? We owe it to ourselves, don't we?'

"The truth is we owe it to the holders of government bonds among whom individual citizens hold only about 10% ($81 billion). We owe some $101 billion to the so-called Federal Reserve banks, which you will be interested to know, are just as private as the commercial banks which hold about $95 billion worth.[6]

"As shown in Figure 1, this $834 billion of federal debt was accumulated over a 200 year period, very slowly until 1913, but skyrocketed since 1940. Congress is responsible! Congress passed the Federal Reserve Act in 1913. Our present Congress is neglecting to correct the Fed's design errors. So 'we the people' must continue to pay and pay."

Ed exclaimed sharply, "There just has to be a logical ex-

Figure 1-1

OWNERSHIP OF FEDERAL DEBT 1979 JANUARY

Held by	Amount $ Billions
Federal Reserve Banks	101
Commercial Banks	95
Total Primary Debt (to private banks)	196
Government Agencies and Trust Funds	168
Individuals- Includes Series E&H Bonds	81
Corporations- Includes Life Insurance Cos.	38
State and Local Governments	68
Foreign and International	142
Mutual Savings	5
Miscellaneous	93
Total Secondary Debt (to non-banks)	595
Grand Total Debt	791
Percent held by individuals 81/791 = 10%	

planation for that kind of debt-acceleration! I wonder what it is?"

I started to answer, but Earl couldn't wait with his question.

"Ed," he said, "America has been living with that accelerating debt for the past 35 years. Maybe it doesn't matter any more how big the debt gets."

"Will the federal debt continue steeply upward beyond 1979?" Martha asked. "Tell us, will it?"

"Well," I replied, "our study group asked that same question in 1974 when the debt was $475 billion. Rather than speculate on the future, we chose to concentrate on understanding precisely what caused the debt to get to $475 billion. And we did find out! If you are willing to pursue this objective search with me a little further you will be able to answer your own question with certainty!

"The annual interest cost on our federal debt is shown in Figure 2."[7]

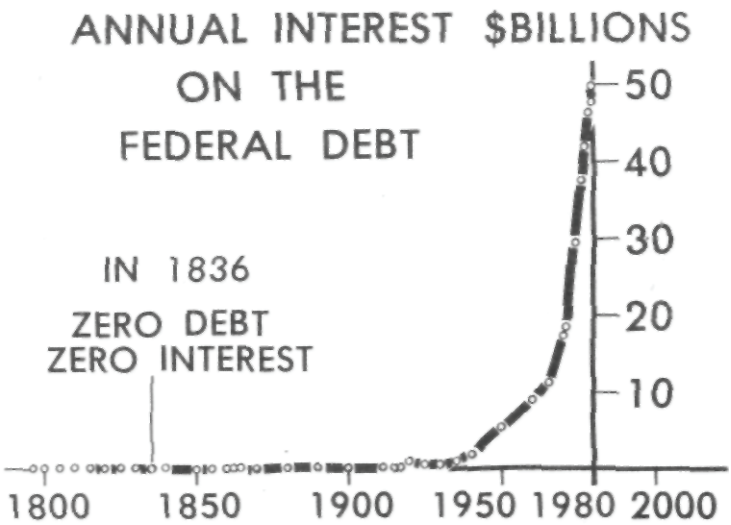


Figure 2

"In 1979 the interest cost on the federal debt was $48 billion, the third biggest item in the budget after welfare and national defense.[8] In 1836 when the debt was zero the interest cost was zero. But both curves are similar in shape because the annual interest cost is a percentage of the debt. In 1979 this was 6%. (You can calculate this by dividing $48 billion by $834 billion which equals 6%)."

At this point Ed broke in, "How much longer can we stand this rate of growth of the debt? According to your charts the debt is increasing faster every year. But even so I don't feel it----or do I?"

"Are you sure you don't feel it?" I asked. "I thought you were concerned about the cost of groceries and everything else doubling in the past ten years. I believe you said that was your personal experience. Do you suppose that the cost oi your groceries is somehow related to the increase in the federal debt?"

Ed hesitated for a few moments. "Well," he said, "If there is a relationship, it is not obvious to me!"

Earl's wife Nancy could hardly wait to ask her question, "But who gets that $48 billion of interest you show on Figure 2? And another thing, I don't see the relationship between interest and the cost of my groceries!"

"Take my word for it my young friends," I said, "there is an undeniable relationship between DEBT and INTEREST and INFLATION! We will come to that presently. But may I suggest that you first commit to memory three key facts from Figures 1 and 2,

$834 BILLION WAS OUR FEDERAL DEBT IN 1979

$48 BILLION WAS THE INTEREST ON THAT DEBT IN 1979

THE PATH OF BOTH THE DEBT AND THE INTEREST CONTINUES STEEPLY UPWARD

"You might wonder if other countries in the past have suffered from such indebtedness as the United States is now experiencing. The answer is, yes they have. Consider Ancient Rome, Greece, Germany[9] after World War I and France in the 1790's which preceded the French Revolution, and brought the Dictator Napoleon to power.

"The American historian Andrew Dixon White, in the late 1800's, published an accurate record of the French inflation in his helpful book entitled 'Fiat Money Inflation in France'.[10] White recorded not only the quantity of the debt but also the corresponding cost of various items of food, clothing and fuel. Figure 3 was plotted from the data in White's book. It shows the course of Debt Money Inflation in France during the decade 1790-1800."[11]

Figure 3

"In 1790 France was having financial problems due to prior involvement in foreign wars (including the American Revolution) as well as government excesses at home.

"The French Assembly was persuaded to issue bonds for the purpose of paying off creditors.

"In the name of France, the Assembly expropriated lands owned by the Catholic Church to back the bonds.

"The bonds were sold to the bankers for Treasury credits and paper francs (the basic unit of French money) which the government then spent into circulation.

"On Figure 3 that first little circle in April 1790 represents the first issue of this Debt Money, 400 million francs. (0.4 billion) This was all spent by September. The French Assembly could see no ill effects of inflation so they borrowed 800 million francs more from the bankers in September.

"The increase in France's National Debt can be traced by the circles. The increase was gradual at first but within a few years it got out of control -- as inflation always does! By mid 1795 the debt had increased to 14 billion francs. One year later it was 40 billion. Compare the shape of Figure 3 with Figure 1. History is repeating itself!

"Let's see what was happening to consumer prices in France. A table of prices was published in 1795. Historian A.D. White converted the prices into American money of those years. Here are a few extracts:[12]

	1790	1795
Bushel of flour	40 cents	45 dollars
Cartload of wood	4 dollars	500 dollars
One cabbage	8 cents	5 dollars
Pair of shoes	1 dollar	40 dollars
Twenty-five eggs	24 cents	5 dollars

Figure 4

"History records the grim consequences of that runaway inflation, the collapse of the French franc, and bankruptcy of the middle class. France did not recover from this collapse for over 40 years!"

Ed broke in again, "I'll accept your story about what

happened in France. I can check on that in the history books. But you still have not convinced me that there is any direct relationship between the federal debt and the increasing price of groceries!"

"You are correct about that, Ed, I haven't proven it yet. We're only reporting what happened in France, not what caused it to happen! But we will soon come to that."

"And here is another question," Ed added, "You said that the French Assembly issued bonds which they exchanged for those billions of paper francs you have plotted on Figure 3. I just don't understand that sleight-of-hand at all."

"Well," I said, "perhaps now is a good time to examine the steps used to create money whether in France, Britain or the United States. I feel sure that what I am going to explain now you will not believe! Are you all ready for a big surprise?"

Ed and Martha glanced at their friends who smiled quizically but said nothing, so I proceeded.

"We have been talking about money but we haven't really defined it. Here are two definitions taken from publications of the United States House of Representatives Committee on Banking and Currency:

'Money is anything that people will acccept in exchange for goods or services, in the belief that they may, in turn, exchange it, now or later, for other goods or services. Any number of different materials • including paper IOU's • may serve as money. How money functions, and what money represents are its important aspects and not simply what it is made of.

'Today, the American people use coins, currency (paper money) and bank deposits (checkbook money) as money.'[13]

"Most Americans think of money in terms of paper dollars and coins. To a small child money is copper pen-

nies, nickels and dimes. To elementary school children money 'is for lunch'. Money includes quarters and even an occasional dollar bill when mother can't find her change-purse as the school bus comes to a hurried stop. A high school student thinks in terms of dollar bills, or 'fives', and even 'tens' and 'twenties'.

"When a young person opens his first bank account he becomes aware of money in another form, namely bank credit money, or simply bank money. It is quite natural to think of the numbers in our bank books in terms of paper money and coins. The bank teller will give you cash for the dollar numbers written on your personal check. One seldom raises the interesting question, 'Suppose everyone in a community would write and sign a check for the total amount in his checking account and submit it to his teller for cash. Could everyone get his total cash that day?'

"The answer is, 'No he could not!' There is not that much cash money in the banks on any one day. About 25% of the money supply is in the form of cash. 75% of the money is in the form of figures written in a book, or as numbers in depositors' checking account passbooks. Of course the bank maintains corresponding numbers in its books of account. To emphasize, about 75% of bank deposit credit does not exist as cash and never will!"

"Well," Ed said, "does it really matter? The people won't all want their money in cash on the same day. Statistically, that could never happen."

COMPONENTS OF MONEY STOCK MEASURES[14]

	Currency $ billion	Demand Deposits (checking accts) $ billion	M1 Money Supply	Currency %of M1
April 1976	76.6	225.2	301.8	25.4%
April 1977	83.3	238.0	321.3	25.9%
April 1978	91.3	255.1	346.3	26.4%
April 1979	101.4	269.6	371.1	27.3%

Figure 5

"I saw it happen when I was about your age Ed," I replied. "In fact I was caught in it. When people lose con-fidence in their banks as they did in 1933 they will want their money in cash. Thus 'a run on the bank' develops. I stood in that line intending to draw my money out. It was only $110 but important to me at the time. Before I reached the teller's window, President Franklin Roosevelt had closed all the banks nationwide by Executive order to avoid a panic. Most banks reopened within a few weeks. Some never did, and those depositors lost their money. Some banks were liquidated and the depositors were paid off partially or in full during the next 5 to 20 years."

Nancy was eager to ask her question, "Was there enough cash money in circulation in your community to keep business going while the banks were closed?"

"Frankly I wouldn't know. I was young then and had many important things on my mind. I knew I was fortunate to have a job! My boss paid us in cash for about six months as I remember. I don't know where he got the cash. I didn't wonder about that until years later.

"We have digressed a bit, but to return to our main theme, two major facts about the money supply that you should keep in mind are these,

APPROXIMATELY 25% OF THE MONEY SUPPLY IS IN CASH.

APPROXIMATELY 75% OF THE MONEY SUPPLY
IS IN BANK DEPOSIT CREDITS
WHICH ARE SIMPLY NUMBERS
IN DEPOSITORS' PASSBOOKS,
AND CORRESPONDING NUMBERS
ON THE BANK'S RECORDS.

"Is a check money?" Nancy asked.

"Your personal check is not money," I explained, "but it is a convenient way to transfer money. As you know, wages and salaries are mostly paid by checks. This is a convenient method for transferring bank deposit credits from the employer to the employee. A personal check presented to the bank teller in exchange for cash money authorizes the bank to subtract that amount of numbers (dollars) from your checking account. So in a practical sense we could say honestly that a personal check represents money or is convertible into money."

"Is gold money?" Martha inquired.

"Gold and silver are not money in the United States," I replied.

"But I remember reading about ten-dollar gold coins and real silver dollars," Martha responded.

"That's correct," I agreed, "paper dollars were redeemable in real silver dollars prior to 1957. Gold dollars were legal money prior to 1934; and they were of several denominations, $1, 2 1/2, 3, 4, 5,10 and 20 which was called a Double Eagle.[15] I remember President Franklin Roosevelt speaking on the radio in 1933 asking everyone to turn in his gold coins at the bank in exchange for paper money. The law imposed a penalty for refusal."

"But what was the reason for calling in the gold coins?" Earl asked.

"Well because Congress had voted us off of the Gold Standard!"

"But why?" Earl demanded. "I thought that so-called 'hard money' made of real silver and real gold was the most reliable kind. Maybe that's the reason we're having run-away inflation, because we went off the gold standard in 1933. I'm looking at Figure 1 now, and I see that the upward surge of the federal debt began in the 1930's. Right?"

"Yes," I agreed, "it started then, that is true. You will hear many arguments in favor of returning to gold as a standard for our monetary system, and there are as many who argue against doing so. May I suggest that we keep a totally open mind on the matter of the gold standard as we proceed?

"Please recall we were asking ourselves the question, 'What is money?' Would one of you like to define money based on the facts we have been discussing?"

No-one volunteered so I asked, "Perhaps you would like me to define it?"

They seemed to prefer that so I continued.

"Here is a simplified definition of money:

WHAT WE ARE USING FOR MONEY IN THE UNITED STATES TODAY IS PAPER FEDERAL RESERVE NOTES AND METAL COINS NOT OF SILVER OR GOLD. BUT MONEY IS MOSTLY NUMBERS WRITTEN IN DEPOSITORS' PASSBOOKS AND SHOWN ON THE BANKS' RECORDS AS 'BANK DEPOSIT CREDITS'.

The group pondered this while I repeated it. They agreed to accept it in the interim so we proceeded. I took a one-dollar bill out of my wallet and held it up.

"Have you ever wondered how a dollar bill-Federal Reserve Note like this comes into existence?" "Sure," Ed said, "It was printed." "Right, but who authorized the printing?" "The government. I suppose," he replied, "but I'm guessing now I don't know positively." I pointed to the top line on the bill, "What does it say?" Ed read the words, "The United States of America and above that is Federal Reserve Note".

"Correct. Now what is a note?"

"Well," he said, "a note in banking relates to a promise to pay a debt." Then he continued, "Do you mean to say that this dollar represents a one dollar debt?"

"Precisely," I said, "that is what it means."[16]

"A debt to whom?"

"To the Federal Reserve Banking System."

"Well then we owe it to ourselves!" he said with obvious relief.

"That's what many people think Ed, but the truth is, that we the people oi the United States are 'head over heels' in debt to the Federal Reserve and commercial banks. Incidentally, did you know that the Federal Reserve is a private bank?[17,17-1,18]

If you want to prove it to yourself, write a letter to a Federal Reserve Bank requiring a reply. The answer will come back to you in a regular stamped envelope - not one franked 'Official Government Business.' Or simply open your telephone directory and look up 'Federal Reserve Bank'. It is not listed under United States Government or Treasury Department because it is not a government agency. You will find it listed in the F's with other private corporations. Figure 5-1 is an excerpt from the Cleveland, Ohio telephone directory for 1979.

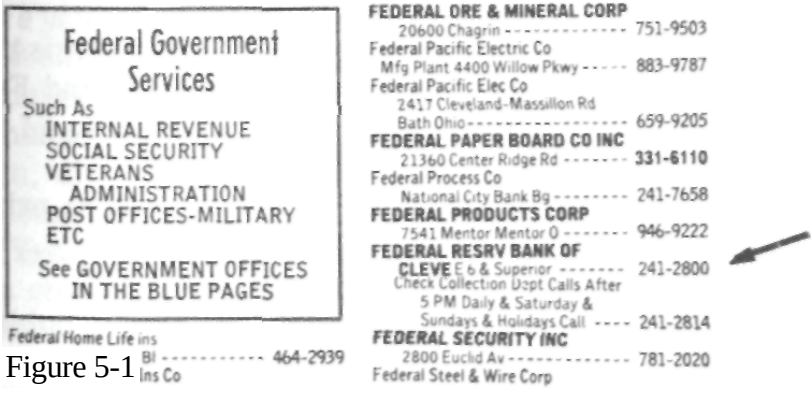

Federal Government Services
Such As
INTERNAL REVENUE
SOCIAL SECURITY
VETERANS
ADMINISTRATION
POST OFFICES-MILITARY
ETC
See GOVERNMENT OFFICES IN THE BLUE PAGES
Federal Home Life ins
Bl ---------- 464-2939
Ins Co
FEDERAL ORE & MINERAL CORP
20600 Chagrin ---------- 751-9503
Federal Pacific Electric Co
Mfg Plant 4400 Willow Pkwy ----- 883-9787
Federal Pacific Elec Co
2417 Cleveland-Massillon Rd
Bath Ohio ---------- 659-9205
FEDERAL PAPER BOARD CO INC
21360 Center Ridge Rd ------- 331-6110
Federal Process Co
National City Bank Bg -------- 241-7658
FEDERAL PRODUCTS CORP
7541 Mentor Mentor O ------- 946-9222
FEDERAL RESRV BANK OF
CLEVE E 6 & Superior ------- 241-2800
Check Collection Dept Calls After
5 PM Daily & Saturday &
Sundays & Holidays Call ---- 241-2814
FEDERAL SECURITY INC
2800 Euclid Av ---------- 781-2020
Federal Steel & Wire Corp

Figure 5-1

"I'm confused." Ed remonstrated, "Recently the President of the United States appointed a new chairman of the Fed. If the Fed is a private corporation, how come he appoints the top man? The President doesn't appoint the chairman of General Motors or any other private corporation."

"Ed, let me explain." I replied, "The Federal Reserve organization is composed of two main bodies.

1. The Board of Governors. This is an agency of the Government. There are seven members. Each is appointed by the President for a fourteen year term and confirmed by the Senate.

2. The Twelve Federal Reserve Banks. These are located as follows: Boston, New York, Philadelphia, Richmond, Atlanta, Cleveland, Chicago, St. Louis, Dallas, Kansas City, Minneapolis and San Francisco. These banks ARE NOT government agencies.

"May I repeat, these banks are private corporations. Their employees are not under Civil Service."

"Well, I'm glad to get that straightened out in my mind," Ed replied with a sigh, "I have several other questions about the Fed but I guess they can wait."

"May I refer you to a little book," I replied, "it is titled 'The Federal Reserve System - Its Purposes and Functions' published by the Board of Governors of the Federal Reserve System in 1939."

"Does the book admit that the Fed banks are private corporations?" Earl asked.

"No, but they don't deny it either." I replied.

"Maybe the Board of Governors prefers not to publicize that fact." Earl continued.

"Perhaps," I replied, "but let us get on with our ex-

amination of the money creating process. The Federal Reserve Banks create money out of thin air by writing checks against no funds for their expenditures such as employees' salaries or the bank's real estate taxes. This act is 'spending money into circulation'.

"The Federal Reserve Banks also create money out of thin air to buy Government Bonds from the United States Treasury. This act is 'lending money into circulation, AT INTEREST'. It is accomplished by the Fed making bookkeeping entries of checkbook credit to the U.S. Treasury. Because the Treasury never collects enough taxes to cover all the debts that Congress contracts for, the difference is made up by borrowing from the money creator, which is the Fed.[19] We the people are responsible to repay. This maneuver has been going on since 1913 the year when Congress created the Federal Reserve!"

My young friends looked at me in silence. Finally Earl spoke up, "This is all new to me. Frankly until this evening I never questioned the wording on a dollar bill or who printed them. I don't remember ever studying about a Federal Reserve Bank when I was in high school. Of course when I was seventeen, basketball was more important to me than learning how the banks operated."

Ed laughed. "Your priorities have changed somewhat since you and Nancy married eight years ago."

"Well," responded Earl, "you're not the carefree teenager either that you were when we enrolled in technical school. But I'm curious about 'creating money'! John, did I hear you correctly? Did you say that the Federal Reserve created money out of nothing?"

"Yes, you heard me correctly," I replied, "but that's only a small part of the money creating process. The commercial banks throughout America create five times as much money as the Fed does."

"Do you mean that my local bank prints dollar bills?"

"No, that's not what I said. Money is not all dollar bills and coin. Most of our money is commercial bank credit, remember? That is what your bank creates out of nothing -bank credit for them, but debt for you! Briefly this is how they do it. I presume your bank holds the mortgage on your home, Earl."

"Yes, and what a load it is, $40,000 for 30 years."

"Well, when you signed the mortgage papers, the bank simply recorded on its book a $40,000 debt against you, repayable in monthly installments - at interest."

"Of 10%." Earl volunteered.

"Have you figured how much you will have paid the bank in those 30 years?"

Earl turned to his wife. "Nancy do you recall the total?"

"No, I don't remember but I can't forget the monthly payment of $351.03."[20]

My pocket calculator was lying on the table so we quickly had the answer: $351.03 x 12 mos. x 30 yrs. = $126,370.80.

"I see something here I never really saw before," Ed said excitedly. "During those 30 years $86,370.00 worth of Earl's work at the shop goes to the bank for the use of nothing more than some numbers written down representing money they never even had in their vaults! Why are we mechanics? We should be bankers! John, this is a clever system. Who invented it?"

I hesitated for a few seconds. Was this a proper place for another diversion? Then I asked, "Do you mind another little historical digression here? Our banking system - called the fractional reserve system - had its origins in the activity of the goldsmiths from ancient times. People used to leave their gold on deposit with the goldsmiths for safekeeping.[21] The goldsmiths in return would issue receipts for the gold on deposit. Soon they discovered that they could make loans in the form of these receipts which were considered 'good as gold'. These receipts were loan-

ed out at interest. So against a small amount of actual gold, gold receipts many times the value of the real metal were loaned. This wasn't exactly illegal if there was no civil law prohibiting it, but neither was it morally honest. Shall we call it a clever maneuver whereby the goldsmiths created additional gold out of nothing but slips of paper. The charge made for the loan, however was in real gold thus increasing the goldsmiths holding of the actual metal even though no gold had left his safe.

"Modern banking uses this same basic system but with subtle refinements. Let's examine the system in use in the United States.

"It is a well known fact that government expenses have exceeded income by many billions of dollars every year since 1955. Consequently the Federal Treasury is short of money most of the time. So the Treasury resorts to borrowing money at interest from the banking system. Originally the Constitution granted to Congress the power to create the money with which to pay the costs of government. Since Congress also has the power to tax, the expenditure money created by Congress would in due course, be redeemed through Internal Revenue collections. But ever since 1913 Congress has had to go 'hat in hand' to borrow the deficit from the Fed, the corporation it created.

YEAR	FEDERAL DEBT LIMIT	APPROVED BY CONGRESS
1979 to Oct.	$836 billion	209 to 165
1979 to April	$798 billion	205 to 202
1978 to Oct.	$773 billion	213 to 194
1977 to Oct.	$700 billion	184 to 177
1976 Feb.	$627 billion	212 to 189
1973 Nov.	$476 billion	253 to 153
1971 March	$430 billion	228 to 162
1967 June	$350 billion	217 to 196

Figure 5-2

"The record shows that Congress is unable to operate the government within its income under the errors existing in the money system! So what do they do?[22-23]

"First, they pass a law increasing the Federal Debt Limit[24] once again.

"I can't conceive of one million dollars, say nothing ot one billion dollars." Martha said.

"Well, here is one way to visualize it. If you had a stack of one billion one-dollar bills and you laid them end-to-end they would extend around the earth 3.7 times. And that is only one billion!

"Step 1 - Legalize a higher 'Federal Debt Limit', so that the prior one can be exceeded.

"Step 2 - The Treasury writes up an interest-bearing bond for the amount of money it needs - say one billion dollars - and sells that bond to the Federal Reserve.

"Step 3 - The Federal Reserve buys the bond and in exchange gives the U.S. Treasury a BANK DEPOSIT CREDIT of $1 billion. Presto! The Fed has created out of nothing $1 billion of debt against the American People who are now obligated to repay the loan at interest or redeem the bond."

Ed broke in dejectedly, "That is hard to believe! I thought that money came into existence by people working, and thus creating wealth and money which then circulates from one person to another in exchange for goods and services. Am I all wrong about this?"

"Well," I replied, "let's see what the Committee on Banking and Currency in the House of Representatives has to say about this. Here is a copy of their publication "MONEY FACTS" printed in 1964. On page 9 is question No. 47. Would you like to read it?"

Ed took the book and read. '47. Where does the Federal Reserve get the money with which to create Bank Reserves?'

"So, what is the answer, Ed?" I asked.

Ed looked perplexed as he read on. 'It doesn't 'get' the money, it creates it. When the Federal Reserve writes a check, it is creating money. This can result in an increase in bank reserves, • a demand deposit - or in cash; if the customer prefers cash, he can demand Federal Reserve notes and the Federal Reserve will have the Treasury Department print them. The Federal Reserve is a total money making machine. It can issue money or checks. And it never has a problem making its checks good because it can obtain the $5 and $10 bills necessary to cover its checks simply by asking the Treasury Department's Bureau of Engraving to print them.'

"Is that the end of the answer, Ed?" Earl asked.

"Yes it is, but listen to question No. 48! 'Who gave the Federal Reserve the power to create the money necessary to cover its checks?"

"Listen to the answer." Ed said. 'The Congress. Because this power to create money is given by the Constitution to Congress, only Congress can delegate this power. And this ** it has done in creating the Federal Reserve System - an agency Congress authorized to create money.' There you have it 'from the horse's mouth' so to speak." he added.

"Was that the Federal Reserve Act of 1913 that John spoke of earlier?" Nancy asked.

"Yes," I said, "but let's move along. I was describing the steps in the process of creating money. The biggest surprises are still ahead of us. Nancy, what was step one?"

"Congress raises the Debt Limit."

"Correct. Martha, what is Step 2?"

"Treasury writes a bond and sells it to the Fed."

"Correct. But remember it's an interest bearing bond. This is an obligation that must ultimately be paid by the

**Does Congress really have the right to delegate its power to create money? This has never been tested in the courts. If it does have that right one may reasonably inquire, "Does Congress have the right to delegate its power to Declare War? -or to provide for the National Defense? -or to fix the Standard of Weights and Measures?"

How money is created

1 Congress votes to increase the Federal debt limit, let us say by $1 billion, and instructs the U.S. Treasury to write an interest-bearing bond for $1 billion.

2 The Treasury offers to sell the bond to the Fed.

3 The Fed buys the bond by simply creating a bookkeeping entry for $1 billion to the credit of the government's checking account

4 The Treasury now writes checks against the created credit.

PEOPLE

These checks are dispersed throughout the country, endorsed by recipients and deposited into banks.

5

BANKS

The banks send the Treasury checks to the Fed for payment. The Fed debits the Treasury's account and credits the banks with the amount. These credits become the banks' *reserve deposit credits*

6

7 These *reserve deposit credits* serve as the base for expanding checkbook money and loaning it out at interest.

Figure 6

American People through forfeiture of their property."

"Wait a minute," Ed interrupted, "something new has been added-'forfeiture of their property'. Surely you don't mean my property."

"May I suggest that we store your question until we have a few more facts about our money system out here in the open?"

"Well okay," Earl said reluctantly.

So we proceeded. "Figure 6 is a picture summary of the steps in the money-creating process. I drew it several years ago to help me understand exactly how money was created. I believe it will help you too."

"In Step 3, you recall that the Fed buys the interest-bearing Treasury Bond, and in exchange gives the United States Treasury BANK DEPOSIT CREDIT of $1 Billion.

"Step 4. The Treasury now proceeds to write checks against the $1 Billion in payment of its obligations.

"Step 5. Let's follow one of these Treasury checks through the banking system. Let's assume that it is a check in the amount of $1000 payable to a building contractor John Doe. He endorses the check and deposits it in his checking account at First National Bank. Mr. Doe thereby has BANK DEPOSIT CREDITS of $1000 with which to pay his bills.

"Step 6. First National Bank sends the endorsed check back to the Federal Reserve.

"Step 7. The Federal Reserve receives the check, cancels it and increases the First National Bank 'Reserve Credit Account' by $1000. A typical reserve requirement is 15%. So, based upon the $1000 deposit by Mr. Doe, the 'money' in the system can now be expanded to $1000/0.15 = $6,667 which is 6 2/3 times the new reserves of $1000 supplied to the commercial banking system.[25]

"This was not immediately understandable to me when I first became aware of the 'sleight-of-hand' five years ago.

I had to work it out stage by stage as follows:"

Stage 1. The First National Bank is permitted to create and lend an amount equal to 85% of the $1000 reserve which is $850. Let's say this was loaned to Dick Peters to finance his purchase of a used car. The bank credits Peters' checking account with the created $850. The $1000 reserve remains in the bank. Peters writes a check for $850 to Don Potter, the used car dealer, and takes delivery of the car.

Stage 2. Don Potter deposits the $850 check in his checking account, which happens to be at a different bank, the Central National. But that makes no difference, because Central National is thereby permited to loan an amount equal to 85% of $850 which is $722. The $850 becomes a new reserve to Central National. The $722 loan is created as a 'deposit' to the credit of the next borrower. Notice however that the $850 reserve remains in the bank! At this point let us say that our friend Earl here is converting part of his basement into a family room and he needs $722 to help pay for lumber, wood paneling and doors. His bank is Central National.

Stage 3. Earl goes to the friendly loan mamager at the bank and reaches agreement on terms, collateral and repayment. Earl gets a DEPOSIT CREDIT of $722, goes to Hancock Lumber Co. and writes his check to them for the lumber.

Stage 4. Hancock Lumber Co. deposits the check to their account at Cleveland Trust Bank, which thereby is permitted to create a loan equal to 85% of $722 or $614. The $722 reserve remains in the bank.

"This process goes on and on through many subsequent stages, as tabulated on Figure 7."[26]

MONEY EXPANSION TABULATED

	Assets			Liabilities	
	Total	Reserves (Required)	(Excess)	Loans and investments	Demand deposits
Initial reserves provided...	1,000	150	850		1,000
Expansion-Stage 1	1,000	278	722	850	1,850
Stage 2	1,000	386	614	1,572	2,572
Stage 3	1,000	478	522	2,186	3,186
Stage 4	1,000	556	444	2,708	3,708
Stage 5	1,000	623	377	3,152	4,152
Stage 6	1,000	680	320	3,529	4,529
Stage 7	1,000	728	272	3,849	4,849
Stage 8	1,000	769	231	4,121	5,121
Stage 9	1,000	803	197	4,352	5,352
Stage 10	1,000	833	167	4,549	5,549
...					
Stage 20	1,000	961	39	5,448	6,448
...					
Final Stage....	1,000	1,000	10	5,667	6,667

Figure 7

"This is pretty heady stuff," Earl exclaimed standing up and stretching his muscular arms up toward the ceiling, "I'm afraid my humble brain needs a short rest - or something. Ed, do you understand all this?"

"Well, I can't say that I do for sure," Ed responded, "but I have a few questions that are bothering me. Maybe they're bothering you too."

"Yes," said Earl "like that 15% RESERVE REQUIREMENT. Where does that come from, and is it always 15%?"

"The Federal Reserve specifies it each day," I said, "and no, it is not always 15%. On demand deposits, that is checking accounts, it varies from 10% to 22% depending upon what the Fed in it's 'wisdom' decides is best for the Nation![27]

"If the Fed wishes to stimulate business it lowers the Reserve Requirement. To put on the brakes it raises the Requirement. Using our $1000 example again it works like this."

To expand the Money Supply
$1000/0.10=$10,000 lending allowed

To shrink the Money Supply
$1000/0.20=$ 5,000 lending allowed

"Let's go back to Stage 1," Earl said, "where Dick Peters borrowed the $850 to buy a used car. Why did you pick $850?"

"Well," I replied, "in this example we used $1000 as the initial BANK DEPOSIT CREDIT in the form of the Treasury Check deposited by Mr. Doe. Since we assumed a reserve requirement of 15% this means that the First National Bank must keep 15% of $1000 or $150 on its books. It

is permitted to create a bank deposit amounting to 85% or $850 to the credit of Dick Peters.

"The second stage of the expansion occured when Don Potter endorsed Peters' check and deposited it at Central National Bank. The 15% reserve requirement allowed Central National to create a bank deposit to loan amounting to 85% of $850 which is $722. When this was credited to Hancock Lumber Company's account at Cleveland Trust, they could create another bank deposit to lend amounting to 85% of $722 =$614. [28]

"So," I continued, "if you would carry through the calculations to the bottom of column 3 of Figure 7 they would add up to $5667, which is the 'new money created by the commercial banking system'. Note that it is over five times the $1000 which entered the system as a Treasury check. Martha, where did the $1000 originate?"

"It was part of that $1 billion that the Fed created out of nothing to buy the Treasury Bond."

"Sometimes a graph can be helpful for the understanding of a column of numbers." I said, "A member of our study group made such a graph. Here it is.

FRACTIONAL RESERVE DEPOSIT EXPANSION

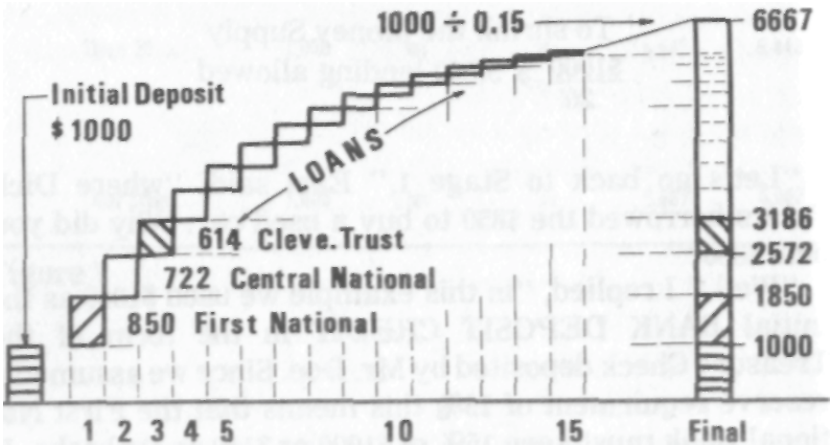


Figure 8

"The vertical scale at the right is money.

"Each segment along the horizontal is a COMMERCIAL BANK.

"The new deposits ($850, $722, $614 etc) created by loans at each stage are added to those created at all earlier stages, plus that supplied by the initial reserve-creating action ($1000).

"The first segment is First National Bank which made the first loan ($850) based upon the initial $1000 deposit. Central National Bank was the recipient of the check -which represented new reserves for them so they became eligible to create new bank deposits (loans) of $722 which is 85% of the new reserves. Hence the term FRACTIONAL RESERVE BANKING which means that the RESERVES held at the bank are only a small fraction of the amount of new bank deposits created and loaned at interest.

"One could go to a friend to borrow the money, and this is sometimes done. But an individual friend cannot lend several times the amount of savings he has in his bank or cookie jar. But incongruous as it may seem, the composite commercial banking system can, and does create money in amounts up to several times its reserves and lends these created bank deposits out at interest."

"Wait a minute," Earl exclaimed excitedly, "you lost me right there. The bank didn't loan out more than they had on deposit. Did they? First National Bank created an $850 bank deposit for Dick Peters based upon the $1000 of reserves. That's 85%, right? Central National Bank created a $722 bank deposit for Earl based upon the $850 which Dick Peters deposited. $722 is 85% of $850. Right?"

"That is correct, Earl. But notice what I said. The composite commercial banking system is permitted to loan up to 10 times the $1000 in our example. By composite we mean the combined system, the total system. May I give you a direct quotation on this as published by the Federal

Reserve Board of Governors in 1939."

The fact that what can be done by the banking system as a whole differs so much from what can be done by any individual bank is one of the most difficult things to understand clearly in the whole field of banking. It seems paradoxical. Yet it is a fundamental fact of utmost importance. The difficulty is to see that the limited power of the individual bank, which can lend somewhat less than the amount of additional reserves it receives, can, when exercised by many individual banks, enable them altogether to lend several times the amount of the additional reserves. But what each bank receives is in each case the greater part of what has already been received by another bank, so that the same amount keeps working over and over again, a little diminished each time.

The practical consequence of this is that the Federal Reserve authorities, by supplying a relatively small volume of additional reserve funds, make it possible for the banking system as a whole to supply the public with a far greater additional volume of credit. Contrariwise, by withdrawing a relatively small amount of funds, when member banks have no excess reserves, the Federal Reserve authorities can make it necessary for the banking system to borrow the amount withdrawn or to reduce loans and investments - and consequently deposits - by several times that amount.

"Well, that settles the matter as far as I am concerned," Earl replied, "but the mechanics of the system are still not clear to me."

"It was not clear to me either upon first reading," I replied, "but the Board of Governors warned us that this is one of the most difficult things to understand clearly in the whole field of banking. May I suggest that you copy

Figures 7 and 8 several times. I guarantee that will help vou to understand Fractional Reserve Banking. Those two figures are intended to illustrate how the total system operates."

"But suppose there is only one bank in the community," Ed inquired, "what happens then?"

"One bank can perform the total deposit expansion," I replied. "In our example, the original $1000 of reserves were deposited in the First National Bank. If it was the only bank in town, Dick Peters' $850 payment to Don Potter would be deposited right back into the First National Bank and Earl would get his $722 loan there as well. When Hancock Lumber Company deposited the $722, the First National Bank was in a position to create a $614 deposit credit to the next borrower based upon the $722 of new reserves."

"I believe I understand it now," Earl beamed, "that $1000 provides the reserves, not only originally but continuously and slightly diminished every time a bank deposit is made."

"That is precisely the way FRACTIONAL RESERVE DEPOSIT EXPANSION works. In this example the original $1000 has been expanded to $6667 of debt on which interest is due to the participating banks in the system."

"Yes and let's not forget that the loan principal must be repaid sometime," I added. "How much is that, Ed?"

"Is it $6667?"

"Not quite, Ed. Let's look at Figure 8 again."

"I see it now. It's the sum of all the blocks along that upward sweeping curve which represents loans."

"Right, and how much is that?"

"$6667 minus the $1000 which equals $5667 of loans of debt."

"Now you have it correct," I said.

Earl was chuckling. "This sort of reminds me of the shell game at the street carnival that was here in the

village last week. That old fellow was really clever with those three walnut shells. In spite of his tricky manipulations I could see positively which shell the pea was under but when he called my bet it was under one of the others."

"Would it be fair to observe that things are not always what they seem?" I asked.

My young friends looked at me in silence. Finally Martha spoke. "I'm not sure I understand all of this but apparently Ed does. He can answer my questions later. It seems to me that today's bankers are operating very much like the old time goldsmiths you spoke about earlier. They loaned gold deposit receipts for many times the amount of gold metal they had in their vaults."

"Yes, the technique is the same," I agreed. "One individual goldsmith receiving $1000 worth of gold might by himself loan out $5000 worth of gold certificates. Likewise today's commercial bank upon receiving $1000 in deposits or 'reserves' can and does initiate the process of lending out checkbook credits several times the amount of the initial deposits. Usually there are a number of banks involved as we have demonstrated in Figures 7 and 8. However, one bank in a community with no other bank competition can accomplish the total deposit expansion process all by itself."

Again I picked up the booklet published by the Federal Reserve in 1939 saying, "On page 74 the Fed admits that 'This seems paradoxical and difficult to understand ...Yet it is a fundamental fact of utmost importance.' "

"So, I guess we had better study this until we understand it?" questioned Ed.

"I hope you may find Figure 7 and 8 helpful in your studies. When you reach the point where you can construct either of those Figures from memory you will have surmounted one of the biggest obstacles to an understanding of banking."

"In that case I'm tempted to give up right now." Earl said dejectedly.

No one spoke. Then I had a suggestion. "Earl," I said, "I heard that you supervise the tape-controlled machining department at your shop."

"Yes, I do."

"Do you think you could teach me in one session, how to program one of your fancy tape-controlled milling machines?"

Earl smiled, "You're pretty smart John, but I doubt that even you would understand it right off." Then he hesitated.

"Okay, I get the point, I'll study the paradox some more." He sat silent for a few moments, then added, "I don't think I appreciate bankers as much as I did before I came here this evening."

"Unfortunately, what the bankers are doing is neither legal nor illegal," I replied, "They operate according to the Federal Reserve Act of 1913 and its hundreds of amendments and regulations, none of which specifically authorizes the creation of money.

"I do hope I haven't given anyone the impression that I am against borrowing money or against bankers who lend it! At times borrowing money is a clear necessity. There is no alternative except to do without, but if you are a businessman that might cause you to slow down your activities or close up shop altogether. And so one seeks out a banker."

Ed re-entered the conversation. "Thus far we have accounted for only $1000 of that $1 billion that the Treasury received from the Federal Reserve as a deposit credit. What about the balance of it?"

"Well," I replied, "if you all understand Figures 7 and 8 as well as I think you do, you are now in possession of enough knowledge to answer your own question."

Nancy volunteered, "For one thing, the Treasury cer-

tainly continues to write checks until the $1 billion is used up!"

"Right," I replied. "Have you ever noticed how many older folks are in the banks on the 3rd, 4th, and 5th of the of the month? Many are cashing their Social Security checks which are dated the 3rd. Across the country this could account for most of that $1 billion."

"Sooner or later those checks get into a bank even if they're first cashed at a grocery store," Earl said, "we're sure of that."

"And the bank makes loans based on these checks as reserves." Ed added with a smile. "See, John I have learned a new word-RESERVES. Until tonight I thought RESERVES was coin piled up in the banks' vaults to pay off depositors if they wanted their money. Boy, was I naive."

"Maybe you still are," said Earl, "I have a strange feeling that John hasn't yet told us all we need to know about this monetary system of ours."

"You should keep in mind that the Fed is the banker's bank!" I explained. "Whenever a commercial bank sends a U.S. Treasury check to the Fed to cancel, the Fed increases the RESERVE ACCOUNT of that bank by the amount of the check."

"So based on those increased RESERVES, the commercial bank can create more 'deposit credits' to loan to unsuspecting borrowers?" Ed questioned.

"Correct. You are very satisfactory students," I said. "You have open minds and ask logical questions. One doesn't need a college degree to understand our monetary system. In some respects too much 'education' is a disadvantage. If I fail to back up my answers with facts at any time, I want you to challenge me."

"So each of those Social Security checks follows the same route as in John's $1000 example," Earl continued.

"Right," said Ed, "and the upshot is that $1 billion of RESERVES enters the banking system!"

"At this point let me give you a test question." I said, "Suppose the RESERVE REQUIREMENT is 12%, how much can the $1 billion be expanded by the banks?"

There was silence for several seconds before Nancy spoke hesitatingly. "Do you divide it by 0.12?"

"Right," I said, "so what's the answer, Nancy?"

"I never was good at decimals. Why don't you divide it out on your little calculator."

$1 billion/0.12 = $8 1/3 billion

"This is new money created out of nothing within the system!"

"So this is the cause of inflation?" Martha asked.

"Steady now, that's not what I said. All we can say for sure and prove with our example is that $1 billion of reserves at 12% requirement will support $8 1/3 billion bank deposit dollars created out of nothing within the money system!"

"You certainly are a stickler for details," Earl said impatiently, "if this isn't the cause of inflation, what is?"

"It is premature to come to any conclusions one way or another just yet. Remember, at this point we are only trying to understand precisely how our monetary system operates. Most people don't know."

Then I continued, "I've been hearing tea-cup type noises coming from the kitchen. Any minute now Marian will be calling me to help her with the tea cart. My wife makes delicious biscuits and strawberry jam that I know you'll enjoy. But before we stop for tea may I summarize again those key facts that you must be able to recall clearly to mind. There were five of them. Remember? Here we go:

1 $834 BILLION WAS OUR FEDERAL DEBT IN 1979.

2 $48 BILLION WAS THE INTEREST ON THAT DEBT IN 1979.

3 THE PATH OF BOTH THE DEBT AND THE INTEREST CONTINUES STEEPLY UPWARD.

4 APPROXIMATELY 25% OF THE MONEY SUPPLY IS IN CASH.

5 APPROXIMATELY 75% OF THE MONEY SUPPLY IS IN BANK DEPOSIT CREDITS.

"Now we must add three more key facts to remember. Here they are:

6 IN THE UNITED STATES TODAY MONEY IS PAPER FEDERAL RESERVE NOTES AND METAL COINS NOT OF SILVER OR GOLD. BUT MONEY IS MOSTLY NUMBERS WRITTEN IN DEPOSITORS' PASSBOKS AND SHOWN ON THE BANKS' RECORDS AS 'BANK DEPOSIT CREDITS'.

7 UNDER OUR PRESENT 'DEBT MONETARY SYSTEM', MOST MONEY IS CREATED AS DEBT BY THE COMMERCIAL BANKS MAKING LOANS.

8 THE FEDERAL RESERVE AND U.S. TREASURY CHECKS ENTER THE BANKS AS RESERVE DEPOSITS AND BECOME THE MONETARY BASE FOR EXPANDING THE MONEY SUPPLY BY SEVERAL TIMES AS BANK DEPOSITS, REPRESENTING DEBT, LOANED AT INTEREST (USURY) INTO THE PRIVATE SECTOR OF THE ECONOMY.

"It's time for tea, my friends. Let's take time out for a little relaxation."

Marian had quietly entered the living room and her gracious smile immediately transformed the serious mood of our guests.

"You young people have been sitting there patiently for so long, wouldn't you like to move about a bit and come into the dining room for refreshments? I'm afraid John loses all consideration of time when he has such a receptive audience."

"That's a great idea," Ed said as he assisted his wife out of her easy chair. Earl and Nancy rose stiffly from the davenport. Earl glanced at his watch. "Why, we've been here almost two hours. Frankly it seems like twenty minutes."

As Marian proceeded to pour, Nancy looked at her intently, "Mrs. Bell, I suppose you have heard this money story many times. Frankly, I don't mind admitting that hearing it this first time really shakes me up. It's hard to believe. I'd rather not believe it!"

"That's the normal reaction Nancy," Marian replied sympathetically, "I had a more gradual exposure than you have had this evening. John let me in on his findings over a period of several years as his studies progressed. None the less, I had many sleepless nights when I couldn't shake some ugly fact out of my consciousness."

"I hope I don't go through that stage," Martha said.

"Well, you probably will Martha," Marian confided, "but that seems to be the price we all have to pay to learn these critical lessons. Many people refuse to learn. That's more comfortable. So ostrich-like they bury their heads in the sand. That's a most vulnerable position for an ostrich." she laughed.

"And for an American citizen," Earl said with a grin that changed to a frown as he buttered a hot biscuit, "I cer-

tainly hope we're not learning these lessons too late!"

"How are the youngsters getting on, Martha," Marian inquired quickly changing the subject to lighten the atmosphere.

"Oh, fine," Martha replied. "Mother and Dad are staying with them this evening and that's a great treat for them.

"And for us," Ed laughed. Then he continued thoughtfully, "Except for them we'd have missed this evening here, which I have a feeling is going to be mighty important to all of us, but who knows in what ways?"

Marian brought another plate of hot biscuits and began serving them. Ed spoke up, "John was right about your biscuits and strawberry jam Marian, I simple must have another even though it encroaches on our learning time this evening."

"John, don't you think you've enlightened our young friends sufficiently for one evening?" Marian asked.

"Perhaps," I replied, "But we are only now approaching the key to our fundamental problems as a Nation. It would be unfortunate for them to miss my next three charts."

"Could we come back-perhaps next week?" Earl asked.

"Why of course," I said, "we'd be pleased if you would. You fellows are working men, I'm not, so you name the date."

"How about a week from tonight," Earl inquired of Ed and Martha.

"That's fine with me," Ed replied as the others nodded assent.

"It's a date then-one week from tonight."

Footnotes to chapter one

1 A Primer on Money, A U.S. Government publication, August 5, 1964; produced for the Committee on Banking and Currency, House of Representatives, pg 1-5.

2 The Story of Our Money 2nd edition by Olive Cushing Dwinell, Forum publishing Co., Boston; pg 202

3 Ibid, pg 207

4 Senate Document No. 23: Lincoln's Monetary Policy presented by Mr. Logan, January 24, 1939; published by Monetary Science Publishing, Wickliffe, Ohio. Document No. 741015.

5 U.S. Treasury Reports: Public Debt of the United States, House Document No. 93-78 (Part 2) 93rd Congress 1st Session, pg 1117 and 1118; U.S. Treasury Bulletin: September 1975, Table FD-1 Summary of Federal Debt; Table FD-2 Interest Charge, pg 27; U.S. Department of Commerce: Statistical Abstract 1975, Public Debt of the Federal Government 1900 to 1974, Table 396 pg 240.

6 Federal Reserve Bulletin, June 1979, pg A32, Gross Public Debt represented by Treasury bills, notes and bonds, Series E and H bonds, Foreign issues and Special issues, January 1979 total: $791 billion.

7 U.S. Treasury Reports: Public Debt of the United States, House Document No. 93-78 (Part 2), (See footnote 5 above).

8 U.S. Treasury Reports: Summary of U.S. Receipts by Source and Outlays by Function. The World Almanac 1976, pg 76.

9 Money Creators by Gertrude M. Coogan, First published in 1935, 11th edition available from Indiana Patriotic Publications, P.O. Box 3, Beech Grove, Indiana 46107, pg 146-148.

10 Fiat Money Inflation in France by Andrew Dixon White, published by The Foundation for Economic Education Inc., Irvington-on-Hudson, New York.

11 Ibid, Chronologicial Table pg 113-116.

12 Ibid pg 100

13 Money Facts: 169 Questions and Answers on Money - (A Supplement to A Primer on Money, see footnote 1), Published by the U.S. Government September 21, 1964 for the House of Representatives Committee on Banking and Currency; Chapter 2, answer to Question No. 22 What is money? pg 5. (This definition fails to emphasize an essential characteristic of sound money namely, "It shall be acceptable in payment of debts and taxes". The Authors)

14 Federal Reserve Statistical Release H-6, May 12, 1977, Table 3; The money supply as defined by M-1 is currency plus demand deposits. See Appendix for specifics.

15 A Guidebook to United States Coins by R.S. Yoeman, 28th Revised Edition, Western Publishing Co., Racine, Wisconsin, pg 158-190.

16 A Primer on Money (see footnote 1) pg 23: "The dollar is based on credit and every dollar in existence represents a dollar of debt owed by an individual, a business firm, or a government unit."

17 Ibid pg 120-124.

17-1 The Federal Reserve System after 50 Years: Proposals for the Improvement of the Federal Reserve. Published August 25, 1964 by the Committee on Banking and Currency, House of Representatives 88th Congress 2nd Session, pg 2-3: "The Federal Reserve Banks are not a public instrument'; pg 22-23: 'The hard truth is that the administration cannot change Federal Reserve Policy."

18 The Federal Reserve System: Its Purposes and Functions, Published in 1939 by the Board of Governors of the Federal Reserve System (If not available from U.S. Government Printing Office, see Reprint by S.W. Adams, with comments. Published by Omni Publications, P.O. Box 216, Hawthorne, California 90250, pg 3-5.)

19 Money Facts (see footnote 13) "Question No. 47: Where does the Federal Reserve get the money with which to create bank reserves? Answer: It doesn't 'get' the money, it creates it. When the Federal Reserve writes a check, it is creating money. The Federal Reserve is a total moneymaking machine."

20 Monthy payments: N, equals P x $(r(1+r)^n/(1+r)^n-1)$ when P is the loan principle, r is the monthly interest rate=annual interest rate/12 and n is the duration of loan in months

(To confirm this calculation, see any good book on finance or consult your banker.) See Appendix for sample computation.

21 A Primer on Money (see footnote 1) "How did the goldsmiths get into the banking business?" pg 28-32.

22 U.S. Office of Management and Budget, 1977 Report

23 U.S. News and World Report, October 3, 1977, pg 29

24 A typical case is House Resolution HR 14114 which is the 1976 act to legalize more Federal debt. Ask your Congressman for a copy of the current Resolution to raise the national debt.

24 The Federal Reserve System: Its Purposes and Functions (see footnote 18) pg 68 "Reserves of the Individual Bank and of the Banking System as a Whole: Additional reserve funds that enable the individual bank to enlarge its own loans by an almost equal amount, enable the banking system as a whole to enlarge the aggregate of loans by several times as much."

26 Modern Money Mechanics published by the Federal Reserve Bank of Chicago, 1968 revision. Figure 7 is an exact copy of page 11 of this publication.

27 The Federal Reserve System: Its Purposes and Functions (see footnote 18) pg 72: "The reserves required are about 20 per cent on the average. Between 1918 and 1929 the ratio of required reserves to deposits declined from about 9 per cent to about 7 per cent. In 1937 it rose to about 16 per cent." (In 1979 it was in the 15 per cent range. The Authors.)

28 The Magic of Reserve Banking by Peter Cook, published by Monetary Science Institute, Wickliffe, Ohio 44092, pg 50.

29 The Federal Reserve System - Its Purpose and Functions (see footnote 18) pg 74.

CHAPTER TWO

THE SECOND EVENING

Learning the facts was the second step

"Those summary sheets you gave us last week were a great help," Ed said to me as our four young guests seated themselves in our living room a week later. Then he continued, "As I studied those eight key facts I tried to find some hole in your arguments. Maybe I'm not smart enough, or maybe you're putting us through a brainwashing process."

"That's it!" Earl laughed, "We're being brainwashed!"

"Right," I agreed, "brainwashed with the truth for a change!"

Earl went right on, "When I think about the Federal Reserve and how it operates it makes me mad that no one ever explained it to me before last week."

"Many books and articles have been written explaining it," I said, "and the Congressional Record has printed page after page intermittently over the past 60 years dealing with the subject."[1,2,3,4]

"Then why, please tell me, why are we kept in the dark about it?" Earl asked impatiently.

"But you young people are now beginning to see the light," I said calmly, "and you are just in your late 20s or early 30s. I was ignorant of these matters until I was in my late 50s! Think of that. A businessman in big business, involved with activities measured in the hundreds of millions of dollars a year and yet totally ignorant of how a dollar's worth of credit is created and extinguished."

No one spoke for several seconds. Their eyes were fixed

on me. Then I said, "I feel a deep personal responsibility for the general public ignorance of these money matters. Now I'm trying to make up for lost time. I hope it's not too late. Shall we get on with the next installment?"

What are reserves?

"Before you move ahead, John, could we back up for a few minutes to clarify what is meant by bank RESERVES?" Ed asked. "I thought I understood it here last week, but on Monday when I tried to explain it to my boss at the shop, I got all tangled up. Please explain it again, in simple language. What are RESERVES and where do they come from?"

I hesitated for a moment to recall a summary I had prepared some time earlier to clarify for myself the answer to this very same question.

"Briefly, the fractional reserve banking system is a system whereby bankers maintain as REQUIRED RESERVES only a small fraction (10-20%) of the amount needed to meet all of the claims against them. RESERVES in modern American banking are deposits held by a Federal Reserve bank in the account of a commercial bank. Please recall that the Fed is the banker's bank. So, to repeat, RESERVES are deposits in the form of book-keeping entries at the Federal Reserve banks, to the credit of commercial banks. The Federal Reserve banks are also the source for the cash currency (coins and paper Federal Reserve notes) which the commercial banks must have available when its patrons want cash. This cash is delivered to the commercial banks on demand and the Fed reduces that commercial bank's RESERVE ACCOUNT accordingly. So you see that cash currency is a part of a commercial bank's reserves. The other part is the numbers written in the commercial bank's RESERVE AC-

COUNT at its regional Federal Reserve bank.

"On any one banking day, the level of TOTAL RESERVES on the books at the Fed is fairly constant; but there is great activity among the commercial banking accounts, which causes the RESERVES of each to fluctuate up and down in response to the movement of checks between the banks. May I emphasize that the banks do not loan out their RESERVES! The purpose of RESERVES is to provide the BASE upon which the banks create several times the amount of bank deposit dollars to lend out at interest to the private sector of the economy. This is our supply of money, commonly referred to as M-1. In fact a more correct term for banking RESERVES is MONETARY BASE. If you use MONETARY BASE as a synonym for reserves you will find it easier to understand."

"Now I'm beginning to get it!" Ed said with a smile.

"Very well, now let's see where those RESERVES come from. It's really very simple. There is only one source of RESERVES or a MONETARY BASE and that is a Federal Reserve bank check, which, you will recall, is written against no funds! If, for instance, that check is written to the order of a broker for securities it will go to the broker's commercial bank and when the check is cancelled by the Fed, the commercial bank's RESERVE ACCOUNT is increased by that amount. Presto! New RESERVES are created by the stroke of a pen.

"A Federal Reserve bank check could take another route. Suppose it is written to the order of the United States Treasury in payment of Government Bonds, as we explained last week in Figure 6. The U.S. Treasury can now write legal checks in payment of it's obligations. Let's assume that one such check is written to the order of a golden-ager as a Social Security payment of $100 and he deposits it into a commercial bank.

"He will get a deposit-credit in either his checking ac-

count or his savings account, whichever he designates. The commercial bank will send the check to its Federal Reserve bank for cancellation. The reserve bank will credit the commercial bank's RESERVE ACCOUNT for the full $100 and debit the U.S. Treasury checking account for the full $100. Presto! $100 of new RESERVES are created out of nothing and the banking system can now
make additional loans of up to $667, at interest, based on that $100 of new RESERVES. And please take note of this: when the prime interest rate on loans is, say, 15% the banks take at least $100 per year on the $667 loaned, but they would pay the golden-ager only $6 (6%) should he have deposited the $100 in a savings account."

"What a rip-off," Earl exclaimed.

"It must be legal," Ed responded, "or it would be stopped wouldn't it?"

"But suppose the golden-ager wants $100 cash in return for his check," Martha asked, "what happens to the bank's RESERVE ACCOUNT?"

"There are two possibilities," I replied. "Here they are:

a. If he hoards the cash in his mattress, the commercial bank has given up $100 of its RESERVES, until the golden-ager's check is cancelled by the Fed, at which time the bank's RESERVE account is restored to its original amount but not increased.

b. If the golden-ager doesn't hoard the cash but spends it, that currency gets into a bank sooner or later to the credit of the merchant's account. At that point the cash again becomes RESERVES to some bank, thereby providing the BASE for another loan."

"Is cash in a bank always RESERVES?" Martha asked. "Yes, cash in a bank is always RESERVES, but

RESERVES are not exclusively in cash, although they are 100% convertible into cash.

"Understanding the nature of reserves is fundamental to comprehending how our monetary system works. But this in itself doesn't explain how or why our money goes up and down in value. It is this phenomenon of changing value that we will be discussing tonight.

The consumer price index

"Over the past several decades our American dollar has changed in value - up and down, but mostly down. One of the accepted scales for measuring such changes is the CONSUMER PRICE INDEX. Figure 9 is a chart covering the period from 1850 to the present.[5,6]

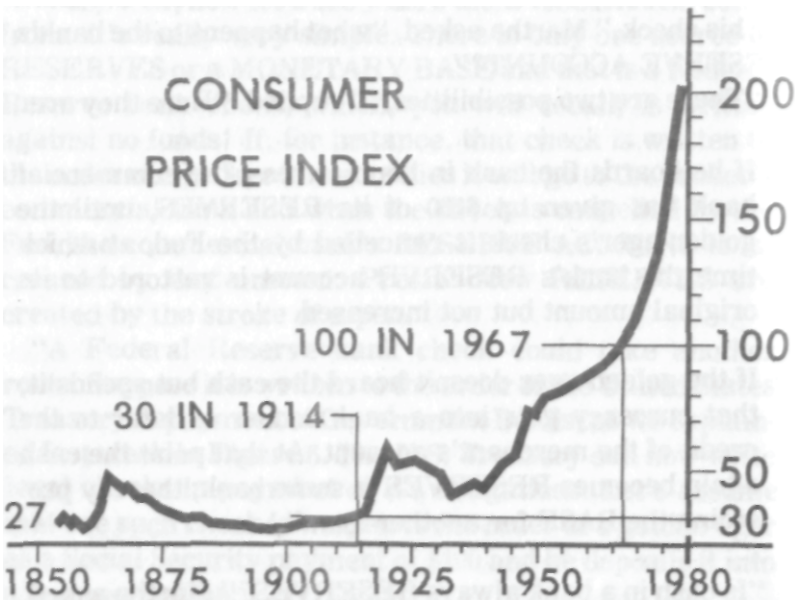


Figure 9

"The Consumer Price Index has a technical definition used by statisticians and economists. But for our purposes we can refer to the index as: a measure of the price of a typical urban consumer's expenditure on basic goods and services. By comparing one year's index with another we can discover how much prices have moved up or down.

"On this chart, the price of those items was $100 in 1967. Let's take that as our base year and call it 100% or an index of 100. In 1850 the price of that same group of necessities was much less, in fact it was $27, or 27% of our base year, or Index 27. In 1914 the price had moved up to $30. In 1979 the price had exceeded the base year by $100 and the index stood at 200. Let's take a closer look at the high and low points on this chart.

"The steep rise in the 1860's was due to the inflation which followed the Civil War. Then came the post-war decline until about 1900. The Consumer Price Index (or CPI) was 30 in 1914. The next steep rise coincides with World War I, followed by the post-war recession, then a leveling in the mid-1920's and the economic collapse in 1929-30. The low section is the Great Depression with a small recovery in 1937. This was followed by Lend-Lease spending to rearm Britain in the late 1930's and then our own involvement in World War II with its rearmament spending in the early 1940's. The CPI reached a plateau of 54 briefly in 1945 and then continued upward through 82 during the Korean War in the 1950's. It rose even steeper during the 12 years of the Vietnam War which ended in 1975, at which point the CPI was 161."

"May I ask a question at this point?" Earl inquired.

"Yes, of course," I replied.

"I'm wondering why you selected 1967 as the reference year for the Consumer Price Index chart. Why not pick some even year, like 1960 or that flat spot back there in the early 1900's?"

"We picked 1967, because in our studies we found that quite a lot of the published data refers back to 1967 as a reference year, so to simplify our comparisons we picked 1967 too. One may choose any year as a reference - 1960 or 1900 or any other. Let's try 1900 and see the effect. All we need to do is to change the scale on Figure 9. The reference year must always be CPI = 100."

"So we multiply the 1900 CPI of 25 by four to get 100!" exclaimed Ed.

"Exactly right. Thus the 100 on the vertcial scale would become 400, and 200 would become 800. This means that the price tags on specific necessities was four times higher in 1967 than in the year 1900."

"Yes, and in 1979 those prices were eight times higher than in 1900," Martha added.

"Eight times higher?" Nancy questioned, "where do you see that?"

"Well," Martha replied, "Figure 9 shows an Index of about 200 for 1979. So dividing 200 by Index 25 for the year 1900 we get eight. Is this the correct way to use the chart, John?"

"That's exactly correct," I replied, "perhaps Nancy finds it difficult to believe that the dollar prices on most necessities have increased by six to eight times since 1900."

"You couldn't prove it by me," Earl volunteered with a smile, "I wasn't here then."

"I wasn't here either, in 1900, but I do remember 1914 distinctly because I used to do simple chores in my grandfather's grocery store when I was seven years old. The price of a small loaf of bread was five cents and the big loaf was ten cents. How much do you pay for a large loaf today, Nancy?"

"75 cents!"

"In 1914 whole milk was delivered to our home for ten

cents a quart. What is the price today in the supermarket?"

"About 60 cents," Nancy replied, "and it keeps going up! That's our problem."

"When one considers the extensive technological improvements that have been made in the production of bread and milk and everything else during the past 60 years, the price should have gone down progressively, not up! Right?" I asked.

My young friends stared at me for a few moments. Then Ed spoke.

"Of course what you say is logical. Prices should come down as better production methods are introduced. But we don't seem to be living in a logical world any more. There's something fishy going on in this country as I've said so many times before."

"You're right," I replied, "Now if you will concentrate on what the Consumer Price Index can reveal, you will be well on your way to understanding what is wrong with our money!"

"Referring again to Figure 9 you will notice that in the far past, wartime inflation was always followed by a period of deflation as after the Civil War (1865) and World War I (1918). But following World War II (1945) there was practically no drop in the CPI. The inflation fever continued upward during the Korean War in the 1950s and became even steeper during and following the Vietnam War, reaching 200 in 1979.

"To analyze this CPI curve more precisely our study group smoothed out the humps and filled in the valleys. The result was Figure 10.

"Prior to 1914 the curve of the Consumer Price Index is relatively flat, but after 1914 the trend is upward ever steeper."

"Isn't Figure 10 an oversimplification of the actual CPI

curve?" Ed asked.

"Not really," I replied, "You're certainly welcome to have a look at the calculations I used to smooth out the curve.[7] If you would sketch in a smooth continuous curve

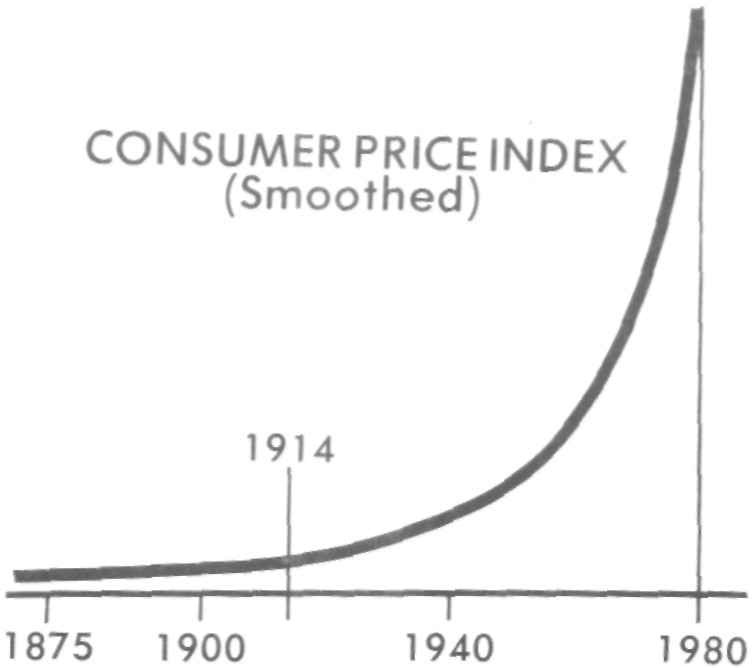


Figure 10

free-hand on Figure 9 between 1940 and 1979 I believe you would find it coincides reasonably closely to my Figure 10. All I really want to show you is that on average, the CPI has been going up ever increasingly for the past 80 years. The mathematicians call a graph such as this one an

EXPONENTIAL CURVE

whose formula is

$y = a^x$

This simply means that the higher the curve rises the steeper it gets. The slope of the CPI curve gives us a measure of the inflation rate. Where the curve is rising gradually as prior to 1914, inflation is low -- perhaps 1% or 2%. In 1979 where the slope is steep, the inflation rate is higher (actually 14%).

"Each one of us can verify the truth of this chart every time we go to the supermarket. Price increases are no longer 1% or 2% a year, or even 3% or 4%. We are now seeing the effects of 'double digit inflation'. That means 10% or more. It is also another way of saying 'Your money is becoming worthless faster.' How fast? Let's go to Figure 9 and pick out half a dozen values of CPI at key points since 1900. Here they are:

Consumer Price Index

Year	1900	1914	1920	1925	1930	1967	1975	1977	1979
CPI	25	30	60	54	50	100	161	182	200

Figure 11

"Referring to the Consumer Price Index, we can see that the price of goods and services was 100, that is, 100% in 1967. Working backwards from the little table above we can see that those same goods and services could be purchased in the year 1900 for one quarter (25/100=1/4) or 25% of what they cost in 1967. So it follows that the Purchasing Power of $1.00 in 1900 was four times greater than in 1967.

$$100/CPI=100/25=4$$

"Your grandparents could confirm the truth of these numbers from their own experience.[8]

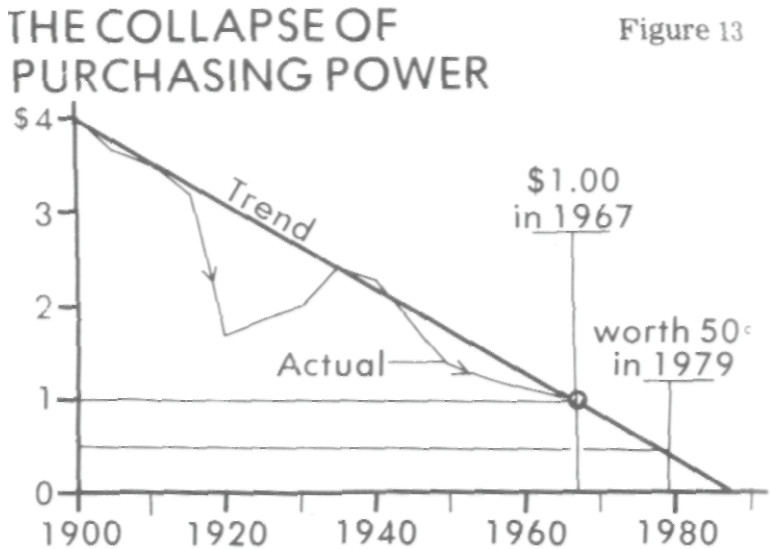
"By completing the calculations 100/CPI for each of the values in Figure 11 we obtain a tabulation showing quantitatively the collapse of purchasing power of the dollar since 1900.

Purchasing power of a dollar based on the value of a dollar being 1 in 1967

Year	1900	1914	1920	1925	1930	1967	1975	1977	1979
Purchasing power	4.00	3.33	1.67	1.85	2.00	1.00	.62	.55	.50

Figure 12

"Here is the way these facts appear in graphical form."[9]



"A 1967 dollar left in the bank until 1979 would have bought only 50 cents worth of goods and services. This means that we have been progressively robbed of one-half of our dollar's purchasing power. The heavy line projects into the future. This indicates that by the late-1980's our dollars will be worth NOTHING.

"This robbery is even more dramatic when based on the 1914 dollar, the year when the Federal Reserve banking system was created by the Congress. Referring back to Figure 11, the CPI in 1914 was 30. So, dividing 30 by the CPI for each of the years being considered we obtain the following tabulation."

Purchasing power of a dollar based on the value of a dollar being 1 in 1914

Year	1900	1914	1920	1925	1930	1967	1975	1977	1979
Purchasing	1.20	1.00	.50	.56	.60	.30	.19	.16	.13

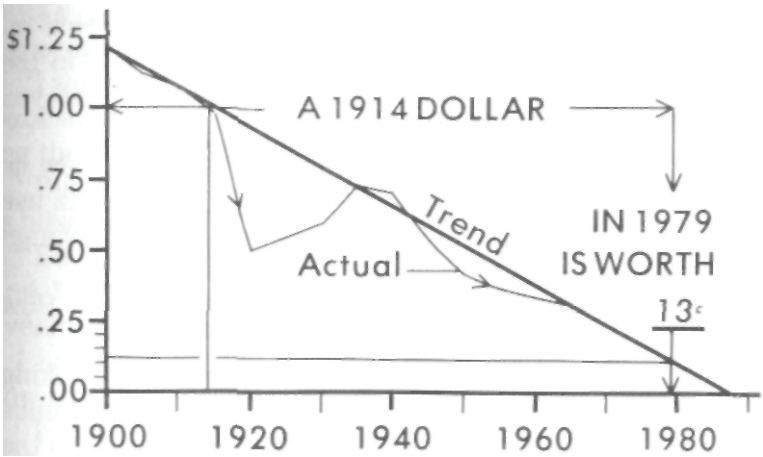
Figure 14

"So a 1914 dollar is worth only 13 cents today?" Earl asked. "Are those numbers correct?"

"They are correct all right," I replied, "and here is the way these facts look on a graph.

PURCHASING POWER COLLAPSE

Figure 15



"You will notice that this is exactly the same curve as in Figure 13. All we need to do is alter the vertical scale so the value 1 ($1.00) is at the reference year which in this case is 1914."

"How do you explain that sag in the curve between 1915 and 1930?"

"Well, as a consequence of the inflation during World War I, prices doubled between 1914 and 1920. On Figure 9 you will notice that the Consumer Price Index jumped from 30 to 60 in those five years. So, what does this tell you about the purchasing power of the money?"

"It went down," Earl replied.

"How much did it go down?"

Earl studied Figure 9. "Well, the Index went up from 30 to 60."

"That means it doubled," I explained, "so what does that do to purchasing power?"

Martha broke in excitedly, "The purchasing power is cut in half!"

"That's correct. Look at Figure 14, Earl. The purchasing power dropped from $1.00 in 1914 to 50 cents in 1920. Purchasing power is the opposite of the Consumer Price Index. When one goes up the other goes down, and in the same proportion. This is another of those key facts you should memorize."

Ed had been sitting in silent contemplation but now he broke in, "John, am I correct in thinking that we can use this same curve for any reference year simply by changing the vertical scale?"

"Yes, that is correct. Let's try another example. How much is a 1930 dollar worth in 1979?"

Ed studied the tabulations. Finally he said, "I'm looking at the numbers on Figure 12. To use 1930 as the reference year we would have to divide by 2. That would put 1 in the 1930 column and .50 divided by two or .25 in the 1979 column. The answer is 25 cents."

"Right," I said, "now try using Figure 14. There we have 0.60 in the 1930 column. To convert that to a '1' we must divide by 0.60. Thus 0.60 divided by 0.60 equals 1. And in the 1979 column 0.13 divided by 0.60 equals .22 or 22 cents."

"In fact the Bureau of Labor Statistics and the Federal

Reserve Bank of New York published a tabulation in 1971 showing purchasing power of the dollar in each decade since 1900. Here it is:

Purchasing Power of the Dollar
Read down for value equivalent to 100c in various years

1900	100c							
1910	83c	100c						
1920	40c	47c	100c					
1930	47c	57c	120c	100c				
1940	57c	68c	143c	119c	100c			
1950	33c	39c	83c	69c	58c	100c		
1960	27c	32c	68c	56c	47c	81c	100c	
1970	20c	24c	52c	43c	36c	62c	76c	
1971 (10/31)	18c	23c	49c	41c	34c	59c	72c	95c

Figure 16

"As you can see their calculations and mine are in agreement."

"I would think that the government would be ashamed to publish such a grim picture," Martha said while examining the numbers.

"But who reads it?" Ed asked, "We haven't. Ignorance is bliss all right."

"Ed, did you have another question? How about Nancy and Martha? Is this reasonably clear to you so far this evening?" I asked my patient young friends.

I had been hoping for some response from Nancy and now she began to speak slowly but with a calm assurance.

"I must admit I donct understand all those charts very well without some study. But therecs one thing I do understand from first hand experience and that is the money-pinch that Earl and I are feeling. It seems we will never get on our feet financially. The increasing cost of food and clothing and everything else just infuriates me. Last week we received two new jolts in quick succession. Our real estate taxes were increased 23% and the insurance

premium on our home has been nearly doubled. We pay these at the bank so I decided to ask the manager about it. He explained that the taxes had gone up because the assessed valuation on our home was increased last year. I asked him if the paneling Earl had installed in the family room caused the increase. 'Possibly to some extent,' he said 'but most of it was because the State needs more money to operate. Inflation, you know.'

"Good heavens! Earl and I need more money to operate on too, but this inflation ~ we have no control over it at all! The manager said that the insurance premium had gone up because the replacement value on our home had been increased by the insurance company. And he used the same old excuse of inflation to explain that too. I really am tired of that excuse."

"We've had much the same experience," Martha added. "It's depressing. We haven't put a dime into our savings account for many months!!"

"What's the sense of saving!" Nancy exclaimed. "The money you put away buy less and less every year. That's what these charts are saying to me. John, how much longer will be before the government get inflation under control?"

"Maybe Congress doesn't know exactly the cause of the problem," Nancy said.

"I wonder about that," Martha interrupted, "there are a lot of smart men in Congress, yes and women too. Certainly some of them are expert about money matters. How many Congressmen are there?"

"There are 100 Senators, two from each State, and about 435 in the House of Representatives," I replied.

"You can't tell me that some of those 535 Legislators don't understand the problem. I'll wager that 100 or even 200 of them know what is going on!" Martha exclaimed.

"Be careful Martha," Ed interrupted, "you might have

a tough time proving that. If they know, why don't they do something about it?"

"Therein lies the mystery," I replied, "the fact remains that they haven't! The debt, and inflation, continue to increase exponentially each year as we saw in Figure 1 last week. What's more Congress authorized the federal debt to rise to $879 billion by April 1980."[10,11]

"Why do we allow Congress to do this to us?" Martha asked.

"Because we don't even know what Congress is up to most of the time," Nancy replied. "And I was ignorant of these money matters until our first meeting here last week. What must we do to educate our Congressmen?" Nancy asked impatiently.

"There is an old saying that goes something like this: 'People have only as good government as they deserve.' Or to put it another way, 'If we ignore the performance of our Congressmen, we deserve the trouble they get us into.' This money crisis is a painful example. For 20 years I could sense there was something radically wrong with our money. What did I do about it? Nothing! I was either too busy, too lazy or too tired to examine the larger picture. When I finally got around to making a serious study of our nation's money problems I discovered to my horror that the federal debt is only one-fifth of the total debt that we must consider if we are to understand the true cause of inflation. Let's examine why this is so.

"The total debt is made up of two parts, the federal debt plus the private debt. To the extent that State and local government debt is non-Federal, it is considered to be part of the private debt. The lower line of Figure 17 (see next page) traces the federal debt since 1915.[12] It's the same curve as on Figure 1 but the scale is compressed so we could add on the private debt and still have space to show the total debt which is the heavy upper line.

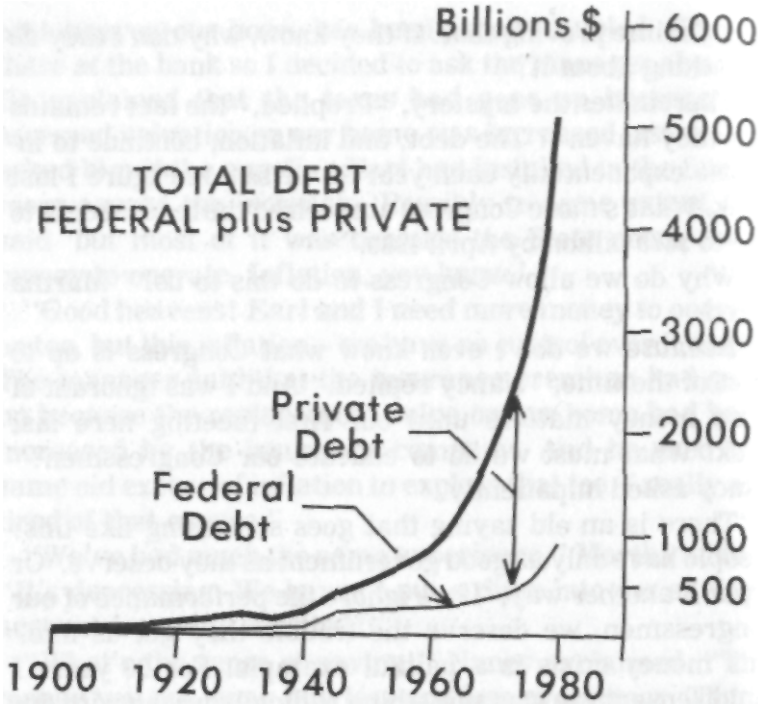


Figure 17

"In 1979 the total debt was made up of[13]

$830 billion federal debt
$4000 billion private debt

$4830 billion total debt

"So the total debt is $4830 billion or $4.8 trillion. The financial experts and writers seldom express serious concern about the private debt.[14] But they should be vitally concerned, and now I'm going to explain why. Private debt is all the money owed by the private sector of the economy

- some to banks (about one-tnird), the rest to individuals and institutions."

"Does it include the $10 Ed borrowed from me at the shop today?" Earl asked with a grin.

"If you were a banker it would be included. Also my bank loans to pay for automobiles, furniture, home appliances. Businessmen borrow on short-term to meet a payroll, or long-term to buy new machinery and equipment. These borrowings are all part of the private debt. As you young people are well aware, the financial institutions will not lend any money unless the borrower agrees to pay an interest charge, currently in the range of 20% per year. Has it ever occurred to you that the interest cost on the private debt is a major cause of inflation?"

After a few moments of reflection Ed replied, "I don't see how that can be. The mortgage interest I pay to the bank subtracts from the money I have to spend, but how can that cause inflation?"

"Has it ever occurred to you that you are paying the interest cost not only on your own debt but also on the debt of hundreds of other people and corporations as well?"

"Do you mean to say that strangers go into debt without my consent and then saddle me with the interest cost?"

"Precisely!" I replied.

"Well that's a new one on me," Ed responded in quiet wonderment.

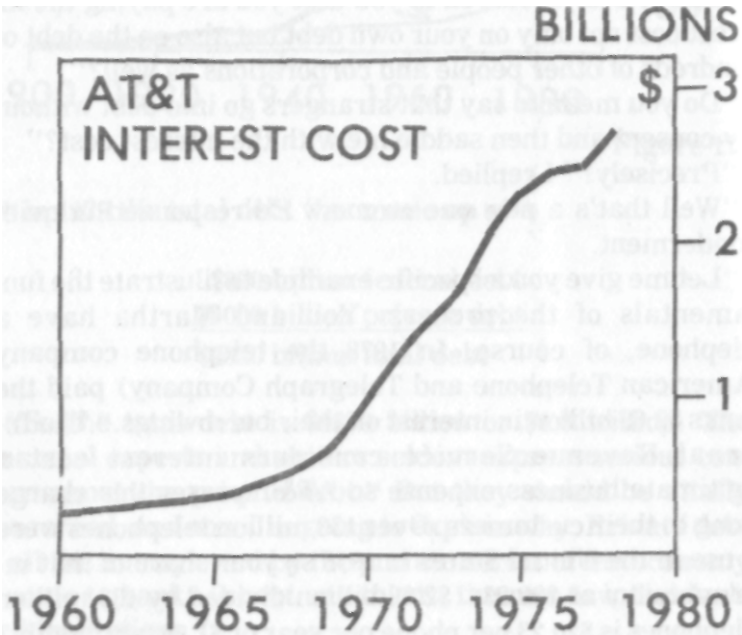
"Let me give you a specific example to illustrate the fundamentals of the process. You and Martha have a telephone, of course. In 1978 the telephone company (American Telephone and Telegraph Company) paid the banks $2.69 billion in interest on their borrowings.[15] The Internal Revenue Service considers interest cost a legitimate business expense so AT&T passes this charge along to their customers. Over 133 million telephones were in use in the United States in 1978 so your share of that interest cost was $20.23. ($2.69 billion divided by 133 million telephones is $20.23 per phone per year or $1.69 per month.)

You may find this instructive to keep in mind the next time you pay your phone bill."

"But $1.69 a month isn't a lot of money when you consider what a good job the telephone company is doing," Earl said.

"Most everyone would agree that the telephone company does a fine job," I replied, "but remember the purpose of this exercise is to illustrate the fundamentals of the process whereby we are all forced to pay someone else's interest cost when we use their service or buy their product. And remember, the $1.69 is only the tip of the iceberg. AT&T has thousands of suppliers, companies large and small. Each of these has its own bank debt. The interest cost is included in the cost of their product or service to AT&T and to every other customer as well. The pyramiding effect of these totaled interest costs increases

Figure 18



the price of everything we buy whether it be telephone service or a loaf of bread. In fact it is illuminating to examine the interest paid to the banks by AT&T and the Pillsbury Company.[16]

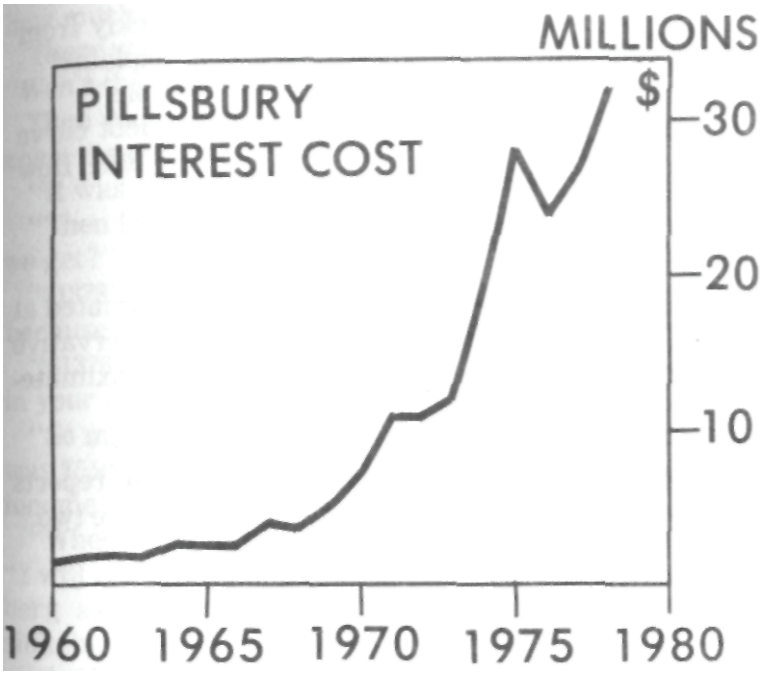


Figure 19

"Dollar sales quadrupled from 1960 to 1978 for both companies. AT&T's interest cost multiplied by ten (from $280 m in 1960 to $2.69 billion in 1978) Pillsbury's multiplied by 26 (from $1,198 m in 1960 to $31.4 m in 1978)

"Every product which is for sale carries an interest cost which is channeled through the producing company back to a bank. This cost is paid for by the buyer - whether he or she is employed, unemployed, or living on a pension. Consequently each one has given up unknowingly that much

purchasing power. As a nation we have much less real purchasing power as a result of the interest drain."

"How much less!" Ed asked.

"About $300 billion in 1979".

"You seem very sure of the $300 billion figure."

"Yes, I am very sure. You can verify it quickly from data published in government reports. Shall I explain?"

"Go ahead," Earl replied,"but I hope it's simple."

"It really is simple. We start with the total debt curve there on Figure 17. Let's stay with the year 1979. How much was the debt that year, Earl?"

"$4830 billion."

"That's correct."

"The interest rate on the total debt can be estimated at about 6% in 1979. It's higher now. But let's be conservative and use 6%. $4830 billion x 6% = $290 billion or approximately a $300 billion interest charge."

"Where does that 6% come from?" Ed asked.

"There are numerous references in official reports published by the United State government. Here are two."

1. U.S. Department of Commerce
   Historical Statistics of the United States
   Bicentennial Edition 1976
   93rd Congress 1st Session, Document 93-78 (Part 2)

2 . U.S. Department of Commerce
   Statistical Abstracts of the United States 1979 National Data Book and Guide to Sources

"Okay, I accept your 6% figure," Ed replied, "so what you have shown is that the American people unknowingly paid $300 billion to the banks and other debt-holders for the goods and services they bought in 1979."

"What I'm saying is that we, the American people,

would have had $300 billion more purchasing power for ourselves if we hadn't given up that amount bit by bit throughout the year in the form of higher prices for everything we buy. Let's get down to some specifics. Ed, how much of this $300 billion did you pay?"

There was no response for a few moments. Then he said, "Won't that be difficult to figure?"

Then Martha said, "We could get a rough idea if we knew the population of the United States."

"It was about 218 million in 1979."

"Then let's divide $300 billion by 218 million and what do we get?" Martha asked.

"$1376" Ed exclaimed. "But that can't be correct because I paid twice that much interest on my mortgage."

"$1376 is average, per capita," I replied. "There are four in your family."

"So my total contribution to the banks and other lenders was $5500 — why that's more than a quarter of my yearly income!"

"When I pay the phone bill next month," Nancy mused, "I will remember that $1.69 is more than the tip of the iceberg as John called it. Didn't an iceberg sink the un-sinkable ship, the Titanic?"

"Let's go on with our examination of the far-reaching effect of interest costs. But first I should remind you that the interest requirement stems from the fact that most of our money comes into existence as debt to the Federal Reserve banking system as it is now constituted.[17] As you have already learned, the Fed is a private banking system. Consequently, much of the interest paid on this debt must move relentlessly into the hands of a small group of people who own and control the system."

"Don't you mean 'control and operate'?" Ed asked.

"The bank employees only operate the system. The tellers, accountants, clerks, computer specialists, super-

visors, bank managers, and yes, even bank presidents only operate the system. They don't control it! They work for wages even as you and I. They are victims of the system just as you and I are. And the pity is that those who find it impossible to pay the interest, even bank employees, are obliged to sacrifice the property they pledged initially to obtain a loan. In truth, the Federal Reserve system is a giant engine pumping the productive effort of the American people into the coffers of those few who own and control the system.[18] Now I am going to illustrate exactly how this control is possible."

"I hope the explanation is simple," Earl sighed, "my brain is getting tired of disturbing thoughts and big numbers in the billions. I can think better in hundreds. How complicated is this explanation going to be?"

"It's even simpler than the telephone example," I replied.

"Those big numbers boggle my mind," Earl complained. "When you start talking about a million dollars my mind resists thinking about it; a billion dollars turns me off. I can't cope with it. And a trillion dollars, forget it!"

"Many people react in much the same way to big numbers and so we're going to confine this illustration to a $100 loan, and, Earl, you're going to make that loan and get rich on the interest payments!"

"Well, now, that's something of real interest to me - no pun intended. Let's go!"

"Let's consider that our little village has organized a colonizing expedition to another planet, and we shall not take any money with us."

"Well," Earl replied, "we'll have plenty of other problems, but without money at least we'll have one less."

"Remember now, the purpose of this expedition is to simplify and clarify the fundamentals of the present United States monetary system. Because we must start

from scratch out there the 'subtle errors' in the design of the system will be more readily detected as the 'gross errors' that they really are."

"Let's go," Ed interrupted, "Countdown...five seconds, four seconds, three, two, one, zero, Blastoff. We're on our way to the planet Pluto!"

"We arrive on the planet Pluto and set up our new community. We develop our economy and soon are ready to graduate from the stage of barter. We need a more convenient means to exchange our goods and services. With my expert knowledge of finance I persuade the colony to adopt the system of 'bank checkbook credit' (as now used on planet Earth) and to appoint Earl as the banker with me as consultant. The majority of the colonists are satisfied to put the 'complicated business of banking' into someone else's hands, so they approve the legislation which I write giving the banker exclusive authority to govern the monetary affairs under broadly stated objectives.

"Earl and I then proceed to work out operating rules and procedures, that we may alter from time to time as our 'good judgment' might dictate.

"Earl names his private corporation the Pluto Central Bank. He has been given the authority to create Pluto dollars, just as the United States Federal Reserve assumed the authority in 1913 to create United States dollars."

"But we didn't bring any money with us to Pluto," Nancy said, "where will Earl get the Pluto dollars for his bank?"

"He will create them!" I replied.

"Out of what?"

"Out of nothing!"

"Is that legal?" Martha asked.

"Well, that is exactly the way the Federal Reserve banks and the commercial banks in the United States create money: OUT OF NOTHING! Do you remember I

explained this to you last week."

"Yes, I do remember," Martha said, "but I can't seem to make myself believe that a mere human banker can create money out of nothing and not go to jail!"

"It is illegal for you to do it, Martha, but the Federal Reserve and commercial banks create money every day. This leads to serious consequences for the nation as I am now going to demonstrate with my $100 example. Let's agree that a Pluto dollar equals a United States dollar at this time.

"Earl has opened his banking office for business. Ed comes in to borrow $100, which represents an adequate money supply for our little community. Ed has an honest face and property, worth more than $100, which he is willing to pledge as security for the loan. Earl prepares a promissory note for Ed's signature and gives him a checkbook and a deposit credit of $100 by making a simple bookkeeping entry. Presto! Earl has created a $100 debt against Ed, which Ed is obliged to pay back to Earl at interest of, say, 6%. Now let's see what happens.

"One year passes. Earl the banker notifies Ed that an interest payment of 6% ($6) is due. What are the consequences of the borrower's obligation to pay this interest cost? There are two possibilities:

1. The borrower writes a $6 check to the banker to pay the interest. Results: $94 is left in circulation. $100 debt remains. The loan is renewed for another year. At the end of the second year, $6 more of interest is due. When the borrower pays this interest there will be $88 left in circulation. If the borrower continues to pay $6 per year in interest, after 16 2/3 years there would be no money left in circulation, but the debt would still be $100. Earl the banker would be obliged to take possession of the pledged property according to law. It is ob-

vious that the borrower was not wise to pay the interest regularly.

Ed interrupted, "But suppose I'm a farmer up there on Pluto. Why don't I pay the interest by giving Earl a sack of potatoes worth $6?"

"The banker is too clever for that," I replied, "he doesn't want your potatoes, he wants your pledged security. Let's examine the second possibility:"

2. At the end of the first year the borrower chooses not to pay the interest but to borrow it from the banker thereby increasing the loan principal to $106. Earl, the banker, is happy to loan the additional $6. It's no problem for him. He can create it just like he created the initial $100 as an additional debt against the borrower. The banker hastens to point out that the interest on the additional $6 is only 36c that first year. This is a paltry sum to keep our circulating money supply up to full strength of $100.

"Do I detect a facetious tone in your voice?" Ed inquired. "Is this second alternative really as innocent as it sounds offhand?"

"Let's calculate your interest cost and total debt during the first five years. In tabular form it looks like this:

Figure 20

Year	Original borrowed principal	Debt at year start	Interest due at year end	Money in circulation (M-1)
1	$100	$100	$6.00	$100
2	(remains	106	6.36	(remains the same
3	the same	112.36	6.74	for the 5 years)
4	for the	119.10	7.15	
5	5 years)	126.25	7.57	

"The debt at the start of the second year is the original $100 plus the interest at 6% which is:

$100 original principal
+ 6 interest charge
$106 total debt after one year

The second year's interest is:

$106 original principal plus one year's interest
x.06 interest rate
$6.36 interest charge for the second year

So the debt at the start of the third year is:

$100.00 original principal
6.00 first year's interest
6.36 second year's interest
$112.36 total debt after two years

So what is the debt at the end of the fifth year?" I asked. "$126.25! No...that's at the start of the fifth year. At the end of the year the debt is:

$126.25 debt after four years
+7.57 fifth year's interest charge
$133.82 total debt after five years

"Correct," I replied, "now what do you think of this system of borrowing to pay the interest?"

"So far it doesn't look bad," Ed replied. "The interest is only $7.57 for one year."

Martha interrupted, "But Ed, look at the debt. It has increased by one-third in five years."

"Yes, I know," Ed replied, "but the interest has only in-

creased from $6.00 to $7.57. That's only $1.57. We can handle that!"

"Do you suppose you could handle the increase after 50 years?" I asked. No one answered.

"Well, let's not speculate on the answer. I have made the calculations out to 70 years. That's not a long time in the history of our colony.

Year	Original borrowed principal P	Debt at year start D	Interest due at year end (rate: 6%) I	Money in circulation (M-1)
1	$100	$100.00	$6.00	$100
2	(remains	106.00	6.36	(remains
3	the same)	112.36	6.74	the same
4		119.10	7.15	
5		126.25	7.57	
10		168.95	10.14	
20		302.56	18.51	
30		541.83	32.22	
40		970.35	58.22	
49		1,639.38	98.36	
50		1,737.75	104.26	
60		3,112.05	186.72	
70		5,573.20	334.39	

Figure 21

"Inspection of these tabulations reveals several important facts about a monetary system which is based on debt:"

* The debt increases each year but the actual amount of money in circulation (M-l) is only the original borrowed principal.

* The debt increase is moderate in the early years but it increases exponentially with time to

unbelievably big numbers: the increase in the Pluto example being $68.95 in the first ten years, but $2461.15 between the 60th and the 70th year.

* Here is a shocking fact. At no time can the debt be paid with the money that is in circulation! Even in the second year the $100 in circulation is $6.00 short of the indebtedness. The banker can foreclose on the borrower's pledged property.

* Here is another surprise. In the 50th year all the money in circulation ($100) won't even pay the interest ($104.26).

* As the debt increases as a result of the interest build-up, more property must be pledged as security for the increasing debt!

"Calculating Ed's interest looks like a long and tedious job to me, and it's my bank that he owes the money to! I really ought to learn how to figure it 'quick and easy'."

"You have a whole year to calculate the interest," Ed laughed, "$100 multiplied by .06 equals $6.00 of interest due at the end of the first year."

"That one is easy," Earl replied, "Debt multiplied by .06 always equals the interest due for that year. But if you're so smart would you please calculate for me your debt at the 20th year without looking at Figure 21?"

Ed sat silent for several moments. Then I broke in, "Well, inasmuch as our colony appointed me consultant to the Pluto Central Bank, I will show you how to calculate quickly Ed's debt for any year! This is a problem in compound interest. The general form of the formula for calculating compound interest is exactly the same as the formula for the exponential curve we have been discuss-

ing: $y = a^x$. Do you remember what an exponential curve looks like?"

"I certainly do," Nancy exclaimed, "the higher it goes the steeper it gets!"

"Correct," I replied, "Nancy, you should apply for a job at your husband's bank. The equation for computing the debt at the start of any year is:

$$D = P(1+r)^{n-1}$$

where D is the debt at the start of the year
P is the borrowed principal ($100 in this case)
r is the annual interest rate (.06 in this case)
n is the year in question

"Now let's test the debt equation for the second year (n=2).

$$D_2 = \$100\,(1+.06)^{2-1} = \$100\,(1.06)^1 = \$106$$

For the third year (n=3):

$$D_3 = \$100\,(1+.06)^{3-1} = \$100\,(1.06)^2 = \$112.36$$

For the twentieth year (n=20):

$$D_{20} = \$100\,(1+.06)^{20-1} = \$100\,(1.06)^{19} = \$302.56$$

Do you have any questions about these calculations?" "Yes, I do," Martha said, "I have forgotten how to raise a number to an exponential power, like 1.06^{19}. How do you do that?" "The easiest way is to use my calculator, or we can multiply 1.06 by 1.06 and then multiply that product by 1.06 and continue the process for 19 times, thus:

1.06 x 1.06 x 1.06 x 1.06 x...= 3.0256 So

$$D_{20}=\$100 \times 3.0256 = \$302.56$$

"This is a laborious process and of course is subject to errors in multiplying. Mathematical tables are available which tabulate the values for various interest rates and years. Bankers use such tables."

"But we're up there on Pluto," Martha replied, "it looks like you and Earl will have to do the calculations by long hand."

"I don't mind that," Earl laughed, "I have an incentive. In a few years I'm going to foreclose on Ed and take his property! You're at my mercy, Ed. I'm in the right business now: banking. You're working for me, but you don't know it."

"Oh yes, I do know it...now," Ed replied, "and I don't like it. Next time we have a town meeting I'm going to expose your racket and put a stop to it!"

"Maybe the colonists won't believe you Ed," I said, "especially if Earl and I refuse to admit we are doing anything unlawful. What we are doing is no different than the Federal Reserve and commercial banks are doing on planet Earth!"

"I know," Ed replied, "but to me it's not fair, it's not honest. It's immoral! It's outright theft! I think I could prove that if I'd plot the data from Figure 21."

"You young people are learning fast, I have already plotted the data. Here it is on Figure 22.[20]

"Say, I recognize that curve!" Nancy interrupted with excitement, "It's the same shape as the total debt curve back there on planet Earth." (Figure 17)

"Up here on planet Pluto that horizontal thin line is the $100. It's the original borrowed principal. Now I'd like to ask you young friends the question I have been building up

SKYROCKETING DEBT
To maintain only $100 in circulation
by borrowing TO PAY THE USURY AT 6%

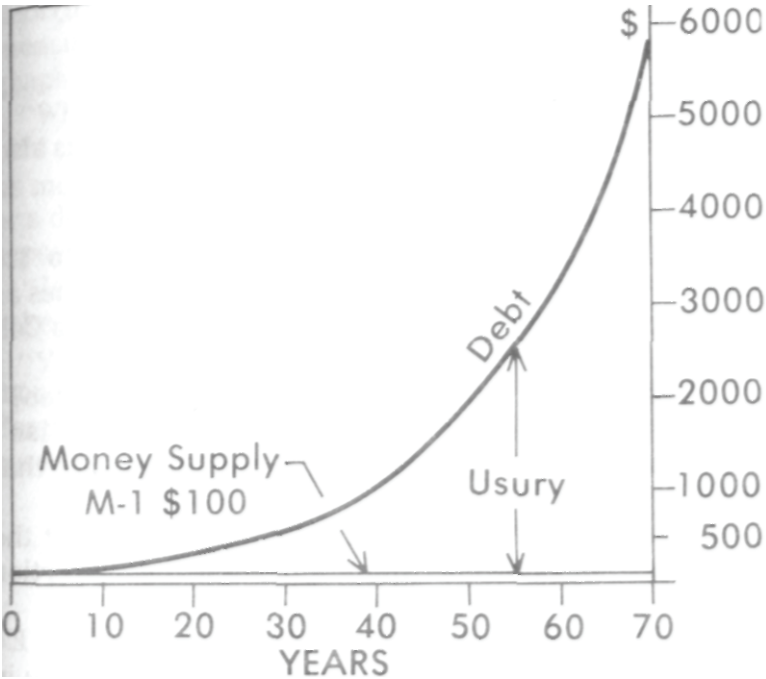


Figure 22

to all this time. The question is:

WHAT DO THOSE ARROWS MEASURING THE GAP BETWEEN THE RISING DEBT (D) AND THE MONEY SUPPLY (M-1) INDICATE?

There was silence for quite a while. Then Earl spoke up. "I'm the banker. I should be able to answer that. Let's look at the 20th year we have been discussing. John, you are the consultant for the Pluto Central Bank. Let me ask you a

few questions. D_{20} is $302.56, Ed's debt to the bank in the 20th year. Right?"
"That is correct."
"That $302.56 includes the $100 he borrowed initially?"
"That's correct, we bankers call that $100...

* The original borrowed principal or
* The original debt principal and in this case it is also
* The Pluto Colony's total money supply M-l

"The $100 has doubtlessly been subdivided into $20 checks, $10 checks, $5, $1, and probably smaller values as it circulates as the medium of exchange in our Pluto Col-only."

"What about that $302.56. Isn't that circulating too?" Nancy asked. Then she added hastily, "No of course it isn't The total money supply is $100! I keep forgetting that fact."

"Look at it this way," I replied, "We all agree that the $302.56 is Ed's total debt and the $100 is the money portion of his debt."

"But I have spent most of that $100 a long time ago," Ed protested, "a few dollars come back from time to time in exchange for my potatoes, but I promptly spend them out again for supplies we need in the family. What I have in my pocket is peanuts compared with the $100 I borrowed and the $302.56 I now owe the bank." After a thoughtful hesitation he continued, "It is becoming very clear that even if I could earn back all of that $100 and pay it to the Pluto Central Bank, I would still be in debt to them!"

"How much would you still owe the bank?" I asked.

"Let's see, it would be $302.56 minus the $100 which is $202.56. Good grief! Now I see it. That $202.56 never existed as money so it's impossible to pay my total debt in money."

"Correct. And the $202.56 that you can't pay in money the bank will take from you by foreclosing on your property that you had to pledge in increasing amounts as your debt increased. That is USURY. And that is what is measured by the space between those two lines on the
graph."

"What a rip-off!" Ed exclaimed.

"I trust it is clear to you all that the $202.56 never existed as money. That's why it is called UNMONETIZED DEBT, or a debt which never had been turned into cash money. To repeat, this is USURY."

"Is there such a thing as MONETIZED DEBT?" Nancy asked.

"Yes, the $100 is MONETIZED DEBT. The $100 is money, checkbook money. It is created money. The Pluto Central Bank created it. So you see, Ed's total debt is composed of two parts:

$100.00 MONETIZED DEBT
$202.56 UNMONETIZED DEBT or USURY

$302.56 TOTAL DEBT at the 20th year.

"Well, that's simple enough," Ed exclaimed, "but it seems to me that the $202.56 is also the accumulated interest charges at the 20th year resulting from the original $100 I borrowed. How about that?"

"That's correct, Ed. You obligated yourself to pay the bank a fee for the use of the $100. Remember?"

"Yes I know that. But I didn't agree to pay $202.56 interest for the use of a measly $100!"

"Oh yes you did agree," Earl protested. "I've been practicing on John's little electronic calculator. You did agree to 6% interest didn't you? Well $100 borrowed at 6% grows to $302.56 by the 20th year. That's for certain."

"It's equally certain that I cannot pay it. Now what hap-pens?"

"I foreclose and take the property you pledged. The bank can't lose. I'm calling the loan and calling my lawyer."

"Not so fast," Ed cautioned with a knowing smile, "I see a way out of this box. The trouble is there's not enough money in circulation. John, let's get some more money in-to circulation and I'll solve my problem!"

"Okay, that's easy enough. The Pluto Central Bank can create some more just like the first $100 it loaned to you. How much more do you want?"

"No, I don't want to borrow any more. I'm in enough trouble now. Someone else should borrow it. Borrowing is the only way we can get more money into circulation as I understand it."

"Yes, in our kind of money system that's the only way. How much do you want in circulation, Ed?"

"Enough to cover my bank debt with some to spare. Let's make it a round $1000 for easy calculating. If we cannot get nine more suckers like me to borrow $100 each let's get the Pluto government to borrow the money for a public project like defense, welfare or to build a dam."

"There's nothing wrong with a public project," I broke in, "provided: the colonists vote in favor of it; they are willing to tax themselves to pay for it; and there is sufficient manpower available to accomplish the project."

"To avoid another digression," Martha said impatiently, "why don't we just agree to these three conditions. I'm anxious to see how Ed is going to get out of debt!"

"We are all agreed then. The borrowed principal has now been boosted from $100 to $1000. The money in circulation (M-1) is therefore $1000. Let's make a new tabulation to show the Pluto colony's combined indebtedness."

"That will be simple," Nancy suggested, "all we need to

do is multiply the dollar numbers by 10 on Figure 22. I'll write them out."

Here is what she wrote.

Year	Total borrowed principal P	Debt at year start D	Interest due at year end (rate: 6%) I	Money in circulation (M-1)
1	$1000	$1000.00	$60.00	$1000
2		1060.00	63.60	
3	(remains	1123.60	67.40	(remains
4	the same)	1191.60	71.50	same)
5		1262.50	75.70	
10		1689.50	101.40	
20		3025.60	181.50	
30		5418.30	325.10	
40		9703.50	582.20	
49		16,393.80	983.60	
50		17,377.50	1042.60	
60		31,120.50	1867.20	
70		55,732.00	3343.90	

Figure 23

"My portion of the debt is still shown by Figure 21," Ed mused as he studied the new tabulation. "That extra money in circulation really solves my problem. I'm going to work like a trojan in my potato field and flood the

market with potatoes. I'll save and save and pay back the bank at the start of the second year. $106! No problem. And there's plenty of money left in circulation."

"But suppose the potato crop fails because of wet weather or a drought and you can't pay the bank until the fifth year?" Earl asked.

"Still no problem," Ed replied, "I simply pay the $126.25. There's plenty of money in circulation. All I have to do is work hard and earn it!"

"Ed is right, if he works hard and is thrifty, then according to the American tradition he can pay off his bank debt and even build up a surplus. But if he does, others must fail in order for Ed to succeed!"

"Why, that's ridiculous," Martha said.

"It may sound ridiculous," I replied, "but with a debt-money system there is never enough money or credit to pay off all the borrowed principal plus accrued interest. Some people may accumulate enough money or credits to pay off their portion of the principal and interest fees, but that generates a greater shortage overall. More borrowing is necessary to postpone the bankruptcy! And mind you it is only a postponement. The ultimate collapse is inevitable. Let me illustrate.

"Suppose that Ed has success growing potatoes. He accumulates $106 and pays off his bank loan plus interest at the end of the first year. There will then be $894 left in circulation. ($1000 - $106 = $894)."

"Wait a minute," Earl protested, "that $106 doesn't disappear, it's in the bank."

"True the $106 is in the bank, but it is not in circulation. It is no longer part of the money supply M-l. It reverts back into the reserves. Interest and principal payments paid to a bank always remove that money from circulation. Suppose that Ed doesn't pay the bank until the 20th year. Let's see how much the money supply is reduced

when Ed finally pays off his debt. Here is what he has to pay the bank:

$100.00 principal
+202.56 interest at the 20th year
$302.56 payment to the bank

So how much is left in circulation in the colony?

$1000.00 original money supply
-302.56
$697.44 left in circulation

"If he didn't pay until the 40th year the money left in circulation would be only $29.65!

$100.00 principal
+870.35 interest at the 40th year
$970.35 payment to the bank

Subtracting this sum from the money supply we find how much is still in circulation at the 40th year.

$1000.00 original money supply
-970.35 $
29.65 left in circulation

"Well, what has happened to the total debt of the Pluto colony, that is, the $1000.00 borrowed and the interest due at a rate of 6%? At the beginning of the 20th year and after Ed pays off his debt, the figures look like this:

$3025.60 Pluto colony's national debt
-302.56 Ed's debt
$2723.04 remaining national debt
(to be paid with a money supply of $697.44!)

At 40 years the situation is even worse:

$9703.50 Pluto colony's national debt
-970.35 Ed's debt
$8733.15 remaining national debt

"But hold it a minute," Earl interrupted, "you mean we owe the Pluto Central Bank $8733.15? How much have we got in circulation to pay this off? All we have in the whole colony is peanuts: $29.65! We can't pay it off. We're bankrupt. Do you mean that this is what's been happening in the United States since 1914?"

"Yes, day-by-day we have a dependency on expanding our debt in order to bring new money into circulation, as principal and interest payments are being made to the banks thus taking money out of circulation. Of course it is easy to get the government to do this expansion for us by borrowing from the banks. The government keeps pumping bank-created money into the system while interest and principal payments are syphoning it off at an ever-increasing rate."

My young friends just sat there transfixed. Finally Ed spoke, "Why is it, please tell me, why is it that I have to be 30 years old before someone explains this money rip-off to me in a way I can understand?"

"I could have explained all this to you last year or the year before that, but I wonder whether you were ready to listen then. Have you ever noticed that people react with most enthusiasm when they are hard hit in the pocket-book? The money pinch is really on in the United States in 1980. Prices keep going up and up but for most of us, income does not keep pace."

After a few moments Earl added, "But no one ever explained our money system to us starting from scratch with $100. John trapped me into listening to his simplified ex-

planation using that $100 bait. Seriously, though, I must admit that I now understand why we got into serious troubles up there on Pluto."

"What do you mean, we?" Ed objected. "You're not in trouble! You're the banker. You stand to gain from the troubles you got us borrowers into. That clever debt-money system is programmed to ultimately concentrate all Pluto's money and property in your hands. Right?"

"At that point I guess I'll have to become the dictator!" Earl replied with a wry smile, "I'll control everything and everybody."

"Unless the citizens wake up in time and correct the system," I conjectured.

Silence reigned. My young friends were deep in thought. I was reluctant to interrupt. Finally I continued, "Let's return to planet Earth now and examine our situation there in the light of what we have learned.

"The fundamental mathematics of a monetary system are the same anywhere in the UNIVERSE and at any time in history. Figure 21 illustrates this fundamental fact. Are all of you sure you understand the development of the tabulations on Figure 21?"

My young friends nodded in agreement.

"And Figure 23 is similar but 10 times bigger because Ed wanted more money in circulation. Figure 24 compares the debt experience on Pluto to what has been happening to the citizens of the United States since 1914.

"The upper curve is for the Pluto colony. Both scales to the left apply to this curve, the one is for $100 which is the original borowed principal and the other is the $1000 Ed wanted loaned into circulation so he could manage to pay off his bank loan.

"The lower curve is the actual total debt of the United States, taken from Figure 17. The scale is at the right."

"This is hard to believe," Martha exclaimed, "the

curves are almost the same shape, but not quite!"

"Both curves are exponentials so they obey the mathematical law:

$$D = Px(1+r)^{n-1}$$

On Pluto we kept the interest rate (r) constant at 6% as the years (n) increased. Thus

$$\text{Debt} = \text{Borrowed Principal (P)} \times (1+.06)^{n-1}$$

In the United States the interest rate over the years has varied from less than 1% to over 20% and also, the borrowed principal has increased from less than $100 billion in 1915 to several thousands of billions in 1980.

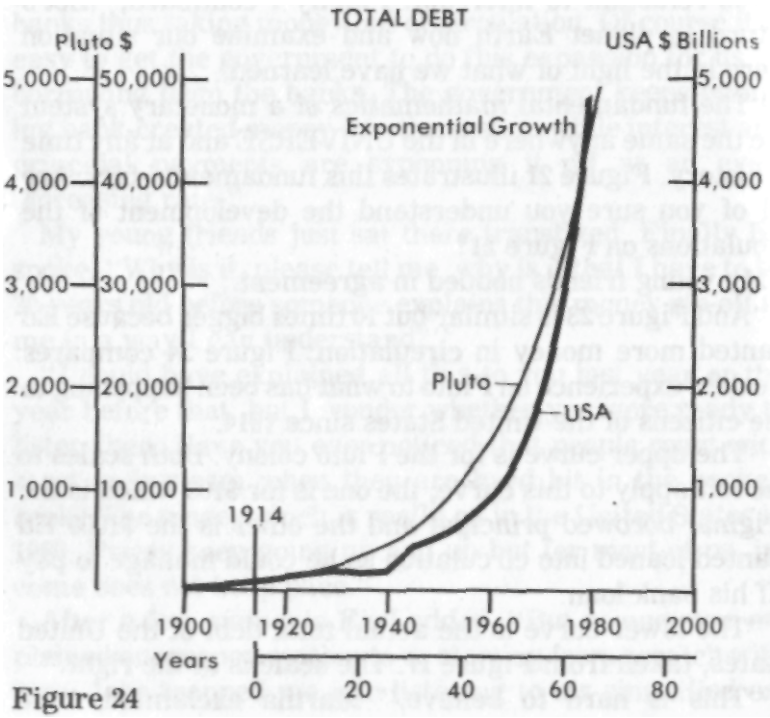


Figure 24

"When we analyze this curve as an exponential we see that the rate of debt increase was 2% to 4% in the early years but it passed the 6% rate in 1960 and has continued to increase ever since."

"It's clear to me now 'the gross errors in the money system' are the root of all our trouble," Ed contemplated. "That compounding of unpayable interest on the total debt is like the ravages of an incurable disease. But how in the world can anyone correct such an overwhelming problem?" he continued, "The disease is worldwide. You said that Canada has the same money system as we do; so does England, France, Germany, Japan - all of them. It seems we're all going down the bankruptcy chute together unless a miracle comes to pass."[21]

"We are in deep trouble," I agreed, "but it should not be considered hopeless in the 20th century. One would think that a nation that can develop the technology, equipment and automatic controls to put teams of men on the moon and bring them back safely to Earth, certainly ought to be able to solve its money problems, don't you think so?"

"Yes it would seem so," Nancy agreed, "but sending men to the moon was a scientific and engineering achievement. Scientists and engineers have to deal with facts. The money problem involves politics and that alone seems to compound the difficulties."

"Nancy, may I say that solving the problems of space travel was once considered, by most people, to be a wild impossible dream. But when capable men of goodwill were organized to accomplish it, the effort succeeded! Many of the scientists and engineers who worked in the moon projects and other space programs have now become managers in their companies or in the government. I am personally acquainted with literally dozens of them. All of these men are intimately acquainted with the scientific method for finding out the facts about any problem, no

matter how complex. They know how to devise automatic controls to stabilize interrelated systems. Don't you think they could correct the inflation problem if they really set their minds to it? Of course they could!"

"Then why don't they?" Nancy asked impatiently.

"I don't know; perhaps we should ask them. Meanwhile may I suggest that we complete this diagnosis and come to some valid conclusions.

"Figure 25 is a generalized picture of the condition that always develops in a country having a debt money system.

"The vertical scale can be American dollars, Canadian dollars, English pounds sterling, French francs, German marks, Japanese yen, or what have you. The shape is

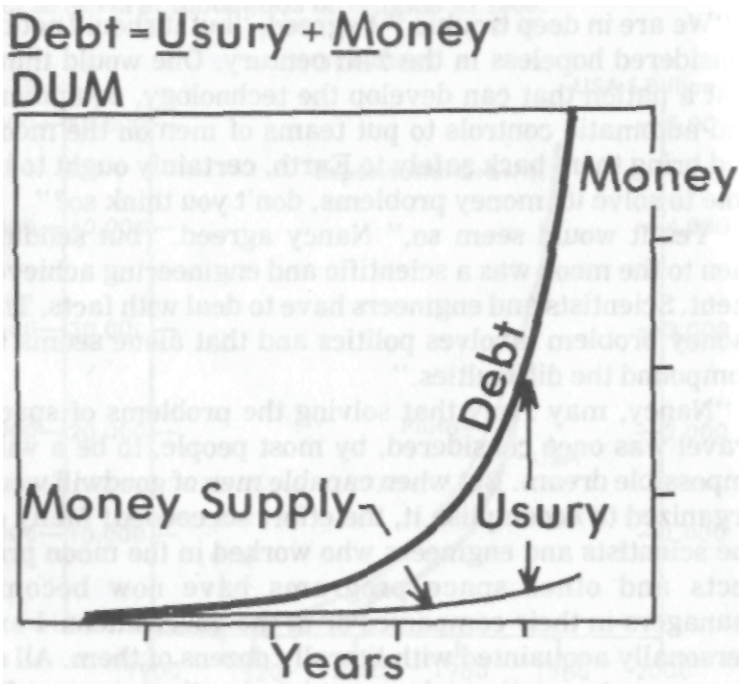


Figure 25

always an exponential curve. It has to be. The laws of mathematics are inviolate. You will see that

USURY = DEBT minus MONEY SUPPLY

and by rearranging terms we have the acronym D=U+M."

"Which is just plain dumb!" Nancy observed. "And here is the definition of USURY in words.

USURY
is any charge at all (whether 1%, 6% or 100%)
by a private lender (the Federal Reserve or commercial bank)
for the use of money
he is allowed to create (as a deposit to the bank account of the borrower, who may be an
out of nothing individual, a company or a government)
as a credit to himself

"That's strange," Martha said "I always thought of usury as excessive interest.[22] But you said that a 1% charge can be usury. How come?"

"Here is the distinction. If the lender is a private entity and created the money to be loaned, out of nothing, the fee for its use is more accurately called USURY. Earl created the $100 as a debt against Ed."

"Well then, if Ed would lend some of his potato money and charge 50% per year that wouldn't be usury?"

"That would not be usury. Because Ed did not create the potato money. He earned it by his work in the potato field. He is entitled to a fee for giving up the use of his earned money. The distinctive name for that fee is INTEREST. Perhaps no one would be willing to pay him 50% as Martha suggested but he might compete with the Pluto Central Bank and ask for 6%. Yes, and if someone needed the money acutely enough he might be willing to pay 10% or

even 25%. In a free society the amount would be negotiated between Ed the lender and his borrower. Here is a good way to remember this distinction:

*MONEY CREATED BY A PRIVATE LENDER, WHEN LOANED GIVES RISE TO PRIMARY DEBT AND THE FEE FOR ITS USE IS CALLED USURY.

*EARNED MONEY WHEN LOANED GIVES RISE TO SECONDARY DEBT AND THE FEE FOR ITS USE IS CALLED INTEREST.

"Were the goldsmiths the first usurers?" Martha asked.

"I'm not sure they were the first. You have heard the old saying that there is nothing new under the sun. Probably that's the case here. When they wrote out receipts for more gold than they had on deposit they were creating money, paper gold you might say. The fees collected for the loan of the gold receipts would certainly qualify as usury. Recall, last week, you learned that modern banking uses this same basic technique but with subtle refinements."

"Like doing away with the gold altogether?" Ed asked.

"That's one of the 'refinements'. You don't need any gold to start a bank today. The main thing you need is the authority - monetary authority under the law. That is what the Pluto colony gave to Earl so he could start the Pluto Central Bank.

"You young people are very satisfactory students. You listen with an open mind, apply logic to what you hear and ask intelligent questions. It is hard work to discover the whole truth. This evening we have covered a lot of ground that is new to you. Perhaps we should bring this session to a close at this point because the time is running on and Marian gave me strict orders to leave ample time for the refreshments she is baking specially for this evening."

"There's a delicious aroma in the air right now," Earl said looking toward the kitchen, "by any chance is it apple pie? "Could be," I replied, "but before we adjourn may I take five minutes to summarize the main points of this evening's discussion? As you recall, last week's summary contained eight items, so this week we will continue with number nine."

Ed broke in, "It would be helpful to glance at the eight points for a refresher."

"That's a good idea," Earl added, "Those facts of last week seem simple compared with this evening."

"Here we go then with last week's summary:

1 $834 BILLION WAS OUR FEDERAL DEBT IN 1979.

2 $48 BILLION WAS THE INTEREST ON THAT DEBT IN 1979.

3 THE PATH OF BOTH THE DEBT AND THE INTEREST CONTINUES STEEPLY UPWARD.

4 APPROXIMATELY 25% OF THE MONEY SUPPLY IS IN CASH.

5 APPROXIMATELY 75% OF THE MONEY SUPPLY IS IN BANK DEPOSIT CREDITS.

6 IN THE UNITED STATES TODAY MONEY IS PAPER FEDERAL RESERVE NOTES AND METAL COINS NOT OF SILVER OR GOLD. BUT MONEY IS MOSTLY NUMBERS WRITTEN IN DEPOSITORS' PASS BOOKS AND SHOWN ON THE BANKS' RECORDS AS BANK DEPOSIT CREDITS.

7 UNDER OUR PRESENT 'DEBT MONETARY SYSTEM', MOST MONEY IS CREATED AS DEBT BY THE COMMERCIAL BANKS MAKING LOANS.

8 THE FEDERAL RESERVE CHECKS ENTER THE BANKS AS RESERVE DEPOSITS AND BECOME THE MONETARY BASE FOR EXPANDING THE MONEY SUPPLY SEVERAL TIMES AS BANK DEPOSITS, REPRESENTING DEBT, LOANED AT USURY INTO THE PRIVATE SECTOR OF THE ECONOMY.[23]

"Now we continue with this week's summary."

9 THE CONSUMER PRICE INDEX IS A MEASURE OF PRICE INFLATION. CPI IS DIRECTLY PROPORTIONAL TO THE PRICE OF CONSUMER GOODS. THE NUMERICAL VALUE OF CPI IN THE REFERENCE YEAR IS ALWAYS 100 (MEANING 100%). THE CPI HAS RISEN EXPONENTIALLY SINCE THE YEAR 1900 WHEN IT WAS 25. IT WAS 100 IN 1967 (THE REFERENCE YEAR), 150 IN 1976 AND 200 IN 1979.

10 THE PURCHASING POWER OF MONEY VARIES INVERSELY AS THE CONSUMER PRICE INDEX, WHICH SIMPLY MEANS - AS CPI GOES UP, PURCHASING POWER GOES DOWN. IN 1979 THE PURCHASING POWER OF 1914 DOLLAR WAS 13 CENTS. AS THIS TREND CONTINUES, A DOLLAR WILL BE WORTH NOTHING BY THE LATE - 1980's.

11 THE TOTAL DEBT OF THE UNITED STATES IN 1979 WAS $4830 BILLION ($830 BILLION OF FEDERAL DEBT PLUS $4000 BILION OF PRIVATE DEBT.)

12 THE ANNUAL INTEREST LOAD ON THE TOTAL DEBT IN 1979 WAS $300 BILLION AND INCREASING EXPONENTIALLY.

13 THIS $300 BILLION IS PAID BY CONSUMERS, YOU AND ME, BECAUSE INTEREST COST IS INCORPORATED INTO THE SELLING PRICE OF EVERYTHING WE BUY, WHETHER A PRODUCT OR SERVICE.

14 THE PURCHASING POWER TO THE AMERICAN PEOPLE WAS THEREFORE REDUCED BY $300 BILLION IN 1979.

15 MONEY CREATED BY A PRIVATE LENDER, THE RESERVE AND COMMERCIAL BANKS, WHEN LOANED GIVES RISE TO PRIMARY DEBT AND THE FEE FOR ITS USE IS CALLED USURY. DEBT = USURY+ MONEY SUPPLY (M-1)

16 EARNED MONEY WHEN LOANED GIVES RISE TO SECONDARY DEBT AND THE FEE FOR ITS USE IS CALLED INTEREST.

17 A DEBT MONEY SYSTEM HAS UNSTABLE CHARACTERISTICS BECAUSE:

A) MOST MONEY IS CREATED AS LOANS AND THEREFORE DEBT;
B) ONLY THE PRINCIPAL IS PLACED INTO CIRCULATION AS THE MONEY SUPPLY (Ml) WHEN THE LOANS ARE MADE;
C) SO THERE IS NO MONEY TO PAY THE INTEREST WITHOUT REDUCING THE MONEY SUPPLY (M-1), BECAUSE ANY PAYMENT OF INTEREST (OR PRINCIPAL) WITHDRAWS

MONEY (M-1) FROM CIRCULATION;

D) THIS WITHDRAWAL OF MONEY SETS UP A SHORTAGE WHICH TRIGGERS DEMAND FOR ADDITIONAL CREDIT AND DEBT JUST TO PREVENT A DECLINE IN THE MONEY SUPPLY (M-l);

E) THE ADDITIONAL BORROWING EXPANDS THE DEBT EXPONENTIALLY THEREBY EXPANDING THE INTEREST BURDEN EXPONENTIALLY.

"Item 17 summarizes precisely the fundamental cause of America's runaway inflation. Think about it until our next meeting.

"And now I see Marian is signalling to us from the dining room. Shall we meet here again next week?"

"Absolutely!" Ed exclaimed rising and stretching, "Now that the doctor has diagnosed the patient's illness we need to know how to find the cure. Let us not forget, we are the patients!"

"It is apple pie," Earl boasted as we all moved slowly toward the dining room, "and ala-mode at that. Marian, it's my favorite dessert!"

"I hope you all won't mind my saying this," Nancy added wistfully, "but the discussion here this evening has really started me to worrying about our future as families and as a nation. In fact I was quite depressed until John reassured us that there is a solution. I hope and pray that there is."

"Marian, you always set such a pretty table," Martha said as our guests stood admiring the colorful flowered tea set casting shadows on the pink tablecloth in the candlelight.

"Thank you, Martha. We bought these dishes in London back in 1970. They were displayed quite as you see them

now. I was taken with them right off and John, bless his heart, said I could buy them."

"They weren't cheap," I replied with a smile, "but I liked them too. Marian had warned me in advance that our old dishes needed to be replaced so I was conditioned to say 'yes'."

"Please sit down," Marian continued, "the apple pie is still a bit warm and I see it is beginning to melt the ice cream."

"Marian your home is just like a haven in a storm," Nancy said glancing around the room. "It's so cozy and warm ... not only in temperature but in the pleasure I feel when I'm visiting here."

"This has been home for us for 32 years come March 15th. Someone has said 'It takes a heap o' living' in a house to make it home.' Possibly that is one of the important ingredients: and only time can provide it. We have been blessed. We have had the time."

Our young guests were in a thoughtful mood as they watched my wife begin to serve the tea. Then Ed spoke.

"Marian, are you thinking that maybe my generation may not have the time to mature as you and John have?"

"Who knows?" Marian replied pensively, "Times do change you know, and not always for the better. Almost everyone, young and old senses that conditions are not improving."

"And if you don't mind my saying it," Earl interrupted, "conditions are getting worse fast. There is a widespread feeling that 'I've got to get mine first.' People go out on strike at the drop of a hat. Then from time to time there's a major walkout like the coal strike. How long did that last? Three months wasn't it? I haven't studied the detailed reasons for the strike but I know my electricity bill has gone up. The company said they had to use expensive fuel oil while the strike was on."

"Yes," Ed said, "and now that the strike is settled we're told that our electric bills will go even higher because of the increased price of coal. This whole situation is ridiculous. A ton of coal is a ton of coal. The only thing that has changed is the number of dollars we have to put out to get a ton of it. John, do you have any figures on the increasing price of coal over the years?"

"Yes I do. A friend of mine from the Cleveland Electric Illuminating Company presented some coal prices at an energy seminar recently. He reported that his company paid an average of $1.40 for a ton of coal in 1900 (see appendix for price of coal) and $35.20 in 1979.

"Isn't that a bit weird?" Ed speculated, "In 1900 coal mining was a back-breaking job with a pick and shovel. Today most mining in the United States is done by machine. The price should be less today."

"Maybe we need to go back to picks and shovels and that way we could bring down the price of coal!" Nancy said facetiously.

"There's something wrong somewhere," Earl added, "Those coal mining machines and improved methods should have reduced the price, not increased it."

"The number of labor-hours required to get coal out of the ground has dropped steadily" I reminded them, "but when you convert those 'labor-hours per ton' into shrunken dollars per ton what do you come up with?"

"I'll tell you," Ed broke in, "you come up with coal prices that are eight times higher than they ought to be!"

There was silence for a few moments. Then Earl asked "Where do you get the eight times higher?"

"One of John's charts shows that a 1914 dollar in worth only 13 cents today. Remember? Our money has been tampered with. It's only worth one-eighth of what it was. To me that means it takes eight times as many dollars to buy any item. And now we know why, don't we! I used to

think that rising prices were normal. They're not! And they're not necessary!"

There was another silence. Then Marian said,

"John has a good illustration close to home — right here on this table in fact. It is milk. His family paid ten cents for a quart of milk in 1918 and the quart was delivered to the door. What is the price today?"

"I paid 60' a quart at the supermarket this morning," Nancy replied.

"The price has gone up six times in spite of the introduction of labor-saving equipment such as milking machines, feed conveyors, hay balers, farm tractors, huge tank trucks and the like," I explained. That quart of milk would have cost you less than 10' if our money system were sound. As you know very well, our 'Standards of Weights and Measures' haven't changed one bit over the years. A one-foot ruler is still the same measure of length as it was in 1900. Also, one pound of weight is exactly as heavy today as it was in 1900. Why is this? It is because in Article I, Section 8 of the United States Constitution, Congress was granted the power to 'Fix the standard of weights and measures and to coin money and regulate the value thereof.' "

"Congress still holds the power over weights and measures but it gave up the power to create money in 1913 when it passed that power over to the private Federal Reserve Bank and to the private commercial banks, right?" Earl said.

"That's what the Congress did to us," I replied, "and unless Congress regains control of the money-power our whole system of free enterprise is programmed to degenerate into federally controlled socialism. That will be the end of freedom!"

"I thought this was to be a period of refreshment and relaxation," Marian said.

"Well, you brought up the subject of milk prices, and our young friends shouldn't remain in the dark as to causes should they? I guess one of the discouraging things in life is that serious things happen so gradually that most young people, yes and even middle-aged and old people too, aren't even aware of what's happening to them. An old German friend of mine used to say:

'Ve grow too soon old und too late schmart.'

"There are many rewards to growing older," Marian mused, "if one's health and interests continue, it can be a time for reflection and analysis and, this may surprise you young people, one has time for study. John's work on the money project sparked my interest in history, especially as related to economic matters. For example, I was fascinated to discover that the ancient Babylonians used a system of credit and recorded the transactions by scratching the numbers on clay tablets.[24] That was about 700 B.C. The goldsmiths were the bankers in those days. The clay tablets functioned like money and credit do today."

"Did the Babylonian bankers create money out of nothing?" Ed asked jokingly and continued, "By writing clay tablets against no funds and collecting usury on nonexistent money?"

"This may surprise you," Marian replied, "but the practice of usury goes back at least to Hammurabi the Sixth, King of Babylon[25] I'm still searching the literature for earlier records."

"That's far enough back for me," Earl said with a grin, "and by the way, this pie is excellent!"

"How do you keep the bottom crust so flaky?" Martha asked "Mine is often soggy."

"Before you answer that question," Ed interrupted, "could we get back to your history studies for a moment. I enjoyed history in high school. Did you come across any other references to usury?"

"Yes, one came to my attention in quite an unexpected way. In his Sunday morning sermon, Pastor referred to a number of scripture passages and one of them was the fifth chapter of Nehemiah. As Pastor read, I followed along in my old King James Bible. When he came to the last sentence of verse ten, 'I pray you let us cease this exacting of interest', I was struck by the different wording in my Bible, 'I pray you let us leave off this usury.' Here were those two words again that John had been writing about. This time they popped up in church. I thought nothing of it until a few days later the incident came back to mind and I began to wonder whether Nehemiah was writing about real 'usury' as recorded in my King James Bible, or the common 'interest' as recorded in the more modern versions. So I read the entire fifth chapter of Nehemiah again and it began to dawn on me that his people may very well have been having money troubles for the same reasons we are in 1980. Would you like to know why I think so?"

"Don't keep us in suspense Marian," Ed replied, "I would like to know more about this."

The others agreed so Marian got out her Bible and thumbed through the yellowed pages to the fifth chapter of Nehemiah. "You may recall that in 500 BC Nehemiah had returned from captivity in Babylon and took on the job of rebuilding the walls of Jerusalem which had been destroyed two centuries earlier by the Babylonians. Nehemiah's workmen were having great difficulty providing enough food for their families. Listen to this account as written in the fifth chapter, starting at verse 1:

'And there was a great cry of the people and of their wives against their brethren, the Jews.

'We have mortgaged our lands, vineyards, and houses that we might buy corn because of the famine.

'We have borrowed money for the king's tax and that upon our lands and vineyards.

'...and lo, we bring into bondage our sons and daughters to be servants, and some of our daughters are brought into bondage already: neither is it in our power to redeem them; for other men have our lands and vineyards.

'And I was very angry when I heard their cry and these words.

'The thing that ye do is not good. Ought ye not to walk in the fear of our God?

'1 pray you, let us leave off this usury.

'Restore I pray you to them, even this day, their lands, their vineyards, their olive yards and their houses also the hundredth part of the money, and of the grain, the wine and the oil that ye exact of them.

'Then said they, — so will we do as thou sayest. Then I called the priests and took an oath of them, that they should do according to this promise.

'And all the congregation said Amen, and praised the Lord. And the people did according to this promise.'

"Well," Marian said, "what do you make of it?" "It certainly sounds like that fellow Nehemiah put the pressure on the money-lenders to let up on his people," Martha said.

"Well," I added, "if we accept Nehemiah's report as true and I'm willing to accept it, one thing is clear; his people were carrying a heavy load of debt. They were being

forced to give up their mortgaged lands and vineyards to those to whom they owed money. Nehemiah says in effect, 'The usury is too great' or 'The interest is too great'. Nehemiah doesn't say whether the money loaned was created credit or earned money, does he? I notice too that the fees were paid in grain, wine and oil as well as money. Today's bankers demand Federal Reserve Notes or other money substitutes of their own creating such as checkbook credit, in payment of both the usury as well as the principal. They won't take potatoes or tons of coal because those are not 'Legal Tender'."

"It seems like the laws are always to the advantage of the money-lenders," Martha added.

"Until a Nehemiah comes along and straightens out the mess," Ed continued. "I'm curious to know whether those Jews were lending created money to the people."

"Maybe Marian will research this further and try to find out," I said, "at least we're quite certain of three facts:

1. Nehemiah's people were over their heads in debt;
2. The fees for borrowed money were excessive;
3. The people were borrowing from the money-lenders to pay their taxes."

"I have a new thought," Ed broke in, "please let me say it before it escapes me again. Isn't it interesting that every generation has had its money-lenders? Some are big money-lenders and some are small, but there are always a lot more money-borrowers than there are money-lenders. And therefore the money-lenders get richer and richer and the money-borrowers get poorer and poorer, until a Nehemiah comes along and calls a halt to the exploitation. What the world needs now is a modern day Nehemiah. Perhaps he will need to go one step further than his predecessor — and that is to establish monetary integrity irrevocably into law."

"Bravo, Ed," Earl shouted clapping his hands as we all

joined in the applause. Then Earl continued, "We are meeting here again next week for our third lesson, aren't we?"

Everyone agreed.

"The session next week can be a short one, A problem well understood is half solved, you know. And we do understand the true nature of America's money problem. To repeat, our problem is DEBT MONEY created by a PRIVATE CORPORATION namely THE FEDERAL RESERVE SYSTEM and LOANED BY the commercial banks directly and indirectly to us 218 million Americans at USURY, which is IMPOSSIBLE TO PAY!

"So, next week I'll show you what we must do to correct the gross errors in our money system and ELIMINATE INFLATION FOREVER.'"

"I think I know what the solution is already," Earl said as he finished off the last of his pie alamode. "It has taken these two sessions listening to John's diagnosis to get an understanding of the truth, but this nation has to return to DEBT-FREE MONEY issued by the government and not private banks just like Jefferson and Franklin and Lincoln said we must!"

"Let's wait and see what John's solution is next week," Earl said looking at his watch. "Nancy, do you know it is way past eleven o'clock. I don't like to break up the party but we all have to go to work tomorrow, including our hosts."

And so our second meeting came to a close.

Footnotes for Chapter 2

1 Banking and Currency and the Money Trust (first published in 1913) by Charles A. Lindbergh Sr. Omni Publications, Hawthorne, Cal. 90250; pg 8 to 14, 90 to 137, 148 to 160.

2 The Economic Pinch (first published in 1923) by Charles A. Lindbergh Sr. Omni Publications, Hawthorne, Cal. 90250; Chapter 10 The Federal Reserve Act pg 83 to 94.

3 The Story of Our Money 2nd Edition by Olive Cushing Dwinell, Forum Publishing Co., Boston; pg 186. The Pujo Committee's Investigation into our currency, 1912. President Wilson, when Governor of New Jersey, declared in 1911: "The greatest monopoly in this country is the money monopoly. So long as that exists, our old variety of freedom and individual energy of development are out of the question. A great industrial nation is controlled by its system of credit. Our system of credit is concentrated. The growth of the nation, therefore, and all our activities are in the hands of a few men. This is the greatest question of all: and to this statesmen must address themselves with earnest determination to serve the long future and the true liberties of free men."

4 The appendix to this book contains a more complete bibliography dealing with the Federal Reserve System.

5 Bureau of Labor Statistics, U.S. Department of Labor. For summary data 1940 to 1975 see The World Almanac 1975 Book of Facts pg. 46 to 49.

6 U.S. News and World Report June 17, 1974; compare chart on pg 30-31.

7 When one draws a simple exponential curve between CPI-30 in 1914 and CPI-200 in 1979, the curve is found to be too steep initially and not steep enough in 1979, thus proving mathematically a fact we know from experience, namely, that the fundamental inflation rate has been accelerating since 1914. Please see the Appendix for the mathmatics of this curve fitting.

8 Sears Roebuck Catalog for year 1908: a reproduction edited by Joseph J. Schroeder Jr, Follett Publishing Co., 201 North Wells Street, Chicago, Ill, 60606; pg 812: Ladies' shoes $1.50 a pair; pg 836: men's shoes $2.50 a pair; pg 71: house paint 98' a gallon; pg 658: gas burning kitchen stoves $11.08 to $20.06.

9 Monetary Law in a Free Society by Harold Fisk M.Sc, published in 1975 by Monetary Science Publishing, P.O. Box 86, Wickliffe, Ohio 44092.

10 See figures in chart 5-1 in chapter one for Federal debt limits.

11 U.S. News and World Retort, July 5, 1976; National (Federal) Debt: Skyrocketing Toward $1 trillion - at Ever-Rising Interest Costs, pg 104.

12 U.S. Department of Commerce - Bureau of the Census Statistical Abstracts of the United States 1976, National Data Book and Guide to Sources; Public Debt of the Federal Government 1900 to 1974 (Gross Public Debt and the Interest Paid) Table No. 396 pg 240.

13 U.S. Department of Commerce Historical Statistics of the United States - Colonial Times to 1970. 93rd Congress, 1st Session, House Document No. 93-78 (Part 2) Net Public and Private Debt 1950 to 1974, Table No. 764, pg 473 and Table Series X393 - 409 pg 989.

14 Here is a notable exception. U.S. News and World Report November 24, 1975, $3 trillion Debt - Is It Out of Control? pg 63, 64.

15 AT&T Annual Report 1978 Interest Deductions pg 6; Long and intermediate term debt pg 29.

16 The Pillsbury Company Annual Report for 1978, pg 19.

17 tree Enterprise in Deep Trouble by Peter Cook, published in 1976 by Monetary Science Publishing, P.O. Box 86 Wickliffe, Ohio 44092, Publication No. 760525, pg 6 & 9.

18 Senate Document 93-62, 93rd Congress 2nd Session Disclosure of Corporate Ownership; Prepared by Subcommittee on Intergovernmental Relations and Budgetary Management. Pg 1 Summary Table shows that as of 1973 32 institutions (banks, insurance companies and investment companies) were managing $329.4 billion worth of stock in American businesses.

19 Handbook of Mathematical Tables and Formulas by Richard S. Burlington PhD; published by Handbook Publishers Inc., Sandusky, Ohio, pg 6.

20 The Federal Reserve Statistical Release H-6, Money Stock Measures Table 1, May 12, 1978. Definition: M-1 is 'Currency plus demand deposits'. Currency is all the folding money and coin in circulation, and therefore does not include currency in the vaults of the U.S. Treasury, Federal Reserve Banks or commercial banks. Demand deposits are checking account balances. See also the Appendix to this book for further definition.

21 Human Ecology by Thomas Robertson, First printing 1948, Reprinted in 1975 by Christian Book Club, P.O. Box 638 Hawthorne, California 90250; see chapter 7 'The World Disease': "In the previous chapters we depicted the usurious technique by which debt is created and through which power is centralized. The centralization of power can be readily traced in recent history; but the results of 'usury' are not so easily perceived, because of the slowness of the cycle of operations, which usually extends over several centuries.

"This means that the resulting disasters happen with such infrequency that they may only be witnessed by one generation of men in many, and to perceive the sequence of events we must consult history.

"To those acquainted with the facts there can be no doubt as to the antiquity of money lending at interest (usury). Extant evidence shows that it was practiced in ancient Egypt, Persia, Babylon, Greece and Rome; and there is evidence that it has always been regarded as a disastrous device. It is, as has been shown, at the very foundation of our European civilization, which, for good or ill, is now world dominant." (The author, Thomas Robertson, is British.)

22 Webster's Dictionary: 'Usury' 1. the act or practice of lending money at a rate of interest that is excessively high. 2. an excessive or unlawfully high rate or amount of interest. 3. (obsolete) interest paid on a loan.

23 Only Federal Reserve checks and those U.S. Treasury checks drawn against funds borrowed from the Federal Reserve enter the commercial banks as new reserve deposits to increase the monetary base. Checks drawn against taxes collected by the Treasury do not add to the reserves. Such checks simply transfer credits within the system.

24 The Encyclopedia Americana 1956 ed. Vol. 3 pg 152. "In Babylon ... transactions were put in written form on clay tablets in the presence of witnesses acknowledged as valid by the mark of seal of the parties and protected against falsification by the placing of a duplicate set within a clay envelope which was not to be broken into unless some dispute required it."

25 Harper's Bible Dictionary by Madeleine S. Miller and J. Lane Miller, Harper & Brothers, Publishers, New York, pg 243, 454, 792.

CHAPTER THREE

THE THIRD EVENING

Finding the solution

A week had flown past and our young friends were gathered in our living room for another lesson on the truth about money.

There was a warm bond of fellowship that evening as they chatted with Marian and me about their youngsters, their gardens and current events. Too soon the clock struck the hour of eight. It was time to resume our study.

"Do you have any questions on anything we have talked about during our first two sessions?" I began and then waited for several moments. No-one responded. Then I continued, "Did you have time to review the summary sheets listing the key points brought to light thus far in our studies, especially point 17?" I asked placing a card of point 17 on the easel.

17 A DEBT MONEY SYSTEM HAS UNSTABLE CHARACTERISTICS BECAUSE:

A) MOST MONEY IS CREATED AS LOANS AND THEREFORE DEBT;

B) ONLY THE PRINCIPAL IS PLACED INTO CIRCULATION AS THE MONEY SUPPLY (M-l) WHEN THE LOANS ARE MADE;

C) SO THERE IS NO MONEY TO PAY THE INTEREST WITHOUT REDUCING THE MONEY SUPPLY (M-l) BECAUSE ANY PAYMENT OF

INTEREST (OR PRINCIPAL) WITHDRAWS MONEY (M-l) FROM CIRCULATION;

D) THIS WITHDRAWAL OF MONEY SETS UP A SHORTAGE WHICH TRIGGERS DEMAND FOR ADDITIONAL CREDIT AND DEBT JUST TO PREVENT A DECLINE IN THE MONEY SUPPLY (M-l);

E) THE ADDITIONAL BORROWING EXPANDS THE DEBT EXPONENTIALLY THEREBY EXPANDING THE INTEREST BURDEN EXPONENTIALLY.

"I haven't memorized all of the points yet," Earl said, "but I've been studying the sheets. I find it hard work, especially when I come to one that's difficult to believe, like 17-A:

MOST MONEY IS CREATED AS LOANS AND THEREFORE DEBT.

"This point really is hard for me to grasp. I guess it's because all my life I have considered money as something to pay debts with or to buy groceries, but now all of a sudden I see that in our present system money itself is a debt. Understanding this forces me to make a radical change in my thinking which I don't find very easy! Every time I look at a dollar bill these days I see those words at the top: 'Federal Reserve Note' and I can hardly believe that somebody had to borrow a dollar at usury to bring that dollar into existence. But now that I am beginning to understand how the money system works I can accept the statement that: 'A Federal Reserve Note represents a debt at usury to the Federal Reserve System'!"

"And the same is true of bank credit money," I added. "Someone had to borrow at usury to bring that money into existence. And the money goes out of existence as the usury and the principal are progressively paid back to the bank. These amounts are huge: hundreds of millions of dollars each day going out of existence. This loss of money from the nation's economy is felt in cash flow shortages which result in more and more loan applications to the banks -- the only place where money can be added to the existing short supply. The banks strive to lend only to creditworthy borrowers largely on the basis of their customers' collateralizable assets.

"Here's a helpful analogy. The nation's money supply may be compared to the water in a bucket. Water is leaking out through two holes, one labeled PRINCIPAL REPAYMENTS and the other USURY PAYMENTS. Now, to keep the bucket from running dry we must add water --NEW LOANS -- continuously at a rate equal to the leakage from those two holes. If the private sector is unable or unwilling to borrow, for whatever reason, the money supply M-l drops and this depresses business activity."

"Hold it. Could we back up for a minute," Earl asked in wonderment. "This idea of money going out of existence as money when it's paid to a bank, is new to me. I never heard of that before, and I find it hard to believe. Suppose I go to my bank and hand the teller a ten dollar bill to apply on my furniture loan. Are you telling me that the $10 disappears as money?"

"Yes," I replied, "that $10 disappears as part of the money supply M-l when it leaves your hand, but it reappears at once under an assumed name - reserves- when the teller takes it. Think of it this way: all of the folding money and coin on the bank teller's side of the window is out of circulation. It has become a part of the bank's

reserves. The other part of the reserves is numbers written in the bank's reserve account book. Reserves are not part of the money supply M-1, remember? Reserves are only the monetary base to be expanded several times, thus becoming debt-money M-l when loaned to a borrower. Items seven and eight on our summary sheet explain concisely this magic of reserve banking. Let's look at them again.

7 UNDER OUR PRESENT 'DEBT MONETARY SYSTEM', MOST MONEY IS CREATED AS DEBT BY THE COMMERCIAL BANKS MAKING LOANS.

8 THE FEDERAL RESERVE CHECKS ENTER THE BANKS AS RESERVE DEPOSITS AND BECOME THE MONETARY BASE FOR EXPANDING THE MONEY SUPPLY BY SEVERAL TIMES AS BANK DEPOSITS, REPRESENTING DEBT, LOANED AT USURY INTO THE PRIVATE SECTOR OF THE ECONOMY.

"PRESTO! Money, M-l, comes into existence by magic. Please note this crucial fact:

17-B ONLY THE PRINCIPAL IS PLACED INTO CIRCULATION AS THE MONEY SUPPLY (M-l) WHEN THE LOANS ARE MADE.

Consequently there is not enough money in circulation to pay both the principal and the usury. So, what happens? We know that usury is being paid to banks by millions of people every day. Where does the money come from?"

"I know where it comes from," Ed broke in with an understanding smile, "I made that discovery up there on Pluto. Frugal people like me simply work doubly hard and

save money out of the general money supply that got there as someone else's borrowed principal. But even if we persevere, only a few of us will be able to avoid large debts and bankruptcy."

"Exactly correct!" I replied, "As we found out last week, there is never enough money in circulation to pay the aggregate interest - or usury - plus the aggregate debt principal. Ed managed to pay off his debt but he garnered somebody else's debt principal to accomplish it. In the long run, a debt-money system such as ours must bankrupt many in order that few may succeed."

"It looks like this nation of ours is already far down that road to bankruptcy," Martha lamented, "but what can anyone do to set things right? The problem seems un-solvable to me."

My young friends sat staring at me in silence. I wonder if they knew how serious they appeared to me - yes, and scared too. After all, how many people are willing to go bankrupt in order that some stranger might be able to pay off his own debt to a bank? And yet this is what the present system demands. And this is why several of their friends had had to declare bankruptcy when the interest rate recently reached 20%.

"My young friends, last week I promised to show you what must be done to ELIMINATE INFLATION FOREVER. That is our objective this evening, and it will not take long!

"The two sessions we have already had together produced 17 facts about our money system that summarize what it is and how it operates. I gave each of you a copy last week. This is our diagnosis of the problem. If we were writing a detective story, we might consider this the set of clues identified in the 'Mysterious Case of the Vanishing Purchasing Power.' No matter how you look at these points they are basic facts which are necessary to unders-

tand before we can attempt to solve the problem of designing a money system which does not collapse. After all, the money system is just that: a system. God didn't make it. people arranged it to be what it is today. If people don't like what it does or the way it works, well, it is up to them to change it.

"As I said before: a problem that is well-defined is half solved. We have 17 clues. All the clues are important. For example, look at number seven. How many of you knew that our money is created as debt by being loaned into circulation at usury - and that it goes out of existence as money when the usury and/or principal are paid back to a bank?"

No-one answered.

"Do any of you doubt it?"

"Three weeks ago I would have doubted it," Ed replied, "but that doubting would have been because of ignorance. You know, I'm not even ashamed of this ignorance. I'm just grateful that curiosity and the financial pinch we're all feeling made me ask some basic questions about money. A lot of people think that inflation is inevitable. I think we're getting to the point where John will tell us it isn't inevitable and boy, will I be relieved to hear that!"

"No, inflation isn't inevitable in a true free enterprise system. And I will show you how the old time-tested infla-tionless money system works. But first let's finish looking again at one more of our clues.

8 THE FEDERAL RESERVE CHECKS ENTER THE BANKS AS RESERVE DEPOSITS AND BECOME THE MONETARY BASE FOR EXPANDING THE MONEY SUPPLY BY SEVERAL TIMES AS BANK DEPOSITS, REPRESENTING DEBT, LOANED AT USURY INTO THE PRIVATE SECTOR OF THE ECONOMY.

Is it clear to all of you that money which is created as debt and loaned at usury into circulation by a private corporation leads to expanding debt that grows at an exponential rate?"

"It's clear to me! Ed asserted, "Look what happened to my bank debt up there on Pluto, and I borrowed only $100 at 6%. In just five years I was in hock $126.25 to the Pluto Central Bank. In 50 years I would have owed them $1737.75. There is no doubt in my mind, debt-money was the cause of our inflation up there on Pluto."

"Yes, and debt-money is the culprit here on Earth or anywhere else in the Universe," I said. "The fundamental cause of inflation is not labor unions, or shopkeepers, or credit card spendthrifts, or businessmen, or politicians, or bureaucrats or bankers. The fundamental cause is debt-money."

"It sounds to me as though we need some debt-free money in the system to pay off the usury," Ed continued, pointing to 17-C. "But where do we get debt-free money --and fast?"

"Congress can create debt-free money," I replied.

"But how would it get into circulation?" Nancy asked.

"Congress could spend it into circulation in payment of its lawful obligations. This isn't a new idea. In fact, it was used successfully here in American a little over 100 years ago.

"The Abraham Lincoln Greenbacks were issued debt-free directly by the United States Treasury during the Civil War. They were spent into circulation directly by the Treasury in support of the military operations. This is how it came about.

"A few months after the Civil War broke out in 1861, President Abraham Lincoln persuaded the Congress to authorize the issue of United States Note currency (paper money) to meet the tremendous expense of the war. Since

they were printed with green ink on the back they soon acquired the popular name of 'Greenbacks'.

Figure 26 A Greenback dated August 1, 1862

"Some $400 million of these Greenbacks were spent into circulation to pay Union soldiers and purchase war supplies. At about the same time $49,338,902 of small change, 'shin plasters' so-called, were also spent into circulation. The total issue was $449,338,902[1] at its highest point. This amount was legal tender for all debts public and private. Since they were issued directly by the United States government they were non-interest bearing.[2]"

"Whatever happened to all those Greenbacks?" Martha asked.

"There was a sudden halt to the issue in 1863. Congress revoked the Greenback Law that year and enacted in its place the National Banking Act. The national banks were to be privately owned and the national bank notes they issued were interest-bearing. The Act also provided that the Greenbacks should be retired from circulation as soon as they came back to the Treasury in payment of taxes. The withdrawal of the Greenbacks began in 1866 and continued for several years. That was the critical reconstruction period for the nation when the supply of sound money

should have been increased not decreased. Greenbacks not being a source of profit for the banks, were a special object of their attack. The banks were determined to get their own debt-money back into circulation and they succeeded. There were changes in the money and banking laws during the next 50 years but none was so disastrous to the American people as the Federal Reserve Act of 1913 which replaced the National Banking Act that had earlier replaced the Greenback Law in 1863.

"There is one place in the world which we know of that has debt-free money in circulation today," I went on.

"Where's that?" Ed asked quickly. "I'd like to em-migrate as soon as possible!"

"Well, you'll have some traveling to do, Ed. It's the Channel Islands located in the English Channel about 90 miles from England and some 10 miles from France. The islands are part of Great Britain but through the centuries they have maintained their independence in a number of ways, one of which is the right of the local government to create and spend their own money into circulation.

"On one of these islands, Guernsey, the history of the note issue illustrates how it is possible for debt-free money to transform a community from conditions of poverty to prosperity within a relatively short space of time.

"When Marian and I were in Britain the last time we made a special trip over to Guernsey, which is now primarily a holiday resort and, ironically, a banking center. There are also acres and acres of greenhouses which are used to grow tomatoes and flowers."

"What about Guernsey cows?" Ed asked with a laugh. "My uncle had a herd of Guernsey's. I never knew that their ancestors lived on an island in the English Channel and that they probably ate hay bought with debt-free money!"

"Yes, there still are plenty of Guernsey cows on the

island. In fact, the problem of distributing farm produce through the local market in St Peter Port, the main town on the island, led to one of the first note issues the local government made.

"In 1815, not long after the close of the Napoleonic Wars, the island of Guernsey was in a desperate state. The roads were deep, muddy ruts and there were no carriages and it was almost impossible for a visitor even to rent a horse.

"As one local record put it in 1815: '...the traveller...left the island in haste and under the most unfavourable impressions.'[3]

"The sea wall too was in need of repair. But unfortunately the local finances were in a mess as well. The government had a large debt which carried an annual interest charge almost equal to the money collected in taxes and duties.

"The islanders were reluctant to go further into debt to the local banks in order to carry out the necessary road-work and it was at this point that some of their leaders came up with the revolutionary idea of issuing their own notes debt-free to pay for the much-needed improvements.

"The first note issue was for a relatively small amount

Figure 27 A Guernsey one pound note

and these notes were redeemable by taxes. This note issue was a great success as it made it possible for the road improvements to be made without increasing the debt of the island.

"The marketplace was a serious problem and when the question of building an enclosed market was raised in 1819 it was decided to pay for the project through a debt-free note issue. Marian and I copied this explanation of how the islanders paid for the market from a plaque inside the market which is, incidentally, still standing and in daily use:

In 1820 the States agreed to build a covered market for £5500. As they had £1000 in hand, £4500 notes of £1 were issued on the security of a small tax on spiritous liquors. The work was undertaken and the Market completed and opened in 1822.
Each of the 36 shops yielded £5 in rent. As soon as £180 was received each year, 180 States' notes were burnt. The 4500 notes would have taken too long to destroy at this rate but the States also paid into the Market Fund £300 per annum derived from tax on wines coming into the Island. £30 of this were set aside for running repairs and £270 went towards the extinction of more paper notes.
At the end of 10 years not one of the notes issued to pay for the building was left, no interest had been paid upon them and there was a steady income of £180.

"We actually stood inside this beautiful granite marketplace. I couldn't help but wonder at the wisdom and public spirit of the men who saw to it that their neighbors could enjoy a necessary service without having to bear the burden of high interest charges over many years to pay for it.

"The island still produces its own notes and the people continue to enjoy the benefits of the note issue one of which is that the maximum income tax is 20% and there is no sales tax nor luxury tax. Any inflation which is experienced is all imported."

"It really is encouraging to know that a few people in the

world are enjoying a common-sense debt-free money system," Martha said. "I wonder what it would take to get the United States converted to a debt-free money system?

"It seems to me that we have the solution to our inflation problem right here within our grasp!" Ed exclaimed with enthusiasm. "Let Congress create the money. Why don't we do that? Here's my reasoning.

"First, we know that a continuing and adequate supply of debt-free money is absolutely necessary. Without debt-free money, when businessmen and guys like me go to pay back their debts to the banks, our principal and interest payments, taken altogether, represent an amount greater than all the money which was created in the first place. Borrowing more money doesn't solve this dilemma since it only creates more debt upon which more interest must be paid. Right?"

"Right!" I replied. "Anyone who truly understands our monetary system must agree with the statement, because it is true. What is your second premise?"

"Second, we know that Congress has the authority to again be the source of debt-free money. The Constitution makes a provision for it under Article 1, Section 8, Clause 5! Right?"

"Correct!"

"Now here's the clincher. Congress can stop inflation if the Congressmen will assume their Constitutional duty (and our Constitutional right) and issue our money debt-free! Right?"

"Your logic is flawless!"

"Then why doesn't Congress get going on this?" Nancy inquired impatiently.

"I think I know why they don't," Martha replied, "it's because most Congressmen don't know what we know about debt-free money being necessary in the system. We need to get debt-free money into circulation, don't we?

That means we need Congressmen who understand the problem and who will vote to spend debt-free money into circulation. I think that educating ourselves, our friends and our Congressmen about debt-free money is the first step in solving the not-so-mysterious case of inflation."

"Frankly, I can't see that it would be all that difficult to set up a debt-free money system run by the government," Nancy said. "After all the government runs the post office system. We trust the people who run that system with our letters and packages, and some of them are very valuable and important to us. The post office issues stamps just like I suppose the Treasury could issue money. When a stamp is cancelled it goes out of circulation. I guess money could go into and out of circulation like stamps do now. We never have inflation or deflation in the post office, because the supply of stamps is regulated by what people need, not by what somebody else thinks is good for them, or the economy!

"Maybe if the money system worked like the post office system we wouln't have money taken out of circulation just when we need it the most. Can you imagine the post office refusing to issue stamps at Christmas time just when the demand is greatest? I bet if the government can supply the stamps equal to the country's demand it can just as sensibly meet the demand for money!"

"Nancy makes it all sound so easy," Earl remarked. "Do you think it could be that simple in practice?"

"Well, the mechanism for the distribution of money could work much as Nancy has described. People would probably want to use the services of commercial banks but there is no reason why the Treasury couldn't issue money in a similar fashion to the way the post office issues stamps.

"Over and over again, however, we come back to the basic principle that what is needed is debt-free money. If

we only do away with debt-money financing of the national budget, we will eliminate inflation and all the related problems. I would like to conclude our session this evening with a final summary of the problem and the solution that my colleagues and I have developed.

The summary

"The problem is a chasm of debt. At the moment this pit into which we are about to be required to sacrifice our real wealth in the form of property, is $4.8 trillion. Of this $4.8 trillion, $4.4 trillion is a staggering accumulation of service charges which is completely unpayable and cannot be turned into tangible dollars or checkbook credits. The annual service charge on this massive debt has already surpassed the entire supply of money in the economy.

"As our Pluto colony taught us, the system is at fault when money is manufactured only as debt. Obviously this debt appears first as a loan principal. The service charge or usury to pay for this principal is not simultaneously created when loans are made and therefore when usury payments are made, slices of the principal must be drawn out of circulation and paid into a bank. As the principal is whittled away by usury payments, money becomes scarce and in order to keep the supply of money at a reasonable level, more loans must be made.

"Since this is the money system we have to live with at the moment, we have to abide by its man-made rules and keep pouring loan-made money into the economy. The amount of money put into the system bears little relationship to the economic needs of the people, the availability of goods and services, or productive capacity. In an attempt to facilitate this process the fractional reserve banking system currently in use sees to it mathematically that more and more loans are required to be made to keep

more and more money coming into circulation. But in relation to our economic needs and production capabilities, the money supply produced in this way is always short.

"These two factors work together to expand the debt exponentially."

"That means," Nancy chimed in, "that the higher the debt goes the faster it starts heading toward zillions of dollars!" .

"That's right. And it goes right beyond zillions to an infinite number - a really uncountable debt. That is why you read about people taking wheel-barrows of money to the market to buy a loaf of bread in times of acute inflation. They reach the point where 'zillions' or an almost infinite amount of money is required to be kept in circulation. As a result, ridiculously large amounts of money are necessary to pay for simple, everyday needs.

"Already in 1980 we see that businesses are reaching and exceeding safe limits of indebtedness. Their ever-increasing interest burden is an ever-increasing cost factor that must be passed on to consumers as ever-increasing prices. This is the PRIMARY cause of general price increases. The demands which people make for higher wages are a natural reaction to interest-generated price escalation and not its cause."

"I think we are all feeling the problem," Earl said. "I've never known so many of my friends to be so concerned about rising prices. We four now know that debt-money is the source of inflation. But how do we get the debt-free money that we so need?"

The solution

"Fortunately for us, the solution is really quite simple. And it has been tried and not been found wanting. Obviously what we need is a source and quantity of debt-free money which flows into the economy to replace the money

flowing out of circulation through interest payments to banks.

"The only legitimate source for debt-free money is the national Treasury. Fortunately, again, our Constitution guarantees us the right to debt-free inflationless and defla-tionless money. In order to get the ball rolling in 1980 the first debt-free money could be put into circulation by the government as their expenditure for projects and services in the true public interest."

"Do you mean something like a project to investigate solar energy?" Ed asked.

"Certainly!"

"Or that gasahol idea so we could run our cars on 'mountain dew' made in Iowa?" Earl chuckled.

"Why not!"

"What about a roadworks project so that we aren't dodging potholes everytime we take the kids to see Mother?" Nancy added.

"I think they ought to spend some debt-free money to improve the national parks," Martha suggested.

"You see there are plenty of legitimate ways the money could be put into circulation. In a free society it ought to be possible to supply the population with the money it needs. Obviously rules are needed to keep things from getting out of hand and my colleagues and I have worked out what we call the FOUR TENETS (OR RULES) OF MONETARY LAW IN A FREE SOCIETY. Here they are.

• "The first tenet of monetary law in a free society is that the national Treasury shall provide debt-free public credit when and as needed for all achievable, authorized and needed expenditures of the national government. This provides the money to pay for the public service needs of the economy. It does not make these services a free gift to the public because every dollar so created and spent into

circulation must in proper time be removed from circula-tion in order to avoid an oversupply of money.

• "The second tenet of monetary law in a free society is that the national Treasury shall service the financial needs of the economy directly through loans of an appropriate minimum amount to any and all creditworthy applicants. The interest payments to the Treasury on these loans will be the major source of revenue needed to balance the national budget.

•"The third tenet of monetary law in a free society is the requirement that national revenue and national spending be maintained in balance. The interest rate on national Treasury lending to the economy will be mathematically regulated to maintain that balance. The interest rate on national Treasury lending will never be permitted to reach a level that would discourage private enterprise. Should it be necessary, taxes (other than income tax) may be levied in order to keep interest rates at a minimal level.

• "The fourth tenet of monetary law in a free society is that the national Treasury must be the one and the only source of money in the economy. This tenet outlaws all fractional reserve deposit expansion traditionally practiced by private financial institutions. This practice becomes unnecessary, because these private institutions will have unlimited drawing accounts on the national Treasury at the prime borrowing rate.

"The banks' own rate-setting, business acumen, lending policies, competitiveness and risk analysis will determine their profitability. All banking practices, apart from fractional reserve deposit expansion, will remain as they are

at the present time. State and local governments would qualify for long-term interest-free United States Treasury public credit to finance projects, approved by the voters, to be paid off by local tax collections effecting enormous savings in interest."

"Those tenets really hit some nails squarely on their heads!" Ed exclaimed. "It really is crazy to ignore the Constitutional provision for debt-free money. It's even nuttier for the government to borrow money from private institutions when it has the right to create it itself - for nothing. And in a republic we, the people, are supposed to be sovereign. This debt-free money is going to benefit us!"

"Yes," I added "and the government and the banks too. inflation and depression hit everyone, community banks included. A poorly designed monetary system is a tragedy for everyone.

"The banking community in particular must recognize its own dependency on the economic and monetary well-being of this country. When it does it will then feel compelled to use its influence to support the reforms which are so desperately needed. We simply can't continue to struggle along under the present system without any prospect of relief."

"What about taxes?" Earl asked. "I think I'm beginning to see that if the government isn't having to pay wild interest rates on its debt we might not have to pay so much to the IRS to support the government's debt."

"That's true. But under the debt-free Public Credit Money System the national debt would soon disappear and income tax just wouldn't be necessary."

"What??? Income tax not necessary?" Earl shrieked.

"Yes unless there is a national emergency of some sort neither personal nor corporate income should need to be taxed. Remember, the revenue from interest on public Treasury credit to the private sector is all that is needed to

finance normal government expenditure. This is one of the major benefits of debt-free money."

"These four rules of monetary law sure make sense to me," Earl said. "But how do we go about establishing a debt-free Public Credit Money System, and fast? As far as I can see this country has already passed the fork in the road and is on the way to bankruptcy and dictatorship. This is no time for polite words and compromises. Our only salvation as a nation is to back up to that fork in the road where the sign post pointed to monetary sanity and take that way. This will probably take an Act of Congress. Doing anything less - or nothing at all! - would be sheer foolishness and irresponsibility."

"I agree with you, Earl, but may I say just a few words in summary as we bring this session to a close?" I said. "Our first two evenings were devoted to an objective diagnosis to pinpoint precisely the cause of inflation and its related ills in America. We went on to prove that debt-money is the root cause of the problem! This evening we came to the conclusion that to achieve a stable monetary system that will function in the best interest of all the people, debt-free money must flow into the economy at a rate to balance the interest payments flowing out.

"In our fourth session I will present the plan for getting a sound money system adopted into the laws of our land and into the fabric of our free-enterprise economy. I have a helpful diagram which illustrates how this system works and the steps that are necessary to get it into operation.

"Let's meet here again in a week's time. I am sure that after that meeting you will know exactly what you need to do to help establish an inflation-proof money system in America."

And so we all agreed to meet again. I knew this last meeting would be an important one. We had analyzed the

problem of inflation. We had identified its cause. We had proposed a solution. Now the time for action had come.

Footnotes for chapter 3

1. Lincoln's Greenback Currency by John O. Bye. Indiana Patriotic Publication, Beech Grove, Indiana; see page 5.

2. The Greenback in Figure 26 issued under the Act of July 11, 1862 carries the following words on the green side: 'This Note is a LEGAL TENDER for all Debts Public and Private except Debts of Imports and Interest on the Public Debt and is receivable in payment of All Loans made to the United States." The banking interests forced Lincoln to accept this compromise.

Because importers had to pay duties on imports, in gold, they had to secure gold at the banks, which charged a premium for gold in terms of greenbacks. Thus for each dollar in gold, they might have to pay as much as $2.00 in greenbacks. The banks could also demand gold for interest on the public debt (in the form of bonds) which they held. With such gold from the public treasury, they could collect more premiums on imports. In this way the duty on imports was increased; but the revenue so derived, was collected by the banks instead of by the United States Treasury. (see 'Basic Principles of Constitutional Money' by Etta M. Russell; Omni Publications, Hawthorne, California 90250; page 94.)

3. An extract from a document presented by the States (as the island Parliament is called) to the Privy Council as quoted in Edward Holloway's 'How Guernsey Beat the Bankers', published by the Economic Reform Club in 1958, London, England.

CHAPTER FOUR

THE FOURTH EVENING

How to implement the solution and so bring debt-free money into circulation

Our fourth meeting together had come and Ed abruptly opened the conversation almost the moment he walked in the door.

"Do you know the first night we met I went home and I couldn't sleep a wink. I didn't sleep very well after our second evening either. But after our session last week I stopped feeling so frightened. Do you know why? For the first time since I began to think about inflation - how it effects my family, my friends, the place where I live, the company I work for - I suddenly felt hopeful."

"Hopeful??" Earl exclaimed, "when the country is going down the tubes, you feel hopeful? You must be nuts! I've been up late every night for the last three weeks worrying about how we're supposed to get out of the mess we're in. I'd like to know your cure for Federal Reserve Insomnia!"

"I'll try to explain," Ed went on. "What I get out of the newspapers, the TV and the radio is that the experts can't agree on what causes inflation. Some theory is in fashion for a time and then suddenly, like the mini-skirt, it's 'out' and something new is 'in'. I think it is this confusion and uncertainty that make everyone feel so insecure, so frightened and so mad.

"It all seems to be the complete opposite of something scientific like, well, the moon project, for instance. When NASA wanted to land men on the moon they hired scientists and engineers who worked out the details and built

machines all according to the laws of physics and mathematics.

"Their calculations were done according to scientific laws so people never got anxious or frightened or mad thinking that these laws might not work right. The only concern was whether the scientists and engineers understood the laws properly and then how well they applied them.

"The moon project was so incredible because we saw space ships land precisely as the scientists had calculated. They didn't guess or theorize or say they couldn't figure out why things happened as they did. They confirmed that the scientific laws are true by landing men on the moon. This was the proof of the laws of physics and math which the scientists understood.

"Now, what I get out of John's charts and the discussions we've had is that money conforms to certain mathematical rules too. These rules can be understood by everybody. The rules of our present money system cause poverty. But we don't have to continue to struggle along with money governed by rules that cause poverty and economic collapse if the rules of prosperity are as easily applied to the economy.

"Just as applying the laws of physics can enable us to build a car or land men on the moon, so our understanding and application of the right rules of money can produce a fair money system. All we have to do is be sensible and govern our system by the right rules. We know that the rules governing the present system bankrupt almost everyone because the economy falls apart every 50-or-so-years. Surely we can identify the mathematical rules that won't cause a collapse and build our economy around these.

"What makes me feel hopeful is that I understand the problem well enough now to know that another collapse

can be prevented. Tonight John is going to tell us how."

"I agree that it is a comfort to understand the problem and know that there is a solution," Martha went on where her husband left off. "But I find this understanding awesome. For centuries people have suffered and died because of inflation and depression. Now we know what causes this suffering. But more important we know that such suffering doesn't need to be repeated again, ever."

"In a way," Earl joined in, "I suppose it makes sense that the cause of inflation has been discovered through scientific analysis. After all, scientists and engineers are taught to look beneath the surface and uncover hidden causes. This is exactly what we needed to zero in on the cause of inflation. Many economists admit that they can't figure out what causes inflation. To me this seems ludicrous. If we can land men on the moon, surely we can know what's wrong with our money. Finding the root of inflation simply had to be a scientific discovery."

"I agree that the discovery of the cause of inflation had to be scientific," Nancy went on, "but to me the havoc caused by misapplied mathematical rules is a moral issue, not just an interesting scientific problem.

"Look around our own families and neighborhoods. How many of us have parents on fixed incomes who are having real difficulties in making ends meet? Look at the crime rates in our cities and even out here where we live. Look at the huge increase in theft. Look at our young people -many of them simply haven't got a hope of getting an education because they or their parents can't pay for it. Look at the way our taxes are going up. Look at the pitiful state of the housing market with house prices soaring and a lot of people unable to even think of owning a home. Look at how many mothers are going out to work because the family can't live on one income. Look at the divorce rate. Most marriage counsellors admit that money troubles are

at the root of many divorces. Look at our wonderful institutions -our art museums and orchestras, our libraries and schools -- all of these are having to cut back their activities not because of lack of interest in them by the community but because of serious financial troubles. All of this is happening because the strength of our money is being bled away and our ability to buy things is being stolen from us -by a stupid money system, of all the crazy things.

"And look at our churches. These institutions which are supposed to take the spiritual leadership in our communities are as baffled and troubled by this problem as anyone.

"All this isn't just a mathematical problem. These things are the result of a burning moral issue."

"Yes, Nancy," I said, "and this has to do with who has the right to create money: private institutions for profit or the people for their own well-being. I know some might say that sounds like communism but the confiscation of people's real wealth, which is certain in a usurious money system, simply can't be described as 'free enterprise'. Our understanding cuts through the disguise which covers the present system and makes the moral issue stand out clearly in the light. Of course, the crying need for a solution seems to be bound up with the moral issue. If we tackle that we should be able to set the solution free.

"There are two simple questions and answers that people need to consider:

Question: When money is created, to whom does it belong?

Answer: To the sovereign under whose authority it is printed.

Question: Who is the sovereign authority in the United States?

Answer: The American People.

"Following this line of reasoning we should conclude

that American money belongs to the American people as a whole. However, when the Congress delegated the power to create money to the private Federal Reserve System, it gave the Fed sovereign authority over the country's economy. Since our money is created in the name of the 12 regional, private Federal Reserve banks, it must belong to these 12 banks, and not to the people. We, the people, think that our money is created by order of our representatives in Congress and therefore it belongs to us. We also think that we are the sovereign authority over our country's economy. But in reality we are not and cannot be under the present banking system.

"Are you ready to see how it is possible for a money system to operate, free of inflation and deflation, under the control of the people?"

"Of course we are!" Ed exclaimed.

"All right, then, in order to illustrate how the system works, let's set off once again for Pluto. Only this time our money system will be governed by monetary science instead of monetary nonsense.

"During the early days in our colony we find that there isn't much time or need for money. We are clearing land and living off the supplies we brought with us. After our first year we find that we can exist reasonably well on a barter system. But during the second year it is becoming obvious that barter is cumbersome and less than adequate for our growing colony. Besides, it is just plain complicated. Earl is raising pigs and he finds that there is no way he can make change.

"On top of this we find that we need a road and no-one can afford to take the time off from growing crops to build it. If he did, he would't have anything to barter with for the needs of his family.

"A group of us meet night after night to discuss alternatives to the barter system. We ponder the fact that back

on Earth no one item was universally used by all civilizations as a means of exchange. Gold and silver had, of course, been widely used. But tally sticks (see appendix), conche shells, beads, and so forth, had all been used at one time or another and in one place or another. Obviously we are not obliged to use a specific item as money. Somehow we have to discover what it is that gives money its utility. What is it that makes money first of all useful, and, second of all, desirable?

"We stumble on to the answer in a curious way. One night as we are discussing various methods of payment which had been used on Earth, Martha mentions that S&H Stamps had been a kind of money in her community as they were exchangeable for goods at a redemption store..."

"There is only one thing wrong with S&H Stamps," Martha laughed, interrupting at this point, "I can't pay my taxes with them!"

There was silence in the room. Here my friends had hit upon an important principle of money and they had seen it themselves without my telling them.

I expanded on the point Martha had made by saying, "You have recognized an important point. If it doesn't matter what money is made of, and we have seen that it doesn't, its utility has to be built into it in some way other than its physical substance. We know that gold coins are of little use as currency because their intrinsic value as a precious commodity is rarely equal to their face value. Their utility is destroyed because the metal's value as a commodity fluctuates.

"A demand for whatever is used as money has to be built into it in order for a monetary unit, a coin, a note, or whatever, to be widely acceptable. In a civilized society organized with a representative government, money is made widely acceptable by the requirement of its use to

pay taxes for public services supplied by the representative government. If S&H Stamps were acceptable to the Internal Revenue Service, they would be widely used as money. Also, money must be acceptable in payment of debt.

"As it happens, here in America, the IRS accepts only checkbook money or Federal Reserve Notes and so these are the only acceptable means of payment within the United States.

"But let's return to our Pluto example. The colonists recognize that their discovery of monetary utility completes their basic understanding of money. They now can begin to establish a sound money system. When they discover monetary utility, they begin to organize a system for producing their own money. A town meeting system of government is set up. It assembles to discuss the need for public utilities such as roads, water, schools, bridges, a postal service, etc.

"A Treasury is established and is charged with the responsibility of creating sufficient Pluto dollars to pay for the public projects needed by the colony. The Pluto dollars are, in fact, tax credit certificates which the colonists use to pay their taxes.

"It is agreed, for instance, that a small toll will be paid for the use of the new road."

"Hold it," Earl said, "Wouldn't that take money out of circulation?"

"Yes it would, but long before the money for the road is extinguished through the payment of the road tax into the Treasury, more money would be created for the colonists' agreed public projects. The money circulates freely throughout the private sector and is withdrawn gradually in the form of taxes. But there is always a residual supply of money which has been created debt-free.

"Eventually savings associations are established. These institutions then discover that they can make loans

available to the colonists. As there is an adequate supply of debt-free money continually flowing into the economy, money is always available to pay interest on the loans without the danger of the interest load eventually exceeding the money supply as is presently the case on Earth. Loans on Pluto are constantly made and repaid by the colonists. Since there is ample debt-free money in circulation it is not necessary to borrow to keep up interest payments and so inflation is non-existant on Pluto.

"Money of constant purchasing power is always available. In fact, individual's interest payments have the effect of lowering taxes."

"What?" Ed cried, "How on Earth - or on Pluto - can that be?"

"Both interest payments and tax money come out of the debt-free issue. If interest payments are taking money out of circulation, taxes can be kept at rock bottom levels in order to achieve their purpose. After all, if the colonists decide that they want a certain service or building or whatever, they simply vote on it and create the money for the project. Why should they pay someone else to create the money for them? They have all the intelligence and expertise to create the money themselves. The colonists call this system the Pluto Public Credit Money System."

"Do you mean that if I borrow $100 in the Pluto Public Credit Money System the money is already there to pay the interest?" Ed asked.

"That's right."

"So I wouldn't need to borrow to pay the interest or get the community to borrow from a bank to create some money to let me pay my interest?"

"That's right. The community would not have to borrow money created by a bank because the community itself is exercising its sovereign authority and right and prerogative to create for its citizens a means of exchange

which is widely acceptable and free from inflation or depression.

"Let's look for a moment at your $100 loan. Remember how in our first example (see page 68) when you made an interest payment on the $100 created out of nothing at the bank, you depleted the colony's money supply by $6 the first year?"

"I sure do," Ed replied, "and eventually it got to the point where even my original loan wasn't sufficient to pay off the interest. It would have taken the colony's entire money supply just to pay interest to the bank. That was a fine kettle of fish to be in. What would happen under the Pluto Public Credit Money System?"

"Okay. You borrow $100 for one year at 6%."

"Why 6%?" Ed asked.

"Because the Pluto Council has an annual budget of public service expenses totaling $6. If the budget were only $3, you could have your money at 3%. Anyway, for the sake of argument, let's say that your $100 loan represents all the other money needed in the community.

"At the end of the year, you can pay the $6 interest and renew the loan. The community's money supply and total debt will remain $100. The interest charge may change according to the public works budget financing requirements but the point is that the money to pay the interest will already be in circulation in the economy when the loan is made.

"As the population of Pluto grows, and as both public and private enterprise grow, the money supply will grow. But the total debt will never exceed the money supply.

"Of course, there will never be any public debt, because the public expenditures will be paid with money created by the Public Monetary Authority - in this case the Pluto Treasury. These expenditures will be collected out of circulation by adjusting the interest rate on the money loaned

to private enterprise."

"Could the Pluto Public Credit Money System work on Earth?" Nancy asked.

"Of course," I replied. "This kind of system is based on certain principles and can be implemented anywhere. I have drawn a simplified diagram which shows how this inflation-proof money system works. (See pages 134-135)

"The right-hand page represents the total United States free-enterprise economy and this includes the banks. The limits of the system are the productive capacities of the people. Thus, the economy expands or contracts on the basis of how willing and able the citizens are to produce, not on how willing or able the monetary authority is to create money.

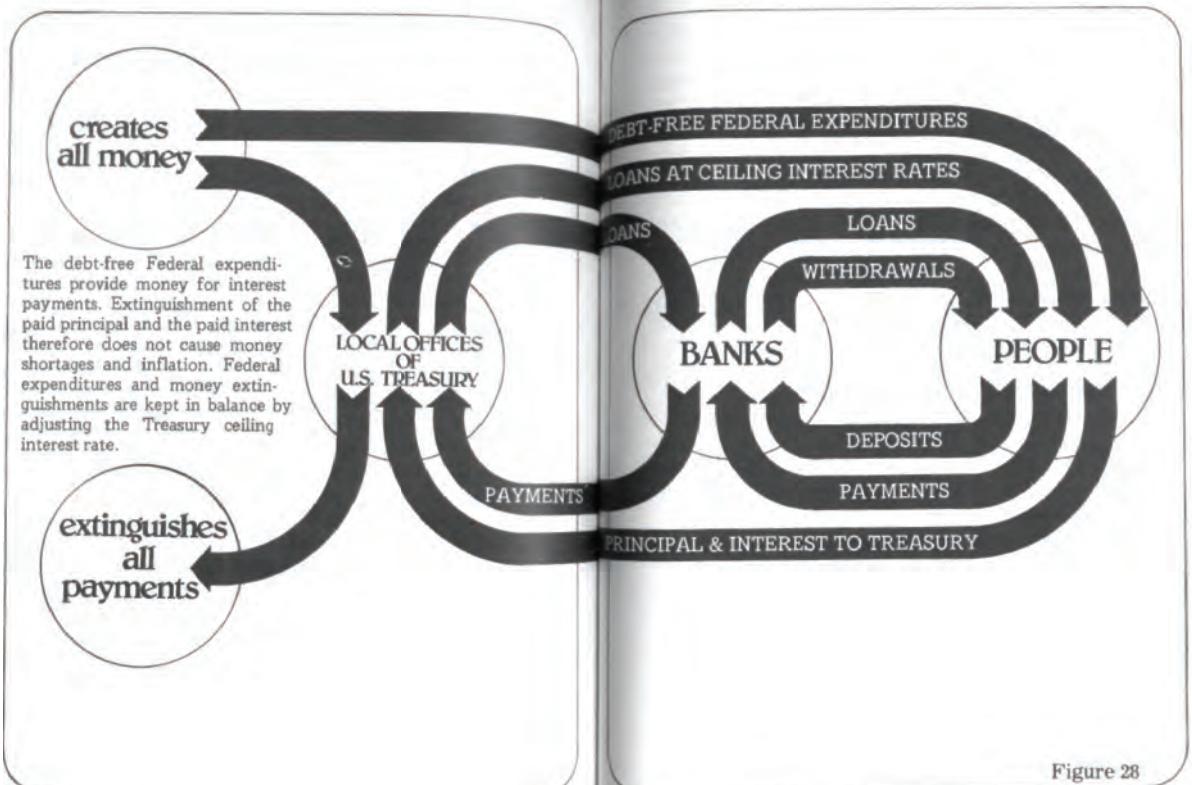
"The United States Treasury is the one and only source of money. Money comes into existence by Federal government expenditures and through loans made by the Treasury through its local offices either directly or via the banks."

"It looks as though the banks borrow from the Treasury too, according to your diagram," Earl said. "Is that true?"

"Yes," I replied, "in the Public Credit Money System banks are just like any other business enterprise. They cannot create money. The principle source of their lending funds will be the savings of the people. However, if they need more money they must borrow it from the Treasury like every other business venture. Their profits are derived from their ability to offer fee-paid services, and to lend profitably from the savings of depositors and from their own or borrowed funds.

"Money is extinguished only when it is returned to the U.S. Treasury in the form of principal and interest payments. Obviously the amount of money created and extinguished is rigorously monitored by the Treasury."

Public credit money system



The debt-free Federal expenditures provide money for interest payments. Extinguishment of the paid principal and the paid interest therefore does not cause money shortages and inflation. Federal expenditures and money extinguishments are kept in balance by adjusting the Treasury ceiling interest rate.

Figure 28

"Which is the debt-free money that we will use to pay the interest on our loans?" Martha asked.

"It is the arrow marked 'Federal expenditures'. The expenditures and the interest payments are closely monitored and the interest rate adjusted so as to maintain equality of these two flows. Most importantly, the flow of interest payments would not be allowed to exceed the flow of Treasury expenditures, because that would cause a shortage of money which would start up the familiar debt-interest inflation cycle. The total quantity of money in circulation is not important, just so the demands of the economy to provide needed goods and services are met.

"Now, the Public Credit Money System operates according to a few specific principles which I would like to explain to you. But before I do, we need to take a slight diversion in order to identify the three basic functions of money. We need to do this to better understand why the Public Credit Money System benefits the economy."

"What are these functions of money?" Earl asked.

"Let me put it this way. The substance of a healthy economy lies first of all in its natural and human resources. These consist of raw materials, plus the knowledge, skills and facilities required to convert them into useful products and to distribute them."

"But those things in themselves have nothing to do with money," Earl said. "Our human talents and our raw materials are given to us."

"True," I said. "Money cannot create human talent or put iron ore in a mountain. But without money, activating human talents or processing raw materials becomes dependent upon a cumbersome system of barter. Thus we see that the first and most important function of money is to activate the productive capabilities.

"Money also has a magical quality in that it can be used to provide the environment for discovering latent talents

or undiscovered potentialities. These call upon education and research for the continual development of better ways and things.

"This brings us to the second and probably best-known function of money which is to facilitate the exchange of goods and services.

"The third function is to provide a medium of stable purchasing power for safe storage of unspent earnings. This function has yet to be achieved, because it demands terminating inflation permanently.

"These are the functions of money in any money system. In the Public Credit Money System these functions are permanent and equitably carried out. The system is not designed to destroy the functions of money as is the case in the usurious money system. The Public Credit Money System protects the functions of money so that they can operate to the benefit of the economy."

"What about the principles of the Public Credit Money System," Nancy said. "You haven't mentioned those yet."

"Right, so I haven't. There are only a few and the first is probably the most important."

I drew a deep breath and then went on.

"There is no truer statement than this: 'Money doesn't grow on trees.' Of course it doesn't! Nor does it come into existence by accident or coincidence. Money is creatable only by authority. This is the starting-point of understanding money, not according to economic theories but according to Monetary Science."

"What is Monetary Science?" Nancy asked.

"Monetary Science is what we have been discussing during our several meetings. It governs the Public Credit Money System. It is the body of knowledge concerning the origin, function and use of money. It defines money according to specific principles and rules and indicates how money and monetary authority can be harnessed for the

good of mankind,

"The first principle of Monetary Science, which is im-portant but so fundamental that it is often overlooked is that money is creatable. All we have to do to prove this is to look at the United States money supply figures over a period of time. In 1932, for instance, the money supply in the United States was $22 billion. Today it is close to $400 billion. This means that during the last 48 years the amount of money in the economy has grown, on average $20 million each day.

"How did this money come into existence? It had to come from somewhere. But where?

"It was created by the decisions of people who possess the supreme authority to call it forth from nothing. The only reason that they can do this is that they have assumed the power to do so. Their authority isn't granted to them by law. The only words in the Federal Reserve Act of 1913 which could possibly be construed as a license to create money is the phrase in the preamble which states it is part of the Fed's purpose to 'furnish an elastic currency'.

"We must realize that creating money is a vital necessity to a civilized society. That authority has rested in the Congress since the Constitution was adopted. I wonder if the members of the Congress in 1913 had realized that they would be giving away to a private banking system the authority to create and demand interest on all circulating money needed for both public and private enterprise whether they would have passed the Federal Reserve Act of 1913.

"Money commands resources: natural resources, human resources. Monetary authority commands money. It causes it to spring into existence or disappear. This brings us to the second principle: Monetary authority is a source of immense power.

"When the authority to create money rests outside of the

jurisdiction of legitimate government, that authority's actions have far-reaching effects on the lives of all people. The capacity of a private monetary authority to expand and contract the money supply and to dictate interest rates constitutes the most awesome concentration of power over human lives ever conceived by the mind of man.

"So, in a free society where justice and human rights characterize the people's idea of right government, monetary authority has got to be totally subservient to civil government and not vice versa. This is the third principle."

"I'm still a bit puzzled about how interest rates work in the Public Credit Money System," Ed said. "Can you explain how interest works in an economy where there is debt-free money spent into circulation by the public monetary authority?"

'Of course," I said. "Your question brings us to the fourth principle of Monetary Science. This is the principle of monetary equilibrium."

"Equilibrium means that something is in perfect balance, doesn't it?" Nancy added.

"That's right. The principle of monetary equilibrium states that there must be a balance between money flowing into the economy and the money flowing out."

"That's simple enough," Earl said, "How does it work in practice?"

"Well, in the Public Credit Money System there are two channels through which money is created and sent out into the economy. These are illustrated in Figure 28. They are:

1. As payments for authorized Federal expenditures. In this channel are the checks written against sovereign Congressional authority. These checks monetize the nation's productive capacity for public needs such as national defense, the post office, etc.

2. As loans of substantial size to the private sector

"Money flows back to the Treasury as principal and interest payments on the loans made to the private sector and as internal revenue payments of any kind.

"The interest rate on Treasury loans to the private sector (either to banks or direct to industry) are computed and adjusted regularly to maintain a near-balance between the inflow of interest payments from the private sector, and the outflow of Treasury expenditure payments to the economy."

"Does the Treasury outflow of money into the economy mean the money which is created for government expenditures?" Nancy asked.

"Yes," I replied. "And the interest payment inflow means the money which is extinguished. Treasury outflow is creation; interest inflow is extinguishment. The near-balance of these amounts is mathematically calculated to favor a residual amount of debt-free money maintained in circulation. This avoids the condition where total debt could ever approach or overtake the total money supply. We can summarize the Principles and Rules of Monetary Science as they apply to the Public Credit Money System in the following way:

Principles and Rules of Monetary Science as they relate to the Public Credit Money System

1. Money is a public utility created by law alone.

2. Monetary authority is a source of immense power; it is the maximum authority in human government.

3. Monetary authority must be totally subservient to civil government and not vice versa.

4. In order to maintain monetary equilibrium, the interest rate charged must be mathematically regulated (after taxes) to withdraw money from circulation at the same rate as Treasury expenditures.

5. Money as a public utility is available without limit; it is creatable in a convenient form and spent or lent into circulation by the public monetary authority alone.

6. Money has no intrinsic value and needs no intrinsic value; the imperative value of money to a civilized society lies in its functions.

7. Monetary authority is authority under law to create money; monetary authority is the sovereign prerogative of government and not of private companies or individuals.

"Hold it a minute," Ed said interrupting. "The idea of the government creating debt-free money sounds good once you understand how the whole Public Credit Money System fits together. But if you tell people that the government ought to create our money they'll say that sounds like communism. They won't remember that the Constitution decrees that our money is to be created and regulated by Congress and Congress alone. A lot of people won't even know that this is what the Constitution says!"

"You may be right," I said. "People may think that way. But uninformed opinion can't shake the fact that the Public Credit Money System is based on the Constitution and is the soundest system to preserve and promote the best interests of free enterprise.

"The popular conception of communism is of a system where the state own everything and the individual works only for the state and owns little or nothing at all. If this is

so, doesn't it seem weird that American banks which are privately owned have been doing big business with com-munist countries for years? It just seems peculiar that privately-owned American banks should have representative offices in places like Moscow, for instance. In fact, the communist bloc's indebtedness to American banks amounts to many billions of dollars. It all makes me wonder if money is created through the debt-mechanism in both the free world and the communist world. If it weren't, why are all the big banks flocking to the other side of the so-called 'iron curtain'?

"But to get back to the point. In the Public Credit Money system, it is true that the government creates the money but always in response to the needs of the people. The balancing of the creation of money and its extinguishment is done by mathematical law. At the moment in the United States, money is created according to policy, not law. The distinction here may sound subtle but it is profoundly important."

"I don't get it yet," Ed said.

"Policy is changeable. The policy decisions of one set of governors of the Fed can be to reduce drastically the amount of credit which is available. Such a 'credit crunch' can produce a serious depression. Or, a policy decision can encourage or discourage lending to a particular sector of the economy and it will prosper or fall accordingly."

"I think I see," Ed said slowly, "You're saying that policy can be arbitrary or maybe even dangerous to the economy. If, on the other hand, the money system is governed by mathematical law, which is impartial, the money system will be fair to everyone. Is that right?"

"Yes, that is correct. The important point is the impartiality of the Public Credit Money System. Its whole purpose is to supply the economy with sound money which the people can use in whatever way they choose. In the Public

Credit Money System, money is a public utility, not a private debt. As the money which is created in a Public Credit Money System is inflation-proof, it cannot destroy free enterprise but must help it to thrive.

"Any nation, not just our own, which is striving for freedom for its people is now able to embrace a Public Credit Money Sysytem simply by proclaiming it as the law of the land."

"Okay," Earl said, "but it could be argued that a Public Credit Money System would give the Federal government more power. A lot of people think it has too much power as it is. When you look at things superficially, it seems that the banking system is closer to the people and more trustworthy than our government. Look at me, I was the banker up on Pluto. Everyone trusted me. After all, who can be trusted more than your banker? Put money creation in the hands of the politicians and folks would say the thing would be in a shambles in no time."

"Earl, let's just take a look at the Fed's record to see how beneficial their fractional reserve banking system and its practice of usury has been since it was set up in late-1913."

I took out a small table of figures I had put together and placed it on the easel. Here it is:

The Federal Reserve System at age 66

	From 1913:	To 1979:	multiplied:
The National Debt	$1.2 billion	$830	700 times!
Personal Income Tax	$0.03 billion	$159	5300 times!
Value of dollar	$1.00	13c	1/8 th
Acquisition of real property and claims by banking system	negligible	$600 billion	!!!!

"Now, if you consider this a brilliant success story for the American wage-earner, by all means let's not make any changes," I said, hopefully showing the irony I felt.

"What an appalling record!" Martha cried. "That's ter-rible! Why do we put up with it? Frankly, I think old man Fed ought to be retired. He's already past retirement age!"

"It is a shocking record. It is hard to imagine anything much worse. But let's be clear about one thing: putting the Public Credit Money System into effect does not mean simply transplanting the present system from the banks back to Congress. Monetary authority would not be given to the Congress in the form that it now resides in the private Federal Reserve System. That form is total dictatorship over the quantity of money which is allowed into the system based on unpredictable and secret policy decisions made by a financial hierarchy. The worldwide interests of this hierarchy are not necessarily coincident with those of the people in this or any other country.

"The Public Credit Money System, on the other hand, locks monetary authority into law and eliminates arbitrary policy decisions completely. In this system the quantity of money varies according to demand alone. The interest rate for borrowing money into circulation would be automatically adjusted to balance internal revenue with national expenditures."

"Do you mean there would be no more sudden interest rate hikes that come at us out of the blue?" Ed exclaimed.

"Absolutely right!" I replied. "No worthy and achievable public or private enterprise would ever be denied or impeded for lack of money or because of astronomical interest rates."

"Will the Public Credit Money System prevent bankruptcies?" Nancy asked.

"Yes," I replied. "But only those caused by a planned shortage of money. The Public Credit Money System won't change human nature. Someone with an unworkable idea or who refuses to work will probably go bankrupt. But it

will be a direct result of his or her own mistakes and not because bankruptcy is a necessary ingredient of the money system as it is in a usury-based money system.

"It is important to see in all our discussion that the arguments against the Public Credit Money System can't hold a candle to one vital point: money needed to finance the public and private sectors of the nation must be created only by sovereign public authority and belong to the sovereign public (a) to spend for its national public needs or (b) to invest in serving the needs of private enterprise. This point is enshrined into law in a Public Credit Money System.

"Nobody will have the right to use the money created by the sovereign public authority - in our case the U.S. Treasury - unless this private individual or agency or whatever borrows the money from the Treasury, or receives the money as a payment for goods or services supplied to the national government. Any deviation from this requirement would be a serious breach of integrity."

"I'd like to ask my question," Ed said.

"What is that?" I replied.

"Couldn't it be said that the Public Credit Money System is inflationary because it would create too much money if every legitimate loan proposition got the money it needed?"

"No," I said. "First of all remember that interest rates are low, the money is there to pay the interest. If the project is legitimate, a market will be ready to absorb the goods and services being provided. Besides, the most popular misconception about monetary inflation is the theory that price levels vary with the amount of money which is in circulation. The theory is true, but applies only if the economy is practically debt-free. This we know is a condition which doesn't exist and never has. The ludicrous statement 'too much money chasing too few goods' has no

foundation in a Public Credit Money System because the amount of money put into circulation by the borrowing of the private sector would be directly proportional to what the private sector were willing or able to produce.

"We can see that 'too much money chasing too few goods' isn't even a statement of fact in our present system. Just look at the expanding amount of money in circulation, while at the same time masses of unsold goods are in stores and warehouses all over the country. And yet people haven't got enough money to buy these huge inventories of goods. Where is all the money going?"

"To pay usury!" Ed exclaimed.

"Right."

"Okay, okay, I see that," Earl said, "but wouldn't all the prosperity caused by the Public Credit Money System cause inflation like prosperity does now?"

I shook my head. "One thing that a quick review of the last ten years shows us is that low interest rates prosper the economy and high interest rates depress it. Cycles of boom and depression are mis-taught as a natural phenomenon. The fact is they are directly attributable to monetary policy manipulation. William McChesney Martin, a former Governor of the Fed said: 'We're the ones who take away the punch bowl when the party starts getting good.' In other words, the Fed jacks up rates to cause recessions just when businessmen are starting to see the fruits of their investment and labor. Prosperity doesn't cause inflation any more than a windmill causes the wind to blow. Policy decisions concerning the creation of money cause prosperity or inflation. The idea that depressions are necessary to counteract prosperity is one of the most fantastic misconceptions of present economic thinking.

"I still wonder about gold," Martha commented. "Isn't it necessary to have gold behind the money system?"

"The theory here is that gold is a discipline to money

creation," I answered. "But just suppose that the nation's money supply was already expanded to the limit of its gold reserves when a catastrophic emergency, like the Mt. St. Helens volcanic eruption hit. Before the rescue missions could be dispatched, it would be necessary to marshall an emergency gold mining expedition to get the necessary reserves to expand the money supply to pay for the rescue
work.

"In short, the point that needs to be understood is that gold is a commodity, whereas money is a 'creature of law'.

"Do you have any more questions?" I asked. No one replied.

"I don't have any more just now," Earl said, "but I would like to see if I can list for myself the benefits of the Public Credit Money System."

"Fine," I said, "you start and I'll fill in any gaps."

And here is the list we put together that evening:

Benefits of the Public Credit Money System

1. Money becomes permanently available at reasonable interest rates.

2. Business activity and employment surge forward.

3. Inflation is halted protecting wages, savings, retired persons, and those on fixed incomes.

4. Bankruptcies are no longer necessary to balance successes.

5. Private debt is made payable for all time.

6. Prices diminish along with debt and stabilize when debt stabilizes.

7. Cycles of boom and bust are relegated to oblivion.

8. All existing primary debt, both public and private, diminish and ultimately reach a level below that of the money supply.

9. Federal government borrowing ceases entirely.

10. Federal taxation is drastically reduced immediately.

11. State and local taxes are gradually reduced to less than half of the present levels.

12. The national debt is reduced and eliminated, never to grow again.

13. Working people at all levels are able to own their homes free and clear.

14. Constitutional self-goverment rises superior to and replaces private monetary authority.

15. The practice of usury under the Federal Reserve Act is completely eliminated.

"That is the most thrilling list," Martha said. "And each one of those benefits is in reach right now. It is easy to see how we got the Public Credit Money System going from scratch up on Pluto. How do we patch up the mess we've got here on Earth?"

"This is no time for a patch up job," I replied. "What is needed is a complete piece of legislation to institute a debt-free money system. My colleagues and I have drafted out a Public Credit Money Bill. In outline, the provisions are as follows:

1. The United States Treasury shall be the sole source of original monetary issue.

2. The Federal Reserve Act of 1913 together with all of its amendments, codes and regulations is hereby repealed.

3. Private banks, institutions and individuals are henceforth prohibited from creating money or money credits in any form.

4. As designated in Article 1, Section 8, Clause 5, of the United States Constitution, Congress shall coin, create provide and regulate money and money credits for all requirements of the United States both public and private.

5. Money and credit needed to pay obligations of the national government shall be spent into circulation debt-free.

6. The Treasury local offices shall service the financial needs of the economy directly through loans of an appropriate minimum amount to any and all creditworthy applicants.

7. The interest rate charged by the U.S. Treasury on all loans to the private sector shall be matematically regulated (after taxes) to withdraw money from circulation at the same rate as Treasury expenditures.

8. State and local government treasuries shall qualify for voter-approved interest-free loans direct from the U.S. Treasury.

9. All legitimate financial obligations in effect when this

bill becomes law shall remain in force until paid. All illegitimate obligations shall be voided. This will hurt no-one because the interest is being extinguished.

10. After the passage of this bill, the U.S. Treasury shall remove from circulation Federal Reserve Notes currency by exchanging it for United States Treasury currency.

11. All Federal government borrowing shall be prohibited.

Conclusion

"So you see, the changes can be made," I said. "Abraham Lincoln, the only President in modern times to be responsible for the issue of debt-free money, had this to say about the sovereign right of government to create money:

> 'The privilege of creating and issuing money is not only the supreme prerogative of government, but it is the government's greatest creative opportunity.'

"But John," Earl interrupted, "I was never taught that in school. I was never taught anything in school about how money is created. It was after I got out of school that I got the impression that money can only really be understood, entrusted to, or administered by high-powered experts."

"Exactly," I replied, "and this widespread belief has resulted in great abuse by a few and the greatest loss of freedom ever experienced in America. Devastating inflation is the price of monetary ignorance. And depression is the result of monetary abuse.

"The great and inspired men who wrote the Constitution

of the United States of America had studied the systems of government which have existed since the beginning of recorded history. In their wisdom, they specifically decreed that the control of our money system belongs to the Federal Government under law.

"We all know that our government has not always acted wisely yet the Constitutional laws that have remained intact have provided a freedom for our people unparalleled by any civilization.

"We must, therefore, conclude that the money-creating authority, being the most powerful tool in all human affairs, must be properly confined to serve the public interest and to be guarded and preserved as belonging to all the people forever. This most vital element of government of, by and for the people remains to be understood and instituted into the government of our country.

"Until this is accomplished, we continue to embrace the most subtle and debilitating form of tyranny to which any nation on Earth has ever fallen victim.

"With the simple implementation of the Public Credit Money Bill with its principles and legal controls, we can eliminate inflation, the national debt, the unpayable private debt, involuntary unemployment, business depressions and corporate and personal income taxation for all time."

This is the truth in money.

Money supply

America's supply of money is not confined to the notes and coins which are in circulation at any given time. As we have seen, notes and coin constitute only 25% of what is considered the 'money supply' or 'money stock'. The other 75% of the nation's money supply is composed of checking account balances.

Beyond this there are numbers written in ledgers which represent money placed in savings accounts, credit unions, savings and loans and highly esoteric monetary instruments which are not thoroughly defined in the available literature.

The money supply figures are compiled from reports made by financial institutions to the Federal Reserve banks.

Economists designate the five definitions with a kind of shorthand. The first definition is known as M1-A (Ml prior to 1980), the second M1-B followed by M2, M3, and L.

For our purposes the most useful definition is M1-A. This is "Currency in the possession of the public plus checking accounts."

Those readers wishing to investigate the definitions of the other money stock measure are referred to the 'Federal Reserve statistical release' which is issued weekly.

APPENDIX NO. 2

Sample computation of mortgage repayments

Contracting to buy a home is a major step for anyone to take. Agreeing to a $40,000 to $100,000 debt is a big decision, especially in inflationary times. But the decision is even bigger when it is realized that the borrower is contracting to pay back the borrowed principal, say $40,000, plus two times that amount - roughly $80,000 -- in interest charges alone. Can this be true? Let's look at the mathematics of an average mortgage payment over its 30-year lifespan.

The formula for monthly interest payment on a mortgage is:

$$N = P \times \frac{r(1+r)^n}{(1+r)^n - 1}$$

N is the monthly payment
P is the loan principal
r is the monthly interest rate,
or the annual interest rate divided by 12
n is the duration of the loan in months

Let's assume that we are taking out a $40,000 mortgage and we will pay it off over a period of 30 years at an agreed annual interest rate of 10% (.10).

Now, let's substitute the appropriate figures into the formula.

$$N = \$40{,}000 \times \frac{\frac{10}{12}\left(1+\frac{.10}{12}\right)^{360}}{\left(1+\frac{10}{12}\right)^{360} - 1}$$

N=$351.03

Thus we see that our monthly payment will be $351.03. When we multiply the monthly payment by 360 months (12 months times 30 years) we find that at the end of the mortgage we will have paid the bank a staggering $126,370.80! This means that while we have paid back the $40,000 we borrowed to buy the house, we have paid an additional $86,370.80 in interest - enough to buy two more houses!

Obviously the rate of interest charged has a profound effect on our monthly mortgage payment and the amount of money the bank receives in interest charges. When the mortgage interest rate is 15%, for instance, we find that after 30 years we will have paid the bank 4 1/2 times the amount we borrowed. To be specific, if we borrowed $40,000 at 15% for 30 years, our monthly payment works out at $505.78. Multiplying this by 360 months we discover to our amazement that at the end of the life of the mortgage we have paid the bank $182,080.80!

If on the other hand, we borrow the same $40,000 at 5% we will only pay for our house about twice, since at 5% the monthly payments amount to $214.90. Multiplying this by 360 months makes a total of $77,364.00 which is just a couple of thousand dollars short of twice the cost of the house. At 2% the interest cost amounts to $13,283 after 30 years. Of course, at 0% interest we simply pay back the original borrowed principal.

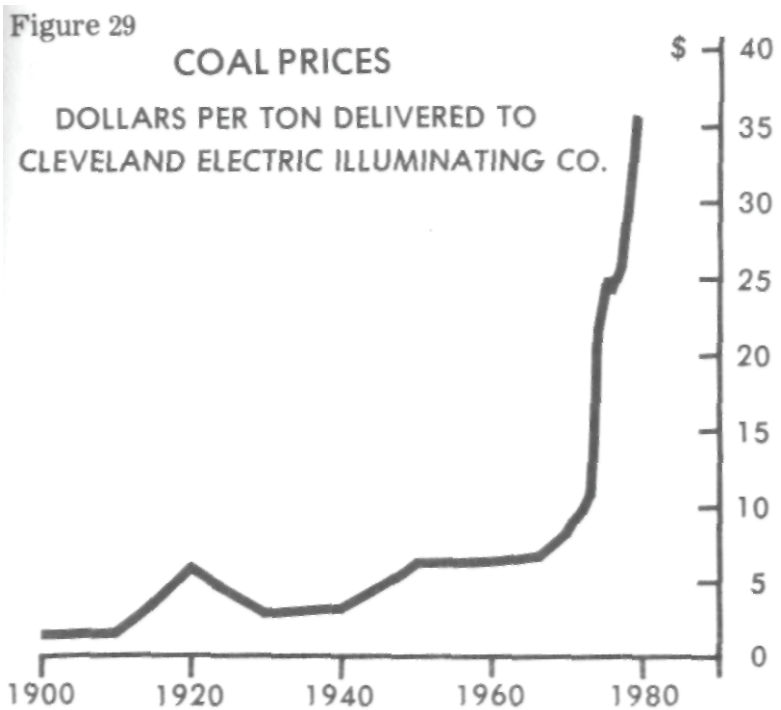
The interest payment on a house is a big expense which must be considered by every potential homeowner. This expense begins to seem even bigger when we understand that the bank created the original amount borrowed out of nothing with simply the flick of a pen and the whirr of a computer.

Coal prices 1900-1979*

Year	$/ton		
1900	1.40	1971	9.03
1910	1.68	1972	9.94
1920	5.77	1973	11.05
1930	2.88	1974	21.53
1940	3.11	1975	24.93
1945	4.58	1976	23.98
1950	6.49	1977	25.72
1960	6.41	1978	30.73
1967	6.57	1979	35.20
1970	8.12		

*information supplied by the Cleveland Electric Illuminating Co.

Figure 29



APPENDIX NO. 4

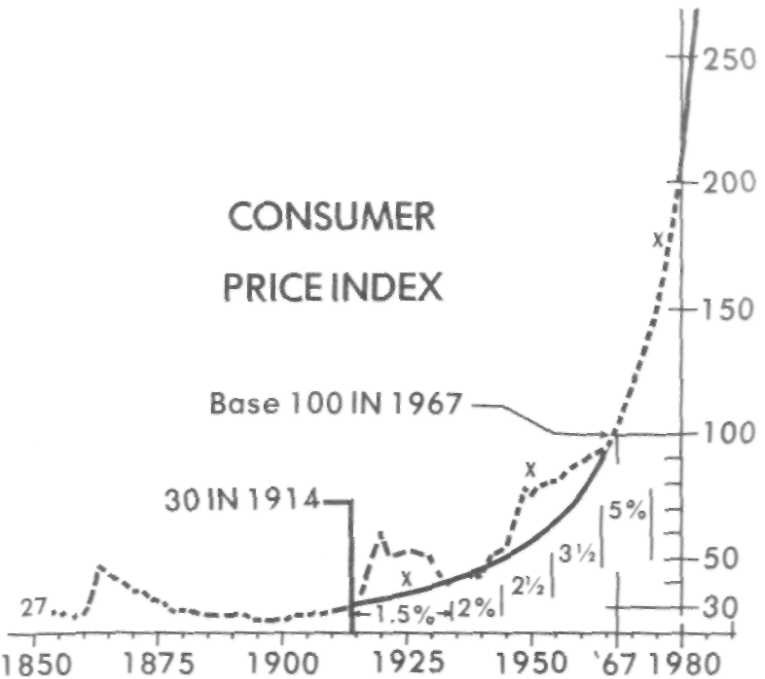
A mathematical analysis of the Consumer Price Index Curve

Stating that the growth of the Consumer Price Index traces an exponential curve when plotted on graph paper involves more than hunch or guesswork. Fitting an exponential curve to the CPI as plotted on graph paper is a mathematical exercise which illustrates a disturbing fact: the CPI is growing at a faster and faster rate.

How do we fit an exponential curve to the CPI?

First of all the index for each year is plotted on graph paper.

Figure 30



The dashed line is the actual CPI from government data. The solid line is the smoothed curve drawn from 30 in 1914 to 200 in 1979 and favoring the actual CPI values from 1965 Inward.

The rate at which the CPI is growing year-by-year can then be calculated mathmatically by the equation:

where: $y_1=y_0(1+r)^n$

y_0 is the CPI at the start of a certain period of time
y_1 is the CPI at the end of that period of time
r is the annual growth rate of the CPI during that certain period of time
n is the time period in years.

First we need to establish whether a constant rate exponential curve fits the plotted points between 30 and 200.

$$200= 30(1+r)^{65} \quad r = .0296 \text{ or } 2.96\%$$

Using this value for 'r' compute several values for CPI:

Year	CPI
1925	41.34
1950	85.74
1975	178.00

These are shown as x's on the figure.

It is clear that the actual CPI is not a constant rate exponential curve. The rate is less than .02% in the early years and greater than .0296 in the 1970's.

Now we proceed to compute the actual increasing values of 'r'. The smoothed curve is analyzed by sections. Take the 20 year section (1914 to 1934).

$$y_{1934}= y_{1914}(1+r)^{20}$$

From the smoothed curve we find $y_{1934}=40.4$.

$$40.4 = 30(1+r)^{20}\ r = .015 \text{ or } 1.5\%$$

In a similar manner we compute 'r' for the other sections as we proceed up the curve. Here they are:

1934 to 1944: 2%
1944 to 1954: 2 1/2%
1954 to 1964: 3 1/2%
1964 to 1974: 5%
1974 to 1979: 7%

What this means is that the CPI has the characteristic of an exponential curve but with an additional, worrying feature. The rate of growth of the CPI within the three ten-year segments from 1944 to 1974 is not constant. The increases go from 2% to 5%. Between 1974 and 1979, only five years, the rate is 7%. This graphically represents the fact that consumer goods are becoming more expensive at a faster rate than they ever have done in the past.

In fact, the price of anything can be analyzed by this method. We have plotted the increase in the price of coal, real estate taxes, and shoes and they all follow the course of this type of exponential curve in which the rate of increase increases more and more as time goes on.

Using these techniques it is possible to predict the future level of the price of consumer goods. In fact, once we had established the curve's features, we discovered that the actual CPI figures from 1967 onward coincide very closely with the values we computed before the actual figures were produced by the government at the end of the year. Thus it was possible for us to predict accurately in 1976 what the CPI would be in 1980.

APPENDIX NO. 5

An illustration of the power of compound interest

Question
One cent - 1c or $0.01 - was loaned at 6% compound interest in the year zero, in other words the year before the birth of Christ Jesus. What is the amount of interest due in gold in 1979?

Answer
Using the formula for compound interest we substitute the amounts thus:

$$\$0.01 \times (1.06)^{1979} = 1.203 \times 10^{48}$$

If we calculate the interest due in 1979 in cubic feet of gold (weighing 1,205.6 pounds per cubic foot -- it's heavy stuff!) at $500.00 a Troy ounce (12 ounces to a pound, not 16), the answer is:

$$1.66 \times 10^{41} \text{ cubic feet of gold}$$

How much gold is this? Let's calculate it in terms of the size of the Earth's sun since the amount is so vast.

Diameter of the Earth's sun: 865,000 miles
Volume of the sun: $4.98825511 \times 10^{28}$ cubic feet
How many suns: 3.333×10^{12}

This is a difficult number to comprehend. Can it be stated more simply?

Yes, let's assume 1,000,000,000 (one billion) suns in a galaxy and express the figure in galaxies.

3.333×10^{3} or 3,333 galaxies of 1 billion suns each.

So the amount of money we would have to repay on the $0.01 borrowed at 6% compound interest 1,979 years ago would be the value of 3,333 galaxies each containing 1 billion solid gold suns.

Now suppose the interest rate had been 1% instead of 6%. How much would we have to repay in 1979?

$\$0.01 \times (1.01)^{1979} = \$3{,}564{,}500$ our interest due in 1979 years

These calculations show the amazing effect of compound interest and also the dramatic reduction in long-term debt by reducing the interest rate by five percentage points from 6% to 1%. If the interest had been zero, the amount due in 1979 would be simply the one penny borrowed in the first place.

Einstein said that compound interest was the greatest discovery in history. This example illustrates his point.

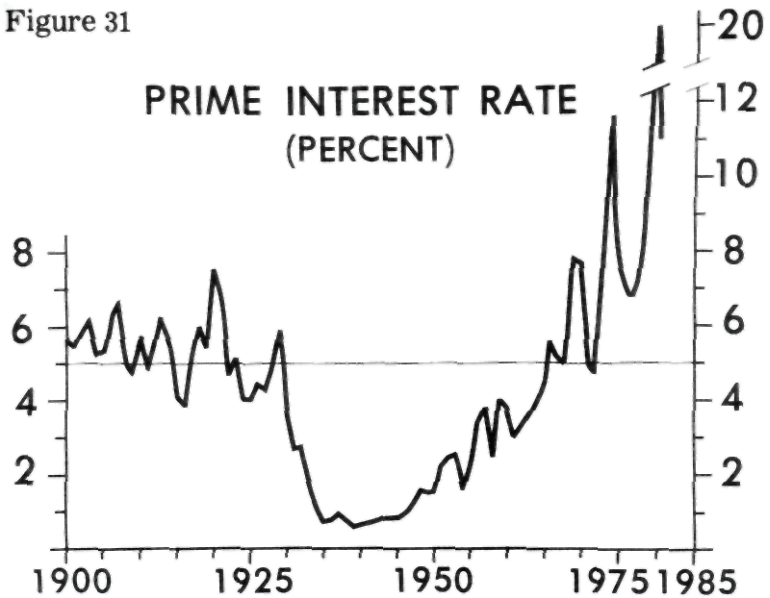
Knowledge is power.

Knowledge of compound interest is super power (provided most others are kept in ignorance.)

The prime interest rate

In view of what has been happening to the price of goods and services as measured by the Consumer Price Index, it is enlightening to examine the changes in the price one must pay to borrow money from a bank. This price level is commonly expressed by the Prime Interest Rate.

Figure 31



This figure was plotted from data readily available in any good library.

A mathematical analysis of the values from 1940 to 1980 shows that the Prime Interest Rate follows an exponential curve having an increasing annual growth rate. Contrast this to the period 1939 to 1945 during which years the Prime Interest Rate was less than 1%.

Recall that neither the Congress nor the President has any control whatsoever over interest rates. The Fed alone specifies what the rate shall be at any given time.

Compound interest and the 'Rule of 72'

In order to roughly estimate the amount of time it will take for a debt, at compound interest, to double, you can simply apply the banker's 'Rule of 72'. Using this method you divide 72 by the annual interest rate. The quotient is the number of years it takes for the debt to double. Thus, an interest rate of 10% will cause a loan of any amount to double in 7.2 years, provided no payments of principal or interest are made.

Interest rate %	Years for the debt to double
1	72
2	35
5	14.4
10	7.2
20	3.8

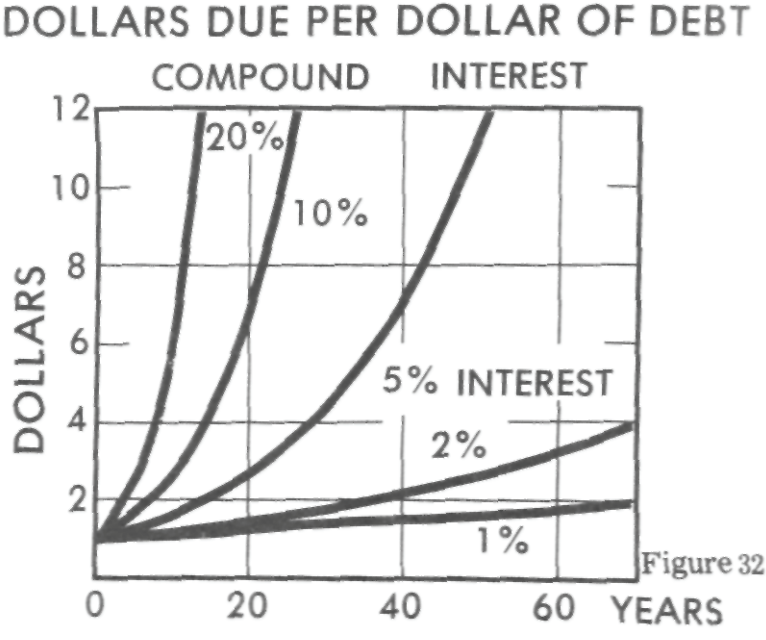


Figure 32

Suppose, therefore, you borrow one dollar at compound interest. What would the increase in your indebtedness look like over a period of years at, say, 1% -- if no payments are made? At 20%? The charts show how long it will take for the $1.00 debt to double at a number of different rates of interest. It is important to note that the higher the rate of interest, the faster the debt will double.

APPENDIX NO. 8

The Twelfth Century's debt-free money system

'Nor need I tallies thy dear love to score...' Shakespeare's 122nd Sonnet

Tally sticks as a form of money were introduced in England by King Henry I, the fourth son of William the Conqueror. Henry I came to the throne in 1100.

Tally sticks (from the Latin talea, meaning 'a stake') were used by the king's treasury - the Exchequer - to finance social and public projects, to purchase the court's supplies and to pay those who worked for or served the king.

King Henry I built in a demand for tally-stick money by requiring that they be used to pay taxes. It was this sovereign power to levy and collect taxes which instilled an economic demand for what were otherwise worthless pieces of wood. The levying of taxes to be paid in tallies was the factor which infused 'value' into the tallies and thus endowed them with monetary utility. English merchants, farmers, craftsmen, etc, worked and traded to obtain Exchequer tallies because of the decree that they were the only acceptable method of paying the king's taxes. In turn, the only source of tallies for paying taxes was the king's royal expenditure.

Tally sticks were used exclusively as money in England for 594 years; partially for the next 89 years, and unofficially for another 43 years - a total of 726 years. Both an Exchequer issue and a private issue were widely circulated. Their widespread use is illustrated by literary references, including the line from a Shakespearean Sonnet given at the beginning of this note.

The sticks were narrow shafts of wood (normally hazel but also willow, box or other seasoned wood) varying in length from about eight inches to as long as three feet or more. They were flattened with a knife.

The sum of money representing the value of the transaction was cut across the stick in notches. Higher denominations were indicated by deep notches on one face of the stick, lower denominations were indicated by smaller notches on the opposite face. The tally was usually more flat than square and the flat surfaces were used to write the nature of the transaction and the names of the parties.

After the stick had been notched and inscribed on both faces, it was split lengthwise through the notches but with one piece slightly longer than the other. The longer piece (the stalk or counterfoil) was normally given to the payer and the shorter (the leaf or foil) kept for reference by the payee. The method of cutting Exchequer and private tallies was carefully differentiated in detail.

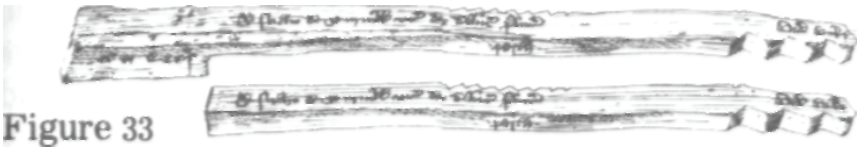


Figure 33

When taxes were collected, the stalks of the Exchequer tallies were presented to the tax collector. These were matched up ~ tallied ~ with the foils which had been kept in the Exchequer and the tax was thus paid.

This system was used by the English Exchequer until 1826. When the system was finally abolished, the supply of tally sticks which had been amassed in the Exchequer was used as firewood in government offices. In fact, in 1834 when the sticks were burned in the furnace of the House of Parliament the flue overheated and started the fire which completely destroyed the building. About 1,300 tallies survived the fire but only one complete foil is among them.

Sources:

The Public Record Office, Chancery Lane, London
Guide to the Medieval Room, The British Library, page 233-234
The Echo of History by Paul Carson, Monetary Science Institute
How to Cure Inflation by Hyrum J. Amundsen Jr., pages V-6/7

APPENDIX NO. 9

Is the Federal Reserve Bank of Cleveland a private corporation?

To determine whether it is or not we can follow this logic:

Fact 1: Departments of government do not pay real estate taxes on the land and buildings which they occupy

Fact 2: Private corporations do pay real estate taxes on the land and buildings which they own and/or occupy.

Fact 3: The Federal Reserve Bank of Cleveland pays real estate taxes on the land and buildings which it owns and occupies.

Therefore: The Federal Reserve Bank of Cleveland is a private corporation.

The evidence used to come to this conclusion can be found in the Auditor's 1979 Tax List of Real and Public Utility Property at the Cuyahoga County Auditor's Office, Cleveland, Ohio. This list shows the amounts of real estate tax owed and paid by the Cleveland Federal Reserve Bank per half-year.

Bibliography

The following books provide information, documentation and background from which an understanding of our money and banking system can be gleaned. All of these books are available from: Monetary Science Publishing Box 86 Wickliffe, Ohio 44092

A Primer on Money
A government publication printed in 1964 for the use of the Committee on Banking and Currency of the House of Representatives. It explains in simple language how our present monetary system works. It points out faults and attempts to justify them.

Money Facts: 169 Questions and Answers on Money
A government publication printed in 1964 as a supplement to A Primer on Money. Money Facts is out of print.

Money Creators
by Gertrude M. Coogan
The author was awarded a Masters Degree in Economics and Finance by Northwestern University and was for eight years a Security Analyst for the Northern Trust Company of Chicago. Her profound understanding of the money system resulted in her producing this helpful and simply written book.

The Legalized Crime of Banking
by Silas W. Adams
A simple explanation of the fractional reserve banking system and how bank deposits (checkbook money) are created out of nothing.

Banking, Currency and the Money Trust
by Congressman Charles A. Lingbergh, Sr.
The father of the famous aviator wrote this illuminating book in 1913.

A Fraudulent Standard by Arthur Kitson
The author, an English engineer, lecturer and businessman, explains how it is impossible for gold to be a just measure or an honest expression of exchange values. Suggestions are also made for the establishment of an invariable unit of value.

The Federal Reserve System: Its Purposes and Functions by the Board of Governors of the Federal Reserve, 1939 Edition.
A republication by Silas W. Adams of a suppressed document with his explanations and comments. This booklet explains how the Federal Reserve banks can write checks against no funds and how these checks then become free reserves to the commercial banks and thus the public's money supply.

Wealth, Virtual Wealth and Debt
by Prof. Frederick Soddy
The author explains how the fault in our economy which causes inflation lies with neither production nor consumption but with 'bad money' created as debt.

Human Ecology
by Thomas Robertson
A brilliant study and analysis of financial, political, and social mechanisms. The author writes: 'The more I read the orthodox (financial) text-books, the less I understood, until it dawned upon me that what I was reading was not a

science so much as a description of a mythical apparatus.'

Lincoln Money Martyred
by Dr. R. E. Search
President Lincoln's monetary views.

Books by Wickliffe B. Vennard Sr:

The Federal Reserve Hoax By Conquest or Consent
What's Wrong in Washington
The Enemy Within
Solution to the Federal Reserve Fraud
50 Years of Treason
Chronological History of U S Money
World War HI Shaping Up (published in the 1960's)

Lincoln's Greenback Currency
by John O. Bye
This book compares what the continued emmission of and expansion of the use of Greenbacks would have done for the United States, as compared with what the currency issued under the National Banking Act of 1863 plus that issued since 1913 under the Federal Reserve Act has done to us.

Monetary Law in a Free Society
by Harold Fisk
The author, an engineer and mathematican, points out that the cause of inflation is due to a fundamental error in our monetary system. In four tenets, Mr. Fisk scientifically explains what changes are required to reverse the trend of inflation and recession and the exponential growth of public and private debt. First published in 1975.

About the Authors...

Theodore R. Thoren and Richard F. Warner bring to the study of the money system a unique combination of mathematical and analytical skills.

Mr. Thoren holds degrees in both mechanical and aeronautical engineering from the University of Michigan. He received his masters degree in mechanical engineering from the University of Iowa after which he joined Thompson Products (later TRW) where he became Director of Research and Development. From 1959 to 1968 he was Vice President of Engineering and Research for the Aero-Space division of Borg Warner Corporation.

Mr. Warner is a graduate of Case Institute of Technology where he received a bachelor of science degree in mechanical engineering. He is the former chief engineer of the Actuator Division of Cleveland Pneumatic Tool Co. (now a division of Pneumo Corporation) and currently owner of a business serving education.

Early in the 1970's both men independently became convinced that the continuing economic problems of our nation were the result of fundamental wrongs in the design of our money system. Their mutual interests eventually brought them together in writing The Truth in Money Book. Their grounding in mathematics and engineering gives them a unique background. Their approach to the problem of inflation is from a scientific point-of-view with the intent of solving it as one would solve any engineering or scientific problem.

Mr. Thoren

Mr. Warner